# FORT RUCKER / WIREGRASS AREA JOINT LAND USE STUDY

October 2009









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The Fort Rucker / Wiregrass Area Joint Land Use Study (JLUS) is a cooperative land use planning exercise between Fort Rucker and surrounding entities in Southeast Alabama. The participating jurisdictions are listed in Table 1. The Friends of Fort Rucker was also instrumental in providing assistance to this process.

Table 1 JLUS Participating Jurisdictions

Barbour County	Coffee County
Dale County	City of Daleville
City of Dothan	City of Enterprise
Geneva County	Houston County
Town of Level Plains	Town of Newton
Fort Rucker	Alabama Dept. of Transportation
	Aeronautics Bureau

The JLUS process has studied past events and development actions in the formation of the study. However, it is not designed to retroactively address past activities. The JLUS is a forward-looking process that will provide guidance to Fort Rucker and local governments to implement objectives to increase future land use compatibility in the region and to strengthen the relationship between the military and civilian communities.

#### INTRODUCTION

Most military installations were planned and located away from densely populated areas, due to noise creation and other negative disruptions created by training exercises. However, active military installations provide benefits that have caused areas nearby to become attractive for development in close proximity to training areas. This development has exposed larger populations to the negative impacts of military training.

The Department of Defense (DOD) has developed multiple programs in the 1970s to address these negative impacts, including the Army's Operational Noise Management Program (ONMP). The ONMP is a technical report that details the noise and accident potential levels that is created in areas nearby training sites. The ONMP is submitted to all area local governments and other stakeholders to use in local planning efforts.

There are other factors that are created by military training that impacts the surrounding areas besides noise and accident potential. The DOD, through the Office of Economic Adjustment (OEA), created a community planning assistance program called the Joint Land Use Study (JLUS). The primary objectives of a JLUS is to encourage cooperative land use planning between military installations and the surrounding communities so that future civilian growth and development are compatible with the training or operational missions of the installation and to seek ways to reduce operational impacts on adjacent land.

From the time Fort Rucker (then Camp Rucker) opened in 1942, and especially since the Army Aviation School relocated from Fort Sill in 1954 soon after making it a permanent post, the installation has grown in importance as the primary provider of aviation training to the Army.

As Fort Rucker has expanded in training scope and size, the communities adjacent to Fort Rucker has also grown. Civilian area growth has been aided by Fort Rucker, due to opportunities for housing, retail, and other opportunities for soldiers, other employees, and families that are locating in the area. This increased development has also created more opportunities for operational conflicts, due to the noise and safety effects created by the aviation and weapons training, and the compromise of training effectiveness that can negatively affect quality of life in the Wiregrass.

Fort Rucker and several local government officials recognized the need to study land use compatibility issues around the installation and its outlying aviation facilities through participating in the JLUS program. These interested partners engaged the Southeast Alabama Regional Planning and Development Commission (SEARP&DC) to facilitate the study. OEA funded 90% of the study with the matching funds provided by the Friends of Fort Rucker.

The Fort Rucker / Wiregrass Area JLUS intends to improve the quality of life in the surrounding region through:

• Developing strategies to protect the health and welfare of civilian and military populations in the Wiregrass Area;

- Enhancing communication regarding compatible land use between Fort Rucker, Wiregrass communities, and other regional stakeholders; and
- Protecting the viability and capabilities of Fort Rucker and its roles for the Wiregrass and the United States of America.

The Fort Rucker / Wiregrass Area JLUS is not a process to limit growth in the region, but to facilitate future growth in a balanced way that does not jeopardize the quality of the aviation training or the welfare of the residences and businesses in the civilian areas. This report is not a binding document, but it is advisory to the partners to implement the best strategies available to encourage compatible growth in the Wiregrass region.

The outcome from this process is a recommendation of strategies for both the civilian communities and Fort Rucker to review and incorporate into appropriate practices to minimize current and future incompatible development and its effects on the training mission of the U.S. Army Aviation Center of Excellence and the safety and welfare of the surrounding communities.

This JLUS concentrates on the local communities that share the Wiregrass Region with Fort Rucker, "The Home of Army Aviation," and its multiple aviation facilities, some which are located outside the installation. This process has assessed land use compatibility in the areas that fall within Barbour County, Coffee County, Dale County, Geneva County, and Houston County.

#### STUDY BACKGROUND

# Fort Rucker Background

The origins of Army Aviation and Fort Rucker can be traced back to the early months of World War II. During World War II, the United States conducted a manpower mobilization unprecedented in its history in terms of total numbers, putting more than 16,000,000 men and 333,000 women in uniform. This mobilization called for the creation of new training camps and military bases, including Camp Rucker in Southeast Alabama. During the 1930's a 35,000-acre tract of land in Dale and Coffee counties was purchased by the federal government, withdrawn from cultivation, and converted into a wildlife refuge called the Pea River Land Use Project. Eventually an additional 30,000 acres were also purchased.

In 1941, the U.S. War Department selected the lands of the Pea River Project in Southeast Alabama to be used as an army infantry training camp. Camp Rucker officially opened on 1 May, 1942. In September 1942, an additional 1,259 acres south of Daleville were acquired for the construction of an airfield to support the training camp. It was known as Ozark Army Airfield until January 1959, when the name was changed to Cairns Army Airfield.

The first troops to train at Camp Rucker were those of the 81<sup>st</sup> (Wildcat) Infantry Division; the 81<sup>st</sup> Division left Rucker for action in the Pacific Theatre in March 1943. Three other infantry divisions received training at Camp Rucker during World War II, the 35<sup>th</sup>, the 98<sup>th</sup> and the 66<sup>th</sup>. The 66<sup>th</sup> (Panther) Division left for the European Theatre in October 1944. Camp Rucker was also used to train dozens of units of less than division size. These included tank, infantry replacement, and Women's Army Corps units.

Camp Rucker was inactive from March 1946 to August 1950. The principal Army unit operating at Camp Rucker during the Korean conflict was the 47<sup>th</sup> Infantry Division, which trained replacement troops for combat in Korea. The post again became inactive in June 1954, after an armistice was signed.

Camp Rucker reopened in August 1954 when the Army Aviation School began moving to Camp Rucker from Fort Sill, Oklahoma. The initial training class began in October 1954. On February 1, 1955, the Army Aviation Center was officially established and in October 1955, the post was given permanent status by the Army with the name change from Camp Rucker to Fort Rucker.

In 1956, the Department of Defense gave the Army control over all of its own training. Gary Air Force Base and Wolters Air Force Base in Texas transferred their rotary wing training activities to Fort Rucker. Lacking adequate facilities, primary rotary-wing training continued at Fort Wolters until 1973, when it was consolidated at Fort Rucker. Air Force rotary wing training was moved to Fort Rucker in 1971. In 1956, the Army Aviation Center began assembling and testing weapons on helicopters. This eventually led to the development of armament systems for Army helicopters. Both Army Aviation and the helicopter as a fighting gunship came of age in the 1960's during the conflict in Southeast Asia.

During the Vietnam War, Fort Rucker played a vital role in the training of helicopter pilots on the UH-1 Huey, CH-47 Chinook, OH-6 Cayuse, OH-58 Kiowa, AH-1 Cobra, and CH-54 Tarhe. Fort Rucker continued as the chief Army Aviation rotary-wing training ground in the 1970's, 1980's, and 1990's. Army pilots were trained on the UH-60 Blackhawk, AH-64 Apache and the OH-58D Kiowa. Today, the United States Army Aviation Center of Excellence (USAACE) at Fort Rucker trains pilots for military aviation missions utilizing the TH-67 Creek, UH-60A Blackhawk, AH-64A Apache, CH-47D Chinook, OH-58D Kiowa Warrior and the AH-64D Apache Longbow helicopters.

Today, Fort Rucker's military footprint covers 63,072 acres in an area known as the Wiregrass, named for a wild grass peculiar to the region. With the consolidation of all Army Aviation flight training at Fort Rucker in 1973, the post has become the home of Army Aviation. Fort Rucker continues to train helicopter pilots for other armed forces braches including the Air Force and trains students from over sixty foreign countries. Fort Rucker's military aviation training mission today is critical to Army Aviation helicopter training and military readiness and to support today's combat aviation fighting ability in Afghanistan and Iraq, and in the continuing global war on terrorism.

Fort Rucker is home to the 1<sup>st</sup> Aviation Brigade (Golden Hawks), consisting of the 1<sup>st</sup> Battalion, 13<sup>th</sup> Aviation Regiment; the 1<sup>st</sup> Battalion 145<sup>th</sup> Aviation Regiment; and the 1<sup>st</sup> Battalion, 210<sup>th</sup> Aviation Regiment. Fort Rucker is also home to the 110<sup>th</sup> Aviation Brigade, consisting of the 1<sup>st</sup> Battalion, 14<sup>th</sup> Aviation Regiment; the 1<sup>st</sup> Battalion, 212<sup>th</sup> Aviation Regiment; the 1<sup>st</sup> Battalion, 223<sup>rd</sup> Aviation Regiment; and the Helicopter School Battalion (HSB).

#### **Current Mission**

The current mission of the USAACE at Fort Rucker is to develop the Army's aviation force for its worldwide mission. This includes developing concepts, doctrine, organization, training, leader development, materials and soldier requirements. To provide resident and nonresident aviation maintenance, logistics and leadership training support of the total force and foreign nations for the sustainment of joint and combined aviation operations. Fort Rucker supports a daytime population of about 20,000 including 9,300 military service, 7,500 civilian and contract employees, and 3,200 military family members residing on post. The post also supports about 67,000 retirees living within 50 miles.

In the 2005 Base Realignment and Closure (BRAC) round several recommendations were approved that are in the process of being implemented that will affect Fort Rucker's overall mission. The Department of Defense (DoD) realigned Fort Eustis, Virginia, relocating the Aviation Logistics School and consolidating it with the Aviation Center and School at Fort Rucker. Also, the DoD is realigning Fort Rucker by relocating the Aviation Technical Test Center to Redstone Arsenal in Huntsville, Alabama, consolidating it with the Technical Test Center there. BRAC recommended the realignment of Fort Knox, Kentucky by moving the Armor Center and School to Fort Benning, Georgia.

The 2005 BRAC recommendations negatively affecting Fort Knox were likely weighted due to environmental and encroachment issues around the base resulting in the loss of Fort Knox's long

standing training mission for armor. Today similar encroachment issues are of high concern and are being actively voiced both by military officials at Fort Rucker and regional private sector stakeholders due to land use incompatibility issues surrounding the Fort Rucker and the aviation training stage fields located in Southeast Alabama. Land use compatibility concerns are primarily due to growing residential housing and commercial development around Fort Rucker's training facilities. Identified concerns point to the justification and the need to conduct a Joint Land Use Study (JLUS) for Fort Rucker in order to ensure compatible future land use for both military and civilian lands surrounding the installation and to protect both the regional economic impacts and long range military training mission at Fort Rucker.

#### JLUS Process

JLUS organizational meetings held in December 2006 and January 2007 received strong support from regional local government partners and stakeholders pledging active participation and financial support of the project. This group assigned the Southeast Alabama Regional Planning and Development Commission (SEARP&DC) the task as facilitator to develop the JLUS proposal. This process was undertaken during Spring 2007 and submitted to OEA. During this time, the Policy Committee and the Technical Committee were created to represent the local jurisdictions and to oversee the plan development.

The Policy Committee was responsible for the overall direction of the JLUS, preparation and approval of the study design, approval of the draft and final written reports, approval of recommendations, and will monitor implementation of adopted policies. Membership included elected officials, military base leadership, and private sector leadership. Meetings were normally held monthly or bi-monthly during drafting phase.

The Technical Committee reported to the Policy Committee and studied and identified technical issues related to the JLUS, including current operational effects on the local area and the feasibility of implementation of recommended policies. Membership was composed of representatives from affected jurisdictions and includes planners, city clerks, county engineers, representatives from the business community, airport officials, state officials, and Fort Rucker employees. Meetings were normally held monthly or bi-monthly during drafting phase. Dates of committee meetings are shown in Table 2.

A third committee, an Advisory Committee, was formed and convened in 2008 to further incorporate citizen and business stakeholders.

**Table 2** Committee Meetings

Policy Committee	Technical Committee	Advisory Committee
October 17, 2007	October 17, 2007	June 5, 2008
November 29, 2007	November 15, 2007	July 10, 2008
April 10, 2008	February 12, 2008	
May 15, 2008	March 11, 2008	
June 12, 2008	April 8, 2008	
September 16, 2008	May 13, 2008	
January 29, 2009	June 10, 2008	
February 26, 2009	September 16, 2008	
September 15, 2009	November 13, 2008	
September 29, 2009	December 9, 2008	
	January 29, 2009	
	February 26, 2009	
	September 15, 2009	
	September 29, 2009	

The JLUS process also involved several public involvement meetings at three stages of the project to give residents and business stakeholders an opportunity to comment on Fort Rucker impacts and possible implementation tools.

Workshops were held September through November 2007 in Daleville, Ozark, and Enterprise. A second round of workshops was held June through July 2008 in the same three locations. A third round of workshops was held in September 2009, also in those locations.

# Wiregrass Region Study Area

Overall, Fort Rucker utilizes a 32,300 square-mile aircraft training area that encompasses 27 counties in Alabama, Florida, and Georgia. The Fort Rucker reservation encompasses 57,772 acres in Coffee and Dale counties, while 3,626 acres are owned outside the reservation, and 1,674 acres are leased. The U.S. Army Aviation Center for Excellence altogether uses 23 aviation facilities located in Barbour, Coffee, Dale, Geneva, and Houston counties, as well as 89 remote training sites.

The JLUS is focusing on Fort Rucker and the 23 aviation facilities, which are divided into five (5) Army basefields, one (1) Forward Arming Refuel Point (FARP), and 17 stagefields. Basefields are facilities with a full range of maintenance and classroom facilities. The only facility that can manage fixed-wing aircraft is Cairns Army Airfield located approximately five miles south of Fort Rucker. Basefields located on Fort Rucker include Knox, Hanchey, and Lowe Army Heliports (AHP). Shell AHP is located west of Fort Rucker in northern Enterprise. The location and further information about these facilities are located in the Compatibility Assessment section.

The combined population of the five counties that surround Fort Rucker and its training facilities in Southeast Alabama is 249,724 according to 2008 U.S. Census estimates, a 5.67% increase

from the 2000 Census population of 236,333. More specific jurisdictional estimates are listed in Table 3 and Fort Rucker population information is located in Table 4.

Table 3 Study Area Population

	2000 Population	2008 Population Est.
arbour County	29,038	29,309
Baker Hill	327	314
Blue Springs	121	115
Clayton	1,475	1,377
• Clio	2,206	2,210
Eufaula	13,908	14,502
Louisville	612	565
Coffee County	43,615	47,753
• Elba	4,185	4,164
• Enterprise (pt.)	20,993	25,112
• Kinston	602	614
New Brockton	1,250	1,234
Pale County	49,129	48,292
• Ariton	772	748
Clayhatchee	501	493
• Daleville	4,653	4,546
• Dothan (pt.)	650	979
• Enterprise (pt.)	185	239
• Grimes	459	453
• Level Plains	1,544	1,511
Midland City	1,703	1,883
Napier Field	404	396
• Newton	1,708	1,653
• Ozark	15,119	14,711
Pinckard	667	627
Geneva County	25,764	25,882
• Black	202	208
Coffee Springs	251	256
<ul> <li>Geneva</li> </ul>	4,388	4,445
Hartford	2,369	2,426
<ul> <li>Malvern</li> </ul>	1,215	1,222
• Samson	2,071	2,029
• Slocomb	2,052	2,047
Taylor (pt.)	10	11
<b>Houston County</b>	88,787	98,488
<ul> <li>Ashford</li> </ul>	1,853	2,062
• Avon	466	475
Columbia	804	841
• Cottonwood	1,170	1,202
• Cowarts	1,546	1,630
• Dothan (pt.)	57,082	65,515
• Gordon	408	419
• Kinsey	1,796	1,965
Madrid	303	333
• Rehobeth	993	1,260
• Taylor (pt.)	1,888	1,982
• Webb	1,298	1,367

Note: Jurisdictions in bold are JLUS participants Source: U.S. Census Bureau

**Table 4** Fort Rucker Community Population

	J = -1
Post Population	19,227
Total Military	6,448
Total Civilian	8,674
Military Family Members on Post	4,105
Military Family Members off Post	4,985
FMS Students (27 Different Countries)	230 (not included in Post Population)
All Military Retirees within 50 Mile	59,570
Radius	
All Military Retirees within 50 Mile	148,925
Radius, including Family Members	

Source: Fort Rucker

Fort Rucker comprises at least a \$1 billion economic impact in the Wiregrass region. Table 5 displays the most recent economic information concerning Fort Rucker and its impact on the surrounding area. In addition to the information below, military retiree and annuitant pay within a 50 mile radius also adds to at least \$1 billion annually.

**Table 5** Fort Rucker Economic Impact

Table 5 Fort Rucker Economic Impact	
Military Pay	\$272,512,153.00
Civilian Pay	\$186,585,997.18
Contracts	\$656,241,721.53
PX / Commissary / Non-Appropriated	\$32,018,536.81
Funds, Salaries, and Purchases	
Major Construction Projects and Utilities	\$58,708,290.56
Other Projects and Transactions	\$41,203,694.00
Total Expenditures	\$1,247,270,393.08

#### **COMPATIBILITY ANALYSIS**

Incompatibility of land use provides conflicts between the mission sustainability of Fort Rucker and the health and welfare of the surrounding communities. Training and other activities facilitated at Fort Rucker may negatively impact surrounding civilian areas due to aviation accident potential, noise, and other effects. Equally potentially harmful is civilian activities adjacent to Fort Rucker facilities that may interfere with training. There are multiple land use factors which account for compatibility between Fort Rucker's facilities and the surrounding communities. The following section examines the existing and potential conditions for these compatibility factors at each facility. The compatibility factors concerning land use being examined in the JLUS include:

- (1) Safety
- (2) Noise and Vibration
- (3) Airspace Obstructions
- (4) Infrastructure
- (5) Visibility
- (6) Frequency Interference
- (7) Intergovernmental Coordination
- (8) Airspace
- (1) Safety and (2) Noise and Vibration are the two compatibility factors that are most pertinent to this JLUS study and whose effects are most studied. The other listed compatibility factors have comparatively secondary effects to the study area and will not be noted as extensively.

The public, Technical Committee, Policy Committee, and other local officials provided information to assist in identifying existing and potential compatibility conflicts with the JLUS study areas. The compatibility factors and the information provided regarding the land use conflicts are representative of the areas and is not an exhaustive assessment of compatibility issues present.

Land use planning in the areas adjacent to military installations should incorporate the same level of evaluation as planning around other differing types of land uses. The Department of Defense has guidelines for compatible land use standards that involve managing safety and noise issues located in the Appendices. Varying levels of incompatible development currently exists in the areas around Fort Rucker. Though little can be done to retroactively change the impact of these developments, familiarity with the compatibility factors can assist with developing strategies to ensure compatible development in the future.

The Department of Defense administers programs for military installations that provide information to adjacent local governments regarding areas that are exposed to noise and potential safety hazards. For Army installations, this program is known as the Installation Operational Noise Management Plan (IONMP). Fort Rucker completed the current IONMP document in May 2006. The Fort Rucker IONMP assesses the noise and safety effects caused by operational impacts of the installations on the surrounding areas. It studies the noise environment concerning compatibility with land use, communication and education of the military and

civilian communities, management of noise complaints, mitigation of noise and vibration effects, and other elements, while providing recommendations to assist in promoting compatibility.

# Safety

Safety compatibility in the vicinity of military installations is an important operational impact to address because of accident potential of aircraft. Though safety compatibility receives less attention than noise and vibration issues because of the rarity of aviation accidents, the potentially severe impact of aircraft accidents over civilian areas deserves strong consideration. Historical analysis of military aviation accidents have focused on determining where an accident will likely occur and the impact area of that accident. Areas that are adjacent to the ends of runways have a higher potential exposure to aviation accidents than areas further away. There are three primary safety criteria used to define accident risk: Clear Zone (CZ), Accident Potential Zone (APZ) I, and Accident Potential Zone (APZ) II.

#### Clear Zones (CZ)

Clear Zones are the delineated areas that are located at the end of runways or 75 feet from rotary-wing helipads that show the highest potential for aviation accidents. There is no compatible development, with the exception of navigational aids, within a Clear Zone.

#### **Accident Potential Zones (APZs)**

Accident Potential Zones extend beyond Clear Zones and show areas that are not as critical as Clear Zones but still have high potential for aviation accidents. The APZ I is the area closest to the Clear Zone and the APZ II is the area extending further out from the APZ I. In the APZ I, compatible development includes some industrial and manufacturing uses, transportation and communication facilities, some commercial trade, and low-intensity recreation facilities. In the APZ II, most uses are compatible with the exception of multi-family and other high-density residential development, certain industrial and manufacturing uses, restaurants, schools, medical facilities, and arenas.

The boundaries and sizes of the Clear Zones and Accident Potential Zones vary due to the type of aircraft used and other conditions at an aviation facility. The Fort Rucker IONMP has identified CZs and APZs for the various airfields, basefields, and stagefields at Fort Rucker.

The Department of Defense has prepared a table of guidelines of suggested compatible land uses for Clear Zones and Accident Potential Zones. This table is included in the Appendices section.

Safety conflicts for each studied military installation are specified later in this section.

#### Noise and Vibration

Noise (and vibration) exposure is the most discussed effect of Fort Rucker and its installations. Noise is defined as unwanted sound. The operational effect of noise contributed by Fort Rucker is not a steady source, but a variable source due to different frequencies, times of use, and other

factors involved. There have been statistical methods developed to evaluate sound from those variable sources in order to assess noise in a practical matter. The predominant levels of noise from Fort Rucker are created by the following three activities:

- Aviation
- Large Caliber Weapons
- Small Caliber Weapons

Measurement of aviation noise is primarily derived using the A-weighted (dBA) day-night level (DNL). A-weighting reflects higher frequency noises, such as those created by operating aircraft, which are in a manner approximating the response of the human ear. A simplistic explanation of DNL is that its measurement is derived by averaging operational noise over a 24-hour period with a 10 decibel penalty assessed for noise occurring at night. Measurements of large caliber weapons firing are derived using C-weighted DNL. C-weighting better reflects the frequency and vibration created by large caliber weapons.

There is also a measurement to assess peak level noise. The DNL measurements do not adequately demonstrate the impact of impulsive noise created by weapons firing. The PK 15 (met) measurement is used to calculate a peak noise level that is expected to be exceeded by 15 percent of all events that might occur. Therefore, PK 15 (met) measurements are derived for firing of large caliber weapons and small caliber weapons.

The IONMP program primarily utilizes four noise zones (Noise Zone III, Noise Zone II, Noise Zone I, and Land Use Planning Zone).

#### Noise Zone (NZ) III

NZ III is the area around a noise source in which the A-weighted DNL (ADNL) is greater than 75 decibels (dBA), the C-weighted DNL (CDNL) is greater than 70 decibels (dBC), and the PK 15 (met) is greater than 104. Guidance shows that there should be no noise-sensitive land uses within the NZ III, such as housing, schools, and worship facilities. Some compatible uses in NZ III include most industry and manufacturing (up to 85 dBA), transportation, and agricultural.

#### Noise Zone (NZ) II

NZ II is the area around a noise source in which the ADNL is between 65 and 75 dBA, the CDNL is between 62 and 70 dBC, and the PK 15 (met) is between 87 and 104. Noise exposure in NZ II is considered significant and land use should be limited to compatible uses, such as industry and manufacturing, transportation, and agricultural. Guidance does allow other uses in NZ II with incorporation of noise level reduction techniques, including some low-density housing, retail and services, and recreation and entertainment.

#### Noise Zone (NZ) I

NZ I is the area around a noise source in which the ADNL is less than 65 dBA, the CDNL is less than 62 dBC, and PK 15 (met) is less than 87. Noise exposure in NZ I is not considered significant and is usually acceptable for all types of land use activities.

#### **Land Use Planning Zone (LUPZ)**

The noise contours that identify areas inside 65 ADNL and 62 CDNL represent an annual average separating the limiting NZ II and the fully compatible NZ I. Since the noise environment at Fort Rucker varies daily and seasonally due to fluctuating operations, a LUPZ is used to account for days of higher than average operations and possible annoyances. The LUPZ encompasses areas that can be affected during periods of heightened activity providing a more comprehensive assessment of noise effects in civilian areas. The LUPZ contours are set at 57 CDNL.

The noise contours derived from studies and used in this document should be viewed as a planning tool and not a discrete separation from affected and non-affected noise areas.

The Federal Interagency Committee on Urban Noise (FICUN) has prepared a table of guidelines of suggested compatible land uses for Noise Zones. This table is included in the Appendices section.

#### Aviation

Aviation noise effects for each studied military aviation facility are specified later in this section.

#### **Large Caliber Weapons (Figure 1)**

Noise Zone III: There are two areas within the Noise Zone III contour that extend outside of Fort Rucker boundaries. One area is in unincorporated Coffee County, east of Alabama Highway 51 and northeast of Tabernacle Stagefield. This area is mostly forested with an isolated residence. The other area is in unincorporated Dale County southeast of Molinelli FARP with primarily undeveloped forest land.

Noise Zone II: Areas within Noise Zone II extend northeast, northwest, and southwest from Fort Rucker into unincorporated Coffee and Dale counties. In Dale County, these areas are along County Road 36 and County Road 38. In Coffee County, these areas are along Alabama Highway 27 (Ozark Highway), Alabama Highway 51, County Road 143, and east of County Road 156. These areas are predominantly forested. There are several single family residences within the Noise Zone II contours, especially along Alabama Highway 51, along with a few businesses and small areas of agricultural operations.

#### **Small Caliber Weapons (Figure 2)**

Noise Zone III: All areas within the Noise Zone III contour are located within the Fort Rucker boundaries.

Noise Zone II: There are four areas within the Noise Zone II contour that extend outside of Fort Rucker boundaries. Three of these areas are in unincorporated Coffee County. These areas extend to Alabama Highway 51, County Road 143, and northeast of County Road 156. One area is in unincorporated Dale County and encompasses the County Road 36 vicinity west of County Road 38. These areas are predominantly forested. There are several residences along Alabama Highway 51 as well as small areas of agricultural operations.

The City of Enterprise and, to a lesser extent, the City of Ozark are growing closer to the areas affected by weapons training. There have been many complaints in adjacent off-post areas, especially along Alabama Highway 27, generated by the effects of nightly weapons training.

Figure 1 Large Caliber Weapons

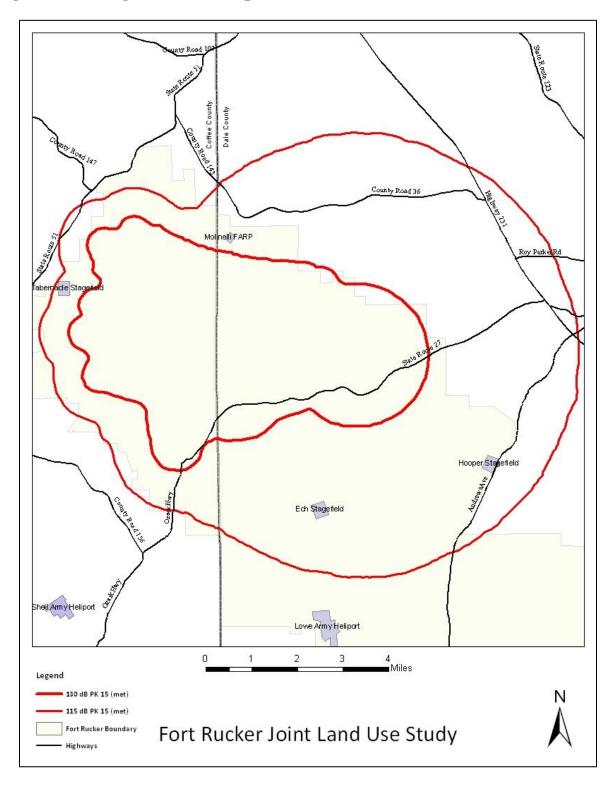
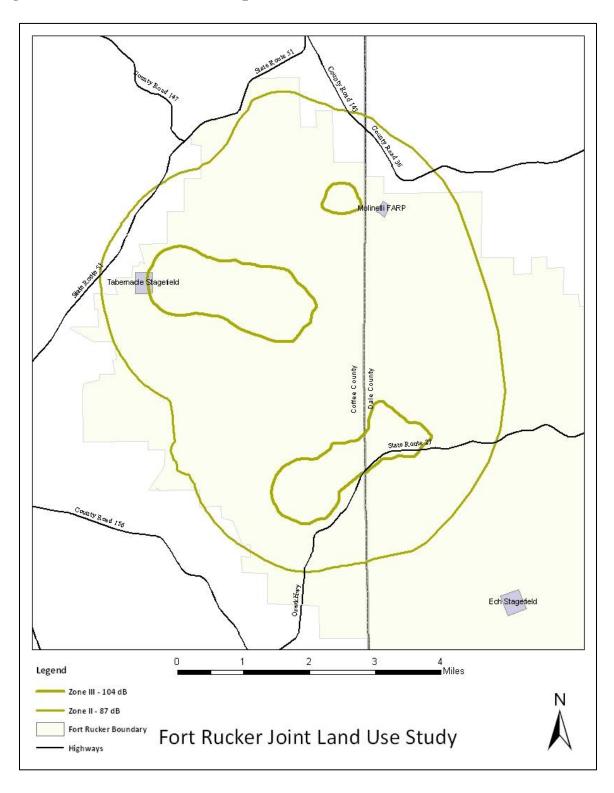


Figure 2 Small Caliber Weapons



# Airspace Obstructions

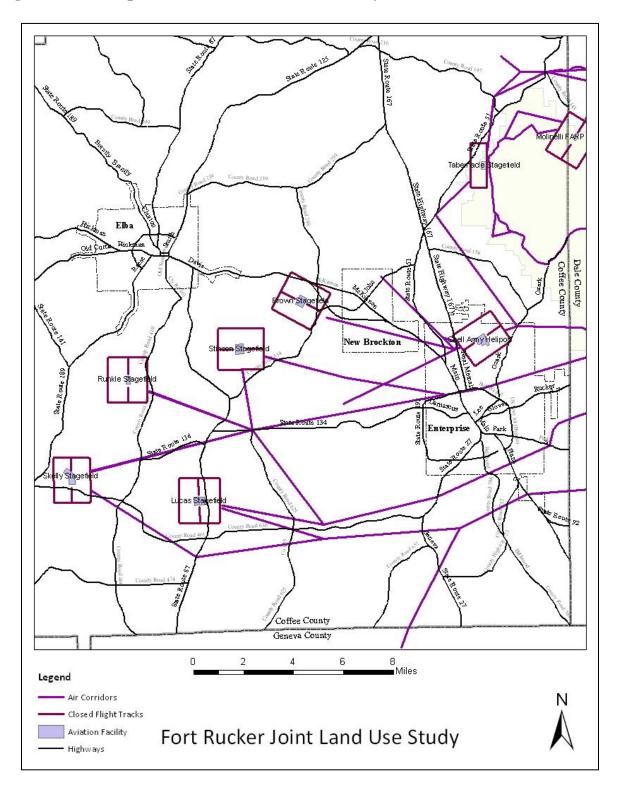
Airspace obstructions are structures or other features that extend into navigable airspace. These structures may include cell and other communication towers, buildings, and water tanks. These structures present potential conflicts to aviation training, as they may be located along routes creating flight navigation hazards to aviators and citizens located near those structures.

The Federal Aviation Administration (FAA) does not have the regulatory jurisdiction to restrict above ground structures, such as communications towers (with the exception of approach, horizontal, and conical areas surrounding airfields). The FAA has the ability to determine whether a structure is an obstruction to air navigation and can require lighting and markings on the structures, but the responsibility to regulate above ground structures are state and local governments.

Fort Rucker has a higher threshold for reporting vertical obstructions than does the FAA. Fort Rucker maintains a Digital Vertical Obstacle Library (DVOL) that alerts aviators about airspace obstruction locations and allows for reporting and commenting on those hazards. Fort Rucker, similar to the FAA, does not have regulatory authority on above ground structures off-site of their property.

Figures 3 through 5 display airspace corridors through Coffee, Dale, Geneva, and Houston counties. Air traffic is routed through these corridors, which are 1,000 meters wide and located to minimize noise effects on underlying populations.

Figure 3 Airspace Corridors – Coffee County



**Figure 4 Airspace Corridors – Dale and Houston Counties** 

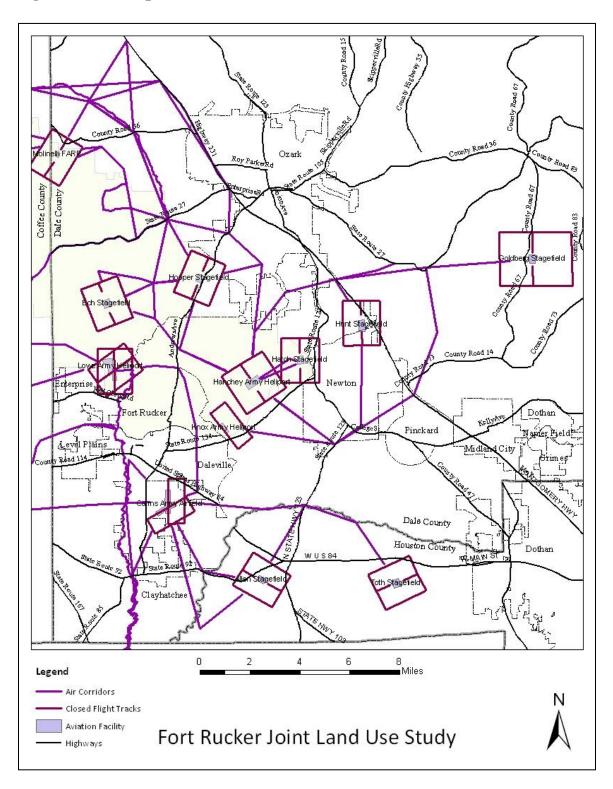
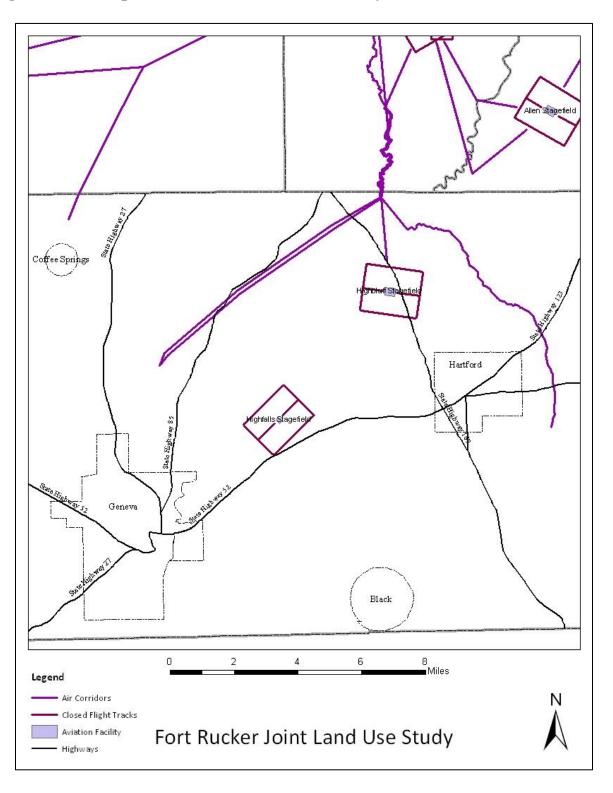


Figure 5 Airspace Corridors – Geneva County



# Infrastructure

Infrastructure is an element that may influence development patterns adjacent to a military installation. Improved or expanded infrastructure near a military installation can boost development that is potentially incompatible with the training mission.

#### **Transportation**

Regional transportation improvements that increase traffic capacity may encourage changes in land use in the affected areas. The closer an area is to transportation improvements, there is a greater potential for land use change. These changes normally occur in two ways: increased intensity of development types and development of vacant properties.

There are three potential primary regional transportation improvements that could affect Fort Rucker and its outlying aviation facilities:

Interstate 10 Connector: This proposed road will be a limited access four-lane highway extending north from U.S. Highway 231 near the Alabama/Florida state line through Houston, Geneva, and Dale counties to U.S. Highway 231 near Pinckard. There will be proposed interchanges with U.S. Highway 231, Alabama Highway 109, Houston County Road 93, Alabama Highway 52, and U.S. Highway 84. This proposed highway will be used to relieve traffic congestion along the major routes in the Dothan area. The Interstate 10 Connector will likely increase residential and commercial development in western Houston County. The proposed route is just east of the Toth Stagefield Zone of Influence.

U.S. Highway 84 Improvements: U.S. Highway 84 through Coffee County is currently being expanded from two lanes to four lanes between Enterprise and Covington County along with a recently opened section that bypasses New Brockton. U.S. Highway 84 is the primary east-west route through Coffee County and the improvements will improve access between Enterprise, New Brockton, and Elba. These cities are the most populous areas in Coffee County. The improvements will likely generate additional development along and adjacent to U.S. Highway 84, which will potentially affect Brown Stagefield.

Alabama Highway 167 Improvements: Alabama Highway 167 from Enterprise north through Coffee County is projected to be expanded from two lanes to four lanes. These improvements will enhance the primary north-south route through Coffee County improving access between Enterprise, Troy, and other areas further north. The proposed improvements will likely generate additional development, which will potentially affect Shell Army Heliport.

#### Water and Wastewater

Nearly all public water consumption in the Fort Rucker vicinity is provided by groundwater pumped from regional aquifers. Historically, the southeastern Alabama region has had a plentiful supply of groundwater. As population has increased, the rate of withdrawal has caused water table levels to recede, especially in the Dothan area. As the Wiregrass region continues to grow, issues concerning water supply will become additionally important.

Fort Rucker maintains its own water system on post. Most of Fort Rucker's aviation facilities are located outside of the main post and either have their own small water systems or are dependent on utilities provided by off-installation providers. On post, there is plentiful infrastructure capacity for the foreseeable future. Off post, there is little impact on the service capacity of the on-site or neighboring utility providers due to the relatively negligible use of infrastructure services at the aviation facilities.

The availability or the expansion of water and wastewater lines adjacent to Fort Rucker and its installations may induce additional development to locate in those areas creating potential compatibilities. Public water service is available adjacent to most of the outlying aviation facilities. Sanitary sewer service is primarily available within municipalities. Currently the only off-post areas with adjacent sanitary sewer access are Cairns AAF in Daleville and Shell AHP in Enterprise.

## **Visibility**

Light and glare from residential, commercial, or other sources, such as home security lighting or street lights, may disrupt night training at Fort Rucker and its outlying aviation facilities. Aviators incorporate the use of night vision goggles and other devices during their night training. Lighting sources from the ground may cause considerable glare to the pilot, negatively affecting their safety and the training environment.

Currently, night vision training is not significantly affected by lighting issues. However, the increase of ground lighting sources in the future may create interference with night aviation training.

# Frequency Interference

Fort Rucker uses multiple frequencies for aviation communications and other support systems. Increasing proximity of civilian development and expanded usage of frequencies increase potential impedance or interference of transmission. This may affect items, such as cell phone usage, garage door openers, and radio transmission.

There have been very few instances of frequency interference in the region surrounding Fort Rucker.

# Intergovernmental Coordination

Fort Rucker and its operations impact multiple jurisdictions throughout southeastern Alabama. Overall, Fort Rucker and adjacent civilian communities have healthy partnerships, especially in the larger communities such as Daleville, Dothan, Enterprise, Geneva, and Ozark. The area has very strong chapters of the Association of the United States Army, the Army Aviation Association of America, and has a Combined Federal Campaign that devotes plentiful resources to charities in the region.

The Joint Land Use Study will assist in strengthening partnerships between Fort Rucker and civilian communities by discussing common growth issues and the consequences that affect operations inside and outside the post.

# Airspace

There is a high density of civilian airports adjacent to Fort Rucker and its outlying aviation facilities. There are 12 public use airports in the seven county Southeast Alabama region, in which many of those airports and some outside the region are also utilized by Fort Rucker. Due to the high demand of airspace within the region due to the volume of military training, civilian air traffic may impact aircraft operations (e.g. approaches/departures and traffic patterns).

Currently, airspace interaction between Fort Rucker and civilian air interests are healthy throughout the region. The Cairns Army Radar Approach Control (ARAC) directs airspace throughout the area capably managing the high volume of air traffic. Fort Rucker also provides technical assistance to many of the small airport operations within the region.

# Cairns Army Airfield (AAF) (Figure 6)

Cairns AAF is located in Dale County approximately five miles south of the Fort Rucker reservation. The City of Daleville borders to Cairns on the north, west, and southwest and the Town of Clayhatchee borders along the southeast. Major roads near Cairns AAF include U.S. Highway 84, Alabama Highway 85, and Gritney Road (County Road 45).

Cairns AAF is the only aviation facility at Fort Rucker capable of managing fixed wing aircraft. It has two runways for fixed wing aircraft that lie in a north-south and northeast-southwest orientation. It also has pads for rotary wing aircraft. Cairns AAF is the basefield for the fixed wing aircraft assigned to the Army Aviation Center and for helicopters used in instrument training. It is the airspace area control center for the regional area.

The Daleville area is in a position of growth due to being located along the U.S. Highway 84 corridor between the fast-growing areas of Dothan and Enterprise. Gritney Road, located on the southern periphery of Cairns AAF, provides some of the last remaining easily developable properties in Daleville. In the past few years, single family residential development has markedly increased along Gritney Road within sight of Cairns AAF.

#### **Safety Conflicts (Figure 7)**

Clear Zones (CZs): The CZs for fixed wing aircraft at Cairns AAF is 3,000 feet in length and 1,000 feet in width at the immediate ends of the runway. The CZs for rotary wing installations at Cairns AAF are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The fixed wing runways at Cairns AAF has an Accident Potential Zone I (APZ I) and an Accident Potential Zone II (APZ II). The APZ I for Cairns Army Airfield, a Class A runway, is 2,500 feet in length and 1,000 feet in width. The APZ II for Cairns Army Airfield is 2,500 feet in length and 1,000 feet in width. The APZs for rotary wing installations at Cairns AAF are 800 feet in length and 300 feet in width. APZ II criteria are not applicable for rotary wing aircraft.

#### Fixed Wing Flights

- North of Cairns AAF: The CZ/APZ north of Cairns AAF lies mostly in Daleville. Land in this area is mostly forested and residential with isolated commercial uses. Within the CZ, there are a few single family residences along Holman Bridge Road and one commercial structure on U.S. Highway 84. Within the APZ II area, there is a large single family residential subdivision near the intersection of Alabama Highway 85 and Alabama Highway 134 along Oak Drive, Plaza Drive, Simpson Drive, Peacock Street, Dee Court, Leigh Street, Hargett Street, Richard Street, and Michelle Court.
- South of Cairns AAF: The CZ/APZ south of Cairns AAF lies in Clayhatchee and unincorporated Dale County. Land in this area is a mixture of forested, agricultural, and residential properties. There are a small number of single family residences along Gritney

- Road (County Road 45) that lie wholly or partially within the CZ. Within the APZ I area, there are a few single family residences along Rabbit Road.
- Northeast of Cairns AAF: The CZ/APZ northeast of Cairns AAF lies in Daleville and unincorporated Dale County. Land in this area is mostly undeveloped and primarily forested with a few single family residences just outside the APZ I along U.S. Highway 84.
- Southwest of Cairns AAF: The CZ/APZ southwest of Cairns AAF lies in Daleville. Land in this area is undeveloped and primarily forested with a few pockets of agricultural use. There are a small number of single family residences just south of the CZ along Gritney Road (County Road 45) and Pecan Lane.

#### Rotary Wing Flights

Only one rotary wing helipad APZ I zone extends outside of Cairns AAF property.

• South of Cairns AAF: The APZ I of the helipad parallel to the west of Runway 36 extends south into Clayhatchee and Daleville. The APZ I is on the western boundary of the CZ of Runway 36. Within this APZ I area, the land is either forested or agricultural property. There are a few single family residences just south of the APZ I along Gritney Road (County Road 45).

#### **Aviation Noise (Figure 8)**

- North of Cairns AAF: Noise Zone II extends north of Cairns AAF into Daleville. Land in this area is a mixture of forested and residential along with the VFW Post on U.S. Highway 84. There are several single family residences along Holman Bridge Road, Caldwell Court, and U.S. Highway 84 located within the Noise Zone II contour.
- South of Cairns AAF: Noise Zone II extends south of Cairns AAF into Clayhatchee and unincorporated Dale County. Land in this area is a mixture of forested, agricultural, and residential properties. There are a small number of single family residences along Gritney Road (County Road 45) that lie within the Noise Zone II contour.
- Northeast of Cairns AAF: Noise Zone II extends northeast of Cairns AAF into unincorporated Dale County. This area is mostly forested with isolated single family residences along small sections of Wright Road and Woodland Road within the Noise Zone II contour.
- Southwest of Cairns AAF: Noise Zone II extends southwest of Cairns AAF into Daleville. Land in this area is primarily agricultural with a few single family residences along Gritney Road (County Road 45) and Pecan Lane within the Noise Zone II contour.

Figure 6 Cairns Army Airfield Zone of Influence

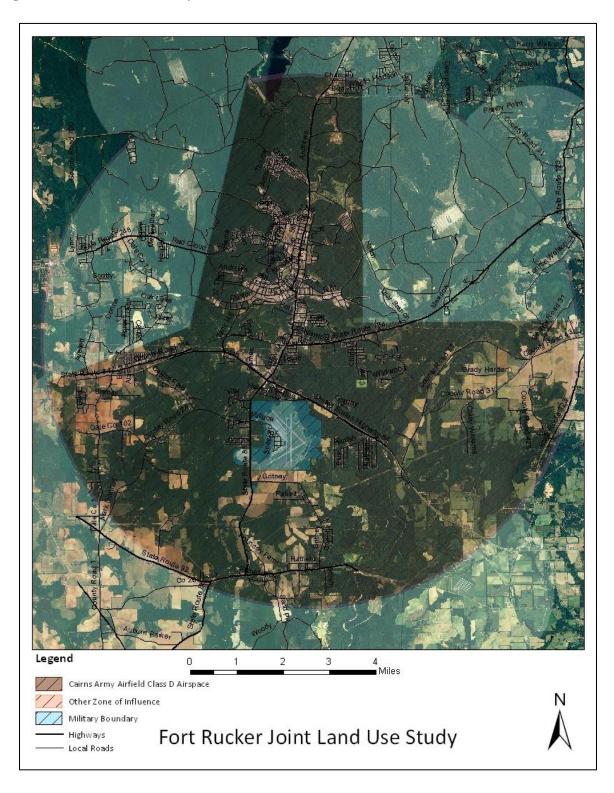


Figure 7 Cairns Army Airfield Safety Zones

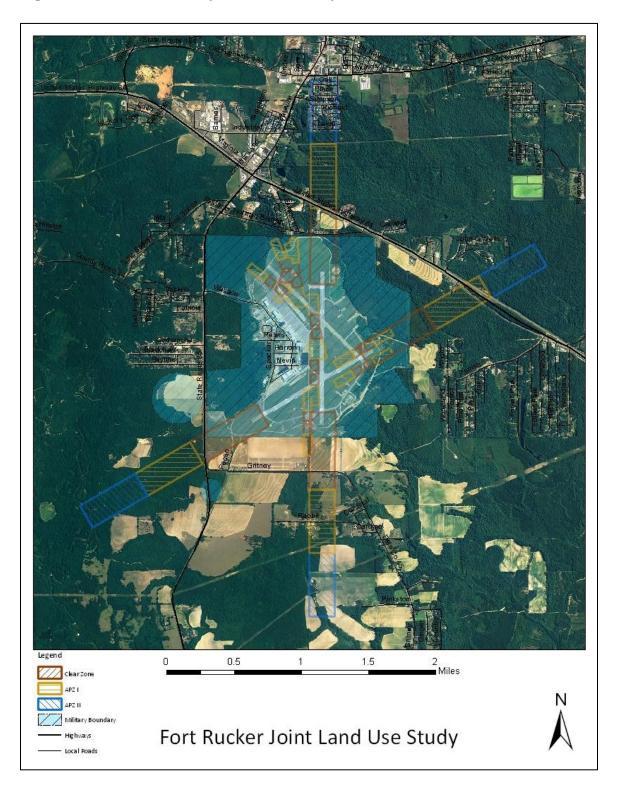
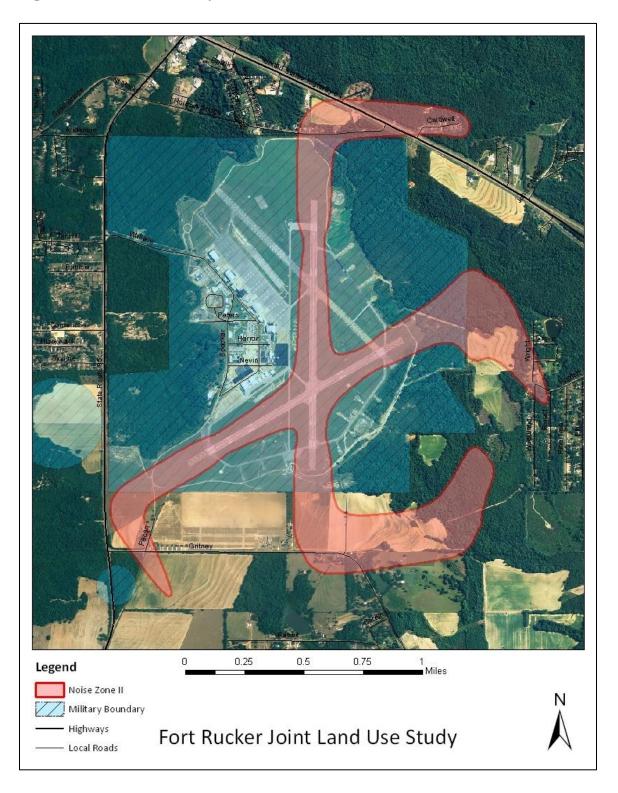


Figure 8 Cairns Army Airfield Aviation Noise Zones



## Hanchey Army Heliport (AHP) (Figure 9)

Hanchey AHP is located on the Fort Rucker reservation approximately four and one-half (4.5) miles northeast of the Cantonment Area. Hanchey AHP is the basefield for attack and advanced scout helicopters used for both primary and advanced flight courses.

Hanchey AHP also has maintenance and support facilities and is used day and night. The off-post areas affected by Hanchey AHP are in Dale County between Daleville and Newton. This area is bounded by the Fort Rucker reservation and the Choctawhatchee River along Alabama Highway 134. Currently there is isolated residential development in this area and the area is not a fast-growth area. Any future development will be confined to a narrow strip along Alabama Highway 134.

#### **Safety Conflicts (Figure 10)**

Clear Zones (CZs): The CZs at Hanchey AHP are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Hanchey AHP are 800 feet in length and 300 feet in width.

The CZs and APZs from the helipads at Hanchey AHP are contained on Fort Rucker property and do not extend into the civilian areas in Dale County.

#### **Aviation Noise (Figure 11)**

South of Hanchey AHP: Most of the Noise Zone II of Hanchey AHP is located within the Fort Rucker boundary. A small portion extends south into unincorporated Dale County between Daleville and Newton. Land in this area is mostly forested with a pocket of open land. A single family residence is located just outside the Noise Zone II contour.

Figure 9 Hanchey Army Heliport Zone of Influence

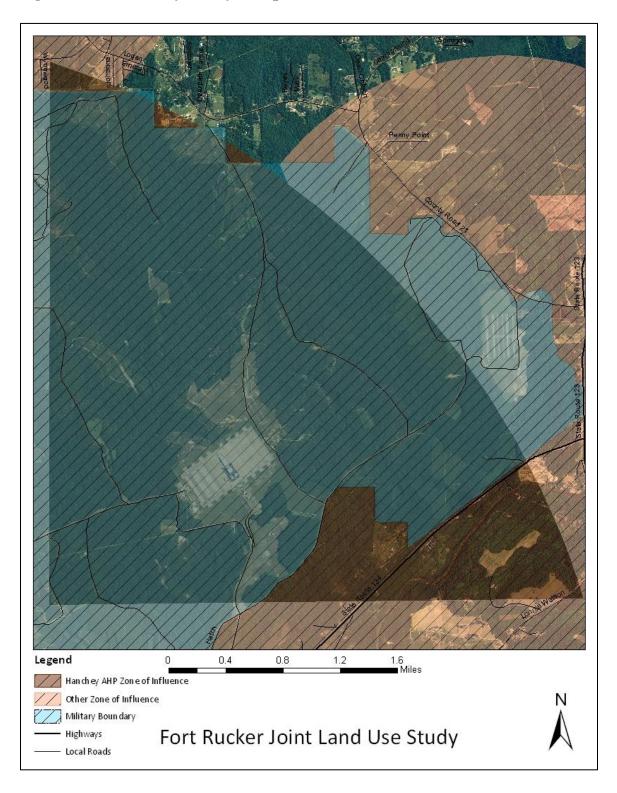


Figure 10 Hanchey Army Heliport Safety Zones

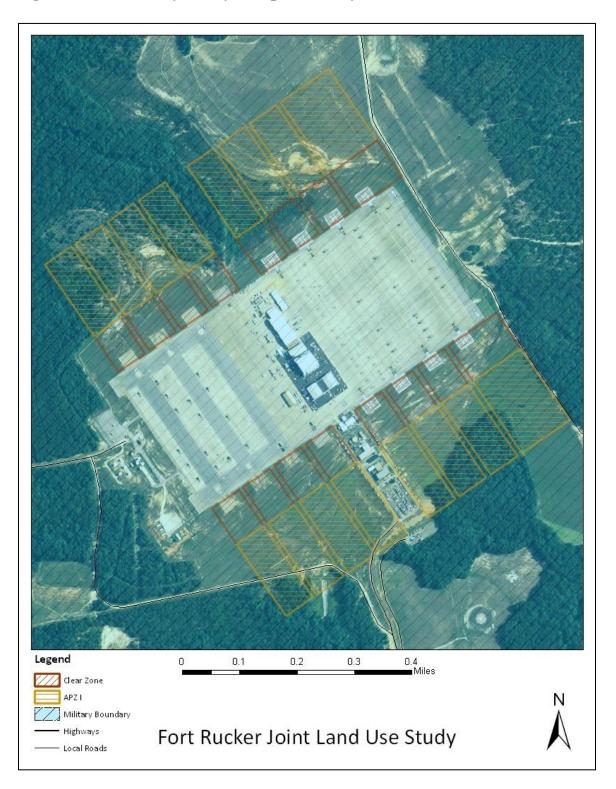
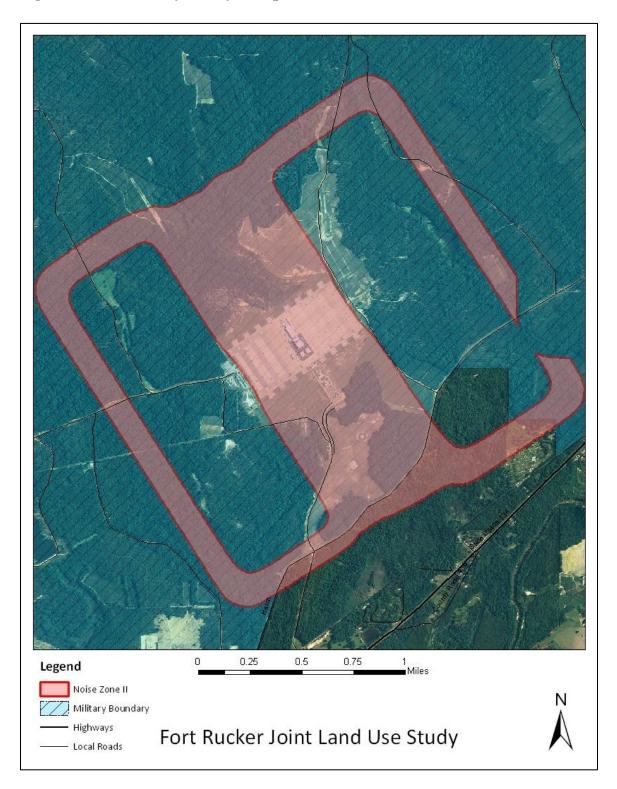


Figure 11 Hanchey Army Heliport Aviation Noise Zones



# Knox Army Heliport (AHP) (Figure 12)

Knox AHP is located on the Fort Rucker reservation approximately one and one-half (1.5) miles southeast of the Cantonment Area. Knox AHP is used as a training facility for the Maintenance Test Flight Course and the basefield for CH-47s and has maintenance and support facilities.

Knox AHP is similar to Hanchey AHP in that the affected off-post areas are along Alabama Highway 134 bounded by the Fort Rucker reservation and the Choctawhatchee River. Knox AHP is located closer to Daleville than Newton. Currently there is minor residential development in this area and the area is not a fast-growth area. Also similar to Hanchey AHP, any future development will be confined to a narrow strip along Alabama Highway 134.

## **Safety Conflicts (Figure 13)**

Clear Zones (CZs): The CZs at Knox AHP are 400 feet in length and 300 feet in width. Accident Potential Zones (APZs): The APZs at Knox AHP are 800 feet in length and 300 feet in width.

The CZs and APZs extending from the northern helipads are contained on Fort Rucker property and do not extend into the civilian areas in Dale County. The southern halves of the APZ I from the two southern helipads extend into unincorporated Dale County just east of Daleville. There is one single family residence within the APZ I zone with the remainder of the land being forested.

### **Aviation Noise (Figure 14)**

South of Knox AHP: Approximately half of Noise Zone III and Noise Zone II extend south from Knox AHP into Daleville and unincorporated Dale County. Land within the Noise Zone III contour is primarily forested with a few single family residences located on Alabama Highway 134 and Dilly Branch Road. Land in the Noise Zone II contour is also primarily forested with small agricultural use and with several single family residences located on Alabama Highway 134, Valley Drive, and Meadow Lane.

Figure 12 Knox Army Heliport Zone of Influence

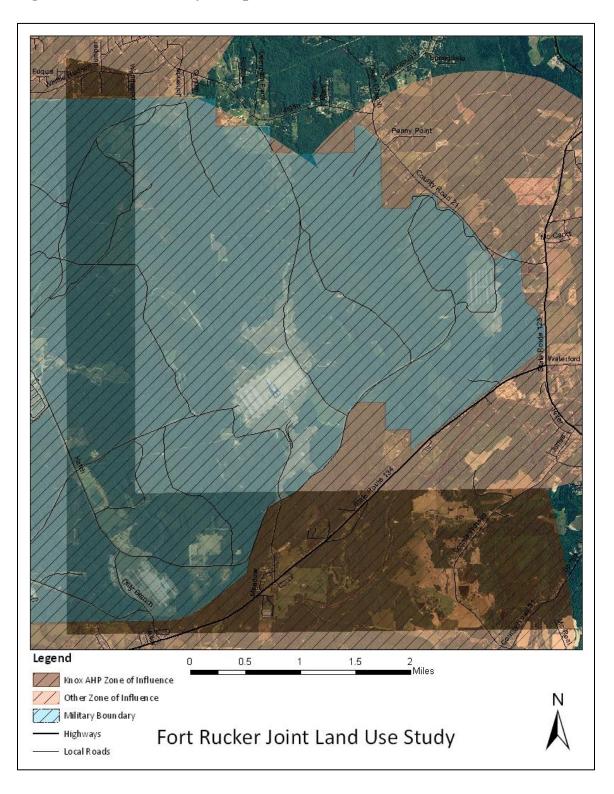


Figure 13 Knox Army Heliport Safety Zones

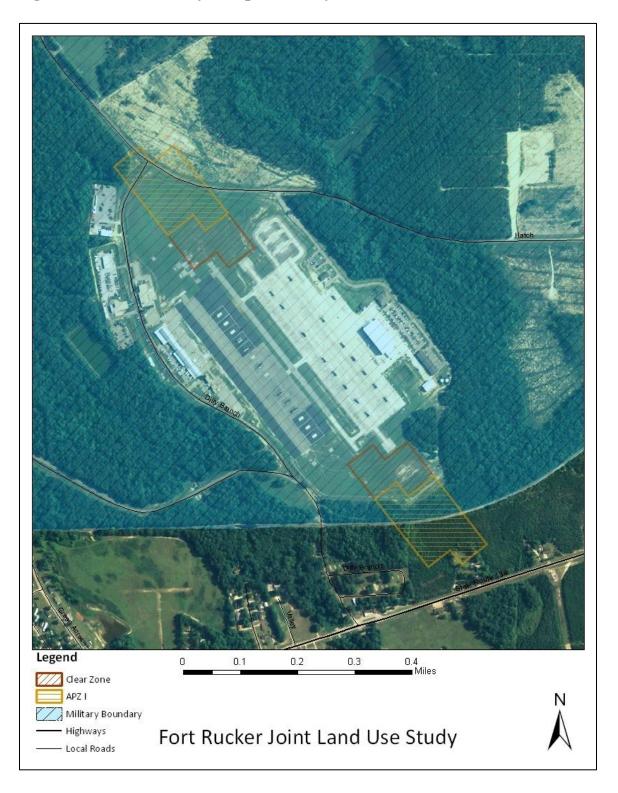
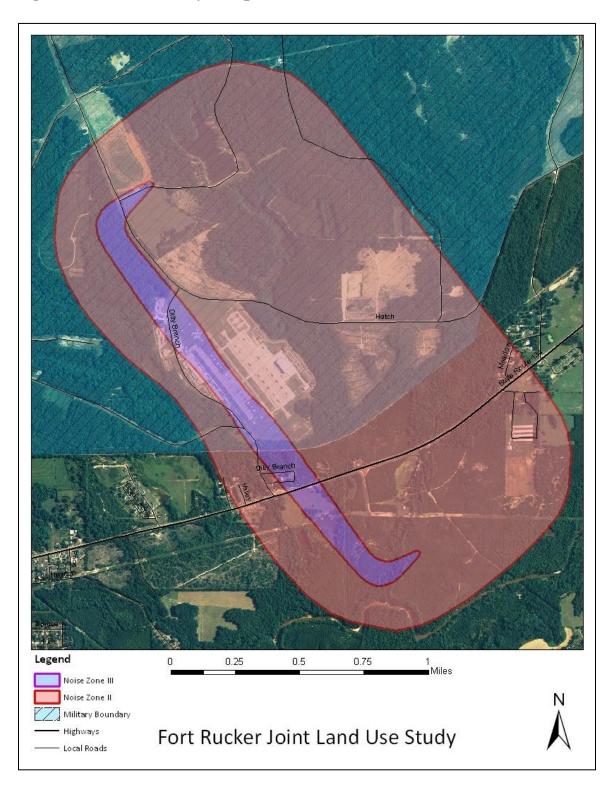


Figure 14 Knox Army Heliport Aviation Noise Zones



# Lowe Army Heliport (AHP) (Figure 15)

Lowe AHP is located on the Fort Rucker reservation approximately three miles northwest of the Cantonment Area. Lowe AHP is the basefield for advanced and combat skills flight training of the utility helicopter fleet and has maintenance and support facilities.

### **Safety Conflicts (Figure 16)**

Clear Zones (CZs): The CZs at Lowe AHP are 400 feet in length and 300 feet in width. Accident Potential Zones (APZs): The APZs at Lowe AHP are 800 feet in length and 300 feet in width.

There are portions of three helipad APZ I zones that extend outside of Fort Rucker property.

- Helipad located in northwestern portion of Lowe AHP: Approximately one-third (1/3) of the APZ I extends southward into unincorporated Dale County. Land in this area is undeveloped and forested.
- Two adjacent helipads located in southwestern portion of Lowe AHP: Approximately one-fourth (1/4) of the APZ I extends southwestward into unincorporated Dale County. Land in this area is undeveloped and forested.

### **Aviation Noise (Figure 17)**

Southwest of Lowe AHP: A small portion of Noise Zone II extends southwest from Lowe AHP into unincorporated Dale County north of Rucker Boulevard (Alabama Highway 248). Land within the Noise Zone II contour is primarily forested with isolated single family residences along Meriwether Road.

Figure 15 Lowe Army Heliport Zone of Influence

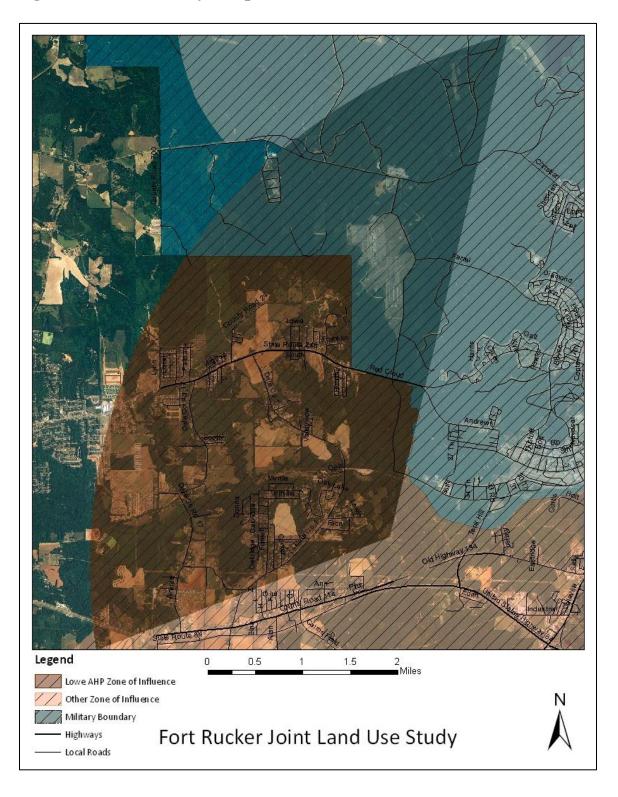
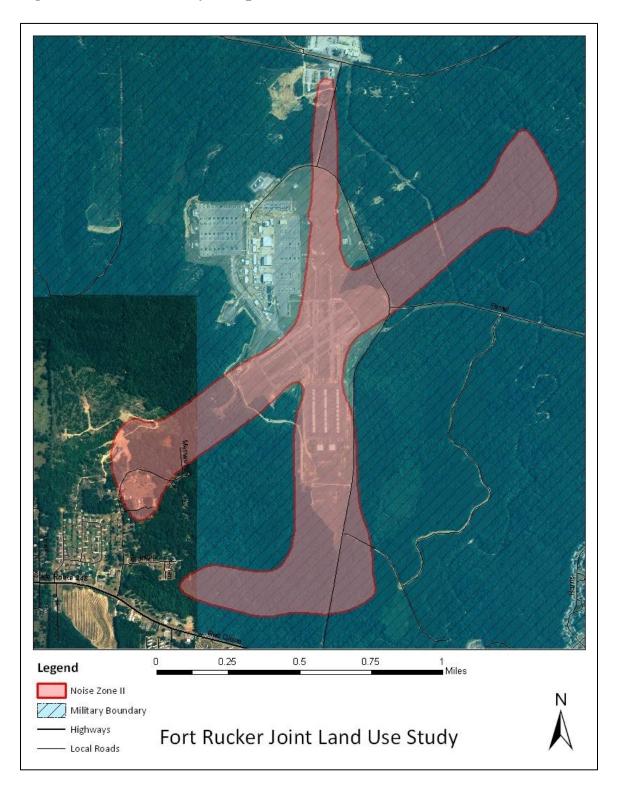


Figure 16 Lowe Army Heliport Safety Zones



Figure 17 Lowe Army Heliport Aviation Noise Zones



# Molinelli Forward Arming and Refueling Point (FARP) (Figure 18)

Molinelli FARP is located on the Fort Rucker reservation approximately 15 miles north-northeast of the Cantonment Area. Molinelli FARP is the support facility for aerial gunnery training and is available for day and night operations.

# **Safety Conflicts (Figure 19)**

Clear Zones (CZs): The CZs at Molinelli FARP are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Molinelli FARP are 800 feet in length and 300 feet in width.

The CZs extending from Molinelli FARP are contained within Fort Rucker boundaries. Portions of the APZ I zones extending north from Molinelli FARP are in unincorporated Dale County. The affected land is primarily undeveloped agricultural/open land south of County Road 36.

### **Aviation Noise (Figure 20)**

North of Molinelli FARP: A portion of Noise Zone II extends north from Molinelli FARP into unincorporated Dale County. Land within the Noise Zone II contour is a mixture of mostly forested and agricultural uses with isolated single family residences and a church along County Road 36.

Figure 18 Molinelli FARP Zone of Influence

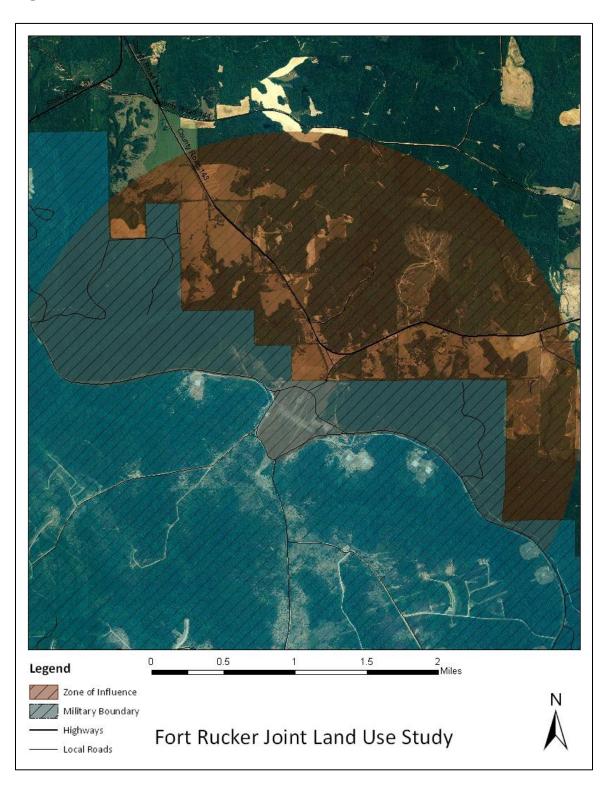
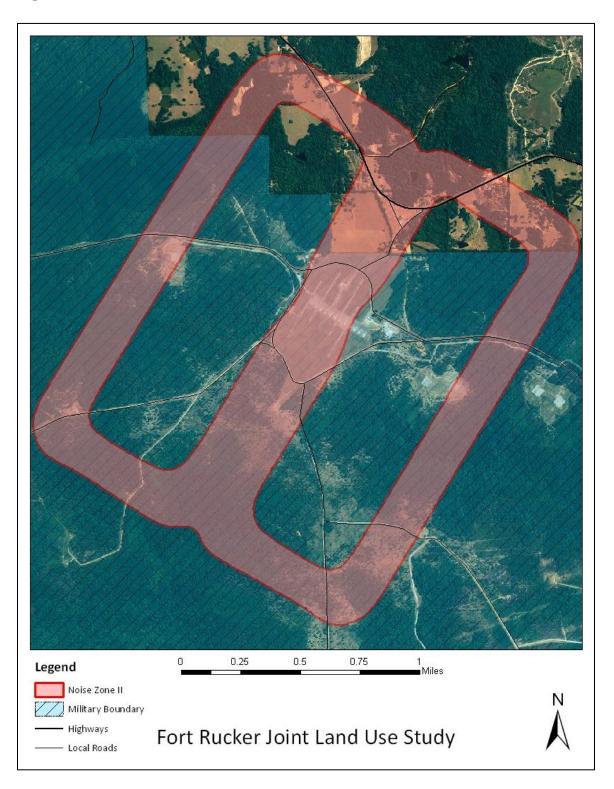


Figure 19 Molinelli FARP Safety Zones



Figure 20 Molinelli FARP Aviation Noise Zones



# Shell Army Heliport (AHP) (Figure 21)

Shell AHP is located in Coffee County 11 miles west of the Fort Rucker reservation within the city of Enterprise. Major roads near Shell AHP include Shellfield Road, Alabama Highway 167, and Alabama Highway 27. Shell AHP possesses classroom and maintenance facilities and has refueling capability.

The areas in the vicinity of Shell AHP are the most developed of any Fort Rucker aviation facility. There are many residential subdivisions adjacent to Shell AHP and additional subdivisions are in the process of being developed. The Enterprise area will continue to grow into the near-future creating development pressures on undeveloped properties. The proposed widening of Alabama Highway 167 will increase traffic and potentially increase residential and commercial development near Shell AHP.

# **Safety Conflicts (Figure 22)**

Clear Zones (CZs): The CZs at Shell AHP are 400 feet in length and 300 feet in width. Accident Potential Zones (APZs): The APZs at Shell AHP are 800 feet in length and 300 feet in width.

Southwest of Shell AHP: Shell AHP has CZs and/or APZs that extend southwest into Enterprise. The land affected by the CZs/APZs is a mixture of residential, forested, and open land. There are several single family residences in the APZ I along Windsor Garden Drive and Waverly Park Drive in Windsor Trace Subdivision and isolated single family residences along Shellfield Road.

Northeast of Shell AHP: All five helipads have APZ I that extend northeast outside Shell AHP into Enterprise. The land affected by the APZ I is mostly forested land with a few single family residences around the intersection of Shellfield Road and Britt Drive.

### **Aviation Noise (Figure 23)**

Southwest of Shell AHP: Most of Noise Zone II extends southwest from Shell AHP into Enterprise. Land within the Noise Zone II contour is a mixture of agricultural/open land and residential. Single family residences within the Noise Zone II contour consist of several homes along Shellfield Road, much of Windsor Trace Subdivision, northwest sections of Valley Stream Subdivision, and a few homes near the Alabama Highway 167/Salem Road intersection.

Northeast of Shell AHP: Most of Noise Zone II extends northeast from Shell AHP into Enterprise. Land within the Noise Zone II contour is a mixture of agricultural/open land and residential. Single family residences within the Noise Zone II contour are along Shellfield Road, the southern portion of Britt Drive in Shell Landing Subdivision, and portions of Clubview Estates.

Figure 21 Shell Army Heliport Zone of Influence



Figure 22 Shell Army Heliport Safety Zones

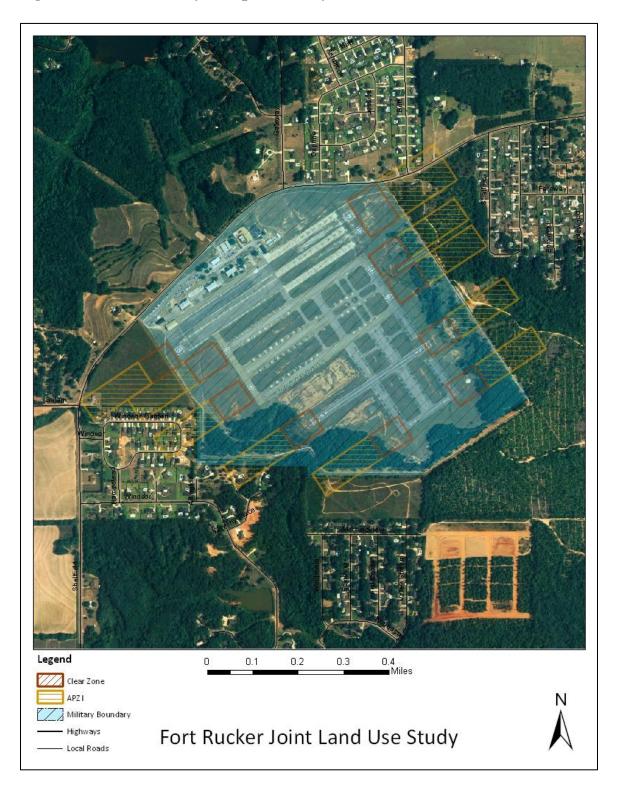
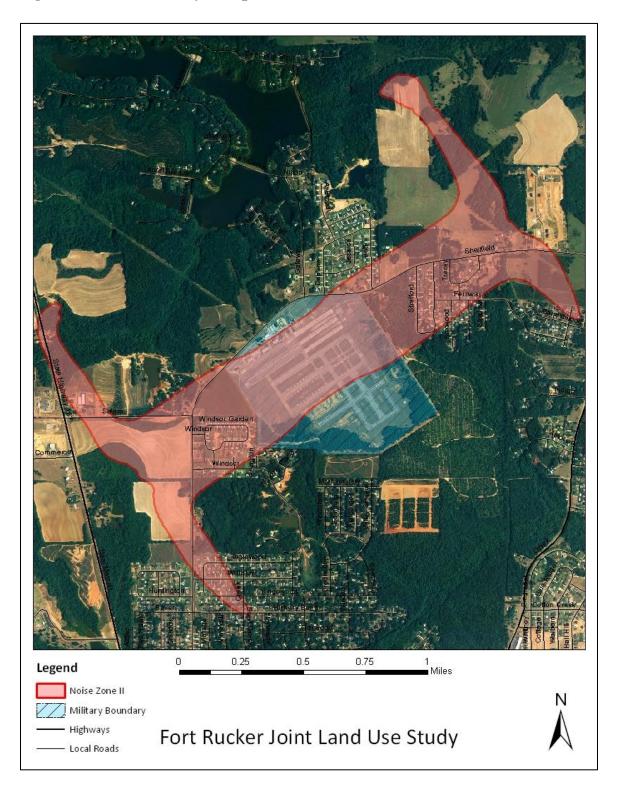


Figure 23 Shell Army Heliport Aviation Noise Zones



# Allen Stagefield (Figure 24)

Allen Stagefield is located in Houston County approximately 13 miles southeast of Fort Rucker. Major roads near Allen Stagefield include Alabama Highway 92, Wicksburg Road, and Windmill Road. Allen Stagefield is a rotary wing stagefield that can support day and night training.

Allen Stagefield is located in the Wicksburg community south of U.S. Highway 84, traditionally a low-density agricultural area of Houston County. This area is experiencing moderate residential growth, as the area lies in a location that is convenient to Dothan, Enterprise, and Fort Rucker.

## **Safety Conflicts (Figure 25)**

Clear Zones (CZs): The CZs at Allen Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Allen Stagefield are 800 feet in length and 300 feet in width.

Northwest of Allen Stagefield: Approximately one-half (1/2) of the APZ I extends northwest outside of Allen Stagefield into unincorporated Houston County. The land affected by the APZ I is a mixture of agricultural and residential use. There are a few single family residences in the APZ I centered around the Alabama Highway 92 and Windmill Road intersection.

Southeast of Allen Stagefield: A small portion of the CZ and approximately three-fourths (3/4) of the APZ I extends southeast of Allen Stagefield into unincorporated Houston County. Land affected is undeveloped agricultural land with a few residences just south of the CZ/APZ I boundary along Wicksburg Road.

#### **Aviation Noise (Figure 26)**

Northwest of Allen Stagefield: Much of Noise Zone II extends northwest from Allen Stagefield into unincorporated Houston County. Land within the Noise Zone II contour is mostly forested with a few single family residences adjacent to the Alabama Highway 92/Windmill Road intersection.

Southeast of Allen Stagefield: Much of Noise Zone II extends southeast of Allen Stagefield into unincorporated Houston County. Land within the Noise Zone II contour is a mixture of agricultural and residential properties. There are several single family residences along Wicksburg Road and Alabama Highway 123 that are within the Noise Zone II contour. The Wicksburg School is located just outside of the Noise Zone II contour.

Figure 24 Allen Stagefield Zone of Influence

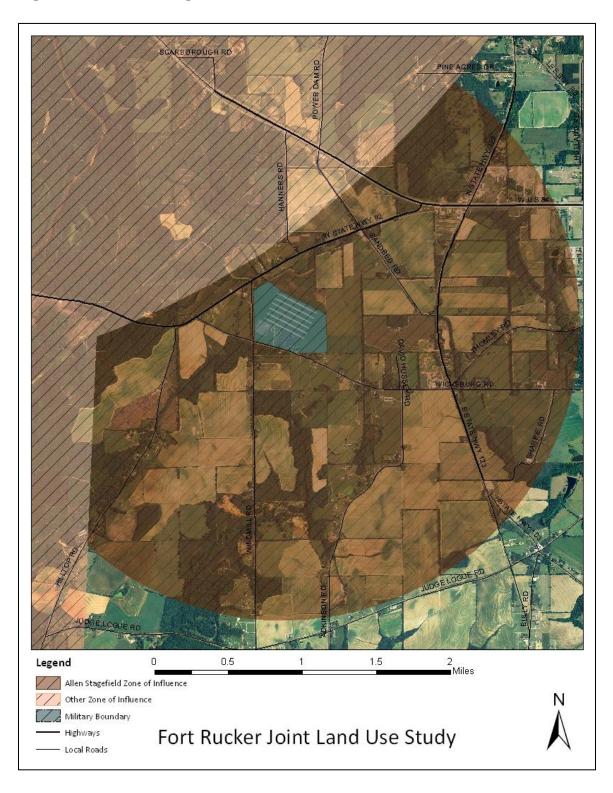


Figure 25 Allen Stagefield Safety Zones

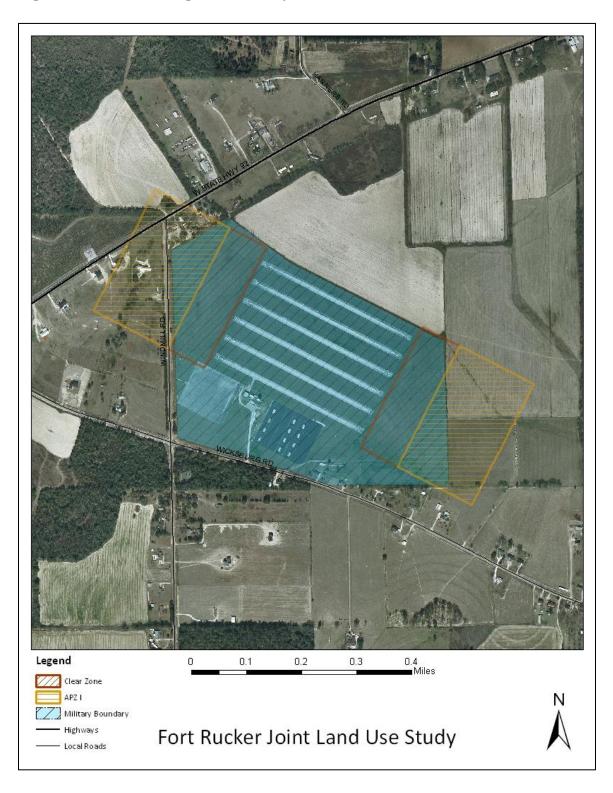
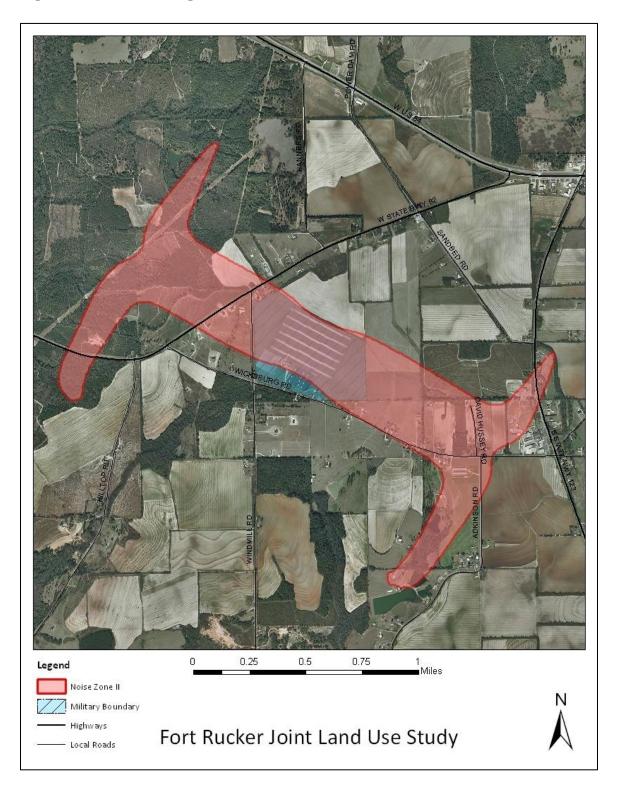


Figure 26 Allen Stagefield Aviation Noise Zones



# Brown Stagefield (Figure 27)

Brown Stagefield is located in Coffee County approximately two and a half (2.5) miles west of New Brockton. Major roads near Brown Stagefield include County Road 515, County Road 514, and a new four-lane bypass section U.S. Highway 84. Brown Stagefield is a rotary wing stagefield that can support day and night training.

The new four-lane section of U.S. Highway 84 that lies along the southern periphery of New Brockton enhances development opportunities near Brown Stagefield. New residential subdivisions are already being developed on the eastern portion of the new highway section. More than likely, new development will edge closer to the west toward Brown Stagefield in the next few years.

### **Safety Conflicts (Figure 28)**

Clear Zones (CZs): The CZs at Brown Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Brown Stagefield are 800 feet in length and 300 feet in width.

Northwest of Brown Stagefield: Approximately 80% of the APZ I zones extend northwest outside of Brown Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is forested and undeveloped.

Southeast of Brown Stagefield: Approximately 90% of the APZ I zones extend southeast outside of Brown Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is undeveloped and primarily forested with a small amount of agricultural use.

#### **Aviation Noise (Figure 29)**

Northwest of Brown Stagefield: Much of Noise Zone II extends northwest from Brown Stagefield into unincorporated Coffee County. Land within the Noise Zone II contour is mostly forested with a few single family residences along U.S. Highway 84 west of New Brockton.

Southeast of Brown Stagefield: Much of Noise Zone II extends southeast from Brown Stagefield into unincorporated Coffee County adjacent to New Brockton. Land within the Noise Zone II contour is a mixture of forested and agricultural properties with a few single family residences along County Road 514 and County Road 517.

Figure 27 Brown Stagefield Zone of Influence

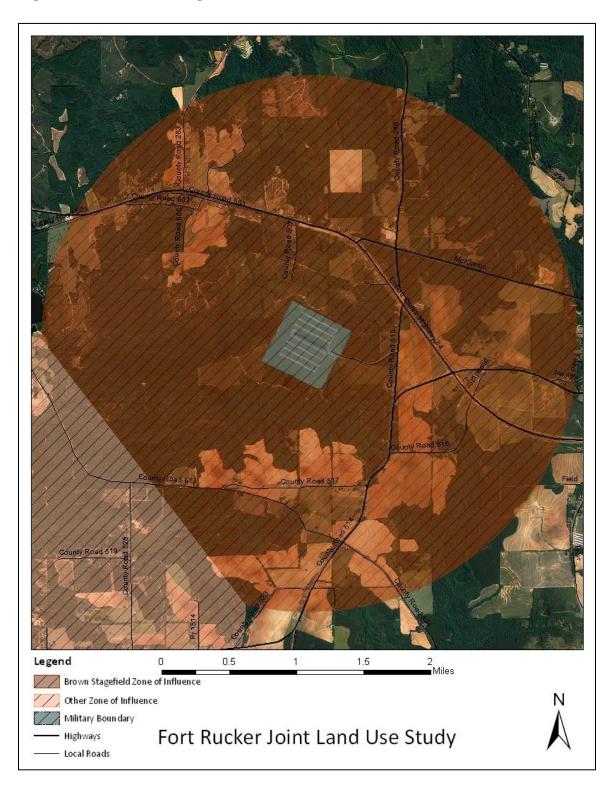


Figure 28 Brown Stagefield Safety Zones

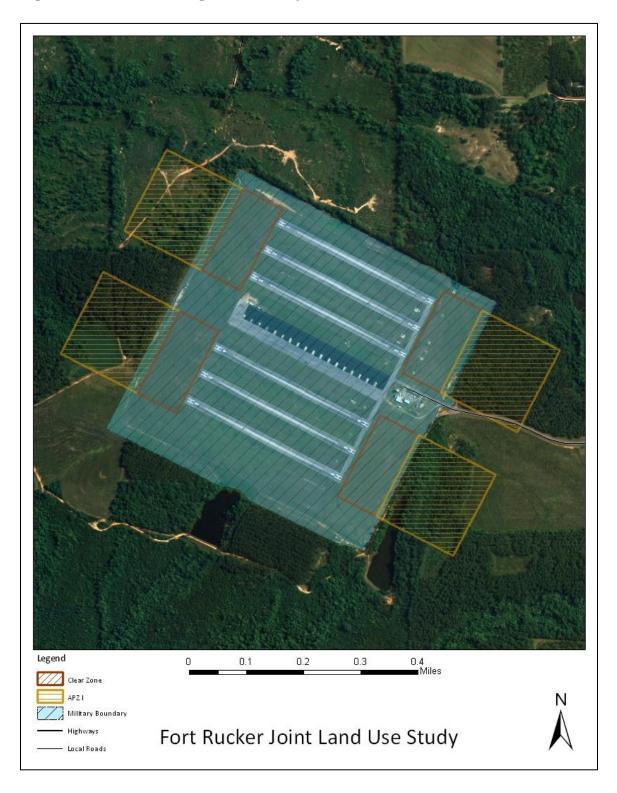
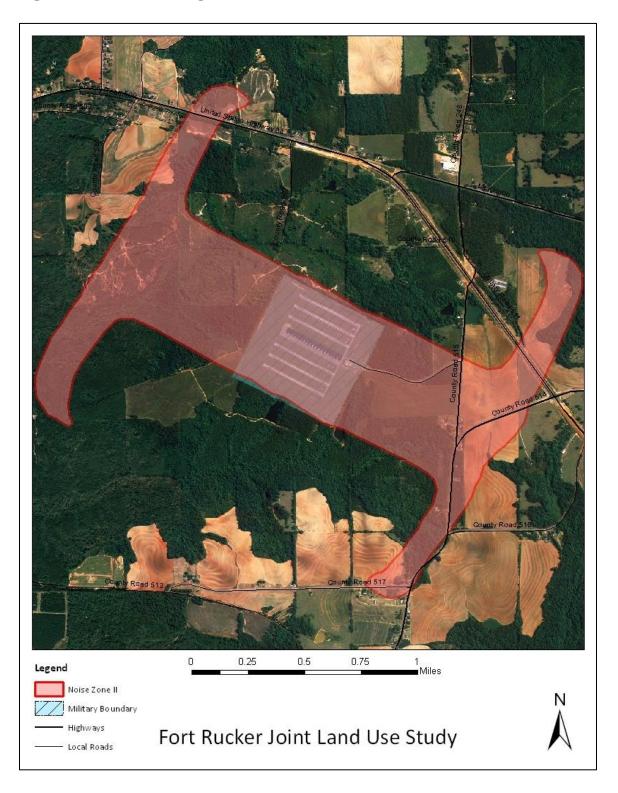


Figure 29 Brown Stagefield Aviation Noise Zones



# Ech Stagefield (Figure 30)

Ech Stagefield is located on the Fort Rucker reservation approximately six miles northwest of the Cantonment Area. Ech Stagefield is a rotary wing stagefield that can support day and night training.

### **Safety Conflicts (Figure 31)**

Clear Zones (CZs): The CZs at Ech Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Ech Stagefield are 800 feet in length and 300 feet in width.

The CZs and APZs from Ech Stagefield are contained on Fort Rucker property and do not extend into the civilian areas in Dale County.

### **Aviation Noise (Figure 32)**

The Noise Zone II of Ech Stagefield is located within the Fort Rucker boundary and does not extend into the civilian areas in Dale County.

Figure 30 Ech Stagefield Zone of Influence

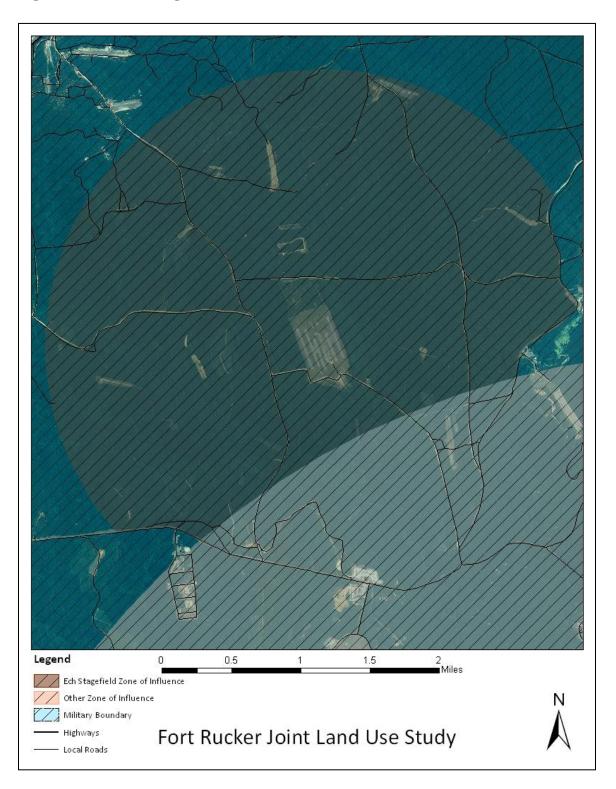


Figure 31 Ech Stagefield Safety Zones

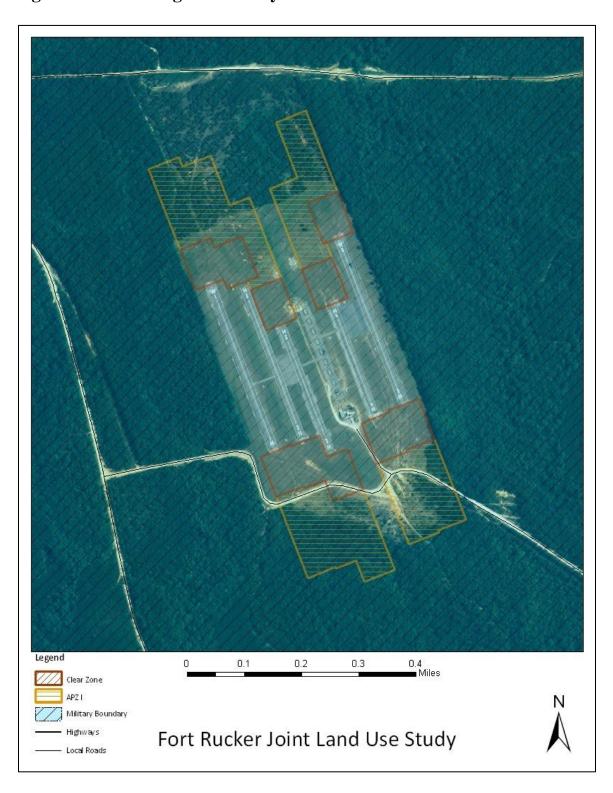
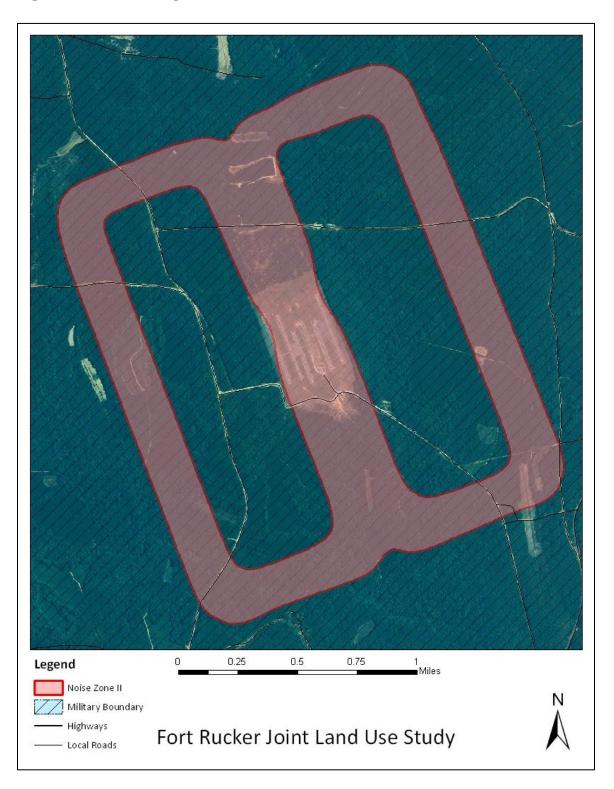


Figure 32 Ech Stagefield Aviation Noise Zones



# Goldberg Stagefield (Figure 33)

Goldberg Stagefield is located in Dale County approximately four miles south of the Echo community and approximately ten miles southeast of Ozark. Major roads near Goldberg Stagefield include County Road 67, County Road 16, and Mount Carmel Road.

Goldberg Stagefield is a rotary wing stagefield that can support day and night training. Goldberg Stagefield is in a primarily low-density, agricultural area. The area around Goldberg Stagefield has not received much growth and is not projected to develop much over the next several years. However, Goldberg Stagefield is located in an area in Dale County that fairly near Dothan, Headland, and Ozark. Additional outgrowth from these communities could create additional residential development adjacent to Goldberg Stagefield.

### **Safety Conflicts (Figure 34)**

Clear Zones (CZs): The CZs at Goldberg Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Goldberg Stagefield are 800 feet in length and 300 feet in width.

South of Goldberg Stagefield: The CZs/APZs extending south from Goldberg Stagefield are contained inside the property boundary and do not extend onto privately-owned property.

North of Goldberg Stagefield: The entire APZ I extends north from Goldberg Stagefield into unincorporated Dale County. The land affected by the APZ I zones is primarily agricultural with a single family residence located on Mount Carmel Road. Just outside of the APZ I boundaries are several single family residences along Mount Carmel Road and County Road 67.

#### **Aviation Noise (Figure 35)**

Portions of Noise Zone III and Noise Zone II extend from Goldberg Stagefield into unincorporated Dale County. Land within the Noise Zone III contour is a mixture of forested and agricultural properties with a few single family residences located on County Road 67 and Mount Carmel Road. Land in the Noise Zone II contour is also a mixture of forested and agricultural properties with scattered single family residences along County Road 67, Dale County Road 16, Baker Whatley Road, Mount Carmel Road, and Sheffield Circle.

Figure 33 Goldberg Stagefield Zone of Influence

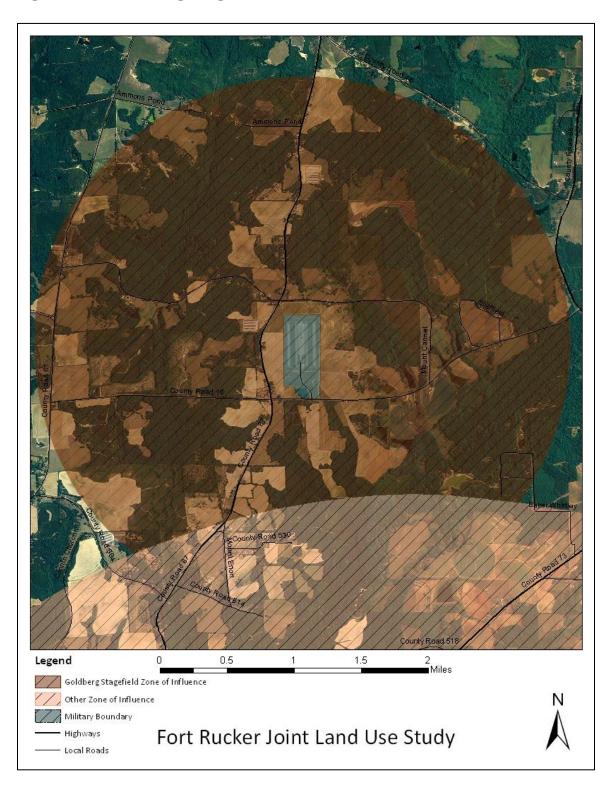


Figure 34 Goldberg Stagefield Safety Zones

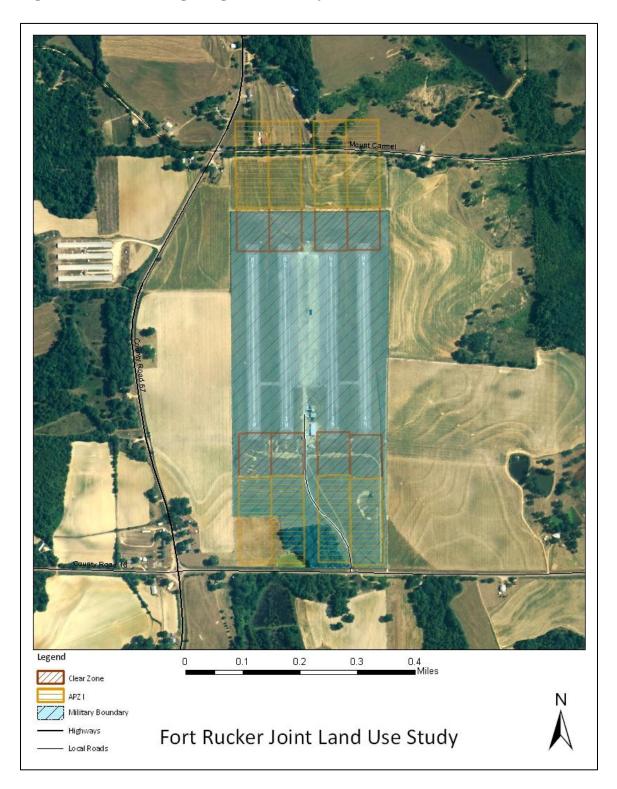
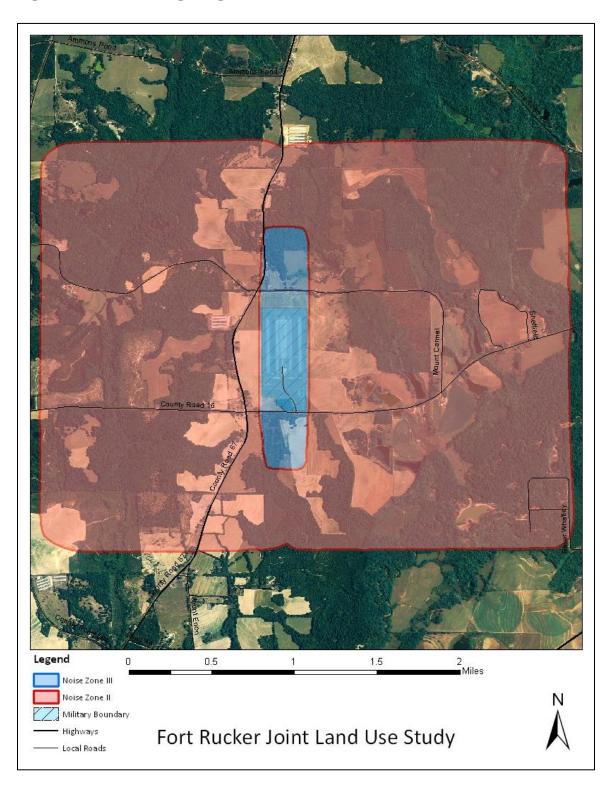


Figure 35 Goldberg Stagefield Aviation Noise Zones



# Hatch Stagefield (Figure 36)

Hatch Stagefield is located on the Fort Rucker reservation approximately seven miles northeast of the Cantonment Area. Hatch Stagefield is a rotary wing stagefield that supports day training only.

The off-post area affected by Hatch Stagefield is in Dale County between Newton and Ozark. This area is along Alabama Highway 123 and its intersection with Alabama Highway 134, and also along County Road 21. The Choctawhatchee River is adjacent to the affected area to the south. Currently there is scattered residential and commercial development in this area and the area is not a fast-growth area. However, this area lies at the intersection of two state highways and adjacent to three communities and therefore has potential for additional development.

### **Safety Conflicts (Figure 37)**

Clear Zones (CZs): The CZs at Hatch Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Hatch Stagefield are 800 feet in length and 300 feet in width.

South of Hatch Stagefield: The CZs and APZs extending south from Hatch Stagefield are contained on Fort Rucker property and do not extend into the civilian areas in Dale County.

North of Hatch Stagefield: The northeast corner of the APZs extends north from Hatch Stagefield into unincorporated Dale County. The land affected by the APZ I zones is a single family residence surrounded by forested land along County Road 21. Two other single family residences are located just outside the APZ I boundary.

#### **Aviation Noise (Figure 38)**

East of Hatch Stagefield: Much of the eastern portion of Noise Zone II extends into the Town of Newton and unincorporated Dale County. The land affected by the Noise Zone II contour is a mixture of forested, agricultural, and residential properties. Within the Noise Zone II contour, there are scattered single family residences along and to the east of Alabama Highway 123, County Road 18, McCants Drive, and County Road 21.

Figure 36 Hatch Stagefield Zone of Influence

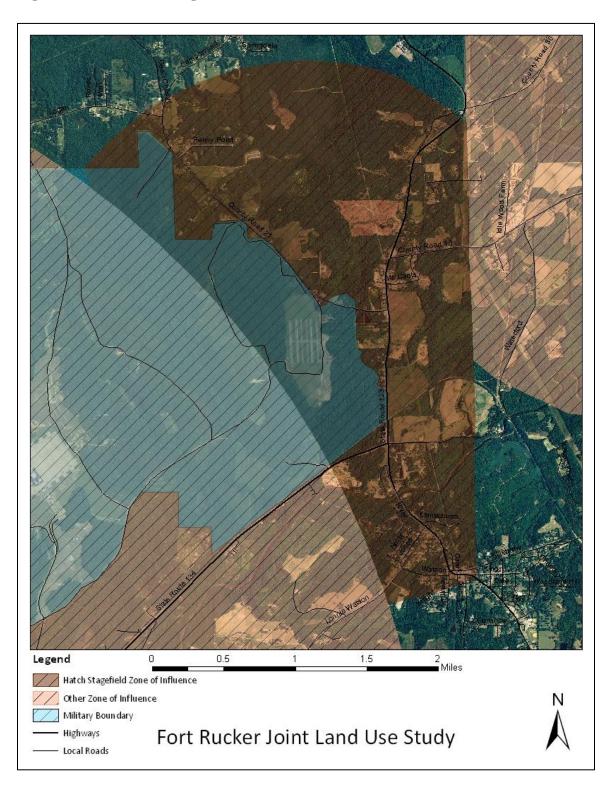


Figure 37 Hatch Stagefield Safety Zones



Figure 38 Hatch Stagefield Aviation Noise Zones



# High Bluff Stagefield (Figure 39)

High Bluff Stagefield is located in Geneva County approximately 14 miles south of Fort Rucker and approximately three miles northwest of Hartford. Major roads near High Bluff Stagefield include Alabama Highway 167, County Road 41, County Road 45, and County Road 47. High Bluff Stagefield is a rotary wing stagefield that supports day and night training.

High Bluff Stagefield is located in a traditional agricultural area in northern Geneva County near the Choctawhatchee River. The Choctawhatchee River provides some protection from development to the north of High Bluff Stagefield. Alabama Highway 167 is the major route from Enterprise to Hartford, so there are potential for additional residential development to the south of High Bluff Stagefield.

### **Safety Conflicts (Figure 40)**

Clear Zones (CZs): The CZs at High Bluff Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at High Bluff Stagefield are 800 feet in length and 300 feet in width.

East of High Bluff Stagefield: Approximately 15% of the APZs extend east from High Bluff Stagefield into unincorporated Geneva County. The land affected by the APZ I zones is agricultural. There is a church located just outside the APZ I boundary located on County Road 47.

West of High Bluff Stagefield: The CZs and APZs extending west from High Bluff Stagefield are contained inside the property boundary and do not extend on private property.

#### **Aviation Noise (Figure 41)**

East of High Bluff Stagefield: Much of Noise Zone II extends east from High Bluff Stagefield into unincorporated Geneva County. The land affected by the Noise Zone II contour is mostly agricultural with a small portion of forested properties. There are very few residences located along County Road 47.

West of High Bluff Stagefield: Much of Noise Zone II extends west from High Bluff Stagefield into unincorporated Geneva County. The land affected by the Noise Zone II contour is a mixture of forested and agricultural properties. There are isolated residences along County Road 41 within the Noise Zone II contour.

Figure 39 High Bluff Stagefield Zone of Influence

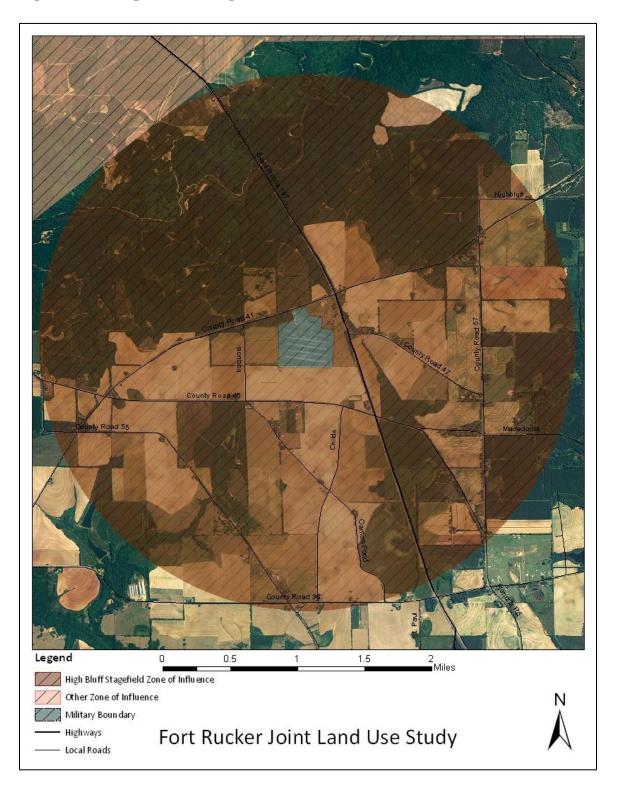


Figure 40 High Bluff Stagefield Safety Zones

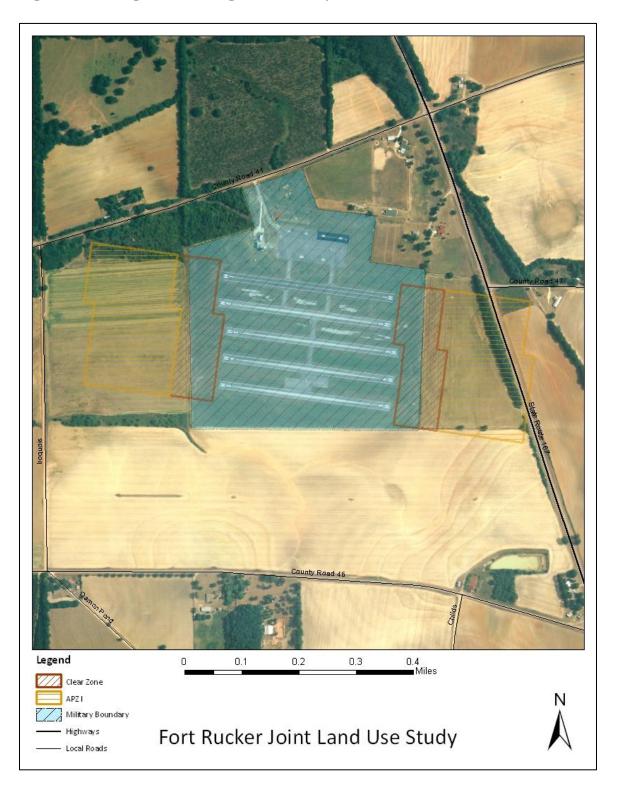
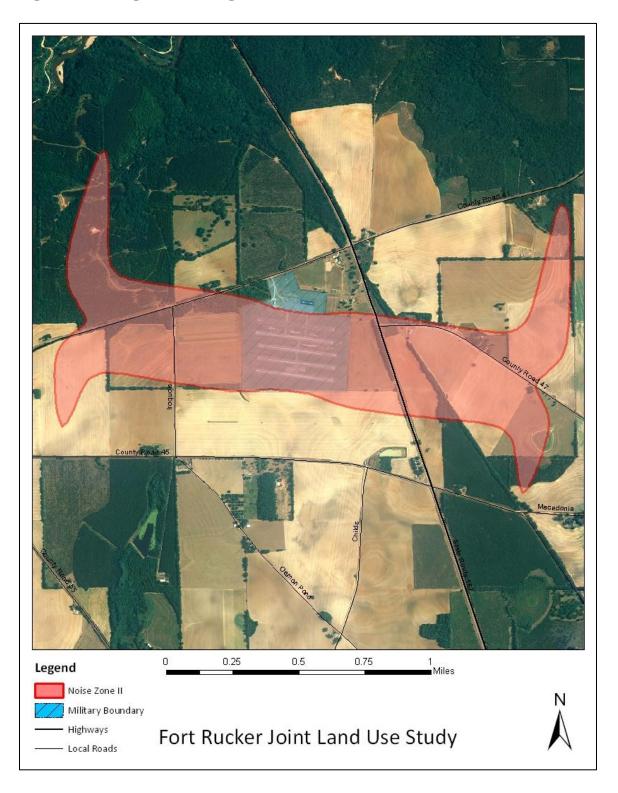


Figure 41 High Bluff Stagefield Aviation Noise Zones



## Highfalls Stagefield (Figure 42)

Highfalls Stagefield is located in Geneva County approximately 15 miles south-southwest of Fort Rucker and approximately five miles northeast of Geneva. Major roads near Highfalls Stagefield include County Road 41, Spann Road, Highfalls Road, and Alabama Highway 52. Highfalls Stagefield is a rotary wing stagefield and due to its small size is not highly utilized for student flight training.

The area surrounding Highfalls Stagefield is very rural and mostly agricultural. This area of Geneva County, between Geneva and Hartford, is not a high-growth area and development is not projected to greatly increase in the short-term future.

### **Safety Conflicts (Figure 43)**

Clear Zones (CZs): The CZs at Highfalls Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Highfalls Stagefield are 800 feet in length and 300 feet in width.

Southwest of Highfalls Stagefield: Approximately 20% of the CZs and 90% of the APZs extend southwest from Highfalls Stagefield into unincorporated Geneva County. The land affected by the CZ zones is primarily agricultural with one single family residence located on Spann Road. The land affected by the APZ I zones is agricultural.

Northeast of Highfalls Stagefield: Approximately 20% of the CZs and 80% of the APZs extend northeast from Highfalls Stagefield into unincorporated Geneva County. The land affected by the CZ zones is agricultural. The land affected by the APZ I zones is mostly agricultural with a few residences located along Highfalls Road.

West of Highfalls Stagefield: Approximately 50% of the CZ and the entire APZ extend west from Highfalls Stagefield into unincorporated Geneva County. The land affected by the CZ/APZ I zones is agricultural.

East of Highfalls Stagefield: Approximately 10% of the CZ and the entire APZ extend east from Highfalls Stagefield into unincorporated Geneva County. The land affected by the CZ/APZ I zones is agricultural.

#### **Aviation Noise (Figure 44)**

Southwest of Highfalls Stagefield: Much of Noise Zone II extends southwest from Highfalls Stagefield into unincorporated Geneva County. The land affected by the Noise Zone II contour is mostly agricultural with a small portion of forested properties. There are isolated residences along Grover Road within the Noise Zone II contour.

Northeast of Highfalls Stagefield: Much of Noise Zone II extends northeast from Highfalls Stagefield into unincorporated Geneva County. The land affected by the Noise Zone II contour is a mixture of agricultural and forested properties with a few residences along Highfalls Road.

Figure 42 Highfalls Stagefield Zone of Influence

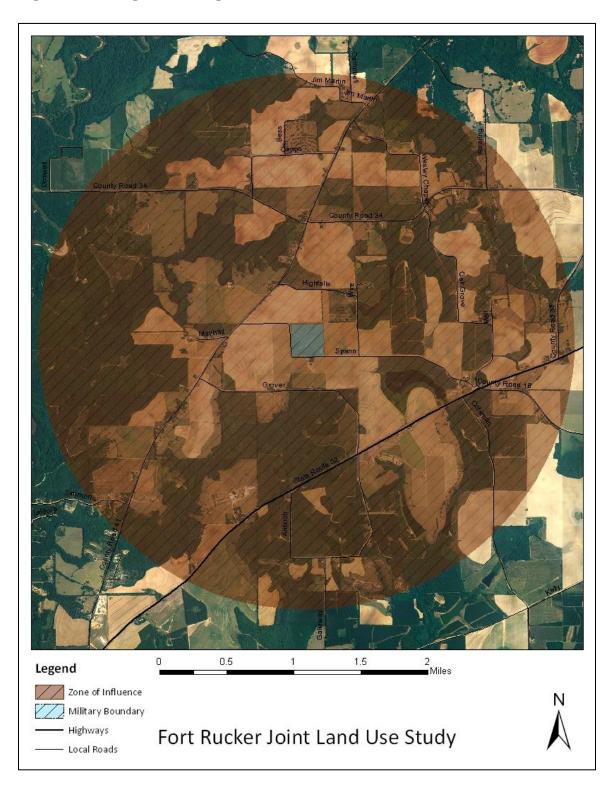
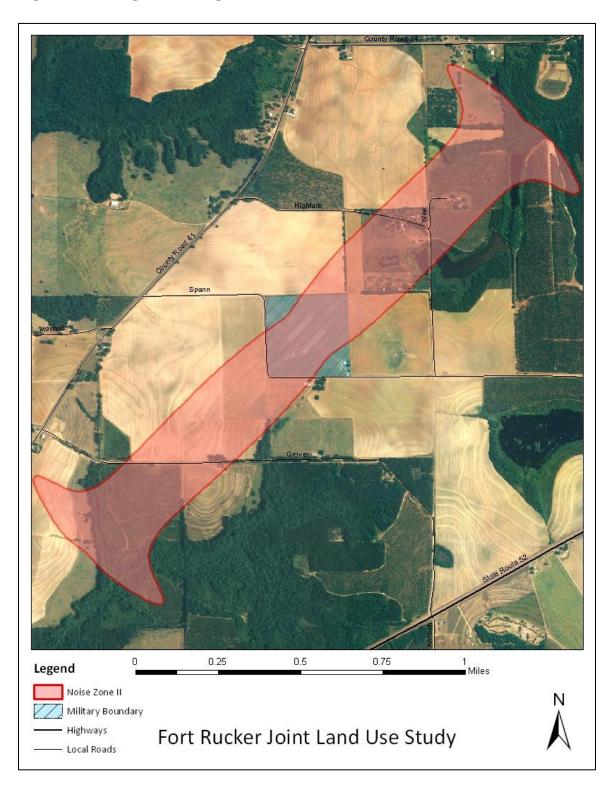


Figure 43 Highfalls Stagefield Safety Zones



Figure 44 Highfalls Stagefield Aviation Noise Zones



## Hooper Stagefield (Figure 45)

Hooper Stagefield is located on the Fort Rucker reservation approximately five miles north of the Cantonment Area and borders Ozark. Major roads near Hooper Stagefield include Andrews Avenue (Alabama Highway 249). Hooper Stagefield is a rotary wing stagefield that supports day and night training.

The off-post area adjacent to Hooper Stagefield is inside the City of Ozark. Andrews Avenue is a highly traveled route to the East Gate of Fort Rucker. This area is moderately developed with a few residential subdivisions, several commercial businesses, and some institutional uses. Undeveloped areas remain between Andrews Avenue and Logan Road that provides infill development possibilities for additional residential subdivisions.

### **Safety Conflicts (Figure 46)**

Clear Zones (CZs): The CZs at Hooper Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Hooper Stagefield are 800 feet in length and 300 feet in width.

The CZs and APZs from Hooper Stagefield are contained on Fort Rucker property and do not extend into the civilian areas in Ozark.

### **Aviation Noise (Figure 47)**

East of Hooper Stagefield: Much of the eastern portion of Noise Zone II extends into Ozark. The land affected by the Noise Zone II contour is primarily a mixture of forested and residential properties, with small areas of agricultural properties. Residential areas within the Noise Zone II contour are located along and adjacent to Andrews Avenue (Alabama Highway 249) along with some commercial and institutional uses, and subdivisions along Logan Road and Campground Road.

Figure 45 Hooper Stagefield Zone of Influence

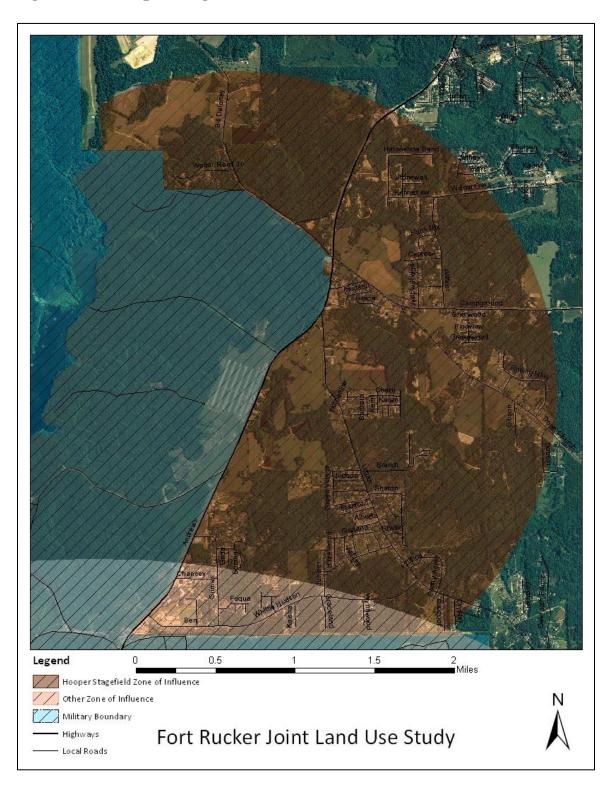
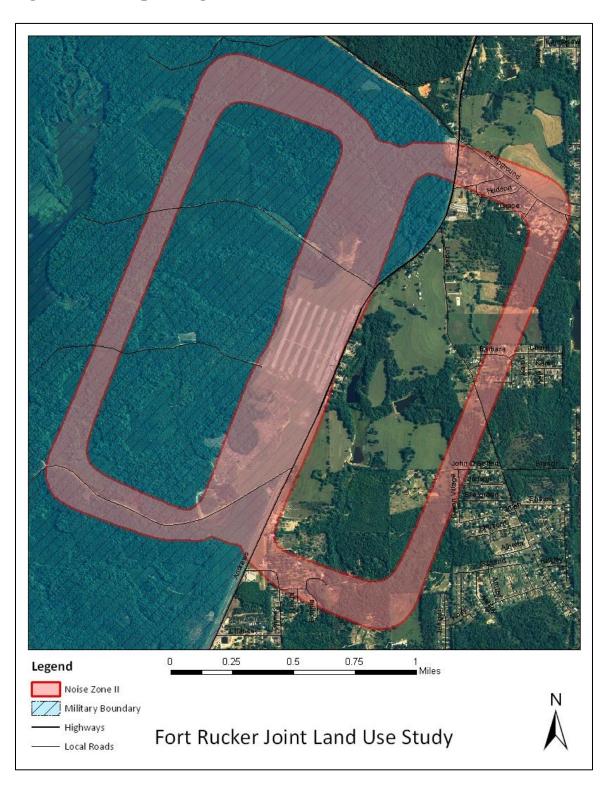


Figure 46 Hooper Stagefield Safety Zones



Figure 47 Hooper Stagefield Aviation Noise Zones



## Hunt Stagefield (Figure 48)

Hunt Stagefield is located in Dale County northeast of Newton and southeast of Ozark. Major roads near Hunt Stagefield include U.S. Highway 231 and County Road 18. Hunt Stagefield is a rotary wing stagefield that supports day and night training.

The adjacent area around Hunt Stagefield is mostly undeveloped, with the exception of a manufactured housing subdivision northeast of Hunt Stagefield and the light commercial development around the intersection of U.S. Highway 231 and County Road 18 east of Hunt Stagefield. With Hunt Stagefield being located so close to U.S. Highway 231, the major highway in Southeast Alabama, outgrowth from Dothan and Ozark will provide development pressures in the future.

#### **Safety Conflicts (Figure 49)**

Clear Zones (CZs): The CZs at Hunt Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Hunt Stagefield are 800 feet in length and 300 feet in width.

North of Hunt Stagefield: Approximately 10% of the APZs extend north from Hunt Stagefield into unincorporated Dale County. The land affected by the APZ I zones is undeveloped with a mixture of forested and agricultural.

South of Hunt Stagefield: Approximately 15% of the CZs and the entire APZ I zone extend south from Hunt Stagefield into Newton. The land affected by the CZ is primarily agricultural. The land affected by the APZ I zones is primarily a mixture of forest and agricultural with a few residences along County Road 18.

#### **Aviation Noise (Figure 50)**

North of Hunt Stagefield: Much of Noise Zone II extends north from Hunt Stagefield into unincorporated Dale County. The land affected by the Noise Zone II contour is a mixture of forested and agricultural properties with some residential development adjacent to U.S. Highway 231 and County Road 30. There is also a Rest Area along U.S. Highway 231 that lies within the Noise Zone II contour.

South of Hunt Stagefield: Much of Noise Zone II extends south from Hunt Stagefield into unincorporated Dale County. The land affected by the Noise Zone II contour is a mixture of forested and agricultural properties with isolated residences along County Road 18.

Figure 48 Hunt Stagefield Zone of Influence



Figure 49 Hunt Stagefield Safety Zones

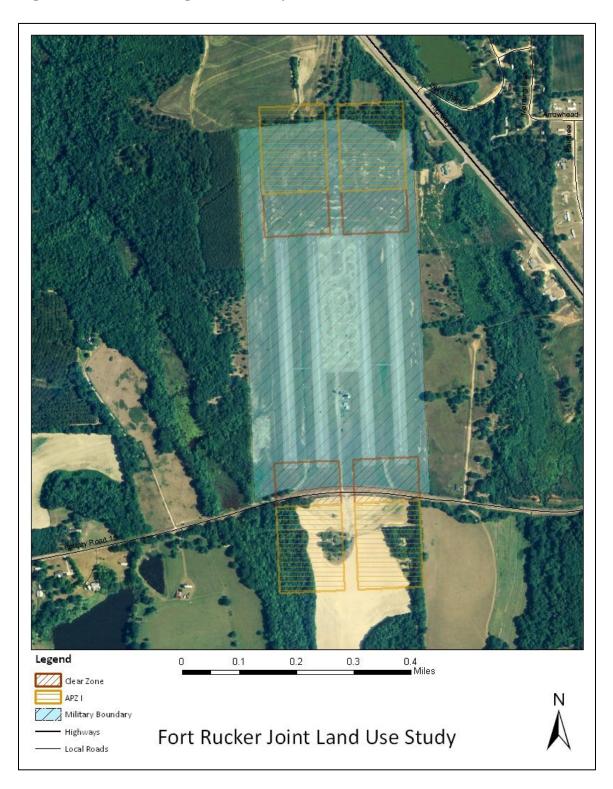
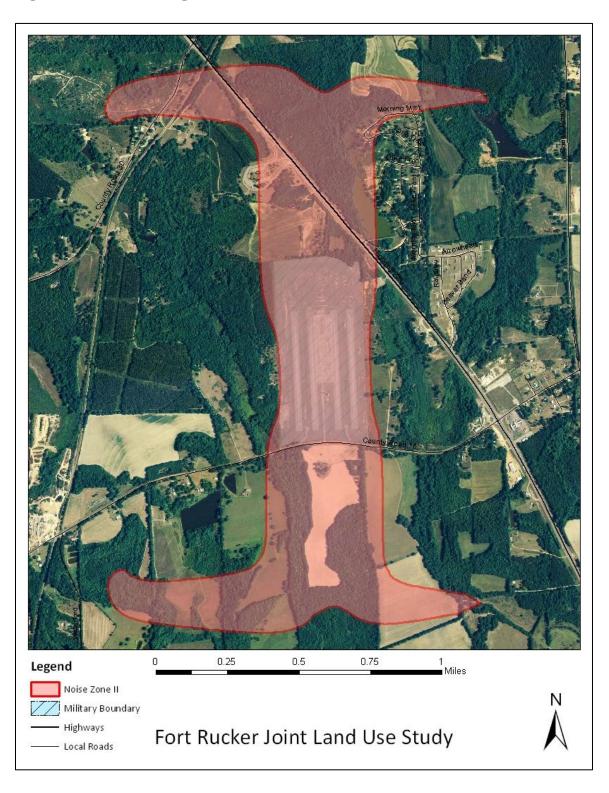


Figure 50 Hunt Stagefield Aviation Noise Zones



## Louisville Stagefield (Figure 51)

Louisville Stagefield is located in Barbour County approximately six miles northwest of Louisville. Major roads near Louisville Stagefield include County Road 9. Louisville Stagefield is a rotary wing stagefield that supports day and night training.

The area around Louisville Stagefield is in a very rural area of Barbour County and is not projected to have development pressure for the near future, with the exception of isolated single family residences.

### **Safety Conflicts (Figure 52)**

Clear Zones (CZs): The CZs at Louisville Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Louisville Stagefield are 800 feet in length and 300 feet in width.

North of Louisville Stagefield: Approximately 90% of the APZs extend north from Louisville Stagefield into unincorporated Barbour County. The land affected by the APZ I zones is undeveloped and agricultural.

South of Louisville Stagefield: Approximately 90% of the APZs extend south from Louisville Stagefield into unincorporated Barbour County. The land affected by the APZ I zones is undeveloped and is primarily agricultural with some areas forested.

#### **Aviation Noise (Figure 53)**

Portions of Noise Zone III and Noise Zone II extend from Louisville Stagefield into unincorporated Barbour County. Land within the Noise Zone III contour is undeveloped and primarily agricultural with smaller forested areas. Land in the Noise Zone II contour is a mixture of forested and agricultural properties with scattered single family residences along County Road 9 and Doyle Sanders Road.

Figure 51 Louisville Stagefield Zone of Influence



Figure 52 Louisville Stagefield Safety Zones

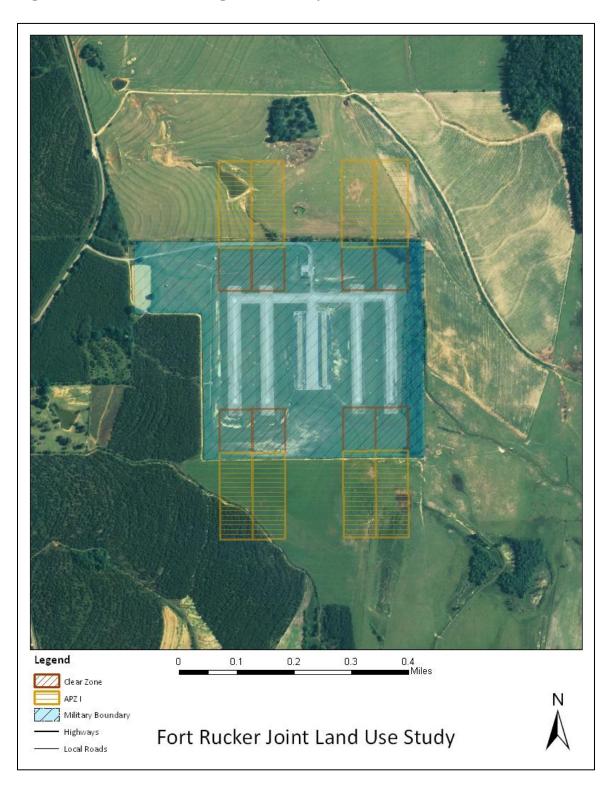


Figure 53 Louisville Stagefield Aviation Noise Zones



## Lucas Stagefield (Figure 54)

Lucas Stagefield is located in Coffee County approximately ten miles south of Elba. Major roads near Lucas Stagefield include Alabama Highway 87, County Road 450, County Road 452, and County Road 459. Lucas Stagefield is a rotary wing stagefield that supports day and night training.

The area around Lucas Stagefield is primarily rural and agricultural. It is located along Alabama Highway 87, which is the major route between Elba and Samson. This area is not projected for major growth in the near future.

### **Safety Conflicts (Figure 55)**

Clear Zones (CZs): The CZs at Lucas Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Lucas Stagefield are 800 feet in length and 300 feet in width.

North of Lucas Stagefield: Approximately 90% of the APZs extend north from Lucas Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is primarily agricultural with one single family residence along Alabama Highway 87. There are a few other single family residences just outside the APZ I boundary.

South of Lucas Stagefield: Nearly all of the APZs extend south from Lucas Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is undeveloped and primarily agricultural with some areas forested.

#### **Aviation Noise (Figure 56)**

North of Lucas Stagefield: Much of Noise Zone II extends north from Lucas Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is a mixture of agricultural and forested properties with scattered residences along Alabama Highway 87, County Road 450, and County Road 448.

South of Lucas Stagefield: Much of Noise Zone II extends south from Lucas Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is mostly agricultural with residences adjacent to the Alabama Highway 87 and County Road 462 intersection.

Figure 54 Lucas Stagefield Zone of Influence



Figure 55 Lucas Stagefield Safety Zones

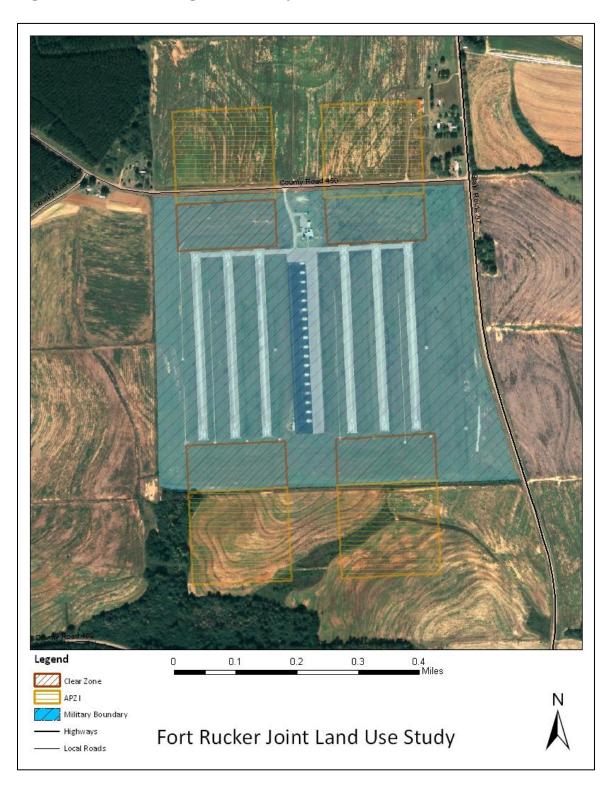
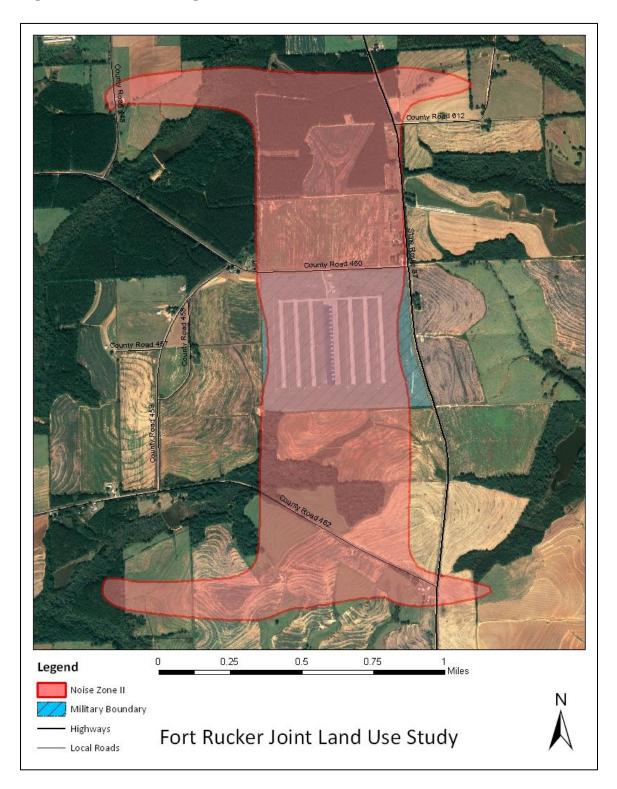


Figure 56 Lucas Stagefield Aviation Noise Zones



# Runkle Stagefield (Figure 57)

Runkle Stagefield is located in Coffee County approximately five miles south of Elba. Roads near Runkle Stagefield include County Road 410, County Road 418, and County Road 495. Runkle Stagefield is a rotary wing stagefield that supports day and night training. It is also used as a tactical training site.

The area around Runkle Stagefield is very rural with isolated residences and an auto salvage yard that is fairly adjacent. The Pea River borders Runkle Stagefield to the west providing some protection from future development. The area is also not located along a major route and is not in a high-growth area. This area is not projected for major growth in the near future.

### **Safety Conflicts (Figure 58)**

Clear Zones (CZs): The CZs at Runkle Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Runkle Stagefield are 800 feet in length and 300 feet in width.

North of Runkle Stagefield: Nearly all of the APZs extend north from Runkle Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is undeveloped and forested.

South of Runkle Stagefield: The CZs and APZs extending south from Runkle Stagefield are contained inside the property boundary and do not extend on private property.

## **Aviation Noise (Figure 59)**

North of Runkle Stagefield: Much of Noise Zone II extends north from Runkle Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is mostly forested with a commercial business along County Road 495.

South of Runkle Stagefield: Much of Noise Zone II extends south from Runkle Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is undeveloped with a mixture of forested, agricultural, and open land properties.

Figure 57 Runkle Stagefield Zone of Influence

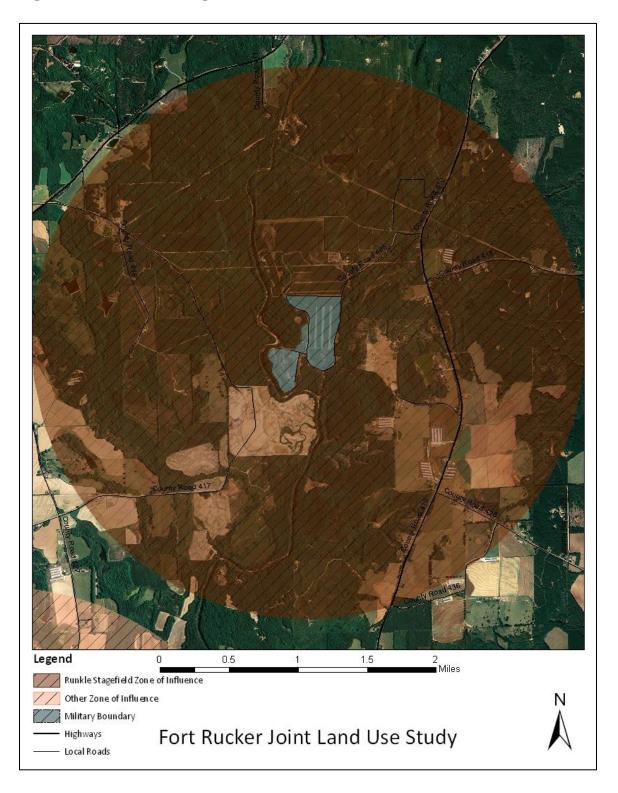


Figure 58 Runkle Stagefield Safety Zones

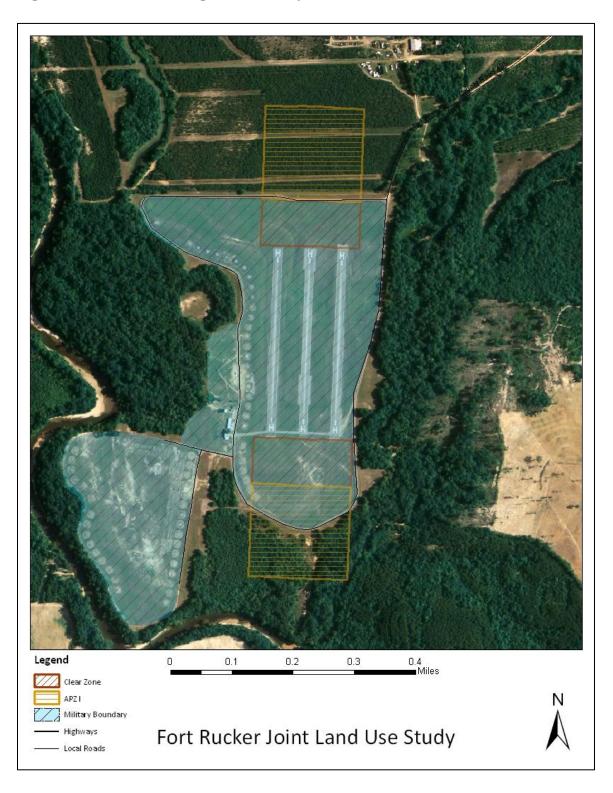


Figure 59 Runkle Stagefield Aviation Noise Zones



## Skelly Stagefield (Figure 60)

Skelly Stagefield is located in Coffee County approximately six miles east of Opp. Major roads near Skelly Stagefield include County Road 427, Alabama Highway 134, and Alabama Highway 189. Skelly Stagefield was formerly a fixed wing stagefield but is now solely a rotary wing stagefield that supports day and night training.

The area around Skelly Stagefield is rural and lightly developed. There are several single family residences in the area and two churches located along Alabama Highway 134. The Perry Store community is located about two miles to the west at the intersection of Highways 134 and 189, with a restaurant and a closed gas station/general store. The Pea River is near Skelly Stagefield to the east. This area is not projected for major growth in the near future.

### **Safety Conflicts (Figure 61)**

Clear Zones (CZs): The CZs at Skelly Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Skelly Stagefield are 800 feet in length and 300 feet in width.

North of Skelly Stagefield: Approximately 50% of the APZs extend north from Skelly Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is forested. There are two single family residences just north of the APZ I zone along County Road 427.

South of Skelly Stagefield: Approximately 10% of the APZs extend south from Skelly Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is agricultural. There is a church and two single family residences adjacent to the APZ I zones along Alabama Highway 134.

Northwest of Skelly Stagefield: Approximately 45% of the APZs extend northwest from Skelly Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is undeveloped with a mixture of agricultural and forested.

Southeast of Skelly Stagefield: A very small portion of the CZs extend southeast from Skelly Stagefield into unincorporated Coffee County. The land affected by the CZ is agricultural. Approximately 40% of the APZs extend southeast from Skelly Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is a mixture of agricultural and residential use as two single family residences are located along County Road 427.

# **Aviation Noise (Figure 62)**

North of Skelly Stagefield: Much of Noise Zone II extends north from Skelly Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is a mixture of forested and agricultural properties with a few residences along County Road 427.

South of Skelly Stagefield: Much of Noise Zone II extends south from Skelly Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is a mixture of forested and agricultural with a few residences and a church along Alabama Highway 134.

Figure 60 Skelly Stagefield Zone of Influence

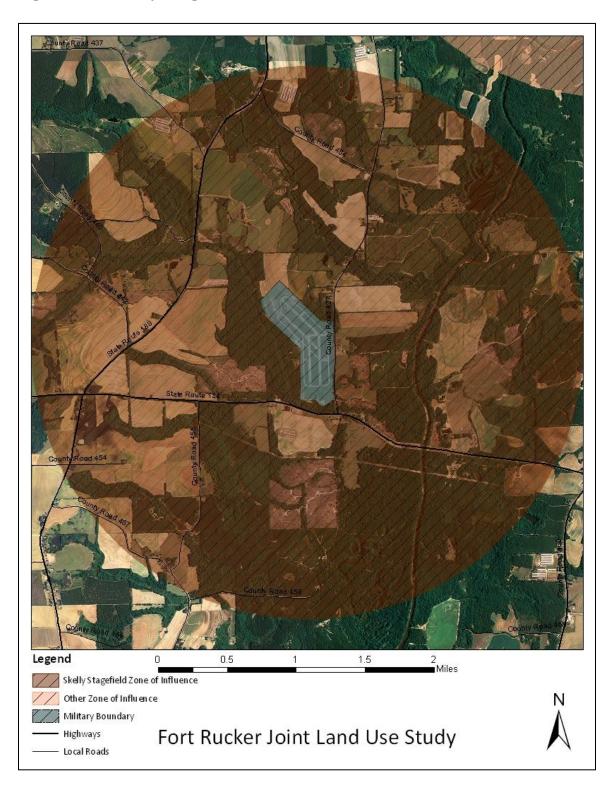


Figure 61 Skelly Stagefield Safety Zones

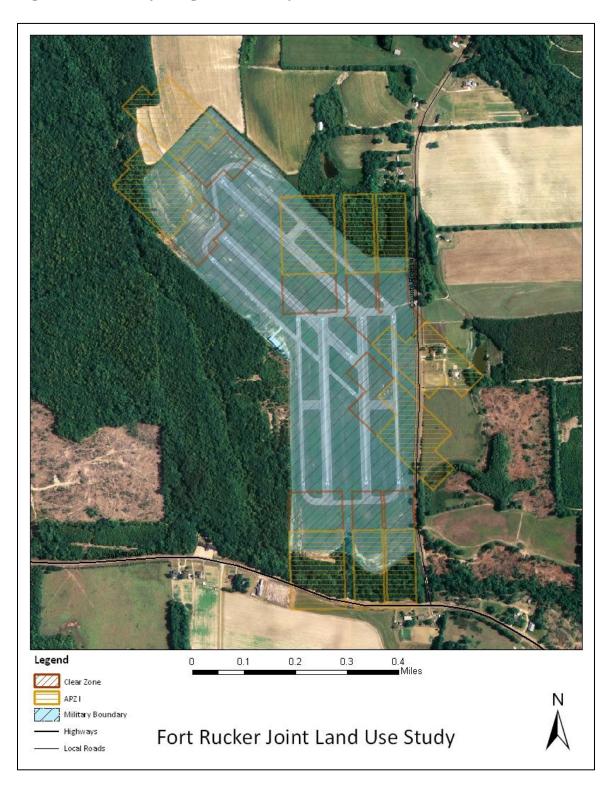
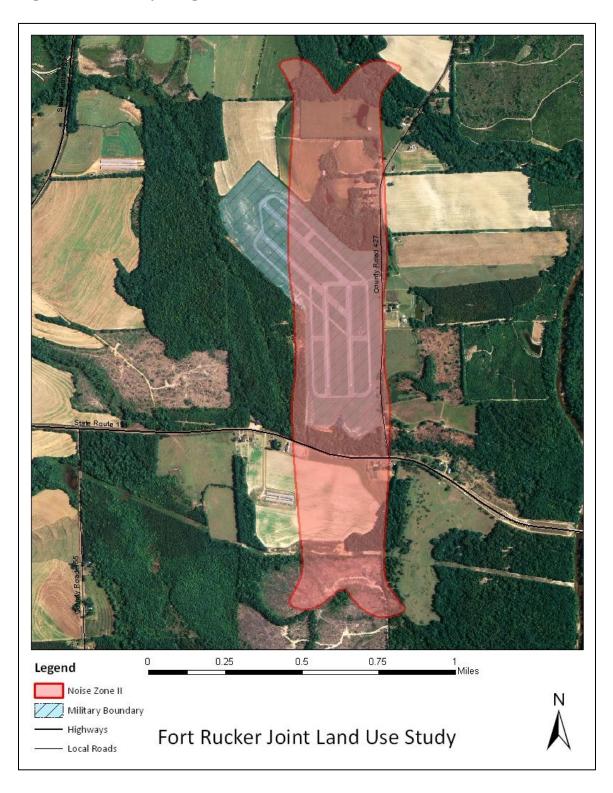


Figure 62 Skelly Stagefield Aviation Noise Zones



## Stinson Stagefield (Figure 63)

Stinson Stagefield is located in Coffee County approximately three miles southeast of Elba. Major roads near Stinson Stagefield include County Road 518 and County Road 527. Stinson Stagefield is a rotary wing stagefield that supports day and night training.

The area around Stinson Stagefield is very rural with isolated residential development. It is located away from major routes and is not in a high-growth area of Coffee County. This area is not projected for major growth in the near future.

#### **Safety Conflicts (Figure 64)**

Clear Zones (CZs): The CZs at Stinson Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Stinson Stagefield are 800 feet in length and 300 feet in width.

East of Stinson Stagefield: Approximately 75% of the APZs extend east from Stinson Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is forested. There is one single family residence just beyond the APZ I on County Road 522.

West of Stinson Stagefield: Approximately 80% of the APZs extend west from Stinson Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is undeveloped with a mixture of forested and agricultural use.

#### **Aviation Noise (Figure 65)**

East of Stinson Stagefield: Much of Noise Zone II extends east from Stinson Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is mostly forested with a few residences along County Road 519 and County Road 522.

West of Stinson Stagefield: Much of Noise Zone II extends west from Stinson Stagefield into unincorporated Coffee County. The land affected by the Noise Zone II contour is mostly forested with a very few residences along County Road 521.

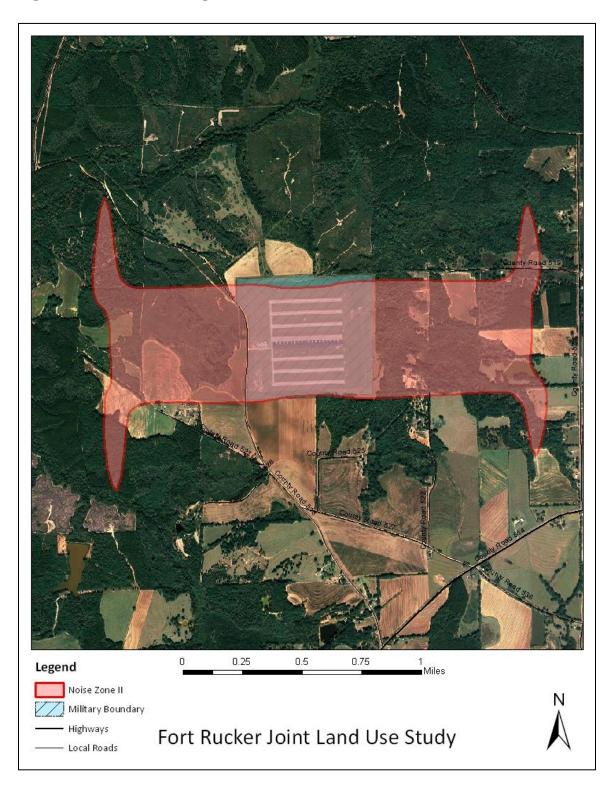
Figure 63 Stinson Stagefield Zone of Influence



Figure 64 Stinson Stagefield Safety Zones



Figure 65 Stinson Stagefield Aviation Noise Zones



# Tabernacle Stagefield (Figure 66)

Tabernacle Stagefield is located on the Fort Rucker reservation approximately 15 miles northwest of the Cantonment Area and borders unincorporated Coffee County. Major roads near Tabernacle Stagefield include Alabama Highway 51. Tabernacle Stagefield is a rotary wing stagefield that supports day and night training.

The off-post areas affected by Tabernacle Stagefield are in Coffee County between Enterprise and Ariton. The Alabama Highway 51 corridor has several residences and the remainder of the adjacent area has isolated residences. This area is not projected for major growth but there is potential for additional residential growth along Highway 51 due to outgrowth from Enterprise.

## **Safety Conflicts (Figure 67)**

Clear Zones (CZs): The CZs at Tabernacle Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Tabernacle Stagefield are 800 feet in length and 300 feet in width.

North of Tabernacle Stagefield: Approximately 30% of the APZs extend north from Tabernacle Stagefield into unincorporated Coffee County. The land affected by the APZ I zones is agricultural, with chicken houses within the boundary.

South of Tabernacle Stagefield: The CZs and APZs that extend south from Tabernacle Stagefield are contained on Fort Rucker property and do not extend into the civilian areas in Coffee County.

#### **Aviation Noise (Figure 68)**

Much of the northern portion of Noise Zone II extends into unincorporated Coffee County. The land affected by the Noise Zone II contour is a mixture of agricultural and forested properties with several residences and agricultural operations along Alabama Highway 51, County Road 148, and County Road 152.

Figure 66 Tabernacle Stagefield Zone of Influence

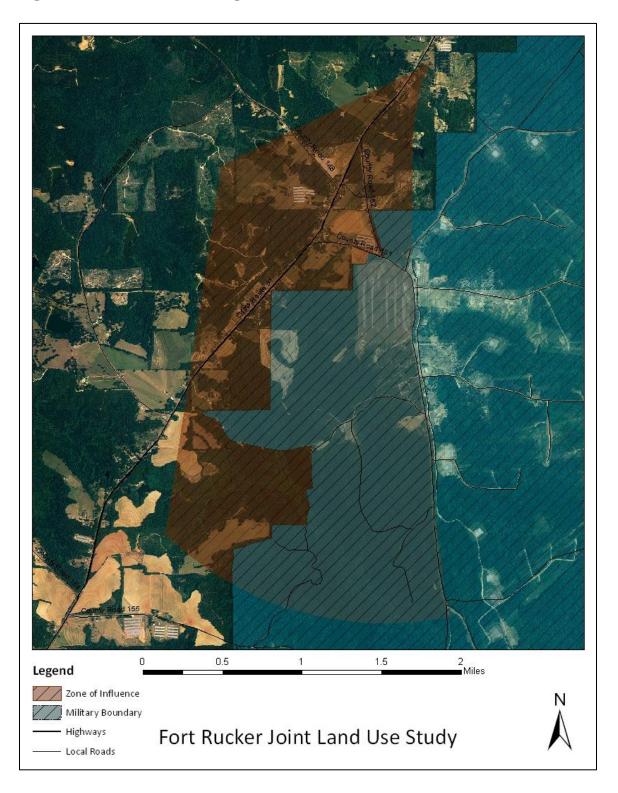


Figure 67 Tabernacle Stagefield Safety Zones

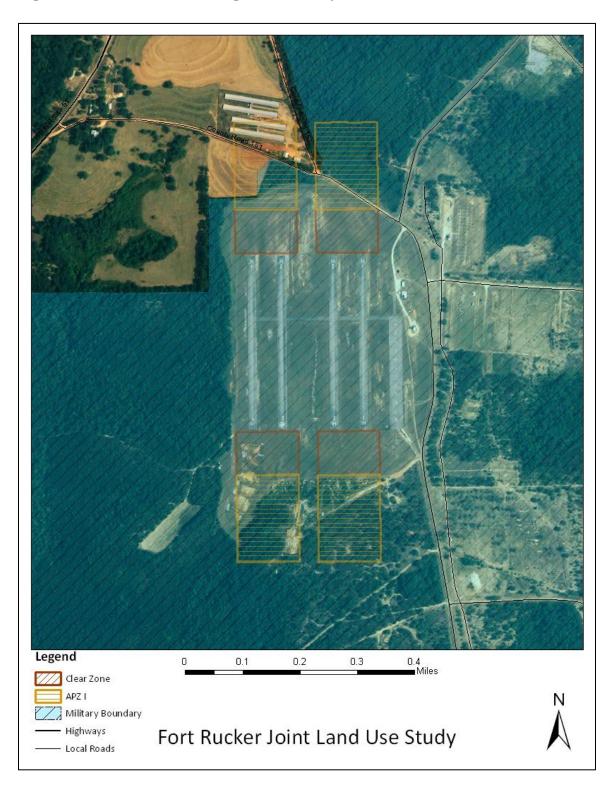


Figure 68 Tabernacle Stagefield Aviation Noise Zones



# Tac-X Stagefield (Figure 69)

Tac-X Stagefield is located in Geneva County, approximately three miles east-northeast of Samson. Major roads near Tac-X Stagefield include Coffee Springs Road (County Road 40) and Revels Farm Road. Tac-X Stagefield is a tactical training site used for night training.

The area around Tac-X Stagefield is very rural with isolated residential development. It is located away from major routes and is not in a high-growth area of Geneva County. This area is not projected for major growth in the near future.

#### **Safety Conflicts (Figure 70)**

Clear Zones (CZs): The CZs at Tac-X Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Tac-X Stagefield are 800 feet in length and 300 feet in width.

North of Tac-X Stagefield: The CZs and APZs extending north from Tac-X Stagefield are contained inside the property boundary and do not extend on private property.

South of Tac-X Stagefield: Approximately 15% of the APZ extends south into unincorporated Geneva County. The land affected by the APZ I zone is forested.

#### **Aviation Noise (Figure 71)**

Much of Noise Zone II extends northwest and southeast from Tac-X Stagefield into unincorporated Geneva County. The land affected by the Noise Zone II contour is a mixture of forested and agricultural properties with scattered residences along Coffee Springs Road (County Road 40) and Revels Farm Road.

Figure 69 Tac-X Stagefield Zone of Influence

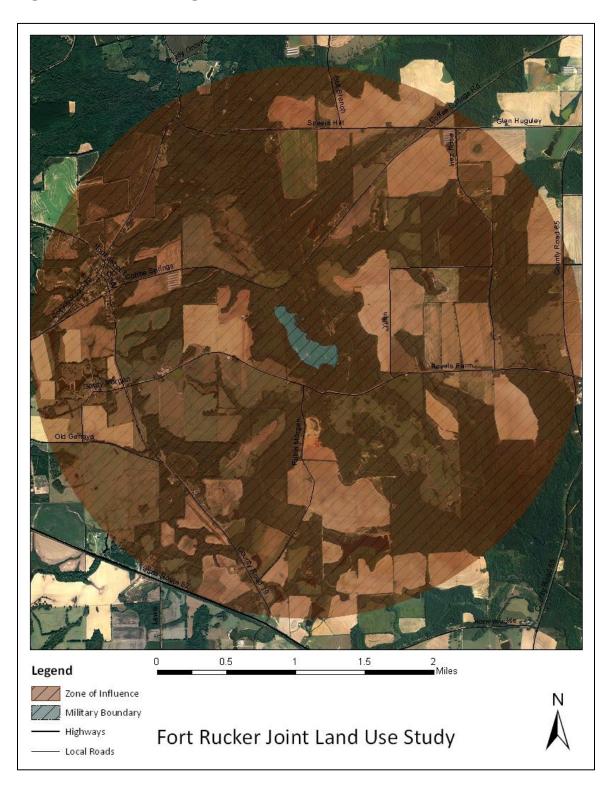


Figure 70 Tac-X Stagefield Safety Zones

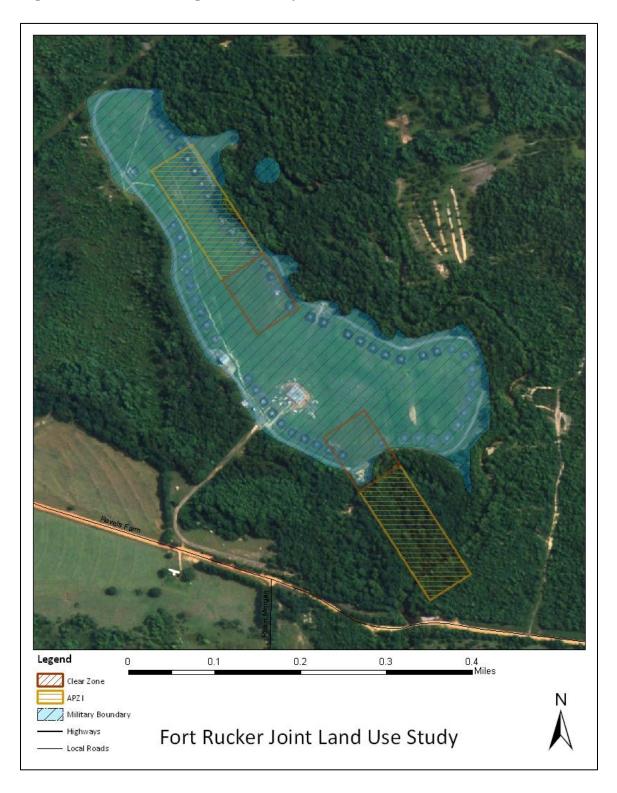
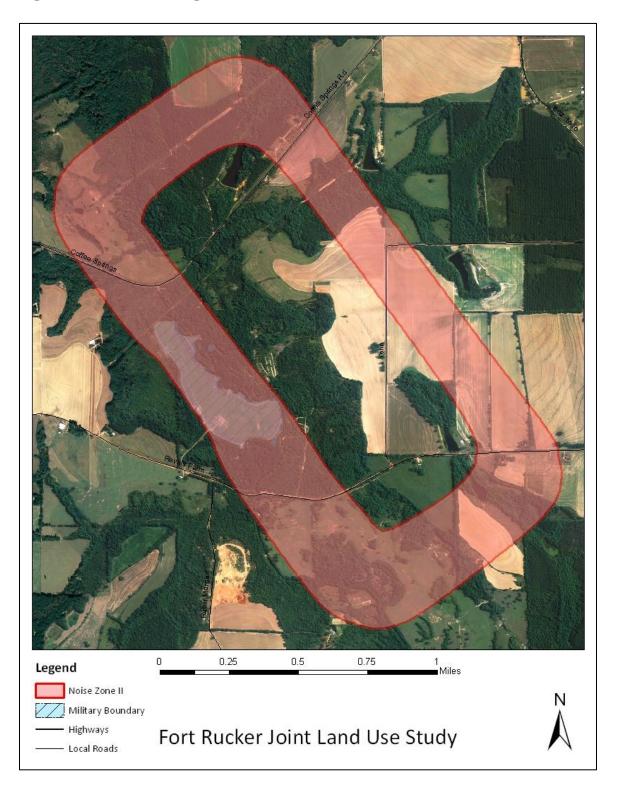


Figure 71 Tac-X Stagefield Aviation Noise Zones



## Toth Stagefield (Figure 72)

Toth Stagefield is located in Houston County approximately ten miles southeast of Fort Rucker and three miles west of Dothan. Major roads near Toth Stagefield include Judge Logue Road, County Road 9, and U.S. Highway 84. Toth Stagefield is a rotary wing stagefield that supports day and night training.

Toth Stagefield is the aviation installation closest to the Dothan area. This area has been an active agricultural area with minor residential development. Residential development is increasing in this area due to accessibility to U.S. Highway 84 and Dothan, as subdivision of property is occurring in multiple parcels. This area is projected to have increasing development pressure in the near future with the potential for plentiful residential development and some commercial development along U.S. Highway 84.

## **Safety Conflicts (Figure 73)**

Clear Zones (CZs): The CZs at Toth Stagefield are 400 feet in length and 300 feet in width.

Accident Potential Zones (APZs): The APZs at Toth Stagefield are 800 feet in length and 300 feet in width.

Northeast of Toth Stagefield: Approximately 70% of the APZs extend northeast from Toth Stagefield into unincorporated Houston County. The land affected by the APZ I zones is agricultural with single family residences just beyond the boundary along Judge Logue Road.

Southwest of Toth Stagefield: A very small portion of the CZ extends southwest from Toth Stagefield into unincorporated Houston County. The land affected by the CZ is agricultural. Approximately 75% of the APZs extend southwest into unincorporated Houston County. The land affected by the APZ I zone is agricultural. There are isolated single family residences just beyond the boundary along County Road 9 and Judge Logue Road.

#### **Aviation Noise (Figure 74)**

Northeast of Toth Stagefield: Much of Noise Zone II extends northeast from Toth Stagefield into unincorporated Houston County. The land affected by the Noise Zone II contour is a mixture of forested, agricultural, and residential properties with several residences along Judge Logue Road.

Southwest of Toth Stagefield: Much of Noise Zone II extends southwest from Toth Stagefield into unincorporated Houston County. The land affected by the Noise Zone II contour is a mixture of agricultural, forested, and residential properties with several residences around the Judge Logue Road/Sherwood Trail intersection.

Figure 72 Toth Stagefield Zone of Influence



Figure 73 Toth Stagefield Safety Zones

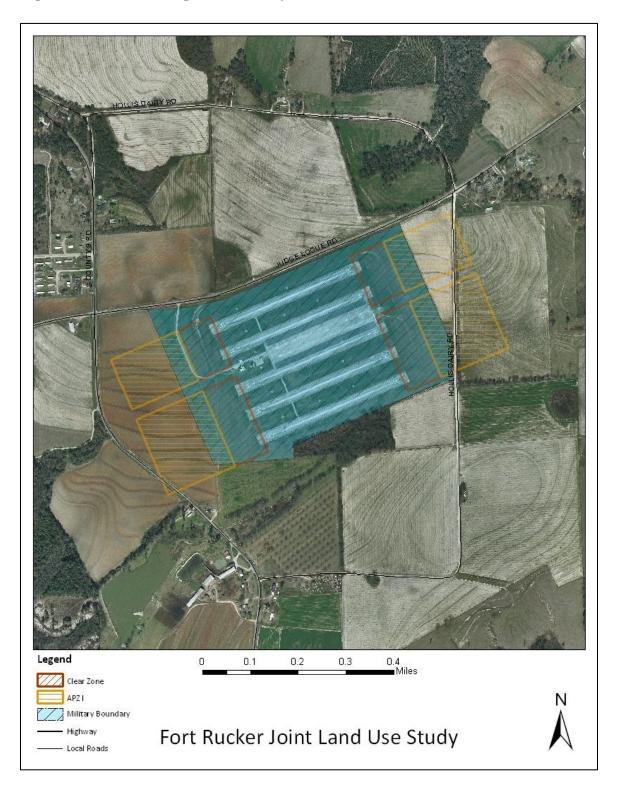
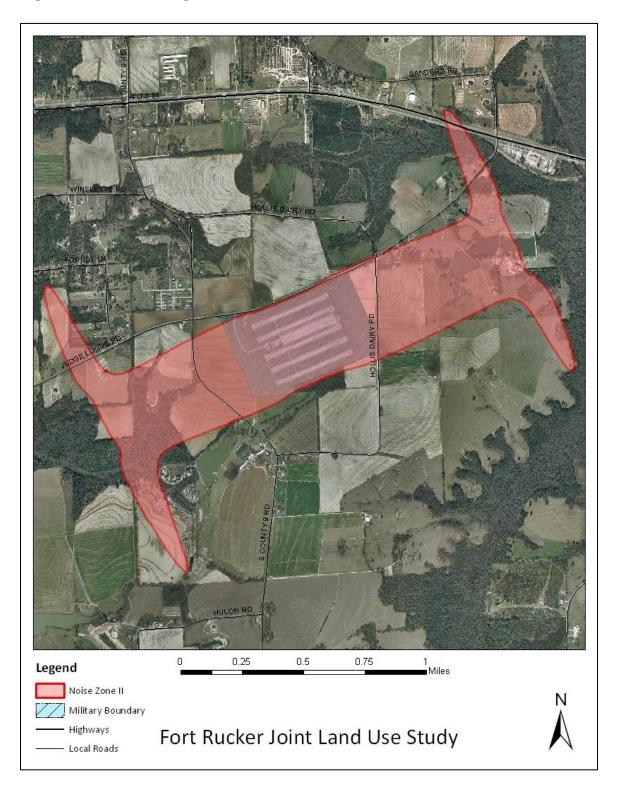


Figure 74 Toth Stagefield Aviation Noise Zones



### RECENT COMPATIBILITY EFFORTS

Through the realization of potential conflicts between Fort Rucker and the surrounding civilian areas, there have been efforts already implemented to promote compatible land use. Some of these efforts to minimize these conflicts are listed below. The Fort Rucker Installation ONMP describes further many of the strategies incorporated by Fort Rucker.

Inquiries of local government officials and studies of local policies were utilized to review existing efforts to promote compatible land use near the military facilities. This included reviewing comprehensive plans, zoning ordinances, and other documents pertaining to community land use policy.

Overall, the local governments of the Wiregrass have instituted few practices that incorporate compatible land use in the identified sensitive areas. As mentioned below, a few local governments have instituted notification methods and property disclosures in recent years. There is further strengthening of local governmental policies needed to promote compatible land use in the Wiregrass region.

## Fort Rucker Installation Operational Noise Management Plan (IONMP)

The Army's Operational Noise Management Plan, along with the other Department of Defense compatible use programs, studies the noise and safety impacts created by a military installation and describes current compatibility of land use around Army bases and ranges, as well as provides recommendations for both the military installation and surrounding communities concerning land use compatibility and noise management issues. Fort Rucker developed an IONMP effective May 2006 that reports on these functions.

The Fort Rucker IONMP was distributed by Fort Rucker to regional jurisdictions in order to facilitate increased education of potential effects and to engage communication between the base and civilian areas. Fort Rucker should update the IONMP when changes are made to the installation's mission that affects the extent, geography, and other impacts to the surrounding areas.

# Noise Complaint Management Program

Fort Rucker has an assigned Noise Mitigation Officer that records and investigates noise complaints from the community and responds to those complaints through replying to the complainant regarding why an operation must occur or researches potential strategies to address noise operations in a particular area. Fort Rucker also distributes planned training schedules for range training to neighboring property owners.

# Fly Neighborly Program

The Fort Rucker Fly Neighborly Program instructs Army helicopter pilots to minimize noise complaints through taking appropriate steps to avoid flying in developed areas when possible.

This program involves studying flight patterns, ascent and descent angles, and other flight operations that may affect noise levels.

# Army Compatible Use Buffer (ACUB)

Fort Rucker is currently developing an ACUB proposal with prioritized objectives detailing the location and types of properties the installation believes needs to be protected from further development. These areas will primarily be areas within noise and safety zones, as well as air corridors. The prioritized sites are privately-owned areas that, if developed, would negatively affect the training mission and jeopardize the future of the installation. The Army may provide funding to implement strategies, such as conservation easements, for development interests in prioritized areas and developing agreements with experienced partners to assist in maintaining these agreements. This program serves multiple purposes, as affected lands would also meet conservation objectives.

## Property Disclosure Requirements

The municipalities of Daleville, Dothan, and Enterprise have either required property disclosures for the transfer of property or have promoted disclosure statements to developers on a voluntary basis to this point. These disclosures require a statement to be inserted in each deed of a potential subdivision. Disclosure requirements will be explained further in the Compatibility Tools sections.

# Joint Land Use Study (JLUS)

Fort Rucker initiated discussion of the need for this JLUS study with stakeholders in neighboring communities. Community meetings and visits from the Department of Defense helped solidify local support needed to develop this study.

### COMPATIBILITY TOOLS RECOMMENDATIONS

The current and potential land use conflicts that are documented in the Compatibility Analysis section provided a framework for JLUS task force members in the development of recommendations to reduce these military and civilian activity conflicts. This section is very important, as local implementation of these recommendations will aid the process of increasing land use compatibility in Southeast Alabama. The participating regional jurisdictions have varying legal, technical, and financial abilities for implementation of the recommended tools. The Policy Committee recommended the listing of all tools for cities, counties, and Fort Rucker to have the choice of implementing which tools are most appropriate. The areas affected by the military / civilian impact interface are displayed in Table 6.

The tools documented below are not an exhaustive list and further discussions should continue to develop methods to encourage compatible land use. These discussions will display the willingness of Fort Rucker and the regional local governments to continue studying effects.

The JLUS task forces examined a wide variety of compatibility tools that were recommended by members, addressed in public meetings, or was noted to have been successful in similar situations around the country. These proposed tools were evaluated, which included the following factors:

- political and economic feasibility
- probable effectiveness
- sustaining military training effectiveness
- promoting economic vitality of the region
- protecting safety and welfare of regional citizens

The Compatibility Tools section is divided into three sections based on the basic categories the action items are listed in. These sections are listed as follows:

- Conservation Tools
- Compatible Land Use and Regulatory Tools
- Communication and Information Dissemination Tools

 Table 6
 Community Impacts

Table 0 Community Impacts										
Marked Areas (X) Where	Installation Perimeter		fety Zo centrat		Noise Concentra Aviation	Noise Zone Concentrations from Weapons Training			Height Impacts	
Military Operations are Impacted or Potentially Impacted		Clear Zone	APZ I	APZ II	Noise Zone III (> 75 ADNL)	Noise Zone II (65-75 ADNL)	Noise Zone III (> 70 CDNL)	Noise Zone II (62-70 CDNL)	Land Use Planning Zone (57-62 CDNL)	Air Corridors
Unincorporated Barbour County	X		X		X	X				
Unincorporated Coffee County	X	X	X			X	X	X	X	X
Enterprise	X	X	X			X			X	X
Unincorporated Dale County	X	X	X	X	X	X	X	X	X	X
Clayhatchee	X	X	X	X		X				X
Daleville	X	X	X	X	X	X				X
Level Plains	X									X
Newton	X	X	X			X				X
Ozark	X		X			X				X
Unincorporated Geneva County	X	X	X			X				X
Unincorporated Houston County	X	X	X			X				X

#### Conservation Tools

#### **Conservation Easement**

A conservation easement involves a voluntary legal agreement between a property owner and other parties concerning future development on a particular parcel of land. Other parties may include units of government, conservation groups, or other charitable interests. Conservation easements have been used to limit future development in a variety of uses, including protecting vulnerable habitats, scenic mountain viewsheds, floodprone areas, and general open space protection. They are flexible instruments and can be written for variable priorities, as property owners may retain certain rights on the property. An entire parcel or only a portion of a parcel may be included in a conservation easement, depending on the priorities of the agreement.

The property owner retains ownership and use of the property, under the tenets of the conservation easement. The owner is able to sell or lease the property, but any subsequent owner of the property remains under the agreement. Either a government entity or a conservation group normally serves as a holder, which monitors the property to ensure the conservation easement is being maintained. There are several entities, including the Nature Conservancy, the Alabama Land Trust, and the Alabama Forest Resources Center, that are experienced in assisting property owners and local governments in development and maintenance of a conservation easement. Utilizing conservation easements on properties near Fort Rucker and its outlying aviation facilities would be an effective tool in southeastern Alabama through directing potential growth away from the sensitive areas, while conserving open space and existing agricultural or silvicultural use.

Conservation easements are recognized by the Internal Revenue Service (IRS) and the State of Alabama, which allows potential benefits. Through relinquishing the development rights of the property, a property owner is eligible for certain tax incentives in exchange for setting aside property to not be further developed or similar objectives. Another conservation tool with similar objectives of conservation easements is purchase of development rights (PDRs), which provides compensation to the property owner for the difference of assessed market value through not developing the property.

#### **Implementation of the Army Compatible Use Buffer (ACUB)**

Title 10 U.S. Code 2684a authorizes military departments to enter into agreements for real estate interests in areas near military installations to add additional buffer areas adjacent to training sites. The Army's program is known as the Army Compatible Use Buffer (ACUB). As mentioned earlier, Fort Rucker is currently developing an ACUB proposal with prioritized areas the installation believes needs to be protected from further development.

It is recommended for Fort Rucker and the Army to work with property owners, local governments, and conservation groups to implement the ACUB in order to protect those prioritized properties in a method that will provide multiple benefits. A primary method to implement these objectives includes the development of conservation easements.

#### **Continue SERPPAS Participation**

The Southeast Regional Partnership for Planning and Sustainability (SERPPAS) promotes regional coordination concerning resource issues in order to prevent additional incompatible development around military properties in Alabama, Florida, Georgia, North Carolina, and South Carolina. The organization was developed in 2005 and has partners including the Department of Defense (DOD), the U.S. Fish and Wildlife Service, the U.S. Forest Service, state environmental and conservation departments, and others. In 2007, within SERPPAS a focus partnership (FLAG Corridor) was formed to more closely link conservation efforts in the Fort Benning (GA), Fort Rucker, and Eglin Air Force Base (FL). This group's intent is to promote sustainable operations of each base, conserve resources, and promote compatible development. Fort Rucker is recommended to continue in the SERPPAS partnership.

#### **Fee Simple Acquisition**

Fee simple acquisition is an available tool to reduce potential incompatible development through obtaining total control of property. The utilization of fee simple acquisition is recommended to be a low priority due to the substantial financial and legal expenses required, however this tool might be appropriate in extreme cases in highly prioritized areas.

## Compatible Land Use and Regulatory Tools

#### **Comprehensive Planning (with Military Influence Element)**

Comprehensive planning serves as a community's shared statement of future physical, social, and economic development and provides a legal basis for policies and regulations that are adopted to implement the choices made during the planning process. The State of Alabama authorizes but does not mandate creation of a comprehensive (master) plan, which differs from most states. Many states, including Arizona and Florida, require local comprehensive plans to study compatibility with military facilities.

Comprehensive planning will assist communities through highlighting potential military impacts on civilian areas and resources and potential civilian impacts on military operations. Comprehensive plans should address compatible development around military installations by designating or highlighting areas of military influence. These areas, for the focus of the JLUS, are adjacent to military aviation facilities and have delineated Accident Potential Zones (APZs) and Noise Zones (NZs).

Some municipalities in the JLUS Study Area, including Daleville, Enterprise, and Ozark, have comprehensive plans or land use plan elements. There are currently no counties in southeastern Alabama that have comprehensive plans and multiple municipalities' plans are many years of age and in need of updating.

Communities are recommended to develop or update comprehensive plans with the inclusion of a Military Influence element. This element should identify and examine areas that are affected by military impacts, including areas identified in the most recent Joint Land Use Study (JLUS),

Fort Rucker Installation Operational Noise Management Plan, and other pertinent documents. The element should discuss the following factors at a minimum: military impacts on local government (including facilities, types of activities, extent of impacts), civilian impact on military operations (including developments within noise and safety zones, as well as other prioritized areas), review of compatible land use within sensitive areas, potential height restrictions (in noise and safety zones, training routes, and other restricted areas), and other important discussions related to having close proximity to a military installation. Though unincorporated areas have less land use authority than municipalities, studying the impacts of neighboring military installations and strategizing specific methods to encourage compatibility, including through subdivision regulations, are a positive exercise to perform.

#### **Property Disclosure Requirements**

Many prospective developers, buyers, and lessees are unaware of the extent of military operations within the Wiregrass region. Many assume that Fort Rucker only operates on the main post and are not familiar with the outlying military facilities that are used, especially if they are not within sight of the property of interest. Disclosures will assist in the education of the regional population regarding the impacts associated with living and working near military facilities.

Property disclosures requirements may be implemented in local government activities, such as building permit applications, subdivision plat approvals, and rezoning requests that provides the ability to review if an area is notably influenced by military operations. Property disclosure procedures should also be implemented in real estate transactions, as well as permanent inclusion in property deeds and subdivision plats for continuous disclosure in areas that are adjacent to a military installation to reveal potential exposure to military training operations. It is recommended throughout the Wiregrass area to disclose to potential buyers and leasers, early in the process, that military training operations occur in the entire region. In areas within a Clear Zone, APZ I, APZ II, Noise Zone II, Noise Zone III, and other identified priority areas, disclosures should provide more detailed information about the extent of effects to a particular parcel or subdivision depending on the particular location.

Maps displaying the noise and accident hazard contours should be publically available and made known to stakeholders in the real estate and development community. Potential buyers should be made aware of the possible impacts of being adjacent to an aviation facility on a parcel of property. Increased awareness of noise and safety impacts in the area will aid in better understanding of Fort Rucker's training mission and potentially reduce frustration for residents who are not properly informed prior to purchase.

A Sample Area of Military Impact Real Estate Disclosure form is provided in the Appendices.

#### "Mandatory Referral" Notification of Land Development Actions

Several states, including Florida and Georgia, have requirements for notification to neighboring military installations about potential land use actions. The JLUS committees have recommended

jurisdictions with potential land use actions within at least 3,000 feet of an installation notify Fort Rucker for collaborating and sharing information regarding potential impacts.

Fort Rucker is also encouraged to collaborate with neighboring jurisdictions about potential developments adjacent to civilian boundaries that may increase impacts outside of the military facilities.

Full implementation of this objective will also require enabling legislation from the Alabama Legislature. Municipalities and counties are able to implement this practice locally, as Enterprise and Coffee County has done.

#### **Zoning Overlay District**

It is recommended for municipalities with zoning ordinances to add overlay districts within areas influenced by noise, safety, and other designated areas of influence. These overlay districts should accurately follow land use compatibility guidelines recommended by the Department of Housing and Urban Development (HUD), as well as possible sound level reduction techniques and height restrictions.

Land use compatibility guidelines are provided in the Appendices.

#### **Restrict Tall Structure Placement**

Elevated structures, such as telecommunication towers, present potential airspace hazards to flight training in proximity to flight corridors and airfields. Municipalities have the authority and are recommended to adopt regulations to place height restrictions in affected areas.

#### **Amend Subdivision Regulations for Areas of Influence**

Local governments are recommended to study methods amending their subdivision regulations to allow for varying types of density, especially in areas near military facilities. Certain parcels of property may be only partially within noise, safety, and other designated areas.

Because the counties in the Wiregrass do not have inherent zoning authority provided by the State of Alabama, the only land use authority provided to counties is subdivision regulations. Counties should codify their subdivision regulations to coordinate with Fort Rucker to encourage compatible development within those areas adjacent to the post and outlying aviation facilities.

Subdivision regulations may be used to allow conservation techniques, such as clustered or concentrated development in areas outside of influenced zones, while the undeveloped areas within noise, safety, or installation buffers are used as open space. These concepts may provide the same number of developed lots as in a conventional subdivision, but with potential positive alternatives as increased open space and less expensive infrastructure placement. Counties are recommended to study and adopt regulations to allow for conservation developments within their subdivision regulations.

#### **Infrastructure Planning / Capital Improvement Plan (CIP)**

Local governments should consider the effects of infrastructure expansion on compatible land use objectives during the development or update of a capital improvement plan (CIP) or other local methods of infrastructure planning that projects future infrastructure development. The projects are normally prioritized based on demand and fiscal resources available. Areas with established infrastructure can support higher densities of development and are more attractive to developers. Local governments should study their infrastructure plans and assess if planned infrastructure expansions are within or adjacent to areas of military influence and will promote incompatible development that may attract dense development in those areas.

#### **Sound Level Reduction (SLR)**

Sound Level Reduction (SLR) techniques are specific noise attenuation practices that, if implemented, will reduce the levels of noise and vibration. Local governments with a building inspection program may decide to implement requirements that will encourage sound attenuation in buildings developed within areas inside noise contours to diminish impacts.

Fort Rucker and the Army are recommended to continue to research noise mitigation methods aligned with training activities that will reduce impacts on civilian areas.

## Communication and Information Dissemination Tools

#### **General Coordination of Compatible Land Use Discussion**

The most sustainable outcome of the JLUS will be continued collaboration and education between Fort Rucker, the local governments, and citizens of the Wiregrass region of southeastern Alabama. The following recommendations and other solutions that are not listed should encourage continued involvement in promoting a healthy future for both Fort Rucker and the surrounding area's welfare.

In order to implement and sustain implementation efforts, solutions should ensure the involvement of local chambers of commerce, the real estate community, and the development industry, which have plenty of interaction with stakeholders in the region.

#### **Continuation of JLUS Committees / Regional Compatible Growth Forum**

It is recommended for the JLUS Policy Committee to oversee implementation of JLUS objectives throughout the region. The continuation of the Policy Committee will engage further communication.

During and after JLUS implementation, there should be a standing forum for discussion of regional compatible growth issues. A forum of regional representation should continue collaboration on those issues and display a strong link between entities in the Wiregrass region. "Friends of Fort Rucker" is the organization recommended to facilitate future discussions of compatible growth issues in the Wiregrass region.

#### **Regional Memorandum of Understanding**

A regional memorandum of understanding (MOU) will establish procedures for information sharing and land use consultation concerning military and civilian implementation measures among multiple stakeholders in southeastern Alabama, including Fort Rucker officials and regional jurisdictions.

The MOU will not necessarily provide a binding action on the regional stakeholders, but will provide an authentic effort to implement the tools identified within the JLUS document.

An example MOU is provided in the Appendices.

#### Fort Rucker Representative as Ex-Officio Planning Commission Member

Fort Rucker is recommended to appoint representative(s) as an ex-officio member of local planning commissions. This will provide a standard methodology for communication regarding potential development issues near sensitive areas and potential changes to zoning or subdivision regulations that potentially affect areas near Fort Rucker facilities. As members of area planning commissions, the Fort Rucker representative will receive meeting notices and agendas from each community. For county governments without a planning commission, distribution of commission agendas are recommended to notify regarding potential subdivision plat reviews.

One issue this recommendation will address is the timing of development impact discussions. Too often, Fort Rucker officials have found out about potential developments after the full design and plat process has occurred. If Fort Rucker officials are involved early in the permitting and approval process, these discussions can occur throughout the design process, allowing for potential compromises and changes during the design phase and not after a lot of resources have been expended by the developer.

#### **Distribution of Fort Rucker Master Plan**

Fort Rucker is recommended to distribute their Master Plan to area jurisdictions. The distribution of the Fort Rucker Master Plan to neighboring jurisdictions will be beneficial for future planning purposes. Local communities will be able to work with Fort Rucker to ensure that planning goals and objectives are consistent and not adverse.

## Distribution of Noise and Accident Potential Mapping

Noise and accident potential mapping information developed through the JLUS and Operational Noise Management Program (ONMP) processes should be added to local government mapping websites. These layers can be integrated with existing parcel, street, and other information to allow users to assess the additional constraints to a parcel of property from military training actions.

Maps and/or brochures with noise and accident potential information should also be developed and distributed to local governments, chambers of commerce, real estate offices, and other community locations that are frequently visited.

#### **Establishment of Informative Website**

A website should be created in collaboration with Fort Rucker and local governments that displays important compatible land use information. Mapping information, including noise and safety contours, should be disseminated through the site and other pertinent information that will increase public awareness of training activities or other developments that might affect neighboring jurisdictions.

# **APPENDICES**

# **Fort Rucker Joint Land Use Study Committees**

County/Municipal Government	Technical Committee	Policy Committee	Advisory Committee
Barbour County		Mr. David Hobdy	
Coffee County	Mr. Randy Tindell	Commissioner Kim Ellis	Ms. Becky Hancock
Dale County	Mr. William Chesser	Commissioner Gerald Harden	
Geneva County	Mr. Roy Powell	Commissioner Johnny Windham	
Houston County	Mr. Isaac Mitchell	Chairman Mark Culver Commissioner Phil Forrester	
City of Dothan	Ms. Kelly Schultz	Commissioner John Craig	
City of Ozark	Mr. Jonathan Cordell	Mayor Billy Blackwell	Major General (Ret.) Richard Kenyon
City of Enterprise	Mr. Ray Bickley	Councilman Tommy Johnson, Jr.	Ms. Brenda Byrd
City of Daleville	Councilman Scott Moore	Mayor Wess Etheredge	Mr. Jody Britton
Town of Newton		Councilman Jeff Jordan	
Fort Rucker	Mr. Jack Holmes and Mr. Paul Meissner, Airfield/Airspace Management and Noise Mitigation	Colonel Yvette Kelley, Garrison Commander Mr. Justin Mitchell, Dept. Garrison Commander	Mr. Jonathan Tullos
Alabama DOT, Aeronautics Bureau	Mr. John C. Eagerton		

Former members of the committee instrumental in the JLUS process include: Mr. Bob Bunting, past Mayor of Ozark; Mr. J.L. Weeks, past Coffee County Commissioner; Colonel (Ret.) Scott Larese, past Garrison Commander; Mr. George Steuber, past Deputy Garrison Commander; and Mr. Stephen McCullough, past City Engineer of Enterprise.

# LAND USE COMPATIBILITY GUIDELINES FOR CLEAR ZONES AND ACCIDENT POTENTIAL ZONES (United States Army, 1981)

	TAL ZONES (UIIIEU A	OMPATIBILITY BY ZONI	r.1
LAND USE CATEGORY	CLEAR ZONE	APZ I	APZ II
Residential			
Single Family	No	No	Yes <sup>2</sup>
Two to Four Family	No	No	No
Multifamily Dwellings	No	No	No
Group Quarters	No	No	No
Residential Hotels	No	No	No
Mobile Home Parks or Courts	No	No	No
Other Residential	No	No	No
Industrial/Manufacturing <sup>3</sup>			
Food and Kindred Products	No	No	Yes
Textile Mill Products	No	No	Yes
Apparel	No	No	No
Lumber and Wood Products	No	Yes	Yes
Furniture and Fixtures	No	Yes	Yes
Paper and Allied Products	No	Yes	Yes
Printing, Publishing	No	Yes	Yes
Chemicals and Allied Products	No	No	No
Petroleum Refining and Related Industries	No	No	No
Rubber and Miscellaneous Plastic Goods	No	No	No
Stone, Clay, and Glass Products	No	Yes	Yes
Primary Metal Industries	No	Yes	Yes
Fabricated Metal Products	No	Yes	Yes
Professional, Scientific, and Controlling	No	No No	No
Instruments	NO	NO	No
Miscellaneous Manufacturing	No	Yes	Yes
Transportation, Communications, and Utilit		103	103
Railroad, Rapid Rail Transit (On Grade)	No	Yes <sup>4</sup>	Yes
Highway and Street Right-of-Way (ROW)	Yes	Yes	Yes
Auto Parking	No	Yes	Yes
Communications	Yes	Yes	Yes
Utilities	Yes	Yes <sup>4</sup>	Yes
Other Transportation, Communications,	Yes	Yes	Yes
and Utilities	Tes	res	Tes
Commercial/Retail Trade			
Wholesale Trade	No	Yes	Yes
Building Materials (Retail)	No	Yes	Yes
General Merchandise (Retail)	No	No	Yes
Food (Retail)	No	No No	Yes
Automotive, Marine, Aviation (Retail)	No No	Yes	Yes Yes
Apparel and Accessories (Retail)	No No	No No	
Furniture, Home Furnishing (Retail)	No No	No No	Yes
Eating and Drinking Facilities	No No	No No	No Vac
Other Retail Trade	No	No	Yes
Personal and Business Services <sup>5</sup>	N.	N.	X7
Finance, Insurance, and Real Estate	No	No	Yes
Personal Services	No	No	Yes
Business Services	No	No	Yes
Repair Services	No	Yes	Yes
Professional Services	No	No	Yes

Contract Construction Services	No	Yes	Yes						
Indoor Recreation Services	No	No	Yes						
Other Services	No	No	Yes						
Public and Quasi-Public Services									
Government Services	No	No	Yes <sup>5</sup>						
Educational Services	No	No	No						
Cultural Activities	No	No	No						
Medical and Other Health Services	No	No	No						
Cemeteries	No	Yes <sup>6</sup>	Yes <sup>6</sup>						
Nonprofit Organizations (Including	No	No	No						
Churches)									
Other Public and Quasi-Public Services	No	No	Yes						
Outdoor Recreation	Outdoor Recreation								
Playgrounds and Neighborhood Parks	No	No	No						
Community and Regional Parks	No	Yes <sup>7</sup>	Yes <sup>7</sup>						
Nature Exhibits	No	Yes	Yes						
Spectator Sports Including Arenas	No	No	No						
Golf Courses <sup>8</sup> , Riding Stables <sup>9</sup>	No	Yes	Yes						
Water-based Recreational Areas	No	Yes	Yes						
Resort and Group Camps	No	No	No						
Entertainment Assembly Areas	No	No	No						
Other Outdoor Recreation	No	Yes <sup>7</sup>	Yes						
Resource Production and Extraction and	Open Land <sup>10</sup>								
Agriculture <sup>11</sup>	Yes	Yes	Yes						
Livestock Farming, Animal Breeding	No	Yes	Yes						
Forestry Activities <sup>12</sup>	No <sup>13</sup>	Yes	Yes						
Fishing Activities and Related Services <sup>14</sup>	No <sup>15</sup>	Yes <sup>14</sup>	Yes						
Mining Activities	No	Yes	Yes						
Permanent Open Space Water Areas <sup>14</sup>	Yes	Yes	Yes <sup>14</sup>						
Water Areas <sup>14</sup>	Yes	Yes	Yes						

#### Notes:

- 1. A Yes or No designation for compatible land use is to be used only for gross comparison. Within each, uses exist where further definition may be needed as to whether it is clear or unusually acceptable/unacceptable owing to variations in densities of people and structures.
- 2. Suggested maximum density 1-2 dwelling units per acre, possible increased under a Planned Unit Development where maximum lot coverage is less than 20 percent.
- 3. Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.
- 4. No passenger terminals and no major above ground transmission lines in APZ I.
- 5. Low intensity office uses only. Meeting places, auditoriums, etc. not recommended.
- 6. Excludes chapels.
- 7. Facilities must be low intensity.
- 8. Clubhouse not recommended.
- 9. Concentrated rings with large classes not recommended.
- 10. Include livestock grazing but excludes feedlots and intensive animal husbandry.
- 11. Includes feedlots and intensive animal husbandry.
- 12. No structures (except airfield lighting), buildings, or above ground utility/communication lines should be located in clear zone.
- 13. Lumber and timber products removed due to establishment, expansion, or maintenance of clear zones will be disposed of in accordance with DOD Instruction
- 14. Includes hunting and fishing.
- 15. Controlled hunting and fishing may be permitted for the purpose of wildlife control.

# LAND USE COMPATIBILITY GUIDELINES FOR NOISE (FICUN, 1980)

	LAND USE CATEGORY					NL LEVE		- /
SLUCM No.	Name	NZ I 0-55	NZ I 55-65	NZ II 65-70	NZ II 70-75	NZ III 75-80	NZ III 80-85	NZ III 85 +
10	Residential							05 1
11	Household Units	Y	Y*	25 <sup>1</sup>	30 <sup>1</sup>	N	N	N
12	Group Quarters	Y	Y*	25 <sup>1</sup>	30 <sup>1</sup>	N	N	N
13	Residential Hotels	Y	Y*	25 <sup>1</sup>	30 <sup>1</sup>	N	N	N
14	Mobile Home Parks or Courts	Y	Y*	N	N	N	N	N
15	Transient Lodgings	Y	Y*	251	30 <sup>1</sup>	35 <sup>1</sup>	N	N
16	Other Residential	Y	Y*	25 <sup>1</sup>	30 <sup>1</sup>	N	N	N
20, 30	Manufacturing	1	1	23	30	11	11	11
21	Food and Kindred Products	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
22	Textile Mill Products	Y	Y	Y	$Y^2$	$Y^3$	Y <sup>4</sup>	N
23	Apparel/Other Finished Products	Y	Y	Y	$Y^2$	$Y^3$	Y <sup>4</sup>	N
24	Lumber and Wood Products	Y	Y	Y	$Y^2$	$Y^3$	Y <sup>4</sup>	N
25	Furniture and Fixtures	Y	Y	Y	$Y^2$	$Y^3$	Y <sup>4</sup>	N
26	Paper and Allied Products	Y	Y	Y	$Y^2$	$Y^3$	Y <sup>4</sup>	N
27	Printing, Publishing and Allied Industries	Y	Y	Y	$Y^2$	$Y^3$	Y <sup>4</sup>	N
28	Chemicals and Allied Products	Y	Y	Y	$Y^2$	$Y^3$	Y <sup>4</sup>	N
29	Petroleum Refining and Related	-	•			1		11
2)	Industries	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
31	Rubber and Misc. Plastic Products-			-	-	-	-	11
	Manufacturing	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
32	Stone, Clay, and Glass Products-			-	-	-	-	11
	Manufacturing	Y	Y	Y	$\mathbf{Y}^2$	$Y^3$	$Y^4$	N
33	Primary Metal Industries	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
34	Fabricated Metal Products-							
	Manufacturing	Y	Y	Y	$\mathbf{Y}^2$	$Y^3$	$Y^4$	N
35	Professional, Scientific, and Controls	Y	Y	Y	25	30	N	N
39	Miscellaneous Manufacturing	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
40	Transportation, Communication, and							
	Facilities							
41	Railroad, Rapid Rail Transit, and Street				2	2		,
	Rail	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	$Y^4$
42	Motor Vehicle Transportation	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	$Y^4$
43	Aircraft Transportation	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	$Y^4$
44	Marine Craft Transportation	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	$Y^4$
45	Highway and Street Right-of-Way	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	$Y^4$
46	Automobile Parking	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
47	Communications	Y	Y	Y	255	30 <sup>5</sup>	N	N
48	Utilities	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	$Y^4$
49	Other Transportation, Communication,	Y	Y	Y	25 <sup>5</sup>	$30^{5}$	N	N
	and Utilities							
50	Trade					2		
51	Wholesale Trade	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
52	Retail-Building Materials, Hardware, and				2	2	4	
	Farm Equipment	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
53	Retail-General Merchandise	Y	Y	Y	25	30	N	N
54	Retail-Food	Y	Y	Y	25	30	N	N
55	Retail-Auto, Marine, Aircraft, and Parts	Y	Y	Y	25	30	N	N
56	Retail-Apparel and Accessories	Y	Y	Y	25	30	N	N
57	Retail-Furniture, Furnishings, and	Y	Y	Y	25	30	N	N

	Equipment							
58	Retail-Eating and Drinking Facilities	Y	Y	Y	25	30	N	N
59	Other Retail Trade	Y	Y	Y	25	30	N	N
60	Services							
61	Finance, Insurance, and Real Estate	Y	Y	Y	25	30	N	N
	Services							
62	Personal Services	Y	Y	Y	25	30	N	N
62.4	Cemeteries <sup>11</sup>	Y	Y	Y	$\mathbf{Y}^2$	$Y^3$	$Y^4$	$Y^6$
63	Business Services	Y	Y	Y	25	30	N	N
64	Repair Services	Y	Y	Y	$Y^2$	$Y^3$	$Y^4$	N
65	Professional Services	Y	Y	Y	25	30	N	N
65.1	Hospitals, Nursing Homes	Y	Y*	25 <sup>*</sup>	30 <sup>*</sup>	N	N	N
66	Contract Construction Services	Y	Y	Y	25	30	N	N
67	Government Services	Y	Y*	$Y^*$	25*	30 <sup>*</sup>	N	N
68	Educational Services	Y	Y*	25 <sup>*</sup>	30 <sup>*</sup>	N	N	N
69	Miscellaneous Services	Y	Y	Y	25	30	N	N
70	Cultural, Entertainment, and							
	Recreation							
71	Cultural Activities, Including Churches	Y	Y*	25 <sup>*</sup>	30 <sup>*</sup>	N	N	N
71.2	Nature Exhibits	Y	Y*	$\mathbf{Y}^*$	N	N	N	N
72	Public Assembly	Y	Y	Y	N	N	N	N
72.1	Auditoriums, Concert Halls	Y	Y	25	30	N	N	N
72.11	Outdoor Music Shells, Amphitheaters	Y	Y*	N	N	N	N	N
72.2	Outdoor Sports Arenas, Spectator Sports	Y	Y	$Y^7$	$\mathbf{Y}^7$	N	N	N
73	Amusements	Y	Y	Y	Y	N	N	N
74	Recreational Activities	Y	Y*	$Y^*$	25*	30 <sup>*</sup>	N	N
75	Resorts, Groups, and Camps	Y	Y*	$Y^*$	Y*	N	N	N
76	Parks	Y	Y*	$Y^*$	Y*	N	N	N
79	Other Cultural, Entertainment, and	Y	Y*	$Y^*$	Y*	N	N	N
	Recreation							
80	Resource Production and Extraction							
81	Agriculture (Except Livestock) <sup>11</sup>	Y	Y	$Y^8$	$Y^9$	$\mathbf{Y}^{10}$	$\mathbf{Y}^{10}$	$\mathbf{Y}^{10}$
81.5-81.7	Livestock Farming and Animal Breeding	Y	Y	$Y^8$	$Y^9$	N	N	N
82	Agricultural Related Activities <sup>11</sup>	Y	Y	$Y^8$	$Y^9$	$\mathbf{Y}^{10}$	$\mathbf{Y}^{10}$	$\mathbf{Y}^{10}$
83	Forestry Activities and Related Services <sup>11</sup>	Y	Y	$Y^8$	$Y^9$	$Y^{10}$	$\mathbf{Y}^{10}$	$Y^{10}$
84	Fishing Activities and Related Services	Y	Y	Y	Y	Y	Y	Y
85	Mining Activities and Related Services	Y	Y	Y	Y	Y	Y	Y
89	Other Resource Production and	Y	Y	Y	Y	Y	Y	Y
	Extraction							

Legend:

SLCUM Standard Land Use Coding Manual

Y Land use and related structures compatible without restrictions.

N Land use and regulated structures are not compatible and should be prohibited.

ADNL A-weighted day-night sound level

NZ Noise Zone

Y<sup>x</sup> (Yes with restriction) Land use and related structures generally compatible; see footnotes.

25, 30, 35 Land use and related structures generally compatible; measures to achieve noise level reduction (NLR) of

25, 30, or 35 must be incorporated into design and construction of structure.

25\*, 30\*, 35\* Land use generally compatible with NLR; however, measures to achieve an overall NLR do not necessarily

solve noise difficulties; additional evaluation is warranted.

NLR Noise level reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the

design and construction of the structure.

Notes:	
*	The designation of these uses as "compatible" in this zone reflects individual Federal agencies'
	consideration of general cost and feasibility factors as well as past community experiences and program
	objectives. Localities, when evaluating the application of these guidelines to specific situations, may have
	different concerns or goals to consider

- (a) Although local conditions may require residential use, it is discouraged in 65-70 ADNL and strongly discouraged in 70-75 ADNL. The absence of viable alternative development options should be determined and an evaluation indicating that a demonstrated community need for residential use would not be met if development were prohibited in these zones should be conducted prior to approvals.
- (b) Where the community determines that residential uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB (65-70 ADNL) and 30 dB (70-75 ADNL) should be incorporated into building codes and be considered in individual approvals. Normal construction can be expected to provide a 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 and closed windows year round. Additional considerations should be given to modifying NLR levels based on peak nose levels.
- (c) NLR criteria will not eliminate outdoor noise problems. However, building location and site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level transportation sources. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.
- 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.
- 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 noise-sensitive, use indicated NLR; if not, use is compatible.
- 6 No buildings.

1

2

3

- 7 Land use compatible provided special sound reinforcement systems are installed.
- 8 Residential buildings require a NLR of 25.
- 9 Residential buildings require a NLR of 30.
- Residential buildings are not permitted.
- In areas with ADNL greater than 80, land use not recommended, but if community decides use is necessary, hearing protection devices should be worn by personnel.

# SAMPLE MEMORANDUM OF UNDERSTANDING BETWEEN FORT RUCKER AND [LOCAL GOVERNMENT]

This Memorandum of Understanding between Fort Rucker and the [Local Government] is enacted to establish a mutually beneficial process that will ensure timely and consistent notification and cooperation between the parties on projects, policies, and activities. These parties have a mutual interest in the cooperative evaluation, review, and coordination of local plans, programs, and projects on Fort Rucker, its outlying aviation facilities, and in the surrounding region, including [Local Government]. This mutual interest derives from our common desire to ensure the sustainability of Fort Rucker's ability to train soldiers and modernize the installation's facilities as necessary to support future mission requirements, as well as sustaining the highest possible quality of life for area residents and providing for continued economic prosperity within the region. We see all these interests as mutually supportive, but in risk of coming into conflict with one another if growth and development are not guided by sound planning and judgment.

#### The [Local Government] agrees to:

- 1) Submit information to Fort Rucker on plans, programs, actions, and projects that may affect Fort Rucker or its outlying aviation facilities. This may include, but not be limited to the following:
  - Development proposals
  - Transportation improvements and plans
  - Sanitary waste facilities or any infrastructure necessary to support development
  - Open space and recreation
  - Public works projects
  - Land use plans and ordinances
  - Rezonings and variances
  - Towers or other construction exceeding 100 feet in height.
- 2) Submit to Fort Rucker for review and comment, project notification, policies, plans, reports, studies, and similar information on development, infrastructure, and environmental activities within proximity of Fort Rucker and its outlying aviation facilities as defined by [the 3,000 foot buffer and / or the noise / safety contours].
- 3) Consider Army comments as part of local responses or reports.
- 4) Include Fort Rucker in the distribution of meeting agendas for, but not limited to:
  - [Council / Commission] Meetings
  - Planning Commission Meetings
  - Board of Zoning Adjustment Meetings

5) Encourage development that is compatible with adjacent military training activities (e.g. agricultural, industrial, low-density residential) in the areas adjacent to Fort Rucker and its outlying aviation facilities and recognizing potential impacts due to high-density development, extension of infrastructure, and zoning changes.

#### Fort Rucker agrees to:

- 1) Submit information to [Local Government] representatives on plans, programs, actions, and projects which may affect the [City / County]. These may include, but not be limited to, the following:
  - Installation Master Plan
  - Installation Compatible Use Zone Studies
  - Noise Management Studies
  - Changes in existing installation use that may change off-post impacts, such as noise
  - Appropriate data on troop strength and activities for local plans, programs, and projects.
- 2) Submit to [Local Government] representatives for review and comment, project notification, policies, plans, reports, studies, and similar information on development, infrastructure, and environmental activities at Fort Rucker or its outlying aviation facilities. This requirement may be met for most projects as part of the Installation's National Environmental Policy Act (NEPA) review process.

This agreement will remain in effect until terminated by any of the parties. Amendments to this memorandum may be made by mutual agreement of all the parties. Review process details and appropriate forms may be developed to facilitate uniform and efficient exchanges of comments. This understanding will not be construed to obligate the U.S. Army or the [Local Government] to violate existing or future laws and regulations.

This agreement is approved by the [Local Government] and executed by the [Highest Elected Official].

[Mayor / Chair]	[Fort Rucker Representative]
Witness	Witness

# Area of Military Impact Real Estate Disclosure Form (SAMPLE)

The property at the following location is located within 3,000 feet of a Fort Rucker military facility or within a designated Clear Zone, Accident Potential Zone, Noise Zone, or other designated area associated with a Fort Rucker military facility. Therefore, the subject property may be exposed to periodic low-level military aircraft over-flights and impacts associated with aviation and military training activities.

Parcel Id #:			
Deed Book P	age		
Address:		_	
renter of the subject property) installation or within a designated area associated with	, (owner / agent of the subject property is located with a Fort Rucker military facility and margaret over-flights and impacts associated	hin 3,000 feet of one, Noise Zone, hay be exposed to	a military or other the
property) hereby certify that I agent of the subject property) installation or within a designated area associated with	, (prospective purchaser / le have informed that the subject property is located with ated Clear Zone, Accident Potential Zoh a Fort Rucker military facility and moraft over-flights and impacts associated	hin 3,000 feet of one, Noise Zone, aay be exposed to	(owner / a military or other o the
Owner / Agent	Purchaser / Lessee / Renter	Date	
Owner / Agent	Purchaser / Lessee / Renter	Date	
Signed before me on this the County of, Ala	day of	, 20	, in
	, Notary Public, State of Al	abama	
My Commission Expires on		(SEAL)	

# **Bibliography**

Draft Environmental Impact Statement Project HPP-1602 (507) US 231/I-10 Connector

Enterprise, Alabama Comprehensive Plan

Enterprise, Alabama Zoning Ordinance

Fort Rucker Installation Operational Noise Management Plan

Joint Land Use Study Guidance Manual

Newton, Alabama Zoning Ordinance

Ozark, Alabama Land Subdivision Regulations Manual

Ozark, Alabama Land Use Plan

Ozark, Alabama Zoning Ordinance

Planning and Urban Design Standards

Practical Guide to Compatible Civilian Development

U.S. Army Center for Health Promotion and Preventive Medicine Operational Noise Management Manual