COMPATIBLE LAND USE STUDY

FORT NOVOSEL

AND SURROUNDING COMMUNITIES

DECEMBER 2023

ACKNOWLEDGMENTS

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For sake of simplicity, all illustrations, maps, charts, and tables are referred to as figures. All figures are numbered by chapter.

ACRONYMS

AAD	Average Annual Day
AADT	Annual Average Daily Traffic
AAF	Army Airfield
AARC	Alabama Association of Regional Councils
ACUB	Army Compatible Use Buffer
ADNL	A-Weighted Day-Night Average Sound Level
AGL	Above Ground Level
AGRC	Aviation Gunnery Range Complex
AHP	Army Heliport
AICUZ	Air Installation Compatible Use Zone
ADEM	Alabama Department of Environmental Management
ALDOT	Alabama Department of Transportation
AMSL	above mean sea level
AO	Area of Operations
APZ	Accident Potential Zone
APZ-LZ	Accident Potential Zone-Landing Zone
AQ	Air Quality
AR	Army Regulation
AT	Anti-Terrorism / Force Protection
BASH	Bird Air Strike Hazard
BIO	Biological Resources
BRAC	Base Realignment and Closure
BUG	Backlight, Uplight, and Glare
CA	Climate Adaptation
CLUS	Compatible Land Use Study
CDNL	C-Weighted Day-Night Average Sound Level
CEDS	Comprehensive Economic Development Strategy
CLUS	Compatible Land Use Study
CoC	Chamber of Commerce
COM	Communication / Coordination
CP	Comprehensive Plan
CR	Cultural Resources
CZ	Clear Zone
dB	Decibel(s)
dBA	Decibels, A-Weighted
dBC	Decibels, C-Weighted
dBP	Decibels, Unweighted Peak
DEM	Digital Elevation Model
DISA	Defense Information Systems Agency
DNL	Day-Night Average Sound Level
DOC	Alabama Department of Corrections
DOD	Department of Defense
DSS	Dust, Smoke, Steam
DVIDS	Defense Visual Information Distribution Service
e.g.	for example
EA	Environmental Assessment
ED	Energy Development
ENMP	Environmental Noise Management Plan
ERG	Explosives Research Group
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FARP	Forward Arming and Refueling Point
FSC	Frequency Spectrum Capacity
FSI	Frequency Spectrum Interference / Impedance
FY	Fiscal Year
GIS	Geographic Information Systems
HA	Housing Availability
HOA	Homeowners Association
I	Interstate
i.e.	for example
ICEMAP	Installation Complex Encroachment Management Action Plan
ICUZ	Installation Compatible Use Zone
IDP	Installation Development Plan

IGA	Intergovernmental Agreements
IONMP	Installation Operational Noise Management Plan
INRMP	Installation Natural Resources Management Plan
JLUS	Joint Land Use Study
LAS	Competition for Land, Air, and Sea Space
LEG	Legislative Initiatives
LEQ	Equivalent Sound Level
LFA	Local Flying Area
LG	Light and Glare
LU	Land Use
LUPZ	Land Use Planning Zone
LZ	Landing Zone
MAR	Marine Environments
MCA	Military Compatibility Area
MCOD	Military Compatibility Overlay District
MIPD	Military Influence Planning District
MOA	Military Operating Area
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MTR	Military Training Route
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NLR	Noise Level Reduction
NM	Nautical Mile
NOE	Nap of the Earth
NOI	Noise
NPDES	National Pollutant Discharge Elimination System
NZ	Noise Zone
OEA	Office of Economic Adjustment
OLDCC	Office of Local Defense Community Cooperation
ONMP	Operational Noise Management Program
OSS/CC	Operations Support Squadron / Command Commander
PAO	Public Affairs Office
P.L.	Public Law
P4	Public-Public, Public-Private Partnerships
PT	Public Trespassing
REPI	Readiness Environmental Protection and Integration
RT	Remote Training
SA	Safety Zones
SARNAM	Small Arms Range Noise Assessment Model
SEARPDC	Southeast Alabama Regional Planning & Development Commission
SEL	Sound Exposure Level
SF	Square Feet
STC	Sound Transmission Class
STEM	Science, Technology, Engineering, and Math Program
TBD	To Be Determined
UAS	Unmanned Aerial System
US	United States
USA	United States Army
USAACE	United States Army Aviation Center of Excellence
USAHAS	United States Avian Hazard Advisory System
USAPHC	United States Public Health Command
V	Vibration
VFR	Visual Flight Rules
VO	Vertical Obstructions
WASH	Wildlife Aircraft Strike Hazard
WQQ	Water Quality / Quantity


Cairns Airfield

USAACE Chief of Staff, Col. Whitney Gardner, provides an overview of Fort Novosel missions and operations for the CLUS Committee.

CREDIT: SEARP&DC, photo by Scott Farmer

1. INTRODUCTION

Fort Novosel (formerly Fort Rucker) is located in southeast Alabama in Coffee and Dale Counties. It is home to ten commands including the U.S. Army Aviation Center of Excellence (USAACE). As such, it is the sole producer of Army aviators, maintainers, air traffic controllers, and unmanned system operators. Fort Novosel is unique in that its operations area is not restricted to the installation itself, but also includes numerous airfields, stagefields, and remote training sites located throughout a multi-county area. The widespread distribution of training sites increases the potential for conflicting land uses and personal impact. Fort Novosel is also an economic engine for the Wiregrass area. Development of a Compatible Land Use Study provides an opportunity for Fort Novosel and the surrounding jurisdictions to work together to craft a way forward for the mutual benefit of all.

1.1 What is a CLUS?

A compatible land use study (CLUS) can be defined as a cooperative land use planning effort between a military installation and the adjacent community, or communities, that is designed to promote community growth and development that is compatible with an installation's training and operational mission(s).

Historically, the US Department of Defense and the military service branches have operated within their own boundaries, so to speak. Military installations were built in undeveloped areas. Therefore, military training and operations such as flying, shooting, equipment movement, artillery detonation, and even aircraft testing could occur without consideration of the impact on those living in a nearby community. The growth of military operations, however, have changed the isolated scenario for existing installations. At one time, most jobs on an installation were filled by active duty personnel. Now, many of those jobs are now filled by civil service employees and/or contractor employees. This transference of work duties transformed a military installation from not just a governmental defense operation but to an econmic center supplying jobs to support a local economy. Further, defense operations have also expanded requiring additional personnel and services from both the military and public sectors. As a result of the growing economies, local development also grew with new housing construction closer to the installations for the convenience of personnel. With the new housing came the need for additional stores, restaurants, services and support industries -- all locating in the vicinity of military installation.

What were once isolated locations that suited the purposes and missions of the military operations are now areas of suburban sprawl that threaten the continued operations of the military installations, as well as the safety and well-being of residents. It is not feasible to relocate an installation to another isolated area, where the same growth pattern could occur yet again. Instead, military and local leaders must learn to work together to plan how land should or could be used so that both military installations and local communities can fully benefit from one another rather than limit each other's future.

The DOD Office of Local Defense Community Coordination offers a good place to start in building communication streams through development of a compatible land use study, which investigates existing land use compatibility issues and suggests actions to resolve the issues. The OLDCC provides funds to orchestrate a communications process between military installations, local governments, and communities. The purpose of the communication process is to recognize each other's needs and future growth plans and develop a road map of how each entity can best reach their goals.

The OLDCC has a long history of establishing successful collaborations between the military and local communities. In 1961 under President John F. Kennedy, the Office of Economic Adjustment (OEA) was formed and tasked with the mitigation of the negative impacts on communities of the closure of several military installations.[1] As a result of the Base Realignment and Closure (BRAC) process developed in the late-1980s and 1990s, OEA provided support to many local communities amidst defense industry cutbacks. Again in 2013, military operations were reduced as a result of the Budget Control Act of 2011. In an effort to avoid the economic fallout of the 1980s and 90s, the OEA began publishing "Defense Spending by State" report to help state and local leaders cope with potential loss of defense contracts through economic diversification or technological innovation. Through this report, local governments are able to see where defense money is going, so they can better understand the supply chain and the makeup of the labor force. The William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 included a provision to rename OEA to the Office of Local Defense Community Cooperation (OLDCC). The provision took effect upon enactment of the Act on January 1, 2021.

Figure 1.1: OLDCC Program Requirements

The Office of Local Defense Community Cooperation operates under the authority found at 10 U.S.C. 2391: **Military Base Reuse Studies and Community Planning Assistance.**

All types of assistance are eligibility-and-needs-based under this authority and are situation-driven. Assistance is designed to enable states, local governments, and instrumentalities of local government experiencing the effects of a Department of Defense program change or are managing compatibility issues near a local military installation to respond to these challenges.

Source: Office of Local Defense Community Cooperations, Our Process. https://oldcc.gov/our-process

The OLDCC offers a number of programs to help with the implementation of a CLUS. These programs of assistance are designed to specifically address the challenges of communities in supporting the defense mission. Programs that can be utilized to resolve site-specific issues include the following:

- Community Noise Mitigation Program
- Defense Community Infrastructure Pilot Program
- Defense Manufacturing Community Support
- Diversification and Modernization
- Installation Resilience
- Intergovernmental and Stakeholder Engagement
- Mission Realignment
- Public Schools on Military Installation, and
- Readiness and Environmental Protection Integration Program (REPI).

More information on the programs and projects of the Office of Local Defense Community Coordination can be found on their website, oldcc.gov, as well as how these programs are integrated into the CLUS process or how projects might be derived from the CLUS process.

1.2 Need for Fort Novosel CLUS

In most instances, a military installation is only concerned about the area within the compound boundaries and the land that is immediately adjacent to provide necessary clear zones for flight take-offs and landings and to ensure security for the installation and its missions. By the very nature of its primary mission in aviation training, the impact area of Fort Novosel extends well beyond the boundaries

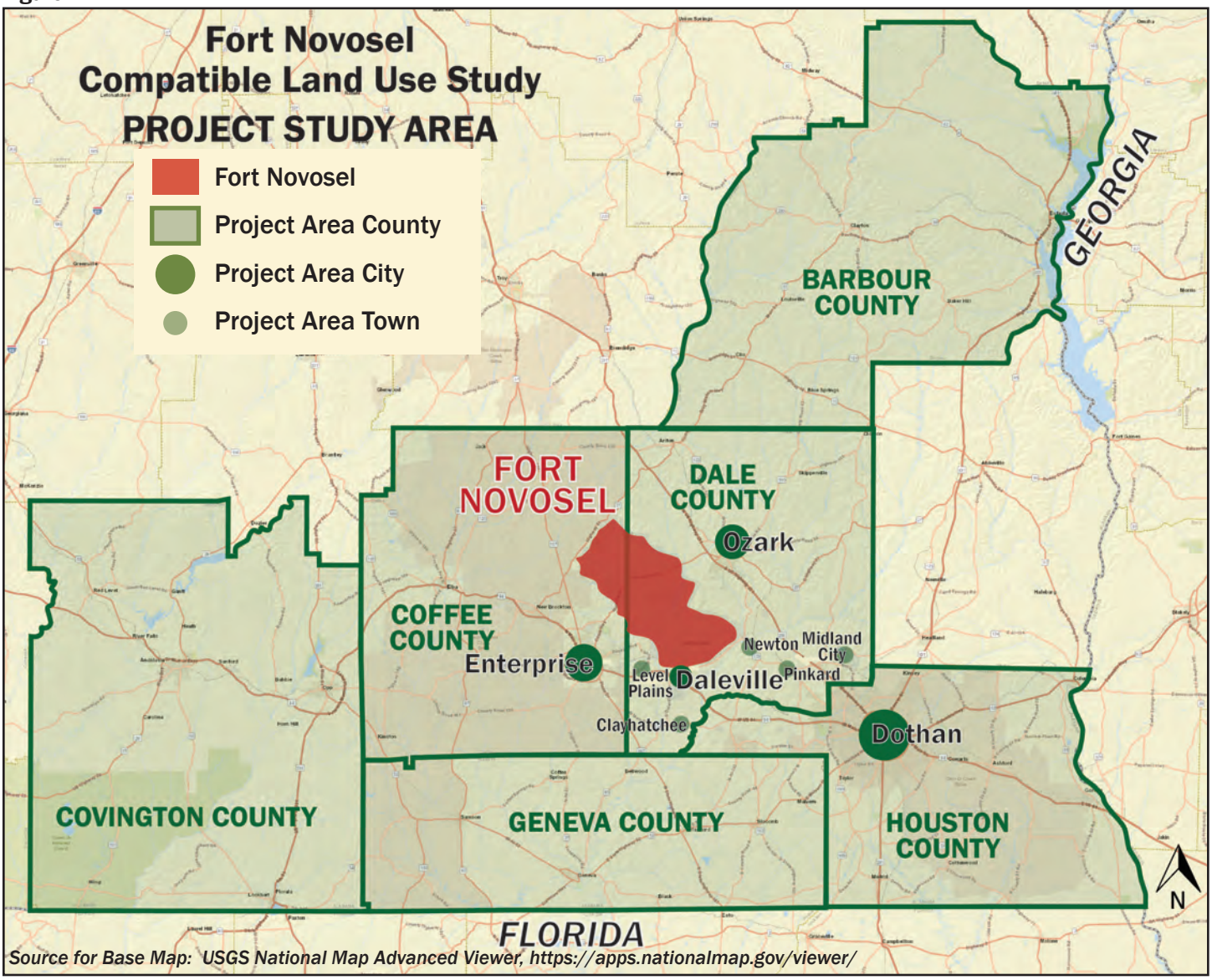
of the installation and adjacent lands. Unfortunately, some of the aviation training operations may disturb or disrupt the daily life and activities of local residents, businesses, agricultural operations and even the environment. Still, most residents see Fort Novosel as an asset to the area, namely for jobs and economic benefits, and support its continued growth. As Fort Novosel grows and expands it missions, the surrounding communities also grow to accommodate new housing, provide more services and retail, more healthcare and infrastructure. The continued growth of both the region and Fort Novosel, however, could be severely limited without a collaborative effort to ensure that communication is in place for the future so that all entities can grow and move forward together.

The Fort Novosel CLUS is a continuation of the 2009 Joint Land Use Study. Much change has occurred in the last 14 years and local leaders feel that considerable more change is on the horizon. The CLUS is a means to re-establish the lines of communication and networks to devise the necessary methodologies to encourage local growth and development that supports, and is conducive to, the missions of Fort Novosel.

1.3 Study Area

The project study area includes six counties encompassing a combined total area of 4,352 square miles, which is equivalent to 8.3 percent of the State of Alabama. The six counties are Barbour County, Coffee County, Covington County, Dale County, Geneva County and Houston County. While numerous cities and towns are located in the 6-county area, the study focuses on nine municipalities that are most affected by the operations of Fort Novosel. The four larger cities are Daleville, Dothan, Enterprise, and Ozark; and the five smaller towns include Clayhatchee, Level Plains, Midland City, Newton and Pinckard.

Figure 1.2



Source for Base Map: USGS National Map Advanced Viewer, https://apps.nationalmap.gov/viewer/

1.4 Stakeholder and Public Engagement

SEARP&DC Staff and Fort Novosel Leadership initially met to discuss preliminary issues and to define a strategy for development of the Fort Novosel CLUS. It was decided that the most effective course of action would be to bring stakeholders together for a series of in-depth meetings and to conduct the meetings within a short time frame to build and maintain a momentum for the study. The next task was to identify the stakeholders that needed to form the CLUS Committee. In general, it was determined that the CLUS Committee should be as apolitical as possible but include staff members who are responsible for local enforcement of building and development regulations, as well as stakeholders that are involved in housing, economic development, infrastructure and utility services. To make this happen, 90 stakeholders -- representing agriculture, federal and state agencies, developers and real estate, local governments, local airports, utilities, and Fort Novosel -- were invited to attend a series of five 3-hour meetings over a period of three months. The members of the CLUS Committee are listed with the Acknowledgments on the inside cover of this study. CLUS Committee members were notified by email prior to each meeting. Following each meeting, the presentation and comments were posted on the SEARP&DC Commission website. Public officials from each jurisdiction in the six counties were also invited to attend the fourth and fifth committee meetings.

In addition to the CLUS Committee Meetings, three public information meetings were conducted in three different counties on three different days, and at three different times. Notification for the public information meetings included a 3-column by 3.5-inch advertisement in six newspapers (one in each county of the study area), mailing of 675 postcards, 160 emails, and various news media and social website postings. The public information meetings provided an overview of the discussions of the previous four committee meetings and provided details on compatibility factors that had been identified by the CLUS and suggestions for how to resolve the issues. At each meeting, attendees were asked if anything had been missed by the CLUS Committee and if there were additional issues that needed to be considered or addressed.

To gather input from persons not serving on the CLUS Committee, a public survey was conducted over a two-week period between the third and fourth committee meeting. The public survey was a brief, non-scientific tool used to take the pulse of the general public about life with Fort Novosel. The survey was distributed by the CLUS Committee through emails and texts and posting on websites and social media. Additionally, one newspaper and two local news stations picked up the survey notice and encouraged the general public to participate. The survey garnered 434 responses. An overview of the survey responses is provided in Figure 4 and the detailed survey responses are provided in Appendix 2.

Figure 1.3 Notification for Public Information Meetings in Newspaper, Postcards and Emails.

Figure 1.4

Public Survey Results

Q1. In what county do you live?
- 44.0% = Coffee County
- 26.7% = Dale County
- 16.6% = Houston County
- 7.0% = Geneva County
- 3.5% = Covington County
- 2.1% = Barbour County

Q2. How many years have you lived in your home county?
- 1.6% = Less than One Year
- 7.1% = 1 to 3 Years
- 7.4% = 3 to 5 Years
- 10.8% = 5 to 10 Years
- 9.9% = 10 to 15 Years
- 10.4% = 15 to 20 Years
- 52.8% = More than 20 Years

Q3. Are you currently serving or have your previously served in the military; are you a veteran; or are you a military dependent?
- 52.5% = Yes
- 47.5% = No

Q4. Do you work on Fort Novosel or for a Fort Novosel contractor?
- 25.1% = Yes
- 62.2% = No
- 12.1% = Retired
- 0.7% = Unemployed

Q5. Are you fully aware of the mission and training activities that take place on Fort Novosel? What do you perceive to be the primary mission of Fort Novosel?
- 84.2% = Yes
- 15.8% = No

Q6. Do you feel that the presence of Fort Novosel is an economic benefit to the Wiregrass Region?
- 97.7% = Yes
- 2.3% = No

Q7. What do you think is the greatest benefit of having Fort Novosel in the area?

Economic Benefits, Jobs, Revenue and Taxes

Q8. What do you think is the worst impact that comes from having Fort Novosel in the area?

None, Helicopter Noise, Traffic Congestion, Target for Terrorist Attack, Potential for Helicopter Crash

Q9. Do you live within three miles of Fort Novosel or any of its airfields or stagefields?
- 56.4% = Yes
- 43.6% = No

Q10. Have you ever been disturbed by the mission, operations and training exercises that take place on Fort Novosel and in the surrounding area? If so, please use the slider bar below to indicate to what extent Fort Novosel activities disrupt your daily life?

Average = 16 out of 100

Q11. What Fort Novosel activity do you find most disruptive?

None, Helicopter Noise, Artillery Noise, Low Night Flights

Q12. Do you feel that Fort Novosel presents a safety issue to you and your family? If so, why?
- 7.0% = Yes
- 93.0% = No

Q13. Would you support continued growth and expansion of Fort Novosel? Use the slider bar below to indicate the level of your support.

Average = 87 out of 100

Q14. Do you know of any incompatible land uses surrounding Fort Novosel or its airfields and stage fields? If yes, please explain.
- 6.5% = Yes
- 93.5% = No

Q15. Do you think local governments should regulate how land around Fort Novosel is developed?
- 55.1% = Yes
- 44.9% = No

Q16. Do you feel that the local governments in the Wiregrass Region adequately support Fort Novosel?
- 93.6% = Yes
- 6.7% = No

Q17 Are you interested in learning more about how you might use your property for conservation purposes? If yes, please provide your name, phone number and/or email address below.
- 11.4% = Yes (Received 48 contacts)
- 88.6% = No

For detailed responses, see Appendix 2.

1.5 CLUS Goals and Study Organization

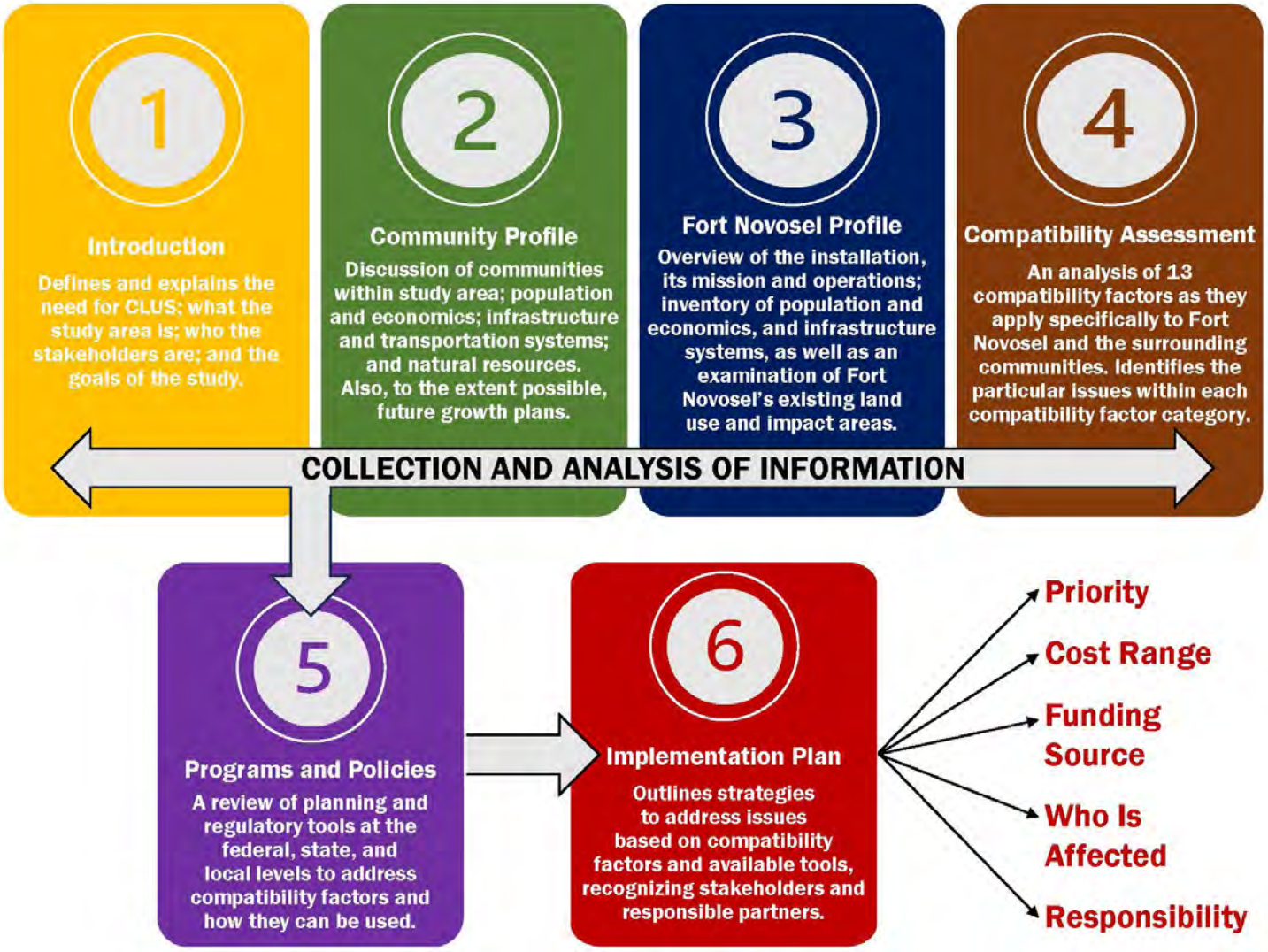
The purpose of the Fort Novosel CLUS is to recognize and address the overlap and interdependence between Fort Novosel and the communities that surround it in such a way that a mutually beneficial path of forward progress is clearly defined. To do so means the improvement of intergovernmental coordination and notification about future development near Fort Novosel and its flying areas. There are six distinct goals of this study:

- Educate elected officials and public leaders
- Improve intergovernmental coordination and communication
- Promote collaborative approach to land use plans
- Identify / develop legislative options
- Ensure infrastructure sustainability for Fort Novosel
- Continued evaluation of implementation

The Fort Novosel CLUS is organized so that each of the six chapters builds upon the previous chapter to culminate in an implementation plan in the final chapter. The first three chapters are focused on the provision of information about (1) the CLUS process, (2) the communities surrounding Fort Novosel, and (3) Fort Novosel. The fourth chapter, Compatibility Assessment, provides an analysis of the existing conditions based on a given set of compatibility factors. The fifth chapter provides a description of available tools at the federal (includes military), state and local levels and explains which compatibility factors the tools might be used to address. Finally, the sixth chapter provides an implementation plan that outlines individual strategies that will be necessary to address the issues that have been identified. Each strategy has been assigned a priority status, or time frame, a cost range, a potential funding source if available, as well as who will be affected, and who will be responsible for implementation. In addition to the six chapters of the study, there are seven appendices that provide more detailed information.

Figure 1.5

Organization of the Fort Novosel Compatible Land Use Study



2. COMMUNITY PROFILES

Fort Novosel and the communities surrounding it are located in a part of Alabama called the Wiregrass region. In actuality, the Wiregrass area, named for the native *Aristida stricta* which is commonly known as wiregrass due to its texture, extends from southeastern Alabama across southern Georgia and south into the Florida panhandle. Six of the nine Alabama counties that make up the state's Wiregrass region are included in this compatible land use study with Fort Novosel as a central fixture. Those counties are Barbour, Coffee, Covington, Dale, Geneva, and Houston. This profile provides insight into the population and development trends of the area based on the most recent census data, as well as other economic indicators.

2.1 Population Trends

The 6-county region included in the compatible land use study encompasses just over 4,350 square miles of land in southeast Alabama. The area has a combined 2020 population of 299,445 people according to the U.S. Census 2020 Decennial Census. The American Community Survey (ACS) 2021 5-Year Estimates reports a combined population of 298,194 people, which is 0.4 percent less than the 2020 Census, The combined study area makes up 8.3 percent of the land area of the state and 6.0 percent of the total state 2020 population.

Of the six counties in the study area, Covington County is the largest by land area, at 1,044 square miles, followed by Barbour County, at 905 square miles and Coffee County at 681 square miles. The remaining three counties are less than 600 square miles each. Houston County is the largest in terms of population, with a 2020 population of 107,202 people. In fact, the population of Houston County is more than twice the size of the next most populous counties -- Coffee County, with a population of 53,465 people, and Dale County, with a population of 49,326 people. The remaining three counties each have a population of less than 40,000 people.

In the 100-year time span between 1920 and 2020,the population of the 6-county region population increased by 57.9 percent from 189,600 people to 299,445 people. Between 1920 and 1930, the study area population increased by 8.4 percent, but between 1930 and 1950 the population decreased by 6.0 percent. The Army Aviation Center was relocated to what had been Camp Rucker in 1955 and the installation was renamed Fort Rucker. Following the reopening of Camp/Fort Rucker,

the combined population of the study area has not experienced a decrease. In fact, between 1950 and 2020, the population of the combined study area had increased by 55.0 percent. The individual counties have experienced different variations of the long-term population increases and decreases.

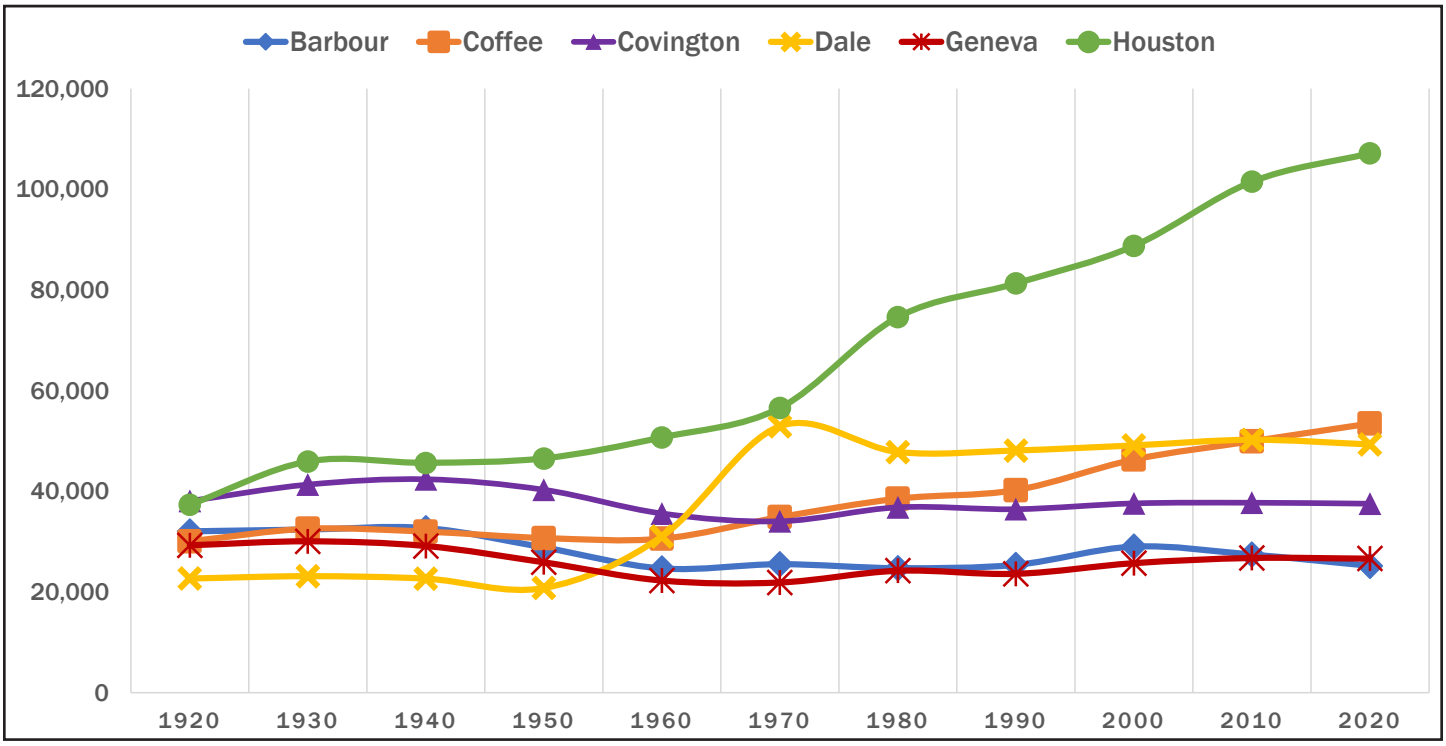
The county that has experienced the highest percentage of population growth since 1950 is Dale County, with a 136.8 percent population increase between 1950 and 2020. Dale County had the second highest increase in population number over the time period with an increase of 28,496 people, doubling the county's 1950 population of 20,830 people. Dale County had explosive population increases at 49.1 percent between 1950 and 1970; however, the county had a 9.7 percent population decrease between 1970 and 1980. Since that time, the Dale County population has remained relatively stable with both increases and decreases of less than 2.5 percent. Most recently, Dale County experienced a decrease of 1.8 percent, or a loss of 925 people, primarily due to people moving away.

Following Dale County, Houston County had the second highest percentage of change with a population increase of 130.3 percent and the highest increase in population number with an additional 60,648 people. Houston County had population increases upwards of 9.0 percent every

Figure 2.1: Population by County, 1920 to 2020

County	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020
Barbour	32,067	32,425	32,722	28,860	24,700	25,543	24,756	25,417	29,038	27,457	25,223
Coffee	30,070	32,556	31,987	30,717	30,583	34,872	38,533	40,240	46,315	49,948	53,465
Covington	38,103	41,356	42,417	40,333	35,631	34,079	36,850	36,478	37,631	37,765	37,570
Dale	22,711	23,175	22,685	20,830	31,066	52,938	47,821	48,130	49,129	50,251	49,326
Geneva	29,315	30,104	29,172	25,928	22,310	21,924	24,253	23,647	25,764	26,790	26,659
Houston	37,334	45,935	45,665	46,554	50,718	56,574	74,632	81,331	88,787	101,547	107,202
Study Area	189,600	205,551	204,648	193,222	195,008	225,930	246,845	255,243	276,664	293,758	299,445

Figure 2.2: Population Change Trendline



Source for Figure 1 and Figure 2: U.S. Census, Decennial Censuses, 1920 through 2020

decade since 1960 until 2020 when there was a 5.6 percent increase from 2010. Natural population increase (births over deaths) and net migration of people moving into the county are equal factors in Houston County's population growth between 2010 and 2020.

Coffee County also experienced population growth at a higher rate than the study area, at 74.1 percent and an increase of 22,748 people. Coffee County has not experienced a loss of population since 1970. Most often the population increases have been more than 10 percent, Between 2010 and 2020, Coffee County had a population increase of 7.0 percent with an additional 3,517 people. Net migration was the primary factor in Coffee County's population growth in the last decade.

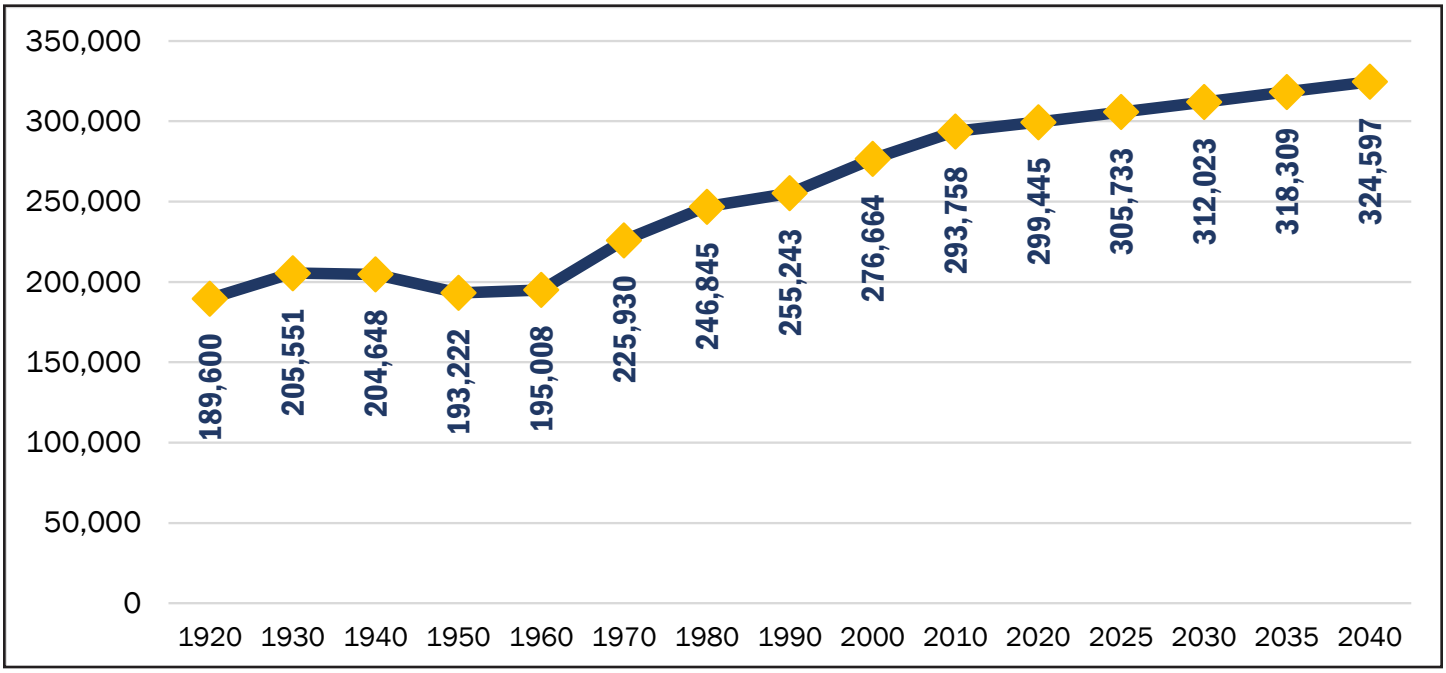
Geneva County had a small overall population increase of 2.8 percent between 1950 and 2020. While the county lost population between 1940 and 1970, the county had significant increases of 10.6 percent in 1980 and.9.0 percent in 2000. The 2020 Census showed a slight population decrease of 0.5 percent, or a loss of 131 persons. Between 2010 and 2020, Geneva County had positive net migration into county, but also had more deaths than births, accounting for the population decline.

Two counties in the study area showed a loss of population between 1950 and 2020, Covington County had a 6.9 percent population decrease and Barbour County suffered a decrease of 12.6 percent. In 1920, Covington County had the largest population base of the 6-county study area. With a 23.0 percent population increase between 1920 and 1930, Houston County became the largest county in the region. Covington County, remained as the second largest county in the area until 1970, when Dale County experienced a 70.4 percent population increase, making it the second largest county. In 1980 Covington County experienced a 8.1 percent increase after three decades of population loss. In 2020, Covington County had a 0.5 percent population decrease due to low in-migration and a significant natural decrease, indicating an aging population.

Barbour County has experienced both significant population increases, at 14.2 percent between 1990 and 2000, and significant decreases, with an 11.8 percent loss between 1940 and 1950 and a 14.4 percent loss between 1950 and 1960. Since 2000, the Barbour County population has declined by 13.1 percent with a loss of 3,815 people over the 20 year time frame, primarily due to population migration to other locations.

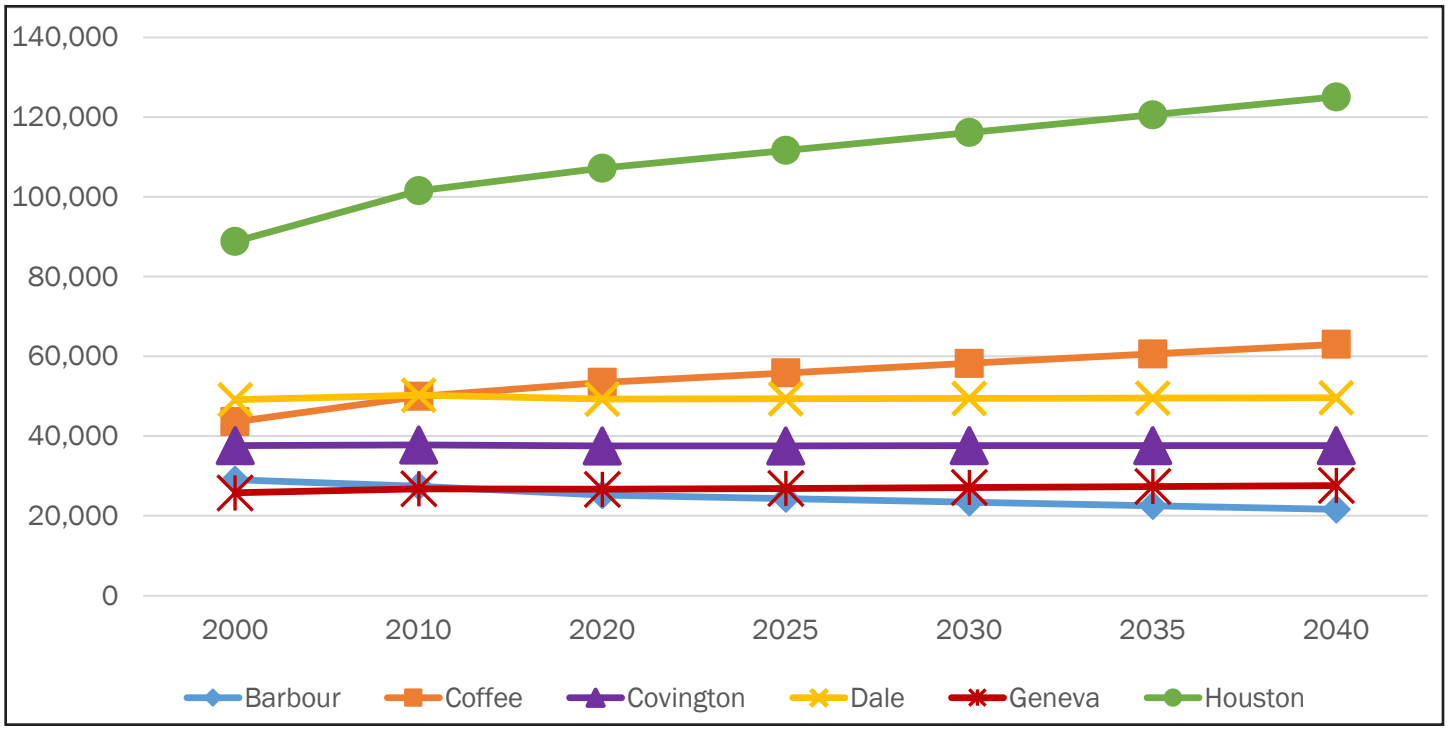
As a whole, the 6-county region is expected to continue to increase in population over the next 20 years. Population projections indicate an 8.4 percent increase by 2040, or an increase of 25,152 people. (See Figure 2.3) Between 2010 and 2020, the population increase in the combined area was primarily attributable to natural growth (births). In total, only 103 more people migrated into the area than left. In terms of migration, there were a net total of

Figure 2.3: Study Area Population Trends and Projections, 1920 to 2040



Source: U.S. Census, 2000, 2010 and 2020 Decennial Census; U.S. Census Bureau, Population Division and the University of Alabama's Center for Business and Economic Research. Release date: May 2021. https://cber.culverhouse.ua.edu/resources/alabama-demographics/

Figure 2.4: Population Projections by County, 2020 to 2040



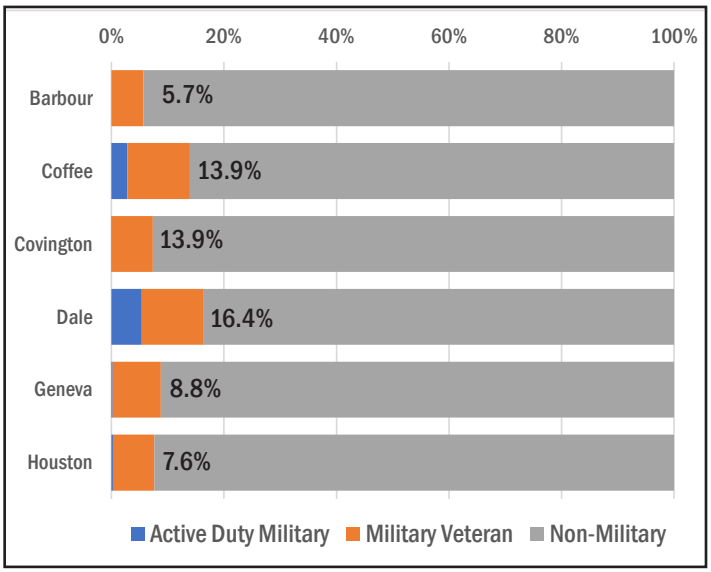
Source: U.S. Census, 2000, 2010 and 2020 Decennial Census; U.S. Census Bureau, Population Division and the University of Alabama's Center for Business and Economic Research. Release date: May 2021. https://cber.culverhouse.ua.edu/resources/alabama-demographics/

2,178 of international population who moved into the area (mostly Houston and Coffee Counties) as opposed to a net loss of 2,075 native population who left the area (Dale and Barbour Counties). The population projections do not indicate the type of growth that is expected to occur; moreover, it can be surmised that natural population growth will continue to be the major factor supplemented with net migration increases unless there is an additional economic reason for relocation to the area.

By 2040, the State of Alabama is expected to have an 11.2 percent population increase, as compared to the study area's projected 8.4 percent increase. Counties that are also expected to experience population growth are Coffee County, at 17.8 percent; Houston County at 16.7 percent; Geneva County, at 3.5 percent; Dale County, at 0.7 percent; and Covington County at 0.1 percent. Barbour County is the only county of the six that is projected to have a population decline by 2040. Projections indicated that Barbour County will have a 14.1 percent decrease with a loss of 3,559 people.

One population characteristic that must be recognized is the high percentage of residents, particularly in Coffee and Dale Counties, that are either active duty military or military veterans. As a basis for comparison, in the United States, 5.6 percent of the population are either active-duty military or veterans, and in Alabama 6.8 percent are active duty or veterans. In the 6-county study area, that percentage is 10.1 percent. In Dale County, 16.4 percent of the population are active duty military or veterans; and in Coffee County, the percentage is 13.9 percent. There is a total of 4,505 active duty military personnel in the study area, most of which are located in Coffee County, at 1,500 persons, and in Dale County, at 2,659 persons. There are a total of 25,633 veterans. While most of the veterans are still located in Coffee and

Figure 2.5: Military-Related Population



Source: U.S. Census, 2021 American Community Survey 5-Year Estimates, Table DP02: Selected Social Characteristics and Table DP03: Selected Economic Characteristics

Dale Counties, the percentage of the population that are veterans in the remaining four counties is higher than that of the state and nation. Note that these numbers do not include the spouses and families that accompany military personnel and veterans. This component of the study area population brings a diversity and cultural awareness that, most likely, would not otherwise be present. Additionally, the military population brings a skilled labor force as well as an increased base population for retail activity.

There are 53 municipalities in the study area with populations ranging from 70 people in Libertyville in Covington County to 70,318 in Dothan in Houston County. Additionally, there is the Fort Novosel Census Designated Place (CDP). A census designated place is similar to an incorporated town or city, but does not have a legally defined boundary or an active, functioning governmental structure. It is used to represent unincorporated communities. Of the 53 municipalities, only four have a population of 10,000 people or more: Dothan, Enterprise, Eufaula, and Ozark. Half of the municipalities, 26, have a population of less than 1,000 people. Municipalities that are most impacted by the presence of Fort Novosel include the Cities of Daleville, Dothan, Enterprise and Ozark and the Towns of Clayhatchee, Level Plains, Midland City, Newton and Pinckard.

More than two-thirds of the study area population, at 68.3 percent, lives within one of the 53 incorporated cities or towns, leaving less than 100,000 people living in an unincorporated part of the 6-county study area. Of the total population living in a municipality, 61.1 percent live within

Figure 2.6: Incorporated vs Unincorporated

Area	2021 Population	Population in Incorporated Area	Population in Unincorporated Area
Barbour County	25,259	17,323	7,936
		68.6%	31.4%
Coffee County	53,043	33,694	19,349
		63.5%	36.5%
Covington County	37,490	20,456	17,034
		54.6%	45.4%
Dale County	49,443	33,510	15,933
		67.8%	32.2%
Geneva County	26,604	12,661	13,943
		47.6%	52.4%
Houston County	106,355	86,112	20,243
		81.0%	19.0%

Source: U.S. Census, 2021 ACS 5-Year Estimates, Table DP05.

Figure 2.7 Municipalities Ranked by Population Size

Rank	County	Municipality	Population
1	Houston	Dothan	70,318
2	Coffee	Enterprise	28,242
3	Dale	Ozark	14,396
4	Barbour	Eufaula	12,753
5	Covington	Andalusia	8,764
6	Covington	Opp	6,671
	Dale	**Fort Novosel CDP**	**5,912**
7	Dale	Daleville	*4,912*
8	Geneva	Geneva	4,208
9	Coffee	Elba	3,449
10	Geneva	Hartford	2,630
11	Houston	Taylor	2,581
12	Barbour	Clayton	2,512
13	Houston	Ashford	2,476
14	Houston	Kinsey	2,364
15	Houston	Cowarts	2,196
16	Dale	Midland City	1,901
17	Dale	Level Plains	1,826
18	Geneva	Slocomb	1,816
19	Covington	Florala	1,779
20	Houston	Rehobeth	1,713
21	Geneva	Malvern	1,711
22	Dale	Newton	1,606
23	Geneva	Samson	1,567
24	Houston	Webb	1,378
25	Coffee	New Brockton	1,210
26	Barbour	Clio	1,195
27	Houston	Cottonwood	1,155
28	Houston	Columbia	876
29	Coffee	Kinston	793
30	Dale	Pinckard	666
31	Dale	Ariton	660
32	Dale	Clayhatchee	637
33	Covington	River Falls	603
34	Dale	Grimes	589
35	Barbour	Louisville	562
36	Covington	Babbie	506
37	Houston	Avon	490
38	Covington	Red Level	462
39	Dale	Napier Field	405
40	Geneva	Black	395
41	Covington	Horn Hill	291
42	Houston	Gordon	287
43	Houston	Madrid	278
44	Covington	Heath	274
45	Covington	Lockhart	264
46	Covington	Carolina	255
47	Covington	Sanford	235
48	Barbour	Bakerhill	216
49	Geneva	Coffee Springs	197
50	Covington	Gantt	143
51	Covington	Onycha	139
52	Barbour	Blue Springs	85
53	Covington	Libertyville	70

Source: U.S. Census, 2021 ACS 5-Year Estimates, Table DP05.

one of the nine study area municipalities. Houston County has the highest percentage of population living within a municipality. There are 12 municipalities in the county, with Dothan being the largest. Geneva County has the largest percentage of population living in unincorporated areas, at 52.4 percent. There are seven municipalities in Geneva County. The following is a discussion of each of the nine municipalities included in the study area.

- **Town of Clayhatchee**

Located in southwest Dale County, Clayhatchee is a small town formed along Alabama Highway 85 (north-south access) and Alabama Highway 92 (east-west access). The town encompasses approximately 2.72 square miles and has a population density of approximately 171.5 persons per square mile. The Town of Clayhatchee was incorporated in April 1967, although the area was settled in the 1830s and the first post office was opened in 1878. The Clayhatchee Town Hall was constructed in 1972. Clayhatchee lies directly south of Cairns Airfield, with Town Hall being two miles from the center of the airfield.

- **City of Daleville**

Located in Dale County, Daleville lies outside the southern gate to the Fort Novosel main installation and wraps around three-fourths of the Cairns Airfield boundaries in the southern part of the city. The Daleville Gate is one of two main gates that include a visitor center. Main thoroughfares include US Highway 84, which travels east-west through the center of the city between Fort Novosel and Cairns Airfield; Alabama Highway 85, which travels north to Fort Novosel and south along the western side of Cairns Airfield; and, Alabama Highway 134 which runs east-west in the northern part of the city and intersects US Highway 84 near the western corporate limits.

The Daleville community dates back to 1827, however incorporation did not occur until 1912, which was rescinded in 1916. The city was incorporated again in 1958, shortly after then Fort Rucker was reopened with the Army Aviation Center. In 1960, Daleville had a population of 693 persons. By 1970, the population had exploded to 5,182 people due to both natural population growth and annexation of nearby land. Population change has seesawed each decade since. Daleville is still very much a military town and its economic well-being in intrinsically tied to Fort Novosel.

- **City of Dothan**

Dothan is the largest city in the study area. Dothan is also the largest city in southeast Alabama and the only metropolitan statistical area (MSA) in the Wiregrass region. Located in Houston County, Dothan is the county seat and an economic hub for many of the surrounding smaller cities and towns. While the City of Dothan has a 2020 population of 71,072 persons, the Dothan MSA population is more than twice that size at 151,007 persons. The Dothan MSA area includes Geneva, Henry and Houston Counties. The population of Dothan has steadily increased with no population losses in the more than 138 year history of the city.

The area that is now Dothan was initially settled in the 1830s as a timber town. The settlement did not thrive and was mostly abandoned by the time of the Civil War. During Reconstruction Era, the settlement was the site of a local Pony Express route and the area began to grow. The City of Dothan was incorporated in 1885 as a center of agricultural production and transport, primarily peanuts, cotton, and lumber. By the 1930s, small industries and retail were being added to the economic climate. In the 1950s, residential growth increased as a result of what was then Camp Rucker. Population growth became even greater with the permanent location of Fort Rucker and the Army Aviation Center. Fort Rucker was renamed as Fort Novosel in April 2023. Dothan experienced yet another population surge, at 32.7 percent, between 1970 and 1980 when the Southern Company constructed the Farley Nuclear Plant just east of the city. Population growth has continued in Dothan since 1980 at significant but lower rates of 8.5 percent to 13.4 percent per decade.

Today, Dothan is one of the ten largest cities in Alabama and is the only large city without access to an interstate. It is the center of growth in the Wiregrass region with transportation routes that include US Highways 84, 231, and 431 and Alabama Highways 52 and 53 radiating out across the state of Alabama into Georgia and Florida and points beyond. Dothan has commercial air service at the Dothan Regional Airport, and Class I rail service via CSX Transportation, Inc. and two Class III rail lines.

- **City of Enterprise**

Enterprise is located primarily in Coffee County to the west of Fort Novosel. A portion of Enterprise extends east towards Fort Novosel into Dale County. There are two gates to the main installation in Enterprise. One, the Enterprise Gate is located at the east end of Rucker Boulevard; and two, the Faulkner Gate which is located at the end of Shellfield Road just outside the northeast corporate boundary. Additionally Shell Airfield is located

the northern part of the city, west of the Faulkner Gate on Shellfield Road.

The City of Enterprise is the center of the Enterprise Micropolitan Area, which is a labor market and statistical area, designated by the U.S. Census, centered on an urban cluster with a population of at least 10,000 but fewer than 50,000 people. In 2020, the City of Enterprise had a population of 28,711 persons, and the Enterprise Micropolitan Area, which includes Coffee County, had a 2020 population of 53,043 persons. Enterprise incorporated as a municipality in 1896 with a population of 250 people. The city had agricultural roots and was the center of the state's cotton economy. The location of a railway in 1898 brought rapid population growth with new industry and businesses. In 1915 an invasive insect from Mexico, the boll weevil, devastated the cotton crop and threatened the region's economy. Farmers used concepts developed by George Washington Carver, and began rotating their crops to include peanuts and corn. The results were so successful that Enterprise erected a monument to the boll weevil in 1919.

In the 1940s during World War II, Camp Rucker was opened bringing another dimension to the local economy and population growth. Enterprise experienced its most significant population growth since incorporation due to the location of the Army post, with a 67.4 percent increase between 1940 and 1950, a 56.6 percent population increase between 1950 and 1960, and another 36.6 percent increase between 1960 and 1970. Since that time, Enterprise population growth has continued in a positive pattern, with increases between 5.2 percent and 25.4 percent each decade over the last 50 years.

■ Level Plains

Level Plains is located in southwest Dale County between Enterprise to the west and Fort Novosel to the east. Although the Level Plains community has existed since the early 1900s, the Town of Level Plains was not incorporated until June 1965. Prior to incorporation the Level Plains community had a school building, a post office, and a cotton gin and grist mill. The Town had a population of 1,007 by 1970, however, the population trend has been somewhat volatile over the last 50 years with significant population losses in the 1970s and prior to 2020. Conversely, Level Plains also experienced significant population growth in the 50-year time period, at 69.9 percent in the 1980s, and a 35.0 percent population increase between 2000 and 2010.

■ Midland City

The Town of Midland City is located in southeastern Dale County along US Highway 231. The town derives its name from one of two sources: (1) from the Midland Railroad Corporation that brought a rail line through the area in the late 1800s or (2) from its location approximately halfway between Montgomery, Alabama and Thomasville, Georgia. The name is fitting as the town is now almost halfway between two economic centers also located on US Highway 231: Ozark, 13 miles to the northwest, and Dothan, nine miles to the southeast. The town is also bisected by Alabama Highway 134 which leads east to Headland and west to Pinckard and Newton.

The Town was incorporated in 1890. Since that time, Midland City has mostly enjoyed population growth, with significant increases in 1910, at 77.3 percent; in 1920, at 23.4 percent; in 1950, at 21.2 percent; in 1970, at 37.2 percent; and in 1980, at 62.4 percent. The town has also suffered some population decreases, but none as significant as the population increases. In 1940, there was a population loss of 108 people, or a 14.3 decrease. More disturbing is the smaller but consecutive population losses between 1980 and 2020. During that 40-year time period, there was only one decade with a population growth. Between 2000 and 2010, the Midland City population increased by 641 persons, or 37.6 percent.

■ Newton

In south-central Dale County, Newton is located between Ozark to the northwest, Fort Novosel to the immediate northwest, and Pinckard to the immediate southeast. Although Newton has good accessibility by US Highway 231 and Alabama Highways 123 and 134, the town has limited growth potential because of the adjacent military and corporate boundaries.

Newton is one of the oldest municipalities in the study area with an incorporation date of 1887. The community itself, however, was founded in 1843. Prior to the creation of Geneva County from the southern portion of Dale County, Newton was the county seat. When Geneva County was formed, Newton was no longer the geographical center of the county and the county seat was moved to Ozark in 1870. Today Newton remains as a small farming town with a 2020 population of 1,607 people. Population growth has been sporadic in the town. Newton has had five decades of population loss with the most significant being a 17.4 percent population decrease between 1970 and 1980. Newton has also had nine decades of population growth, four of which were increases of 20.0 percent or

more. In 1920, Newton had a population increase of 29.8 percent; in 1950, an increase of 20.9 percent; and in 1960 and increase of 28.6 percent. The most significant growth occurred, however, between 1960 and 1970 when Newton almost doubled its population of 958 people with a gain of 907 people, or a 94.7 percent increase.

■ Ozark

The City of Ozark is the principal city of the Ozark Micropolitan Area, which includes Dale County, and is also a part of the Dothan-Ozark Combined Statistical Area. Ozark was first settled in 1822 is one of the older communities in the study area. The town was incorporated in 1870 and became the county seat of Dale County. Ozark is located in central Dale County and is primarily accessed by US Highway 231, which runs northwest to Montgomery and south to Panama City, Florida. Other major access routes include Alabama Highways 27, 105, and 123. Portions of the west side of Ozark abuts the east side of the Fort Novosel installation. There is one main gate to the post with a visitor center located on Andrews Avenue in Ozark.

Up until 1970, the City of Ozark enjoyed abundant population growth with the most significant increases occurring between 1880 and 1890, at 133.4 percent, and between 1950 and 1960, with an increase of 82.0 percent, which was most likely due to the opening of Fort Rucker as a permanent Army post. Ozark also had three decades with population increases greater than 40 percent: between 1900 and 1910, at 42.0 percent; between 1940 and 1950, at 45.5 percent; and between 1960 and 1970, at 42.2 percent. Another way to look at the population increase related to Fort Novosel is that between 1950 and 1970, the City of Ozark population increased by 158.8 percent with a gain of 8,317 in 20 years. Since 1970, however, the Ozark population has been steadily declining with decreases ranging from 1.4 percent of 3.6 percent. The one exception in that 50-year period is a population increase of 17.0 percent between 1990 and 2000.

■ Pinckard

Located in southeast Dale County, Pinckard is a small town formed along US Highway 231 between Ozark and Dothan. The town encompasses approximately 5.3 square miles and has a population density of 109.0 persons per square mile. The town had its beginnings as a new office location for the Midland Railroad Company as the company expanded a line to Thomasville, Georgia in the 1880s. The town was incorporated in 1892.

The population of Pinckard has had significant highs (an increase of 79.1 percent in 1920), as well as significant lows (a decrease of 34.7 percent in 1930). Despite all the ups an downs, the population of Pinckard has never been more than 771 people during its 131 year history, nor has it ever been less than 515 people. Most recently, the Town of Pinckard suffered a 10.0 percent population decrease between 2010 and 2020 with a loss of 65 people.

Figure 2.8: Municipal Historical Population

YEAR	Clayhatchee	Daleville	Dothan	Enterprise	Level Plains	Midland City	Newton	Ozark	Pinckard
1880	----	----	----	----	----	----	469	512	----
1890	----	----	247	----	----	----	520	1,195	----
1900	----	----	3,275	610	----	304	457	1,570	711
1910	----	----	7,016	2,322	----	539	524	2,229	541
1920	----	----	10,034	3,013	----	665	680	2,518	969
1930	----	----	16,046	3,702	----	755	661	3,103	633
1940	----	----	17,194	4,353	----	647	616	3,601	555
1950	----	----	21,584	7,288	----	784	745	5,238	515
1960	----	693	31,440	11,410	----	854	958	9,534	578
1970	505	5,182	36,733	15,591	1,007	1,172	1,865	13,555	609
1980	560	4,250	48,750	18,033	867	1,903	1,540	13,188	771
1990	411	5,117	53,589	20,123	1,473	1,819	1,580	12,922	618
2000	501	4,653	57,737	21,178	1,544	1,703	1,708	15,119	667
2010	589	5,295	65,496	26,562	2,085	2,344	1,511	14,907	647
2020	466	4,866	71,072	28,711	1,825	2,239	1,607	14,368	582

Source: U.S. Census, Decennial Censuses, 1880 through 2020

2.2 Housing Trends

According to the 2021 American Community Survey 5-Year Estimates, there are a total of 138,453 housing units in the 6-county study area. Houston County has the most housing units, at 48,940 units, which equates to 35.3 percent of the total. Houston County is followed by Coffee County and Dale County in the percentage of total housing units, at 17.3 percent and 16.5 percent, respectively. Barbour County, at 8.4 percent, and Geneva County, at 9.0 percent, have the lowest percentage of the total housing stock in the study area.

Of the total housing units in the study area, 82.9 percent are occupied and 17.1 percent are vacant. The United States has an 11.2 percent housing vacancy, and the State of Alabama has a 16.5 percent vacancy rate. Housing vacancy is highest in Covington County, at 23.3 percent, and in Barbour County, at 22.1 percent. Both of these counties are home to recreational lakes with seasonal homes that could partly account for the high housing vacancy. Regardless, the vacancy rate in the remaining counties, which ranges from 14.4 percent in Coffee County to 17.5 percent in Geneva County, is still high in comparison to the state and nation.

The high vacancy rates can be an indicator of substandard housing, which can be defined in census terms as overcrowded by having more than one person per room or as lacking complete kitchen or plumbing facilities. According to the 2021 ACS data, it is estimated that 1.7 percent of the total occupied housing units, or 1,985 households, in the study area are overcrowded. Overcrowding is worst in Barbour County, where 4.4 percent of the households are overcrowded. The data also estimates that 0.8 percent of the occupied housing units in the study area lack complete kitchen or plumbing facilities. The percentage of units without kitchen or plumbing facilities is highest in Covington County, at 1.9 percent or 269 units. Therefore,the two counties with the highest vacancy rates also have the highest indicators of substandard housing. The combination of high vacancy, substandard, and overcrowded conditions is most likely due to a lack of alternative choice in safe and affordable housing options.

The median owner-occupied housing value in the study area is $122,267, which is 77.8 percent of the state's median housing value of $157,100 and only 49.9 percent of the national median housing value of $244,900. Despite the low housing values of the area, there are still those who have trouble covering housing costs. The US Department of Housing and Urban Development (HUD) defines a housing cost burden as a household that spends 30 percent or more of the household income on housing cost. It is estimated that 24.1 percent of the households in the study area experience a housing burden. This percentage ranges from 20.0 percent in Coffee County to 26.5 percent in Houston County.

Despite the lower housing values, as compared to the state and nation, and the high vacancy rates, stakeholders cite housing availability and housing price as issues to be

Figure 2.9: Census Housing Characteristics

Area	Total Housing Units	Occupied	Owner-Occupied	Renter-Occupied	Vacant	Housing Value	Housing Cost Burden
Barbour County	11,667	9,088	5,654	3,434	2,579	$89,500	2,154
		77.9%	62.2%	37.8%	22.1%		25.8%
Coffee County	23,934	20,478	14,153	6,325	3,456	$157,700	3,905
		85.6%	69.1%	30.9%	14.4%		20.0%
Covington County	18,627	14,296	10,681	3,615	4,331	$111,900	3,037
		76.7%	74.7%	25.3%	23.3%		22.9%
Dale County	22,790	19,470	11,617	7,853	3,320	$112,900	4,511
		85.4%	59.7%	40.3%	14.6%		24.3%
Geneva County	12,495	10,303	7,619	2,684	2,192	$115,300	2,120
		82.5%	73.9%	26.1%	17.5%		22.1%
Houston County	48,940	41,095	26,925	14,170	7,845	$146,300	10,451
		84.0%	65.5%	34.5%	16.0%		26.5%
CLUS Study Area	138,453	114,730	76,649	38,081	23,723	$122,267	26,178
		82.9%	66.8%	33.2%	17.1%		24.1%

Source: U.S. Census, 2021 ACS 5-Year Estimates, Table DP04: Selected Housing Characteristics and SEARPDC Calculations.

addressed in the Fort Novosel CLUS. There are two primary real estate markets in the study area for which real estate trend data is available. The Dothan market area includes Coffee, Dale, Geneva, Henry and Houston counties with market information provided by the Southeast Alabama Association of Realtors. The Wiregrass market area includes Coffee, Dale and Geneva counties and the municipalities therein with market information provided by the Wiregrass Area Board of Realtors. Both of these associations provide local market data to the Alabama Center for Real Estate (ACRE) located in the University of Alabama, Culverhouse School of Business. ACRE then provides detailed real estate trend data and analysis for markets across the state.

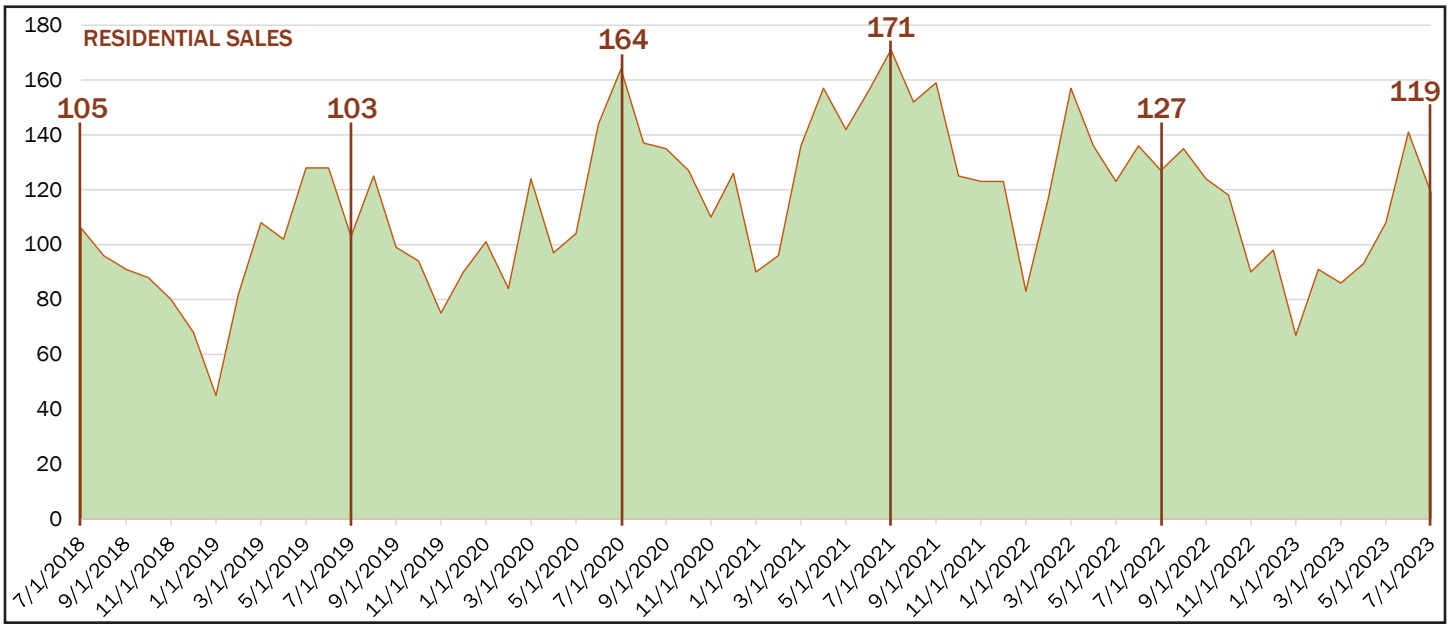
In May 2019, ACRE ranked the Wiregrass region as the number one market for home price appreciation, at 29.0 percent increase during February 2019 over the previous year. In comparison, the statewide average was 3.0 percent increase and the national average was 3.6 percent increase. ACRE reported that inventory shortages in the Wiregrass played a significant role in driving prices upwards. Residential inventory in the area was down 21.9 percent during February 2019, while the statewide inventory dropped 8.9 percent. As seen in Figure 2.10, overall residential sales continued to increase through July 2021 when residential sales peaked at 171 sales. Since that time, residential sales have slowly declined with a 12.2 percent decrease in 123 sales May 2022 to 108 sales in May 2023.

During the same time frame, residential home sales in the Dothan region peaked at 204 sales in July 2020 and has decreased since. The July 2023 residential sales of 147 units marked a 24.2 percent decrease from 194 sales in July 2022. Residential inventory in the Dothan region, however, increased 11.7 percent from 334 units in July 2022 to 373 units in July 2023.

Although the number of sales is slowly decreasing in both the Wiregrass and Dothan regions, the median sales price continues to increase. The Wiregrass region had a 6.1 percent increase from the July 2022 median sales price of $212,000 to $225,000 in July 2023. The Wiregrass region median sales price 5-year average is $174,107 and the 3-year average is $191,345. The Dothan region had a 6.0 percent in median sales price from $215,000 in July 2022 to $228,000 in July 2023. The Dothan region median sales price 5-year average, at $175,930, is slightly higher than that of the Wiregrass region; and the 3-year average, at $190,217, is slightly lower than that of the Wiregrass region.

According to an August 2023 article in ACRE's *Alabama Real Estate Journal*, statewide forecasts for residential growth are weakened by continued increases in interest rates, construction costs and cap rates. For the Wiregrass Region, the sales transactions for 2022, at 1,444 units, was 15.7 percent above the ACRE forecast, but was still an 11.4 percent decrease from the previous year's total sales of 1,630 units. For the Dothan region, the sales

Figure 2.10: Wiregrass Region Total Residential Sales



Source: University of Alabama, Culverhouse College of Business, Alabama Center for Real Estate, Alabama Real Estate Journal, Monthly New Homes Sales Data: Wiregrass Region, Alabama "New Home Sales Fall Below Pre-Covid Levels in July", August 2023. https://acre.culverhouse.ua.edu/2023/08/25/alabamas-new-home-sales-fall-below-pre-covid-levels-in-july/

transactions for 2022, at 1,825 units, was 7.7 percent below the ACRE forecast, and was a 10.3 percent decrease from the previous year's total sales of 2,034 units.

2.3 Economic Trends

2021 American Community Survey data estimates that there are 237,749 persons in the CLUS study area that are age 16 and older -- working age. Of these, 1.9 percent are in the armed forces and 53.0 percent are in the civilian labor force. Of those in the labor force, 6.0 percent are unemployed, as compared to 5.4 percent unemployed in the state and 5.5 percent unemployed in the nation. The unemployment rate is highest in Barbour County, at 8.6 percent, and Dale County, at 8.2 percent, and is lowest in Geneva County, at 3.5 percent.

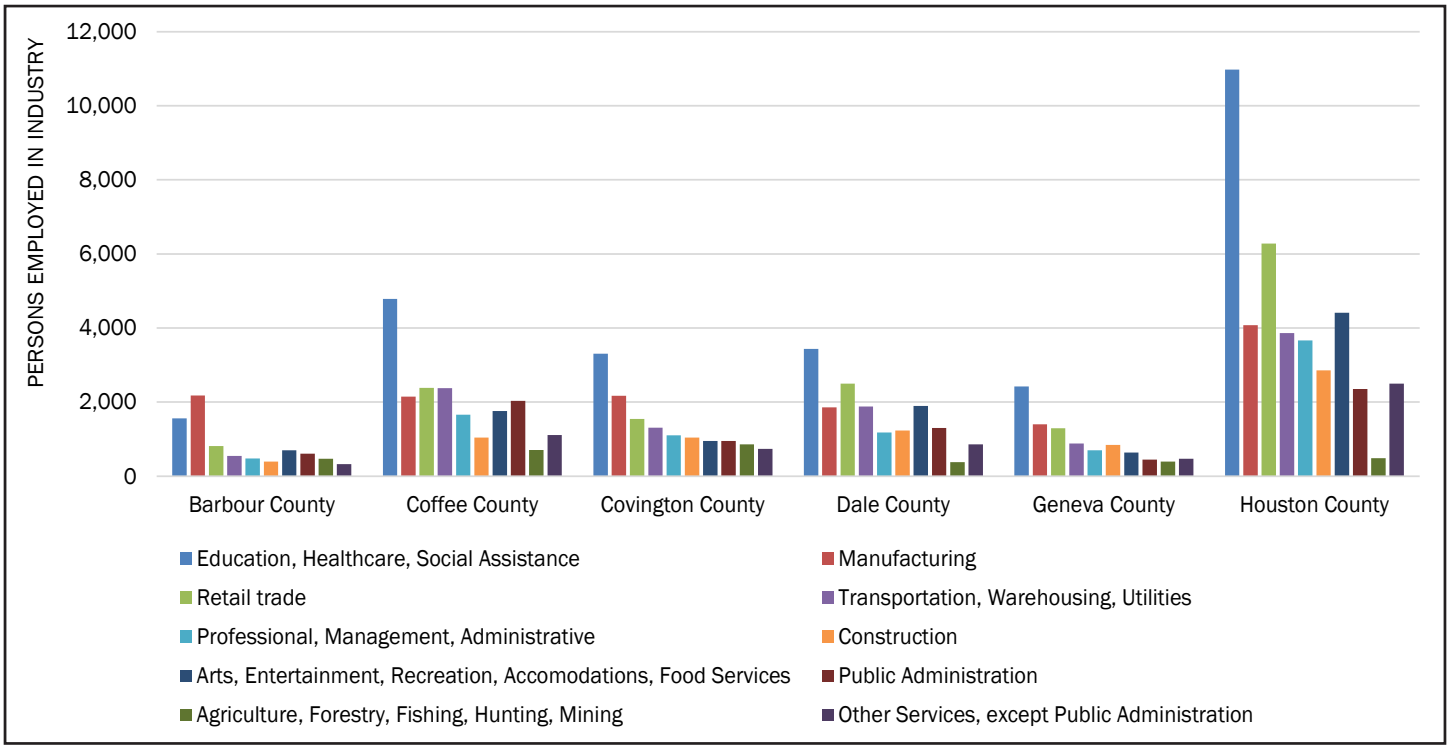
The Alabama Department of Labor, in cooperation with the Bureau of Labor Statistics, also provides monthly unemployment data for counties in Alabama. As of July 2023, the combined 6-county study area has a civilian labor force of 126,453 persons, which is a 0.2 percent increase from July 2022. Furthermore, the July 2023 report shows that the civilian labor force unemployment is 2.4 percent, which is a healthy decrease from 3.0 percent in June 2022. Dale County has the lowest unemployment rate, at 2.2 percent, as of July 2023. Coffee, Geneva and Houston counties all had an unemployment rate equal to the state, at 2.3 percent, followed Covington County, at 2.5 percent. Barbour County's unemployment rate of 4.1 percent was the only county higher than the nation's rate of 3.8 percent.

According to the 2021 ACS data, the top employment industries are education; healthcare and social assistance; retail trade; manufacturing; transportation, warehousing and utilities; and arts, entertainment, recreation, accommodations, and food services. The education, healthcare and social assistance industry employs the most workers in all counties except Barbour County, where manufacturing is the number one industry.

Industry clusters that employ 5,000 or more workers in the 6-county area include local health services, at 15,518 employees; local hospitality establishments, at 10,261 employees; government, at 8,279 employees; local real estate, construction and development, at 6,253 employees; local education and training, at 5,819 employees; local commercial services, at 5,632 employees; and local motor vehicle products and services, at 5,062 employees. Of these, only the local health services and government industries have an average wage of $50,000 or higher.

Each county in the study area, except Geneva County, has at least one business or industry with more than 500 employees. In Geneva County, the largest employer

Figure 2.11: Top Industries by County and Employment



Source: U.S. Census, American Community Survey 2021 5-Year Estimates, Table DP03: Selected Economic Characteristics.

has a total of 465 employees. Due to the number of large employers throughout the CLUS study area, there is a considerable amount of commuting traffic between counties for employment. Commuting patterns are addressed in Section 2.4. It should be noted that in Barbour County and Coffee County the total number of workers employed by the five largest employers makes up a significant part of the county's civilian labor force.

The average median household income for the six counties is $47,583. Median household income is highest in Coffee County, at $59,034, and lowest in Barbour County, at $36,422. Coffee County is the only county in the study area with a median income higher than that of the state, at $54,943; however, the Coffee County median income is still only 85.5 percent of the nation's, at $69,021. The only industry clusters in the study area with more than 1,000 total employees and an average wage higher than the state's median income are electrical power generation and transmission, at $132,993; aerospace vehicles and defense, at $81,459; businesses services, at $71,804; local financial services, at $61,777; education and knowledge creation, at $60,031; transportation and logistics, at $56,5422; distribution and electronic commerce, at $55,971; and government, at $55,117.

All counties in the study area are a part of the Grow Southeast Alabama which is an economic development coalition representing 11 counties. The purpose of Grow Southeast Alabama is to promote and advance industrial growth in the region while leveraging its existing strengths in aerospace, automotive, agriculture, forestry, and wood products industries. Building on the existing industries and local/regional cooperation, Growth Southeast Alabama has identified the following target industries: aviation and aerospace; agriculture, forestry and wood products; advanced manufacturing; metal fabrication; automotive; and distribution and logistics.

Figure 2.12: Five Largest Employers by County

Barbour County			Coffee County			Covington County		
# Emp	Name	Industry	# Emp	Name	Industry	# Emp	Name	Industry
1,480	Tyson Foods	Poultry Processing	5,031	M1 Support Services	Aircraft Maint.	1,050	Shaw Industries	Carpet Mftr
878	Westrock Mahrt Mill	Paper Mill	1,800	Wayne Farms	Poultry	600	PowerSouth	Utility
530	Boyd Brothers Transportation	Trucking	850	Enterprise City School System	Education	410	Covington County School System	Education
395	Alabama Dept of Corrections	Prison	650	Pilgrim's Pride	Poultry	311	Andalusia Regional Hospital	Hospital
362	Eufaula City Schools	Education	518	Hwaseung Automotive AL	Auto Parts	235	Mizell Memorial Hospital	Hospital
45.1% of Civilian Labor Force			40.6% of Civilian Labor Force			17.3% of Civilian Labor Force		
Dale County			**Geneva County**			**Houston County**		
# Emp	Name	Industry	# Emp	Name	Industry	# Emp	Name	Industry
3,800	M1 Support Services	Aviation Maint.	465	Reliable Ruskin Metal Products	Louvers, Arch Prod	2,299	Southeast AL Medical Center	Hospital
477	Michelin North America, Inc.	Tire Mftr	364	Geneva County Schools	Education	1,973	Dothan City/ Houston Co Schools	School system
402	Dale County Schools	Education	305	SYSCO Foods	Wholesale Food Dist.	1,100	Flowers Hospital	Hospital
386	Dale Medical Center	Hospital Services	123	Air Performance	Aluminum Louvers	1,082	City of Dothan	Govt
350	Commercial Jet	Aviation Maint	120	Olam Peanut Shelling Company	Peanut Processing	950	Southern Nuclear (Farley)	Nuclear plant
25.4% of Civilian Labor Force			12.1% of Civilian Labor Force			15.2% of Civilian Labor Force		

Source: Eufaula/Barbour County Chamber of Commerce, https://www.eufaulachamber.com/economics/top-industries; Wiregrass Economic Development, https://www.wiregrassedc.com/doing-business/major-employers; Covington County Economic Development Commission, https://www.covingtoncountyedc.com/workforce/major-employers; Ozark-Dale County Economic Developmenet Corporation, https://www.odedc.com/workforce/major-employers; Dothan Area Chamber of Commerce and Dothan Eagle, https://dothaneagle.com/news/business/dothan-houston-countys-largest-employers/table_64802482-6078-11e5-adb8-bf2abdf5db31.html

2.4 Transportation

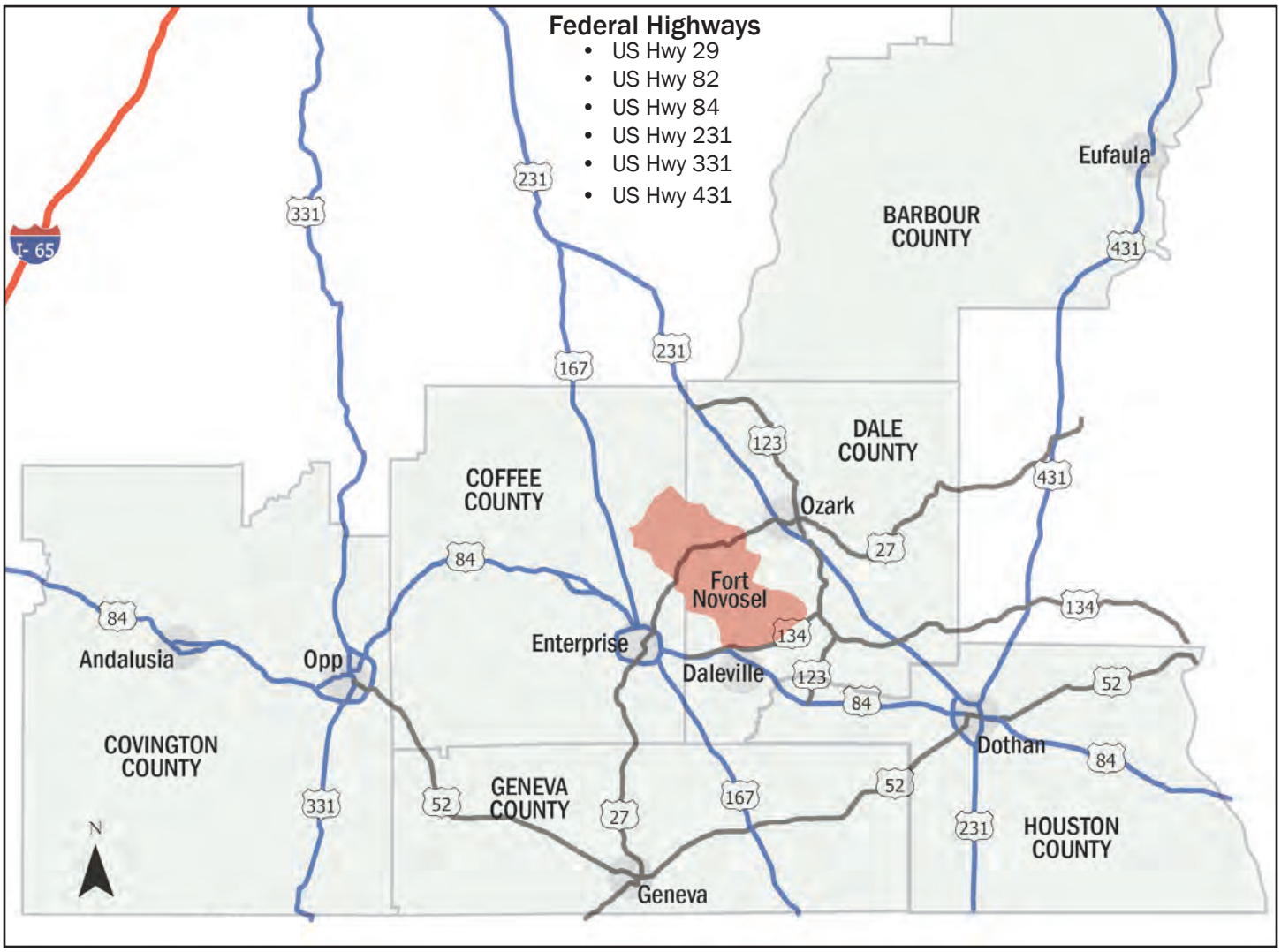
The transportation system in the CLUS study area is comprised of a combination of major thoroughfares, minor thoroughfares, local roads, rail and airports. There is also some navigable waterway on the Chattahoochee River along the east borders of Barbour and Houston counties. There are three transit providers in the study area. First, the Eufaula Barbour Transit Authority provides on-demand service to citizens within the City of Eufaula. On-demand service means that a rider must call 24 hours in advance to schedule the transportation service. Second, the Covington Area Transit System (CATS) serves all residents in Covington County with on-demand service within the county. And third, the Wiregrass Transit Authority is operated by the Southeast Alabama Regional Planning & Development Commission. The transit authority offers on-demand services in the City of Dothan, all of Houston County, with service beginning in the City of Enterprise is October 2023.

There is no interstate system within the CLUS study area. There are, however, six federal highways, most of which are four-lane highways, that provide access through and around the 6-county area. US Highway 29 is found in Covington County. It runs northeast from its southern terminus in Pensacola, Florida to Ellicott City, Maryland, just west of Baltimore. US Highway 29 also runs northeast from East Brewton in Escambia County through Andalusia and Gantt in Covington County to Brantley and Luverne in Crenshaw County.

US Highway 82 is located in northern Barbour County and is an east-west route running from Alamogordo, New Mexico to Brunswick, Georgia. US Highway 82 connects Union Springs in Bullock County to Eufaula in Barbour County.

US Highway 84 is a primary economic thoroughfare that now runs east-west from Midway, Georgia to Pagosa Springs, Colorado. Within the CLUS study area, US 84

Figure 2.13: CLUS Study Area Road Network



crosses Houston, Dale, Coffee, and Covington counties, connecting Dothan to Daleville to Level Plains to Enterprise to Opp to Andalusia. It truly functions and the east-west spine of the study area.

US Highways 231, 331, and 431 are all north-south routes providing access to the larger cities in the study area. US Highway 231 runs from St. John, Indiana through Dale and Houston counties to Panama City, Florida. Cities located on or near US Highway 231 in Dale County include Ariton, Ozark, Newton, Pinckard, and Midland City. In Houston County, US Highway 231 goes through Dothan, forming a part of the Dothan Circle Bypass, before going south through Madrid.

US Highway 331 goes through Covington County as it connects Montgomery in Montgomery County and Brantley and Luverne in Crenshaw County to Opp and Florala in Covington County before going south to Santa Rosa Beach, Florida. US Highway 431 runs north from Dothan through Headland and Abbeville in Henry County to Eufaula in Barbour County before continuing on to Owensboro, Kentucky.

Through the federal highway network, there is solid access to all parts of the study area, except Geneva County, which is the only county in the study area without a federal highway. The federal highways provide good east-west access and the three north-south highways provide adequate access as well. Interspersed with the federal highways is a network of 31 state highways that increase accessibility via a system of well-maintained roadways.

The state and federal roadway network, supplemented with numerous local roads, provides a transportation system that is conducive to commuting workers between counties, as well as outside the study area. In July 2023, WDHN NEWS 19 reported an article compiled by Stacker Media that ranked the 50 worst commutes in Alabama based on the longest average commute time. The article ranked Geneva County at #24, with an average commute time of 28.3 minutes, and Barbour County at #37, with an average commute time of 26 minutes. The other four counties in the study area were not ranked. According to the 2021 ACS data, average commute times for these counties are: Coffee County, 23.4 minutes; Covington County, 23.7 minutes; Dale County, 22.1 minutes; and Houston County, 21.9 minutes.

According to 2020 ACS data, there are 83,943 workers living in one of the six counties of the study area, where there are 81,183 jobs, which means that a minimum of 2,760 workers must travel outside their home county for employment. In actuality, less than half of the workers in the study are employed in their home county. Houston County is the only county with more jobs than workers.

The top employment destinations for study area workers that do not work in their home county include: Dothan, that attracts 6,867 workers; Enterprise, attracting 2,320

Figure 2.14: 2020 Worker Commute Patterns for Private Primary Jobs by County

LOCATION	Inflow (+) and Outflow (–)			In-Area Labor Force Efficiency			In-Area Employment Efficiency		
	Work in Area	Live in Area	Net Job Inflow/ Outflow	Live in Area	Live and Work in Area	Live in Area, Work Outside	Work in Area	Work and Live in Area	Work in Area, Live Outside
BARBOUR COUNTY	6,369	7,205	-836	7,205	3,183	4,022	6,369	3,183	3,186
	100.00%	113.10%		100.00%	44.20%	55.80%	100.00%	50.00%	50.00%
COFFEE COUNTY	12,680	14,624	-1,944	14,624	5,608	9,016	12,680	5,608	7,072
	100.00%	115.30%		100.00%	38.30%	61.70%	100.00%	44.20%	55.80%
COVINGTON COUNTY	9,591	10,506	-915	10,506	5,857	4,649	9,591	5,857	3,734
	100.00%	109.50%		100.00%	55.70%	44.30%	100.00%	61.10%	38.90%
DALE COUNTY	11,591	12,437	-846	12,437	3,723	8,714	11,591	3,723	7,868
	100.00%	107.30%		100.00%	29.90%	70.10%	100.00%	32.10%	67.90%
GENEVA COUNTY	3,510	7,304	-3,794	7,304	1,778	5,526	3,510	1,778	1,732
	100.00%	208.10%		100.00%	24.30%	75.70%	100.00%	50.70%	49.30%
HOUSTON COUNTY	37,442	31,867	+5,575	31,867	20,010	11,857	37,442	20,010	17,432
	100.00%	85.10%		100.00%	62.80%	37.20%	100.00%	53.40%	46.60%
CLUS STUDY AREA	81,183	83,943	-2,760	83,943	40,159	43,784	81,183	40,159	41,024
	100.00%	103.40%		100.00%	47.80%	52.20%	100.00%	49.50%	50.50%

Source: US Census Bureau, Center for Economic Studies, Longitudinal Employer-Household Dynamics (LEHD), On The Map. https://onthemap.ces.census.gov/

workers,; Fort Novosel, that attracts 3,260 workers; Montgomery, attracting 2,012 workers; Troy, that attracts 1,318 workers; Ozark, attracting 968 workers; and Birmingham that attracts 793 workers from the 6-county region. Primary routes accessing these employment destinations are US Highway 29, US Highway 84, US Highway 231, US Highway 331, US Highway 431, Alabama Highway 27, and Alabama Highway 167.

Rail service in the CLUS study area include one Class I railway, CSX Transportation, and three Class III railways: Bay Line Railroad, LLC; Chattahoochee Bay Railroad, Inc.; and Wiregrass Central Railway, LLC. CSX Transportation runs southeasterly from Montgomery through Dale and Houston Counties. The Bay Line Railroad, LLC runs south through Houston County and northeast into Henry County. Chattahoochee Bay Railroad, Inc. runs southwest to northeast in Houston County only. Wiregrass Central Railway, LLC runs west from Dale County into Coffee County. All rail services are for freight movement and there is no passenger service in the study area.

Airports are a strong asset in local communities. There are ten public airports in the CLUS study area: one is a commercial service airport; and ten are general aviation airports. These airports do not include the Fort Novosel airfields and stagefields located throughout the area, which are discussed in Chapter 3. Much of the following data was obtained from the *Alabama Statewide Airport System Plan & Economic Impact Study*, conducted in 2020 by Jviation on behalf of the Alabama Department of Transportation, Aeronautics Bureau, which is referred to in this section as the Airport Impact Study. The second source of data is airnav.com, which is a privately owned website that publishes airport information released by the Federal Aviation Administration.

The Dothan Regional Airport, in Houston County, is the only commercial service airport in the study area. It offers daily flights to Atlanta provided by Delta Connection. The airport has two lighted runways. One runway is 8,499 feet long and 150 feet wide, surfaced with asphalt in excellent condition. The second runway is 5,498 long and 100 feet wide, surfaced with asphalt in fair condition. Of the 70 aircraft based at the airport, 57 percent are military aircraft, as Fort Novosel has based their fixed wing operations at the Dothan airport. There are 19 tenants at the located at the Dothan Regional Airport including one Fixed-Base Operator (FBO).

There is at least one general aviation airport in the remaining five counties, and Barbour, Coffee, Covington, and Geneva counties each have two. A general aviation airport is a public-use airport that does not have scheduled passenger service. These nine general aviation airports supplement the local communities by providing access to markets within the area and primarily support business and personal needs. Together, the ten airports in the study area employ approximately 2,322 persons with a combined payroll of more than $126 million and combined spending of $164.6 million, generating $14.5 million in local revenue (taxes).

Figure 2.15: Economic Impact of CLUS Study Area Airports

County	City	Airport Name	Number of Employees	Total Annual Economic Activity	Total Tax Impacts
Commercial Airports					
Houston	Dothan	Dothan Regional	1,358	$184,455,000	$9,314,300
General Aviation Airports					
Barbour	Clayton	Clayton Municipal	1	$158,600	$5,300
Barbour	Eufaula	Weedon Field	22	$1,689,200	$71,600
Coffee	Elba	Carl Folsom	7	$812,100	$32,200
Coffee	Enterprise	Enterprise Municipal	193	$22,909,600	$1,044,300
Covington	Andalusia/Opp	South Alabama Regional at Bill Benton Field	393	$43,846,000	$2,152,900
Covington	Florala	Florala Municipal	32	$3,742,800	$193,500
Dale	Ozark	Ozark Airport - Blackwell Field	303	$31,707,900	$1,604,300
Geneva	Geneva	Geneva Municipal	10	$996,000	$44,500
Geneva	Samson	Logan Field	3	$386,100	$13,600
Total			2,322	$290,703,300	$14,476,500

Source: Alabama Department of Transportation, Aeronautics Bureau, Alabama Statewide Airport System Plan & Economic Impact Study, prepared by Jviation, 2020. https://www.dot.state.al.us/programs/StatewideAirportSystemPlan.html

2.5 Natural Resources

As stated previously, the CLUS study area is located in the Wiregrass Region of Alabama. The area is characterized by high heat and humidity in the summers and mostly mild winters. Average annual rainfall in the area is 52 to 56 inches. The entire CLUS study area is within the East Gulf Coastal Plain physiographic region. Though the designation of a plain commonly refers to a flat landscape, much of the region consists of a mixture of rounded hills and cuestas (a ridge with steep slopes on one side and gentle slopes on the other), with floodplains along the rivers and streams of the area. The climate and geography of the area are important factors in the operations of Fort Novosel. It has even been hypothesized that the Fort Novosel missions could not be carried out as effectively anywhere else in the United States.

Alabama is one of the most biodiverse states in the nation (ranked #5) due to its location, climate, terrain, geography, and abundance of rivers, streams and other waterbodies. It is reported that Alabama has 132,000 miles of inland waterways, which is more than any other lower continental state (excluding Alaska and Hawaii). The biodiversity and natural resources is often unique to the different regions of the state. There are three main river systems that flow through the region: the Chattahoochee, Choctawhatchee, and Conecuh rivers.

The Chattahoochee River flows mainly north-south, separating Barbour, Henry, and Houston counties from Georgia. The Choctawhatchee River flows generally south-southwest from two forks in Barbour County through Dale, Houston, and Geneva counties into Florida. The Pea River is a major tributary to the Choctawhatchee that flows roughly parallel approximately 25 miles to the west, beginning in Bullock County and forming the border between Barbour and Pike counties into Dale, Coffee, and Geneva counties until it empties into the Choctawhatchee at the "Junction" in the City of Geneva. Both the Choctawhatchee and Pea rivers have caused much of the historical riverine flooding issues within the region. The Conecuh River, like the Pea, forms in Bullock County and flows southwest through Pike, Crenshaw, and Covington counties into Florida. The Conecuh River, in Covington County, has two major dams, Gantt and Point 'A', which provide hydroelectric generation and recreation opportunities. Occasional damaging flooding has also occurred along the Conecuh, similar to the Choctawhatchee and Pea, though affecting less developed areas.

Figure 2.16
Area known as "The Junction" in the City of Geneva, as the Pea River flows into the Choctawhatchee River.

The Encyclopedia of Alabama states that the Wiregrass region "*may be the most agriculturally diverse in Alabama, producing cotton, peanuts, poultry, cattle, some vegetables, and forestry products*." Most of the CLUS study area, with the exception of the City of Dothan, is rural in nature, with land generally used for agricultural or timber purposes.

According to the most recent US Census of Agriculture (2017), there are 4,180 farms in the CLUS study area encompassing a combined total of 960,272 acres, or 1,500 square miles. This equates 34.5 percent of the total study area is used for agricultural purposes. Covington County has the most number of farms, at 907, and Geneva County has the most acreage used for farms, at 183,356 acres. The average farm size is largest in Barbour County, at 307 acres, and Dale County derives the most net cash farm income, at more than $58.4 million. Coffee and Dale Counties are ranked 6th and 7th in the state, respectively, in total market value of agricultural products sold. Coffee County had total agricultural sales of $199.5 million, and Dale County had total agricultural sales of $172 million.

Poultry is, by far, the top quantity of agricultural livestock production with 28.9 million broilers, 1.3 million layers, and 697,659 pullets. Cattle is a distant second in livestock, at 148,045 in the combined six county area. Dale and Coffee Counties are the top producers of poultry, while Geneva and Coffee County are the top producers of cattle. The top crop consuming the most acreage in the study area includes cotton, at 83,418 acres; peanuts, at 81,409 acres; forage (hay), at 77,749 acres; and corn for grain, at 11,562 acres.

The CLUS study area is home to two primary types of forests. The northern part of the study area is largely covered with loblolly shortleaf pine and the southern

part of the study area is primarily in longleaf slash pine. Forestry is a $60.3 million industry in the 6-county area. Barbour County has the highest income, at an estimated $1.3 million, and has the largest amount of pine sawtimber and pulpwood timber and the second highest hardwood timber behind Coffee County. Covington County has both the highest income and most tonnage for poles and piles.

The area's biodiversity is also seen in the number of threatened and endangered species found in the study area. According to lists available on NatureServe (https://explorer.natureserve.org/pro/Map/) with data from the U.S. Fish and Wildlife Service, there are 51 threatened or endangered species in the combined 6-county area, with another 147 species that are considered to be at risk. The list of threatened and endangered species includes:

- 4 Amphibians: Reticulated Flatwoods Salamander, Pine Barrens Treefrog, Gopher Frog, Red Hills Salamander
- 2 Birds: Red-cockaded Woodpecker, Bald Eagle
- 1 Crocodillians: American Alligator
- 2 Mammals: Gray Myotis, Tricolored Bat
- 3 Reptiles: Eastern Diamond-backed Rattlesnake, Eastern Indigo Snake, Florida Pinesnake
- 3 Turtles: Barbour's Map Turtle, Escambia Map Turtle, Alligator Snapping Turtle
- 2 Fishes: Gulf Sturgeon; Halloween Darter
- 13 Mussels and Snails: Delicate Spike, Chipola Slabshell, Tapered Pigtoe, Narrow Pigtoe, Southern Sandshell, Shinyrayed Pocketbook, Alabama Pearlshell, Gulf Moccasinshell, Choctaw Bean, Oval Pigtoe, Fuzzy Pigtoe, Southern Kidneyshell, Rayed Creekshell
- 2 Insects: Southern Snaketail, Westfall's Clubtail
- 19 Vascular Plants: Impressed-nerved Sedge, Harper's Fimbry, Narrowleaf Naiad, Wireleaf Dropseed, Relict Trillium, Kral's Yellow-eyed-grass, Georgia Rockcress, Ciliate-leaf Tickseed, Eggert's Sunflower, Pondberry, Bog Spicebush, Boykin's Lobelia, Curtiss' Loosestrife, Small-flower Meadowbeauty, Eared Coneflower, Florida Willow, Wherry's Sweet Pitcherplant, American Chaffseed, Gentian Pinkroot

2.6 Existing Development

The CLUS study area supports a wide variety of industrial and commercial stakeholders. The region is a strategic location that is served by several federal and state highways, multiple railroads and motor freight lines, an inland waterway system, and a regional airport. The region is home to a large, widely diversified economic base, with automotive, aviation, textile, and poultry manufacturing facilities, Fort Novosel (the Home of Army Aviation), widespread agricultural production, higher education, medical and health services, nuclear power production, and retail trade. The economic impact of losing any industry is directly related to the size/type of business and the duration/severity of the loss.

Dothan is a regional economic engine that attracts people from Southeast Alabama and surrounding areas to engage in commercial, medical, and other activities. Enterprise is the second largest city and Ozark is the third largest city in the study area. Both Enterprise and Ozark are considered micropolitan statistical areas. The presence of a transportation network primarily comprised of federal and state highways has enabled a commuting population as many workers live outside one of the main economic areas and travel short distances to work. As a result, bedroom communities near Dothan, Enterprise and Ozark in Houston, Coffee, and Dale counties have grown over the past couple of decades. Lower land prices outside of the municipal areas have encouraged this type of growth resulting in small neighborhoods in the middle of a relatively undeveloped areas. Additionally, the lower land/housing prices in unincorporated areas make it both possible and feasible for spouses to work in two different directions and neither have undue commute times.

Existing land uses surrounding Fort Novosel properties are reviewed in detail in the assessment portion of this study (Chapter 4). The anticipated future growth and development of the area is a continued pattern of residential growth in outlying areas due to both price and convenience. It is expected that mostly retail commercial development will follow to serve the ongoing residential growth. Figure 2.17 and Figure 2.18, on the following page, provide a comparison of areas that are currently urbanized and where urbanization is expected to occur in the next 40 years. As expected, the maps show growth in the metropolitan and micropolitan areas, but also just as much growth in the smaller communities and along major transportation corridors.

Figure 2.17

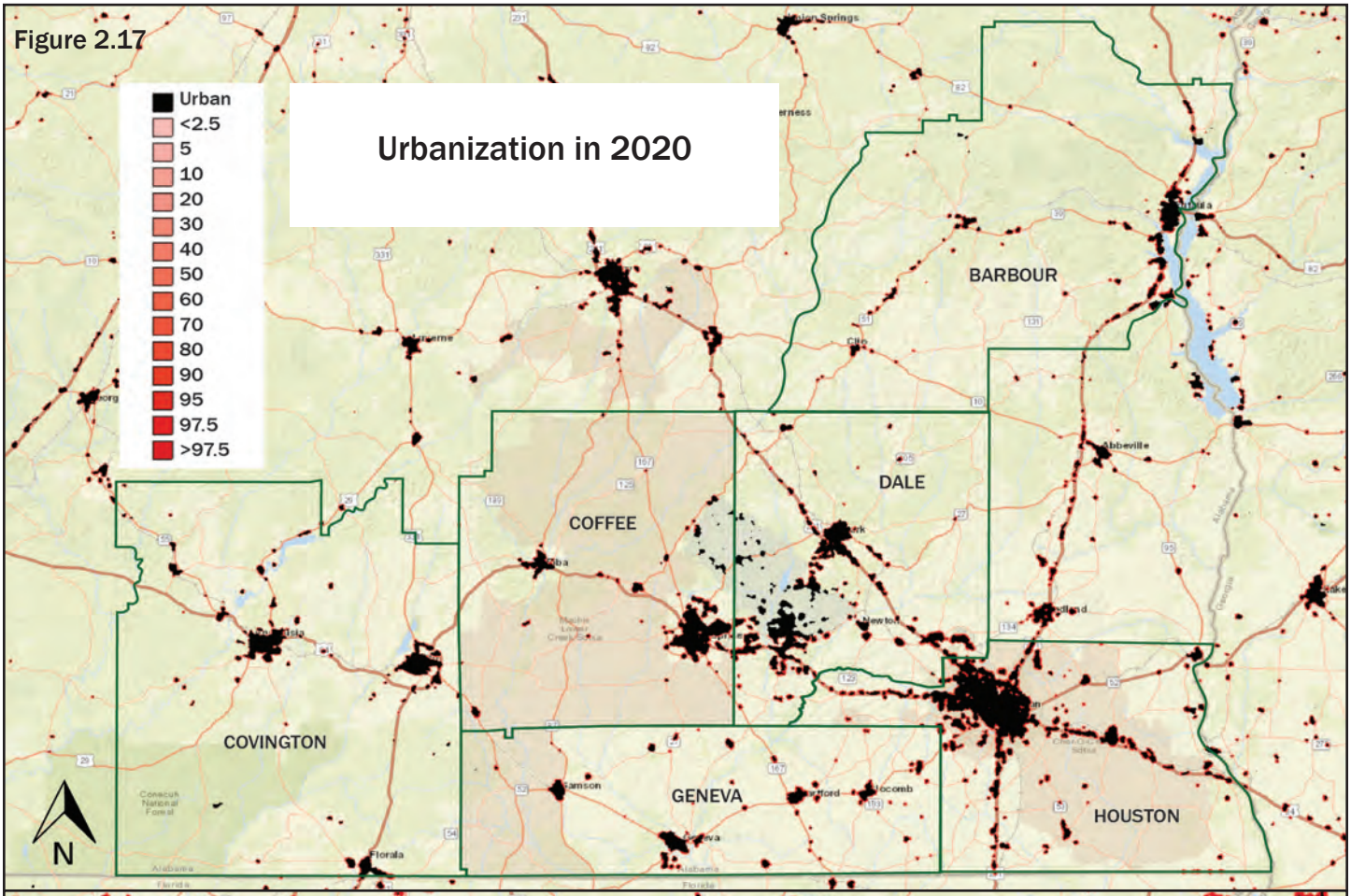
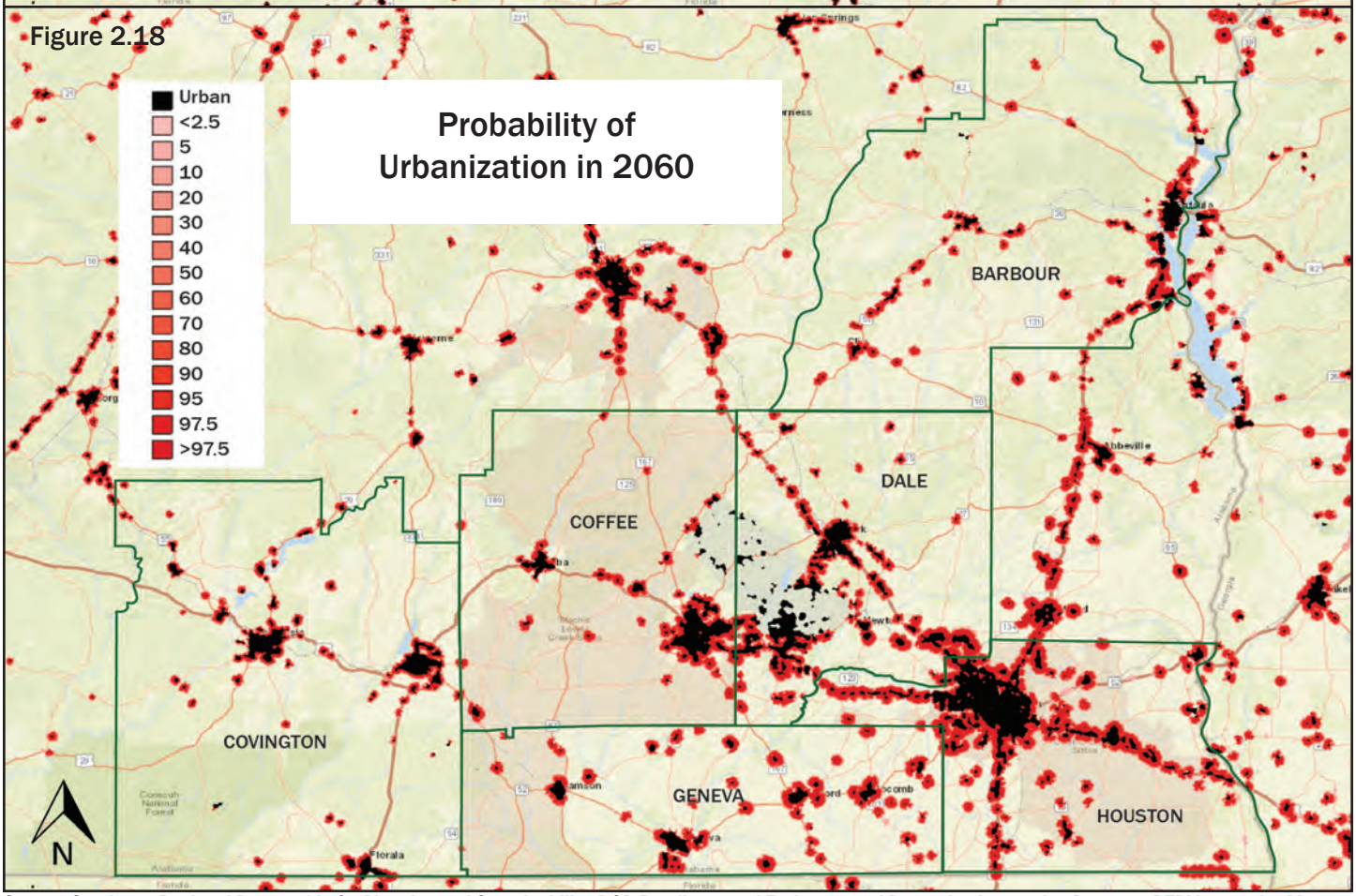


Figure 2.18



Source: Southeast Regional Partnership for Planning and Sustainability, DOD Readiness and Environmental Protection Integration Program, REPI Interactive Map. https://repi.osd.mil/map/

3. FORT NOVOSEL PROFILE

Fort Novosel is the largest of five military installations in Alabama. The others are Aviation Training Center Coast Guard Base, Mobile; Maxwell Air Force Base, Montgomery; Fort McClellan Army Base, Anniston; and Redstone Arsenal Army Base, Huntsville. Previously known as Fort Rucker in honor of Col. Edmund W. Rucker, a Civil War Confederate officer, the installation became Fort Novosel in April 2023. The post was renamed after Michael J. Novosel, Sr. After serving in the Air Force during WWII and the Korean War, Novosel gave up his Air Force rank of lieutenant colonel to join the U.S. Army as a chief warrant officer (CW4) with the elite Special Forces Aviation Section. He served two tours of duty in Vietnam flying medevac helicopters where he flew 2,543 missions and extracted 5,589 wounded personnel. In 1971, he was awarded the Medal of Honor, the nation's highest award for valor in combat. He also received the Distinguished Service Cross, Distinguished Service Medal, Distinguished Flying Cross with two Oak Leaf Clusters, Bronze Star with Oak Leaf Cluster, and the Purple Heart. He was inducted into the Army Aviation Hall of Fame in 1975. He retired as the senior warrant officer with the Warrant Officer Candidate Program in 1985.

3.1 History

Although the full history of Fort Novosel can be found on the Fort Novosel website at *https://home.army.mil/novosel/history*, a summary of the installation's historical highlights is provided here from both a military and community perspective.

Fort Novosel has been a fixture in the Wiregrass area since the late 1930s when, as part of President Roosevelt's New Deal Program, 35,000 acres of marginal farmland were bought directly from farmers and then converted to conservation land for recreational use. In 1941, an additional 30,000 acres was purchased and Camp Rucker was formed to meet the need for more training camps and military bases following the attack on Pearl Harbor. A 2013 article in the *Army Flier* reports, "According to the official history of Fort Rucker, in January 1942, the U.S. Army Corps of Engineers completed construction plans for the 4,600 acre cantonment area of the camp. The J.A. Jones Construction Company of Charlotte, N.C., constructed 1,500 buildings, developed streets, utilities, wells, railroads, sidetracks and other facilities. This work was completed in fewer than the 120 days allotted by the contract and cost $24,620,160. In late 1942, an

Figure 3.1 Headquarters at Camp Rucker, ca 1940s
Source: Encyclopedia of Alabama, Courtesy of the U.S. Army Aviation Museum. https://encyclopediaofalabama.org/media/camp-rucker-ca-1940s/

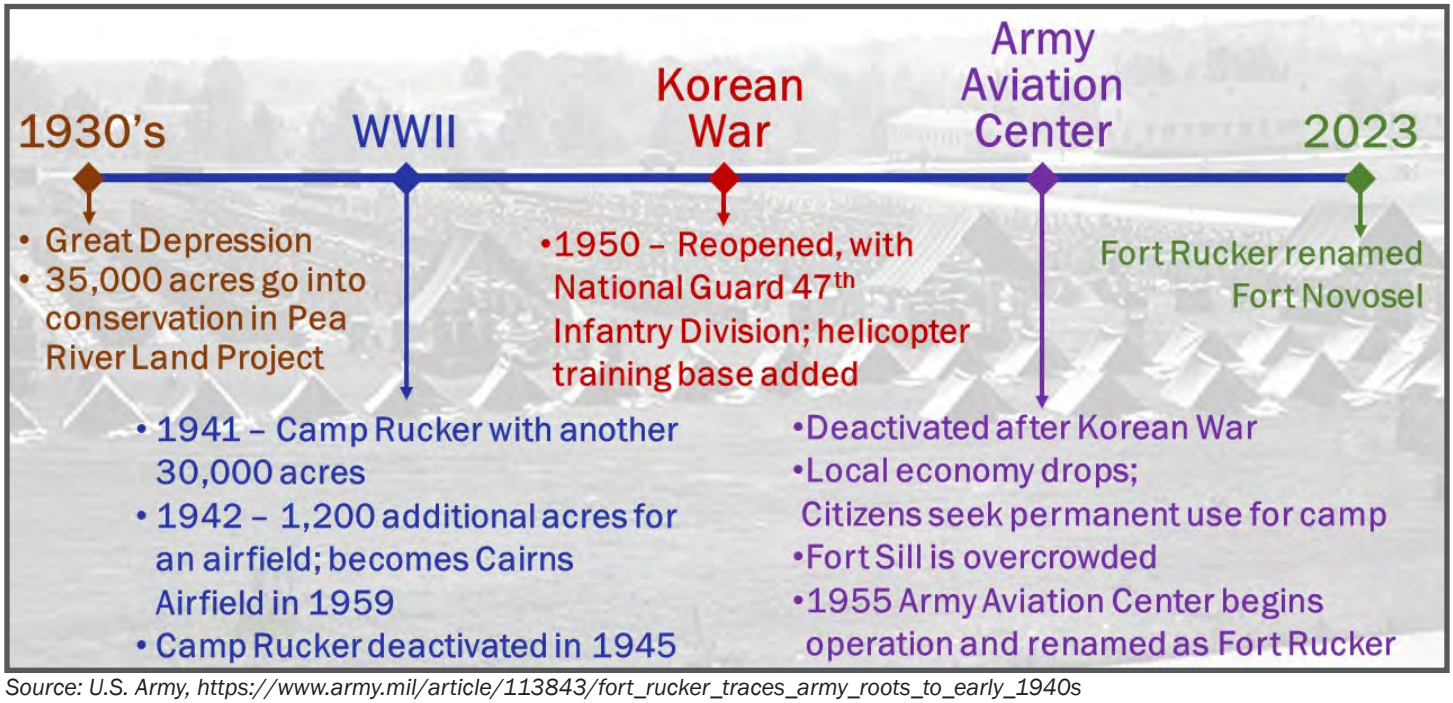
additional 1,259 acres south of Daleville were acquired for the construction of an airfield to support the camp.[2]

The *Encyclopedia of Alabama* states, "Its unique assets, which include a vast airspace for military flight activities and its proximity to other defense and commercial resources, enables Fort Novosel to perform functions that no other military base in the world can duplicate. Through its many functions and thousands of graduates, Fort Novosel has played a key part in every major military operation involving the United States since World War II."[3]

Camp Rucker was deactivated following the Korean War which caused a local economic downfall. Leaders worked with their congressional representatives in seeking a permanent use for Camp Rucker. At the same time, Fort Sill in Oklahoma was becoming overcrowded with the expansion of both artillery and aviation training. On Feb. 1, 1955, the Army Aviation Center was officially established at Rucker. In October of that year, the post was given permanent status, changing the name to Fort Rucker.

Before the mid-1950s, the Air Force had provided primary training for Army Aviation pilots and mechanics. In 1956, the U.S. Department of Defense gave the Army control over all of its own training. Gary and Wolters Air Force Bases in Texas, where the Air Force had been conducting this training, were also transferred to the Army. Lacking adequate facilities at Fort Rucker, Army Aviation continued primary fixed-wing training at Camp Gary until

Figure 3.2 Fort Novosel Historical Timeline



Source: U.S. Army, https://www.army.mil/article/113843/fort_rucker_traces_army_roots_to_early_1940s

1959 and primary rotary-wing training at Fort Wolters until 1973.[4] In 1956, the Army Aviation Center began assembling and testing weapons on helicopters. These tests, conducted while the Air Force still theoretically had exclusive responsibility for aerial fire support, led to the development of armament systems for Army helicopters.

With the creation of the Army Aviation Branch, aviation officer basic and advanced courses began in 1984, and a gradual consolidation of aviation-related activities followed. In 1986, the U.S. Army Air Traffic Control Activity became part of the branch. In the following year, a Noncommissioned Officers Academy was established, and in 1988, the Army Aviation Logistics School was incorporated. More recently, in 2003, the Aviation Branch assumed overall responsibility for unmanned aircraft systems within the Army. What had become the U.S. Army Aviation Warfighting Center was subsequently renamed the U.S. Army Aviation Center of Excellence in June 2006.

3.2 Fort Novosel Mission and Operations

Fort Novosel serves as the headquarters for U.S. Army Aviation. While the garrison command manages the daily operations of the Fort Novosel community, the Aviation Branch Headquarters develops, coordinates and deploys Aviation operations, training and doctrine. The mission of the U.S. Army Aviation Center of Excellence is to generate highly trained, disciplined, and fit Aviation Soldiers; develop leaders of character who are experts in combined arms maneuver; drive change to fight and win in multi-domain operations; and impart the aviation warfighter culture across the total Aviation Force. As the sole producer of Army aviators, maintainers, air traffic controllers, and unmanned system operators, the mission of Ft. Novosel and USAACE is inextricably linked to the strategic success of the Joint Force and the operational success of the U.S. Army in Multi-Domain Operations (MDO).

Major commands on Fort Novosel include U.S. Army Garrison Fort Novosel, U.S. Army Aviation Center of Excellence (USAACE), U.S. Army Combat Readiness Center, U.S. Army Warrant Officer Career College, U.S. Army Aviation Technical Test Center (ATTC), Aviation Center Logistics Command (ACLC), U.S. Army Aeromedical Center, U.S. Army Aeromedical Research Laboratory, U.S. Army School of Aviation Medicine, and U.S. Army Air Traffic Services Command (ATSCOM). The following is a brief description of the tenant units and activities.[5]

- **164TH Theater Airfield Operations Group**

The 164th Theater Airfield Operations Group provides airspace and air traffic services support and expertise to Army warfighters, major commands and installations worldwide.

- **Air Traffic Services Command**

Air Traffic Services Command provides airspace and air traffic services support and expertise to Army warfighters, major commands and installations worldwide.

- **Army and Air Force Exchange Service**

At war and in peacetime, the Exchange provides Soldiers and Airmen with the services and merchandise they need to make their lives more comfortable. The Exchange also maintains services and support to family members and troops back home.

- **Aviation Center Logistics Command**

The Aviation Center Logistics Command provides full spectrum maintenance, supply and contractor oversight in order to ensure availability for all Aviation training mission requirements in support of the U.S. Army Training and Doctrine Command at Fort Novosel and Fort Benning.

- **Civilian Personnel Advisory Center**

The Civilian Personnel Advisory Center provides the personnel administrative needs of the civilian employees of Fort Novosel.

- **Department of Aviation Medicine**

The Department of Aviation Medicine is the Army's center for all rotary wing aeromedical training for Aviators and aeromedical personnel.

- **Logistics Readiness Center**

The Logistics Readiness Center provides logistical and technical support for the Standard Army Management Information System, quality assurance, command supply discipline program, awards program, hazardous materials management plan, contract administration budget and management controls.

- **Lyster Army Health Clinic**

Lyster Army Health Clinic serves about 17,500 patients, including permanent-party soldiers, soldiers attending short-term schools, foreign Soldiers, Family members, and Retirees and their Family members.

- **Medical Evacuation Concepts and Capabilities Division**

Medical Evacuation Concepts and Capabilities Division (MECCD) serves as the Capability Developer for Army Medical Evacuation and develops medical evacuation operational concepts and capability requirements.

- **Mission and Installation Contracting Command, Fort Novosel**

Mission and Installation Contracting Command, Fort Novosel ensures the installation's needs are met through the acquisition of supplies, services and construction.

- **Network Enterprise Center**

The Network Enterprise Center provides Fort Novosel and all tenants with world class sustaining base, common user, information technology services of automation, telecommunications, and information assurance.

- **TMDE Support Center - Fort Novosel**

TMDE Support Center-Fort Novosel is this area's support center for Test, Measurement and Diagnostic Equipment.

- **Trial Defense Services**

U.S. Army Trial Defense Service provides specified defense counsel services for Army personnel, whenever required by law or regulation and authorized by the Judge Advocate General or his/her designee.

- **U.S. Army Aeromedical Research Laboratory**

The U.S. Army Aeromedical Research Laboratory's research focuses on aircrew health and performance; blunt, blast, and accelerative injury and protection; crew survival in military helicopters and combat vehicles; en route care; and sensory performance, injury, and protection.

- **U.S. Army Combat Readiness Center**

The U.S. Army Combat Readiness Center serves as the single source of safety and occupational health information for Soldiers, DA Civilians and contractor employees across the force.

- **U.S. Army Dental Clinic Command**

Brown Dental Clinic is a 22-chair dental clinic and dental laboratory designed to provide First Term Dental Readiness care to the Initial Entry Training Soldiers as well as Readiness and Wellness care for permanent party Soldiers.

- **U.S. Army SERE School**

The U.S. Army SERE School conducts the SERE Level–C Course in accordance with Joint and Army Personnel Recovery Doctrine in order to train service members, DOD Civilians, and contractors who are identified as being at high risk of isolation on the code of conduct and tactics, techniques, and procedures of survival, escape, resistance, and evasion, enabling them to survive isolation and captivity to "Return with Honor."

- **U.S. Army Warrant Officer Career College**

The U.S. Army Warrant Officer Career College educates and trains warrant officers to solve problems using mission command while applying their technical expertise in support of leaders on tactical, operations, and strategic level staffs during operations in complex and uncertain operational environments.

- **USAF 23D Flying Training Squadron**

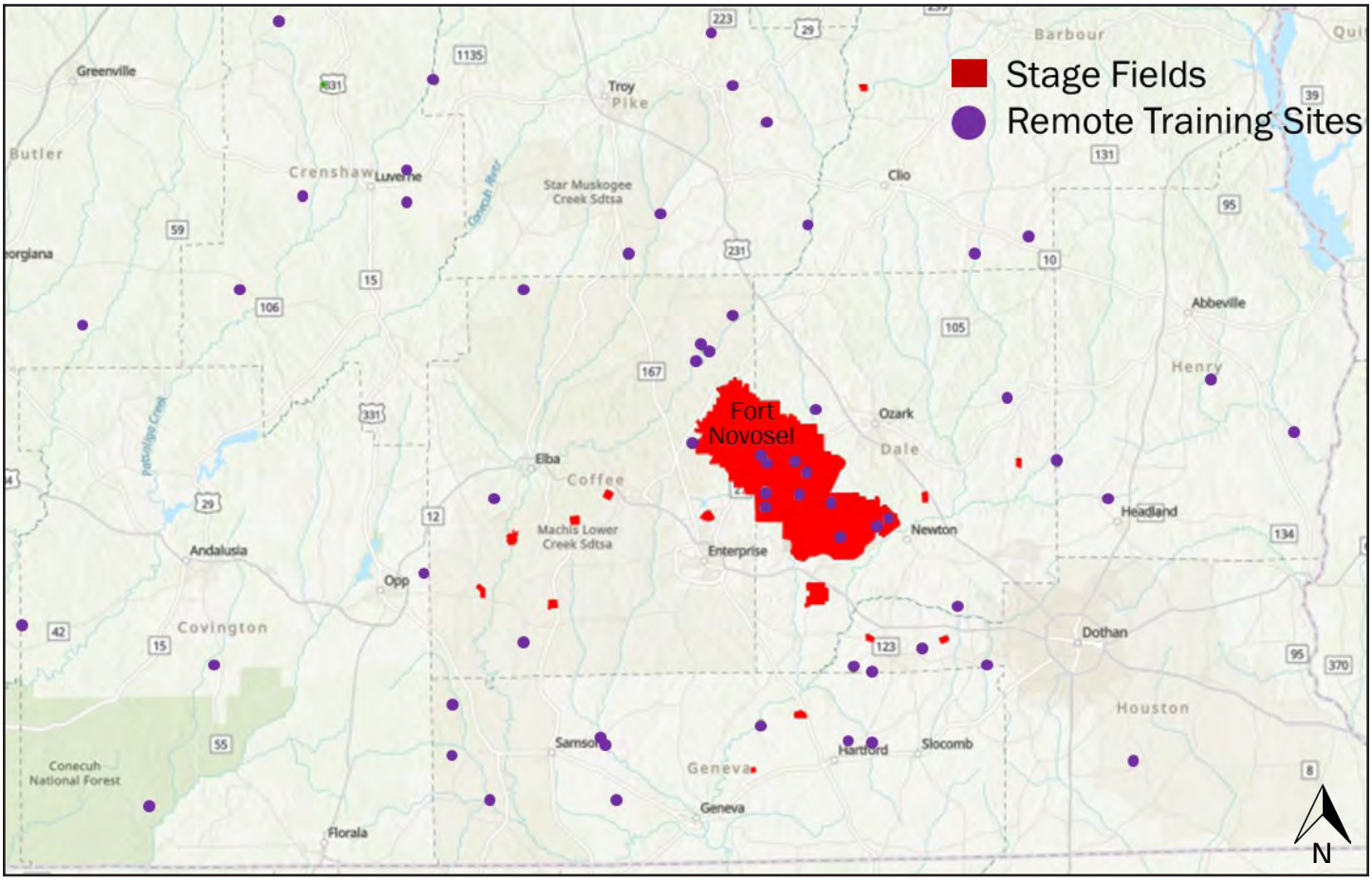
The 23D Flying Squadron Air Education and Training Command is the U.S. Air Force's primary source of helicopter pilots for special operations, combat search and rescue, missile support, and distinguished visitor airlift missions.

3.3 Flight and Training Spaces

The main Fort Novosel installation occupies 55,736 acres, or 87.1 square miles, in Coffee and Dale counties in southeast Alabama. The majority of the post is in the Dale County, at 41,539 acres (64.9 square miles), along most of the western border of the county. In Coffee County, the main installation encompasses 14,197 acres (22.2 square miles) along the county's eastern border. The total market value of the Fort Novosel land is $124.2 million, according to the Coffee County and Dale County Revenue Commissioner Property Search websites. Cairns Army Airfield, located south of the main installation along Alabama Highway 85 (Daleville Road), encompasses 1,180 acres (1.8 square miles) in Dale County. The total market value of the Cairns property is $4 million. The much smaller Shell Army Airfield is located west of the main installation in Coffee County. Shell Field occupies 172 acres (0.29 square miles) with a market value of $1.4 million. The total market value for these properties does not include any improvements, such as buildings or structural facilities.

Cairns and Shell airfields are two of five airfields utilized by Fort Novosel. The other three airfields are Hanchey,

Figure 3.3 Fort Novosel Air Fields, Stage Fields and Remote Training Sites



Source: SEAR&DC with GIS files provided by Fort Novosel, Directorate of Public Works.

Knox and Lowe airfields, which are located in the southern part of the main installation. These basefields are army heliports (AHP) that serve as home ports for helicopters and have a full range of maintenance and classroom facilities as well as helicopter parking and refueling areas. Cairns Airfield is also used for training fixed-wing aviators and instrument training for rotary-wing students. It is the only airfield for fixed-wing aircraft assigned to the USAACE and for the utility helicopters used in instrument training. In addition, Cairns Airfield handles all transient fixed-wing flights associated with Fort Novosel. Finally, Cairns Airfield is the airspace area control center and is equipped with radar approach-departure and surveillance, and weather forecasting equipment.

Fort Novosel also utilizes 18 stagefields for helicopter training. A stagefield is used primarily for practicing standard maneuvers such as takeoffs, turns, landings, and hovering. As pilots get more experience, emergency procedures (e.g. auto rotations), high speed landings and various system failures are also practiced. Stagefields vary in size from 95 to 275 acres, with three to six usable lanes. Lane dimensions range from 500 feet up to 2,000 feet in length. Normal lane density is three aircraft per lane for both day and night flight operations. Thus, aircraft maximum capacity (depending upon stagefield) varies from 9 to 18 aircraft. Five of the 18 stagefields are located on the Fort Novosel main installation. The remaining 13 stagefields are located in Barbour, Coffee, Dale and Geneva counties.

Fort Novosel has 62 remote training sites that are either government owned or leased located in 12 counties. These include the ten counties in southeast Alabama (shown in Figure 3.3) and one site each in Holmes and Walton counties in Florida. The number of remote training sites decreased from 89 sites in 2009, as cited in the Fort Rucker/Wiregrass Area Joint Land Use Study, to 72 sites in 2019, as cited in the Fort Rucker Installation Compatible Use Zone Study, to the current 62 sites. Remote training sites do not have structural facilities, but are instead, the location of military training exercises that are often conducted at low altitudes and can be repetitive.

Fort Novosel utilizes approximately 29,592 square miles of airspace for training activities, designated as the Local Flying Area (LFA). The LFA extends for approximately 100

Figure 3.4 Fort Novosel Flying Areas

Source: SEAR&DC with GIS files provided by Fort Novosel, Directorate of Public Works.

miles in all directions from Fort Novosel, going north to the Lake Martin/Alexander City area; east to Albany and Sylvester, Georgia; southeast to Tallahassee, Florida; south to Bonifay, Florida; and west toward the Alabama River as it flows west of Monroeville.

Within the LFA is the Local Flight Plan Usage Area, which encompasses approximately 7,656 square miles, extending north from Fort Novosel about 35 miles near the Perote community in Bullock County; east about 37 miles to the Alabama/Georgia state line; south about 40 miles to US Highway 90; and west about 60 miles to a point midway between Andalusia and Evergreen. The Local Flight Plan Usage Area is divided into three large Area of Operations: AO Hawk, AI Bearcat, and AO Vanguard. The AOs are further subdivided into active training boxes and Nap-of-the-Earth (NOE) routes to train pilots, instructor pilots, and flight engineers on terrain and low-level navigation, and advanced tactical maneuvers.

Additional airspace areas include maintenance test flight areas, maintenance test pilot areas, maneuvering flight areas, fixed-wing training areas, army radar approach control airspace, an unmanned aircraft systems (UAS) area, regulated airfield and stagefield airspace, and restricted airspace areas. The USAACE G3 (General Staff Level office for Operations and Plans) has command staff responsibility for the establishment, modification, and utilization of all Fort Novosel flight facilities and flight training areas.

An “Alert Area” (A-211) has also been designated within the LFA with the cooperation of the Federal Aviation Administration (FAA). The A-211 airspace consists of approximately 9,000 square miles and is defined as containing a high volume of aerial activity of which is non-hazardous to non-participating aircraft. This designation alerts the flying community there is a high amount of student flight training being conducted.

Other training facilities include a UAS operations area, an aerial gunnery range, and Army radar approach control. Currently there are no UAS operations occurring at Fort Novosel or in the surrounding airspace. Future UAS operations at Novosel may include the larger, longer endurance UAS, which would need to launch and recover at the Cairns Army Airfield.

The Aviation Gunnery Range Complex is located in the northern part of the Fort Novosel installation between Tabernacle and Molinelli Stagefields. Included in this area are dedicated small arms ranges, a demolition training area, grenade ranges, aerial gunnery ranges, and field artillery firing points. Aerial gunnery training consists of stationary firing at 31 separate hover pads and/or moving fire at three combat attack run and dive firing lanes.

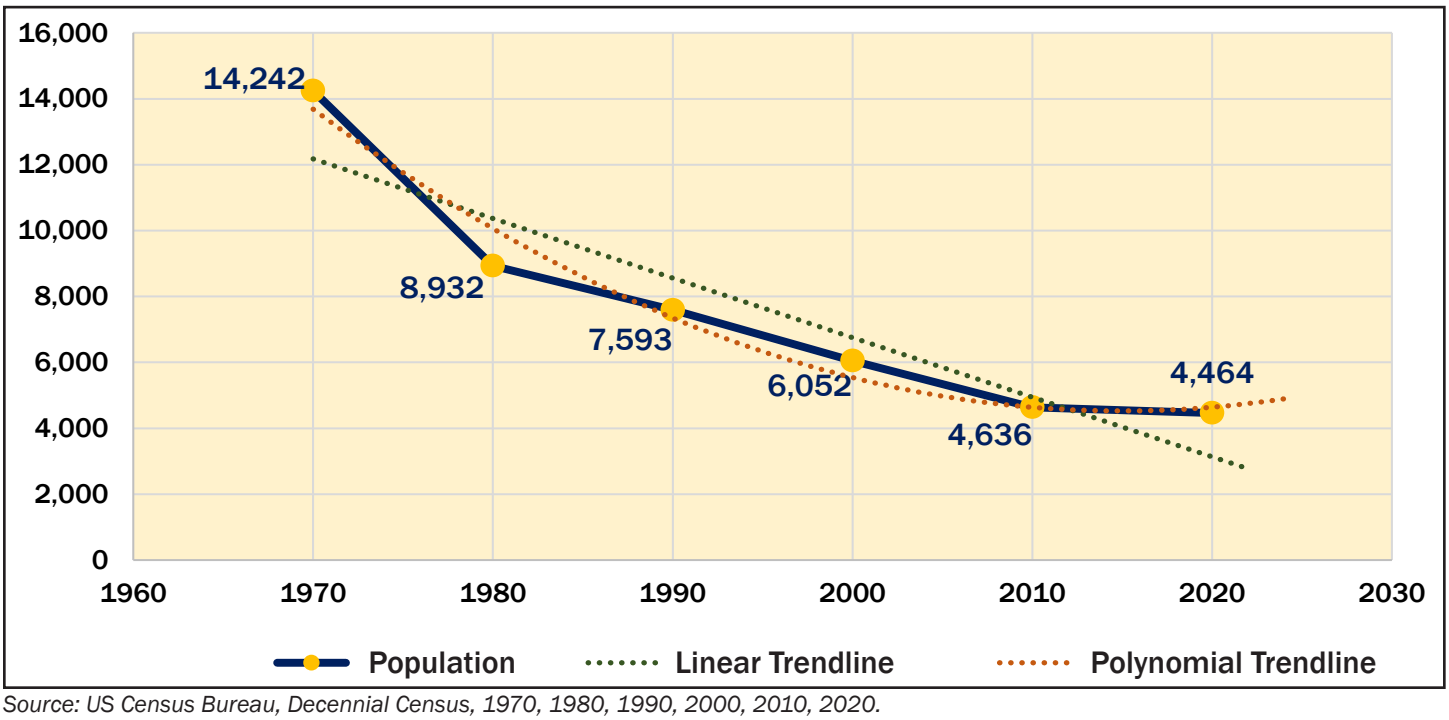
The Cairns Army Radar Approach Control (ARAC) directs airspace throughout the area capably managing the high volume of air traffic. Fort Novosel also provides technical assistance to many of the small airport operations within the region. Cairns AAF is used for training fixed-wing aviators and instrument training for rotary-wing students. It is the only airfield for fixed-wing aircraft assigned to the USAACE and for the utility helicopters used in instrument training. In addition, Cairns AAF handles all transient fixed-wing flights associated with Fort Novosel. Cairns Army Airfield is the airspace area control center and is equipped with radar approach-departure and surveillance, and weather forecasting equipment. Cairns is the busiest airfield in the Army, training large numbers of Army aviators both day and night with an average annual traffic count of approximately 240,000 movements. In addition, Cairns AAF hosts the 23D Flying Training Squadron, which trains United States Air Force pilots in the TH-1H.

3.4 Population, Workforce and Economic Impact

Fort Rucker was first recognized as an unincorporated place within an urban area in the 1970 Census. In 1980, the US Census renamed these areas as a census designated place, or CDP. According to the US Decennial Censuses, the population of the Fort Rucker CDP has decreased each decade since 1970, when the population was 14,242. According to the 2020 Decennial Census, Fort (Rucker) Novosel has a population of 4,464 persons, of which 87.5 percent are white; 12.5 percent are persons of two or more races; 7.7 percent are African American; 3.2 percent are Asian; 0.6 percent are American Indian or Alaska Native; 0.4 percent are Native Hawaiian or other Pacific Islander; and 4.1 percent are of another race.

A linear trend line projection, Figure 3.5, indicates a continued population decrease for Fort Novosel. A polynomial trendline, however, indicates a small increase in population as seen the 2021 American Community Survey 5-Year Estimates, which reports a population of 5,912 people. Of the 2021 population, 59.1 percent are male and 40.9 percent are female. The 2021 median age of the Fort Novosel population is 24.1 years old, as

Figure 3.5 Fort Novosel Population History and Trendline



Source: US Census Bureau, Decennial Census, 1970, 1980, 1990, 2000, 2010, 2020.

compared to the median age in the State of Alabama, at 39.3 years, and the nation, at 38.4 years. Approximately one-third of the population, at 33.5 percent, is under the age of 18. There is a small segment of the population, at 6.5 percent, that are very young adults age 18 to age 20. There is an even smaller population group, at 3.8 percent, that is age 45 and older. The majority of the Fort Novosel population is 21 to 44 years old, with this age group comprising 56.2 percent of the total population.

The racial composition reported in the 2021 ACS data is somewhat similar to that of the 2020 Census. Of the total 2021 population, 74.5 percent are white; 11.1 percent are African American; 7.9 percent are persons of two or more races; 3.9 percent are Asian; 0.1 percent are American Indian or Alaska Native; and 2.6 percent are of another race. The ACS data also reports that 14.2 percent of the total population is Hispanic or Latino.

The census of population, however, is not truly reflective of the number of people on Fort Novosel and the activities that occur on a daily basis. The census on only accounts for the active duty military personnel and their families that are living on post. In reality, Fort Novosel estimates that there is a daily population of more than 20,000 people -- four times the census reported population. The Fort Novosel 2023 Media Guide reports the daily demographics as listed below:

Total Daily Population 22,331
Active Duty Military..... 5,283 / 23.7%
Military Family Members .....5,311 / 23.8%
Working Civilians ..... 10,037 / 44.9%
Training/Students ..... 1,700 / 76%

The combined military and civilian personnel make up an employment base of approximately 17,020 workers, making Fort Novosel one of the largest employers in the State of Alabama and, quite possibly, the largest employer south of Montgomery. In response to the military and aviation-related jobs, the local communities have developed workforce development programs to supply needed workers. Fort Novosel has its own workforce development initiative within the Directorate of Human Resources that offers leadership development, job shadowing and mentorship.

Fort Novosel is located in Region 6: Southeast Alabama Works!, a part of the state's workforce development program. Southeast Alabama Works! identifies and addresses workforce needs and training, matching employers with job seekers through a job listing and job fairs; and fostering partnerships with training providers and educational systems. Grow Southeast Alabama is another regional organization with a focus on helping businesses and industries expand and/or relocate to southeast Alabama. These regional agencies along with the county industrial development authorities, and the local chambers of commerce all support and foster continued growth in the aviation and aerospace industries as a result of the impact of Fort Novosel.

The Alabama Aviation College, which is part of the Enterprise State Community College, offers programs in aircraft maintenance and avionics technology. Both programs teach skill sets needed in the local aviation industry. Additionally, most of the high schools have dual enrollment programs that allow students to take classes at the community colleges while they are still in high school to get a jump start on education and training for the local workforce.

Today, Fort Novosel is truly an economic engine in the Wiregrass Region with approximately 23 aviation and aerospace industries located here. The DOD's Office of Local Defense Community Cooperation compiles data on defense spending each fiscal year. For Fiscal Year 2022, the DOD funded $10,2 billion in defense contracts in Alabama, of which 8.6 percent are in Dale County. While a majority of Alabama's defense spending is located in North Alabama related to Redstone Arsenal, Fort Novosel's M1 Support Services is ranked #4 in the state with defense contracts of more than $500 million. It is estimated that the region's total defense contracts resulted in 6,548 direct jobs in Coffee, Dale and Houston counties in 2022 with a payroll of more than $453 million.

In a report for the Alabama Military Stability Foundation for Fiscal Year 2019, produced by the University of Alabama in Huntsville in January 2023, the Fort Novosel estimates that *"the direct impact on employment from military-related spending is 24,416 jobs with a multiplier impact of 4,449, the total impact on employment in the Fort (Rucker) Novosel Region is 28,865 (jobs)."* The report data indicates that the total payroll is $2.73 billion with an output of $9.04 billion. Jobs created through defense contracts comprise 67.6 percent of the Wiregrass Gross Regional Product (GRP). Of the total defense contracts in the Wiregrass Region, 67.0 percent are for support activities for air transportation, 15.0 percentage for technical and trade schools; 8.0 percent is for construction; 7.0 percent is for facilities support services; and 3.0 percent is for metal manufacturing.

Figure 3.6

Total Economic Impact of Military in Fort (Rucker) Novosel Region

(in Millions except Employment)

Impact	Direct	Multiplier	Total
Employment	24,416	4,449	28,865
Payroll	$2,563	$167	$2,730
Output	$8,373	$667	$9,039

Note: Totals may not tally due to rounding.
Source: Alabama Military Stability Foundation. Military And Aerospace Impact on the State of Alabama, FY 2019; University of Alabama in Huntsville, January 2023. http://www.almsf.org/economic-impact.html

Beyond the impact of jobs directly and indirectly related to Fort Novosel, the location of the post in the Wiregrass area has had an impact on retention of population, especially military population. According to the 2021 ACS data, there are 25,633 veterans in the 6-county study area, which is 11.4 percent of the total population. In comparison, only 6.9 percent of the nation's population and 8.4 percent of the state's population are veterans. In addition to individual veterans, it is estimated that there are 108,824 military retirees and family members in the Wiregrass area.

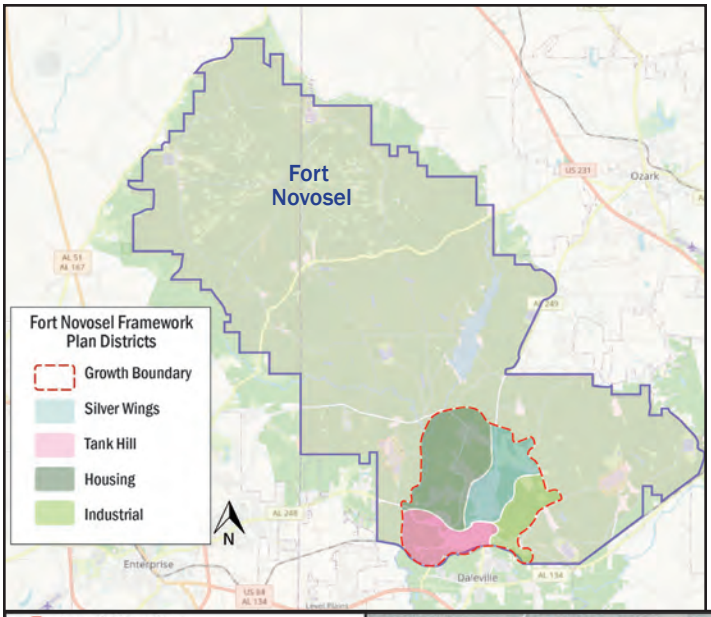
3.5 Infrastructure

Management of the infrastructural systems and planning for future development is housed within the Directorate of Public Works (DPW). Although Fort Novosel is the largest military installation in Alabama, at approximately 62,000 acres, most of the structural development is concentrated in the southernmost portion of the installation in the cantonment which encompasses approximately 3,000 acres. The spatial relationship between the cantonment and the installation is shown in Figure 3.7. The remainder of the main installation, airfields and stagefields are used for training. The **2016 Real Property Vision Plan** outlined four growth and development districts within the cantonment growth boundaries: Silver Wings, Housing, Industrial, and Tank Hill. Beyond the cantonment area, DPW manages facilities on outlying properties that include five basefields, 17 stagefields, and one forward arming and refueling point (FARP).

Fort Novosel has a total of 799 operational facility buildings with a gross square footage of 6.3 million square feet, in addition to 2,207 residential structures. The residential portion of Fort Novosel encompasses more than 2.3 million square feet within 977 acres of land. The **2016 Real Property Vision Plan** also outlined construction of 15 new or renovated facilities, as shown in Figure 3.8. The infrastructure system that feeds the facilities includes power, drinking water and sanitary sewer systems, as well as ensuring vehicular, pedestrian, or other access via safe and well-maintained roadways, sidewalks or other pathways. Additionally, Fort Novosel must comply with national environmental policies such as the Clean Air Act (CAA) and Clean Water Act (CWA).

Power is supplied to Fort Novosel by Alabama Power. At one point, the installation had one single electric transmission feed for electric power. It was questionable if the power supply was adequate to fully meet the needs of the installation in terms of security and sustainability. The issue resulted in a finding on a Department of the Army Installation Management Command (IMCOM) Higher Headquarters Anti-Terrorism (HHAT) security assessment for Fort Novosel. During storm and severe weather events having a single transmission feed could leave Fort Novosel with times of prolonged power outages because of a lack of backup power sources. The issue has been investigated and an alternative power source is being implemented with gensets through the US Army Corps of Engineers. Corvias has also installed an alternative energy source with a 7.2 MW solar farm for residential use. The solar solution is expected to stabilize utility rates for residents and generate cost savings that will be reinvested into the housing program.

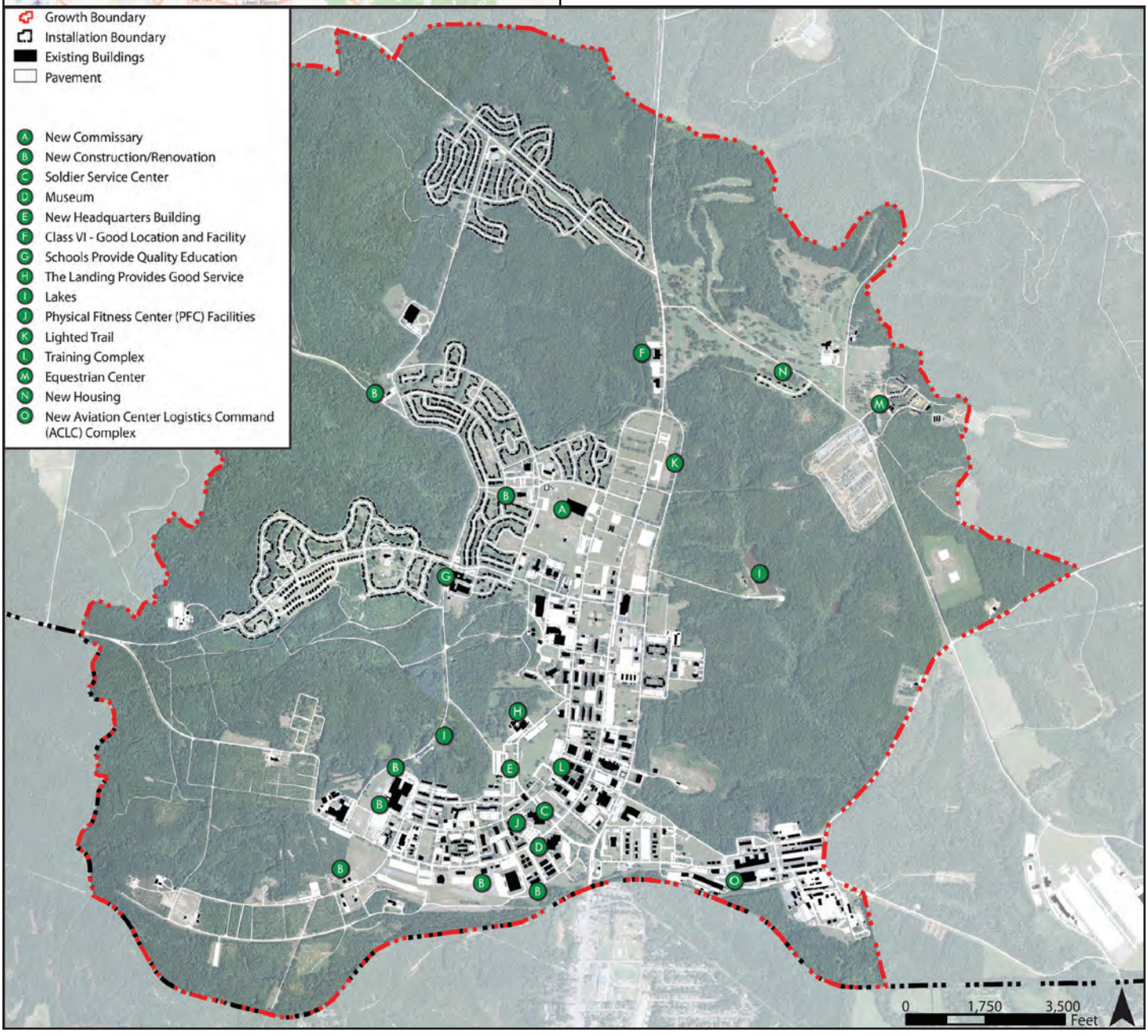
Fort Novosel owns the system that supplies water to the cantonment and most of the outlying area. In 2004, however, the system was privatized and is now managed by American Water Enterprises. In 2022, the Fort Novosel water system supplied an average of 813,698 gallons of water per day for consumer use. Most of Fort Novosel's drinking water comes from seven wells located in the Tuscahoma Sand, Providence Sand, Clayton, Ripley and Nanafalia aquifers. The wells have a pumping capacity ranging from 425 gallons per minute (GPM) to 800 GPM. All wells are closely monitored and maintained. Several other wells provide water for uses such as training, firefighting, and recreation. The water treatment process includes chlorination and fluoridation. Throughout the treatment process, the water is continuously monitored to ensure water quality. There are three 500,000 gallon ground storage tanks and two 500,000 gallon elevated storage tanks with over 70 miles of piping and 1,800



Left:
Figure 3.7
Cantonment in Relation to Installation Boundaries

Illustrations are excerpted from the ***Fort Rucker Real Property Vision Plan***, May 2016, Michael Baker Jr., Inc. - AECOM Joint Venture.

Below:
Figure 3.8
Cantonment 2016 Attributes



service connections within the water distribution system. Cairns Army Airfield is supplied by the City of Daleville; and Shell Army Heliport is supplied water by the City of Enterprise. It is estimated that the current water supply is adequate for both existing and projected needs. The water system is monitored regularly for bacteria and other chemical substances that may find their way into the water source. Fort Novosel's drinking water is in full compliance with U. S. Environmental Protection Agency Primary and Secondary Drinking Water Standards.

Under the CWA, Fort Novosel holds, and maintains compliance with, several NPDES (National Pollutant Discharge Elimination System) permits to manage discharge into nearby waterways from either the sanitary sewer system or from stormwater runoff. NPDES permits are issued and monitored to ensure compliance with EPA standards. Wastewater on the main post and CAIRNS AAF is treated on-post using a 2.5 million gallons per day (MGD) activated biosolids plant. At Shell Army Heliport, the wastewater is routed to the City of Enterprise for treatment. Wastewater services on Fort Novosel are also privatized and are managed by American Water Enterprises. The existing sanitary sewer treatment facilities are capable of supporting an estimated population of 17,621 persons plus expansion potential. Additionally, the Fort Novosel DPW, Environmental and Natural Resources Division provides guidance to employees, residents and students regarding what substances are allowed in sanitary sewer drains and stormwater drains, particularly regarding hazardous materials, oils and fuels.

Non-hazardous solid waste is handled by a commercial contractor who removes solid waste from dumpsters located on Fort Novosel. The solid waste is then transported to a local landfill. Fort Novosel does maintain one closed sanitary landfill. Groundwater and methane from the landfill are monitored at regular intervals to ensure compliance with all applicable regulations. Other closed landfills on post which were used in the past are being investigated under the Installation Restoration Program to determine if they are causing any environmental damage/ issues. Fort Novosel also operates a recycling program that encourages residents to separate all recyclable materials prior to placing solid waste into a dumpster. The Recycling Incentive Program offers installation organizations the opportunity to participate in an incentive-based recycling program that provides DFMWR funds in exchange for direct contributions of recyclable material. The recycling programs accepts a wide range of materials including aluminum cans, cardboard, paper, printer and toner cartridges, metal, wood, electronics, used antifreeze,batteries, and oil, fluorescent light bulbs, and plastic bags.

The Fort Novosel road network includes a system of arterials, collectors and local roads to efficiently manage and carry vehicles within the post. There are five gates onto Fort Novosel, three of which are primary gates, open 24 hours, and two are secondary gates open for limited hours on Monday through Friday to facilitate work traffic flow. The Daleville Gate, located at the south end of the post, is one of two gates with a visitor control center and is the gate closest to the cantonment area. The Daleville Gate is accessed by Daleville Avenue in Daleville, two miles north of US Highway 84. Once on post the Daleville Gate, traffic is directed to the intersection of 3rd Avenue and Novosel Street, both of which are major thoroughfares in the post circulation system.

The Ozark Gate, on the east side of the installation, is the second gate with a visitor control center and is accessed by West Andrews Avenue on the west side of the City of Ozark. The gate is approximately 5.2 miles southwest of the intersection of US Highway 231 and West Andrews Avenue. From the Ozark Gate traffic flows south on Andrews Avenue, another major post thoroughfare, approximately 2.5 miles before reaching the cantonment area.

The Enterprise Gate, located on the southwest side of the installation, is the third primary gate and is accessed from Rucker Boulevard. From the gate traffic can travel east on Red Cloud Road approximately two miles to reach the cantonment area, or fork to the southeast on Andrews Avenue and travel about two miles to the cantonment area. At this entrance point, both Red Cloud Road and Andrews Avenue are only major arterials for carrying traffic on and off the post, but not for interior circulation.

The two secondary gates are the Faulkner Gate, located on the west side of the installation, and the Newton Gate, located on the southeast side. Both gates provide access to the post via smaller, local roads. The Newton Gate, however, does provide commercial truck route access for deliveries. Traffic flow, congestion and road conditions are general complaints of those who live and/or work on the post. Existing sidewalks and pathways, however, are a bonus. Road construction and maintenance is generally conducted on a contractual basis, depending on the size of the project and time frame.

3.6 Natural and Environmental Resources

Management of natural resources and environmental compliance falls under the Directorate of Public Works (DPW), Environmental and Natural Resources Division. The division ensures that all environmental laws are met while at the same time enabling Fort Novosel to sustain its mission. The training and operations of the mission at Fort Novosel, however, are a challenge to environmental safeguards for air quality, water quality, land management and to threatened and endangered species.

Fort Novosel works with state and federal agencies, such as US Fish and Wildlife, to develop a game management plan that includes terrestrial habitat management; fisheries management, a forestry program, and a land management program. Streams that cross Fort Novosel provide habitat to a number of federally listed mussel species. The Southern Sandshell, Southern Kidneyshell, Choctaw Bean, Tapered Pigtoe, and Fuzzy Pigtoe occur in the Choctawhatchee watershed. The Choctaw Bean and Fuzzy Pigtoe have been identified in Claybank Creek and Steephead Creek on Fort Novosel; however, the other species have not been found in any recent surveys. The gopher tortoise is a Species of Concern and is located on the installation. The eastern population of the gopher tortoise is a candidate species for listing under the Endangered Species Act. Much of the prime gopher tortoise habitat on Fort Novosel occurs in the Impact Area. Should the eastern population of the gopher tortoise be listed as endangered or threatened, it could impact the mission of Fort Novosel. In addition, breeding grounds for the threatened Atlantic Sturgeon and habitat for the threatened eastern indigo snake are in the vicinity of the installation. Wetlands are also found on Fort Novosel alongside the tributaries of the Choctawhatchee River, with several floodprone areas located along Claybank Creek and other locations.

Figure 3.9: Gopher Tortoise, a Species of Concern in Alabama present on Fort Novosel

As with any other built environment, there are many factors that can affect an area's natural resources and the surrounding land area. The installation's primary activity is the one that poses the greatest environmental concerns because of the sheer volume of helicopter flying and training that leads to noise, land erosion (rotorwash), exhaust in air, gas and oil spills, and storm water runoff. To offset and minimize the environmental impact of Fort Novosel and its operations, the DPW Environmental and Natural Resources Division implements a variety of best management practices (BMPs) that help sustain environmental compliance, some of which are showcased below.

- Comply with requirements of all permitted activities, such as Stratospheric Ozone Protection Program, CAA, CWA, and NEPA.
- Noise Management Program to mitigate operational noise from the frequent training missions conducted. Goals are to (1) plan for and prevent adverse noise impacts, and (2) investigate and respond to noise complaints. Fort Novosel has and Installation Operational Noise Management Plan; a Fly Neighborly and Noise Abatement Program; and a Fly Neighborly Program Guide.
- Minimize polluted water runoff with aircraft washracks that are equipped with an oil/water separator that captures oil and fuel residue from the water and routes the water on to the wastewater treatment plant. The only approved washrack for vehicle washing on is the Transportation Motorpool.
- Maintain equipment and vehicles so that they operate efficiently and clean, use the control devices intended for the equipment or vehicle to minimize.
- Land Management Program includes maintenance and conservation of all Fort Novosel land to address soil erosion, rotorwash, gully erosion, and sedimentation.
- The presence of live ordnance (surface and sub-surface) found on the Areal Gunnery Range Complex prohibits the ability to completely restore land in this area. Instead, a series of water and sediment retention ponds were constructed on the major drainage outfalls. This conservation practice resulted in the turbidity reduction of all exiting stream waters to now reach compliance with Alabama water quality regulations. These retention ponds have large sediment storage capacities and are currently providing quality habitat for fish and numerous wildlife species.

4. COMPATIBILITY ASSESSMENT

Training and other activities facilitated at Fort Novosel may negatively impact surrounding civilian areas due to aviation accident potential, noise, and other effects. Civilian activities that occur adjacent to Fort Novosel, however, may interfere with training. There are multiple factors that can affect the compatibility between Fort Novosel's facilities and the surrounding communities. The Compatibility Assessment provides a review of 13 of those compatibility factors as they relate to Fort Novosel and the communities that support it.

Compatible land uses are those that can coexist with a nearby military installation without constraining the safe and efficient operation of the installation, or exposing people living or working nearby to significant environmental impacts. Compatibility, in relationship to military readiness, is the balance and/or compromise between community and military needs and interests. The goal of compatibility planning is to promote an environment where both entities can successfully coexist.

4.1 Compatibility Factor Overview

Most compatible use studies consider 24 factors to determine if community and military plans, programs, and activities are compatible or in conflict with one another. For this Fort Novosel Compatible Land Use Study, the review identified 13 compatibility factors that are applicable and therefore assessed to determine current and potential issues, as shown in brown and bold.

CLUS Compatibility Factors

1. Air Quality
2. Anti-Terrorism, Force Protection
3. Biological Resources
4. Climate Adaptation
5. **Coordination, Communication**
6. Cultural Resources
7. Dust, Smoke, Steam
8. Energy Development
9. **Frequency Spectrum - Capacity**
10. **Frequency Spectrum - Impedance, Interference**
11. **Housing Availability**
12. **Infrastructure, Roadways**
13. **Land and Air Spaces**
14. **Land Use**
15. **Legislative Initiatives**
16. **Light and Glare**
17. Marine Environments
18. **Noise**
19. Public Trespassing
20. **Safety Zones**
21. Scarce Natural Resources
22. **Vertical Obstructions**
23. **Vibration**
24. Water Quality and Quantity

Although 13 compatibility factors are assessed, some of the factors are combined into a single assessment group because of their interaction and dependence on one another. For example, land use, noise and safety are the most reoccurring issues and are almost always intertwined, so they will assessed together. The same is true with the frequency spectrum for both capacity and impedance, or interference, which have been combined into one assessment category. Compatibility factors that were not applicable to Fort Novosel and the surrounding area include air quality, anti-terrorism and force protection, biological resources, climate adaptation, cultural resources, dust, smoke and steam; energy development; marine environments; public trespassing; scarce natural resources; and water quality/quantity. The other compatibility factors have relatively mild effects on the study area and will not be assessed as extensively.

4.2 Measuring Sound

Prior to the assessment of land use and noise, it is necessary to understand how sound is measured and when it is defined as noise. In 2019, the Environmental Noise Branch of the Environmental Health Sciences Division of the Army Public Health Center (APHC) prepared the ***Fort Novosel Installation Compatible Use Zone Study*** (ICUZ). The ICUZ study, which is Fort Novosel's required Installation Operational Noise Management Plan (IONMP), quantifies the noise environment from military training sources and recommends the most appropriate uses of noise-impacted areas. The noise study is conducted approximately every five years, or as missions change on the installation that would alter noise. ***This section on the explanation of sound and how it is measured is a direct excerpt from the 2019 ICUZ study.***

Sound is defined as a physical disturbance in a medium (i.e. gas, liquid, or solid) that is capable of being detected by the human ear. Sound waves in air are caused by variations in pressure above and below an even (static) value in atmospheric pressure. These changes in atmospheric pressure as they relate to human hearing can have great variance, for example a whisper at two meters would be as low as 0.0006 Pascals, whereas an M16 rifle fired near the shooter's ear would be 1,000 Pascals.

Due to this large range of sound pressures and that the human ear responds more closely to a logarithmic scale (rather than a linear), the decibel (dB) system was developed to quantify sound energy (loudness) into a meaningful and manageable scale. On this scale, the range of average human hearing runs from approximately zero (threshold of hearing) to 140. Using the example above, the whisper at two meters would register 30 dB and the M16 rifle shot near the shooter's ear would be 154 dB.

When measuring sound, the levels are often filtered (i.e. frequency weighted) to accommodate how the human ear functions. The "A-weighting" network accounts for human hearing and can be assumed for all sound levels in this report unless otherwise specified. However, military low frequency impulsive sounds (e.g., explosions, artillery blasts) use the C-weighting network which takes into account the low-frequency content and better correlates with building vibration and human subjectivity to such events. The following are explanations of the noise metrics that are used in this assessment.

- **Day–Night Average Sound Level (DNL)**. DNL is a noise metric describing the average noise level over the course of a 24-hour period. A 10 dB adjustment is applied to operations that happen during night time hours (10 p.m. through 7 a.m.) because noise tends to be more intrusive at night than during the day. DNL accounts for the total or cumulative noise level at a given location over a specified assessment (time) period. In the case of large caliber and aircraft noise, the assessment period is an annual average.
- **Maximum Sound Level (Lmax)**. The highest sound level measured during a single event in which the sound level changes value with time (e.g., an aircraft overflight) is called the maximum sound level, or Lmax. The maximum sound level is important in judging the interference caused by a noise event with conversation, television or radio listening, sleeping, or other common activities.
- **Peak (dBP)**. Peak is a single-event sound level without frequency weighting. There is no time component or assessment period with Peak such as with DNL. Thus, the peak level does not have a nighttime adjustment. It's also the same whether one round is fired or a thousand rounds fired at a given range. It is a singular measure of the peak sound produced at that instance.
- **PK15(met)**. PK15(met) is a computer modeled single-event peak level that considers the expected range in sound levels under varying propagation conditions. PK15(met) would be exceeded only 15 percent of the

time by the loudest munitions type detonation. This metric accounts for variations caused by weather conditions and favor noise propagation.

- **PK50(met)**. PK50(met) is similar to the PK15(met) except that it represents the peak noise level that is exceeded 50 percent of the time. This metric also accounts for weather but assumes conditions which are not favorable for noise propagation, rather average or neutral weather conditions with regards to noise.

The principle influence on sound propagation, or how sound travels, is weather. Wind and temperature significantly influence how far sound travels from a source and how loud it will be at the receiver's location. As sound travels through air, a receiver downwind of the source will be subjected to higher sound levels than a receiver upwind; in effect the wind is actually helping move the sound to the downwind receiver, while upwind the sound must "swim against the current."

Combine wind direction with temperature variation (as a rule, sound usually travels further in cold temperatures) and one may observe the phenomena of atmospheric refraction. This is the process by which atmospheric conditions actually bend and/or focus sound waves toward some areas and away from others.

When a temperature inversion occurs, military operations may sound much louder than normal, or be heard at greater distances. The inversion layer acts as a boundary for the sound, trapping it close to the ground. This can create areas of high intensity sound far from the sound's source. As a result, on most days it may be possible to detonate 10 pounds of explosives without disturbing a community (neutral weather conditions), while on another day with a temperature inversion, the detonation of 1 pound at the same location may be disruptive (unfavorable weather conditions).

Figure 4.1 illustrates how temperature inversions bend (refraction) the sound created by a typical explosion. The sound waves from the explosion initially travel upward, but the inversion reflects the sound back downward toward the ground, generating high noise levels many miles away. Under normal conditions, the noise levels at that distance would otherwise be much lower.

Based on these phenomenon it is easy to see how predicting sound travel can be very difficult, but the Explosives Research Group (ERG) and the University of Utah developed guidelines to help determine what would be "good" or "bad" firing times. These guidelines as summarized in Figure 4.1. Another factor in sound propagation can be the natural topography of the land in and around the firing ranges and impact areas, as well as outside the installation. Naturally occurring terrain features have an effect on blast noise sound waves (air-blast) through both reflection and diffraction.

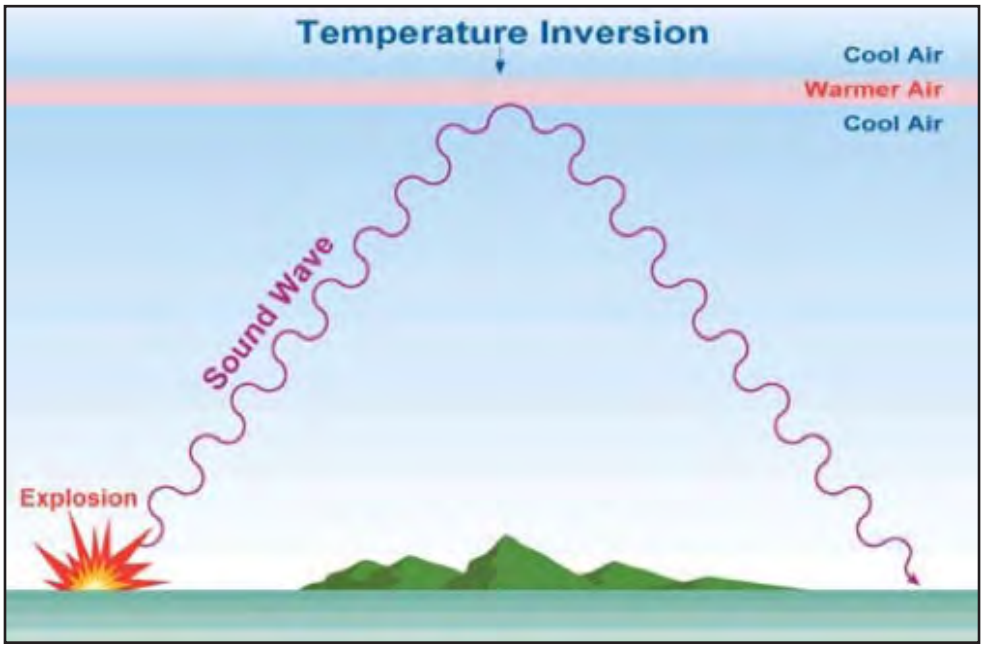


Figure 4.1 Example of a Temperature Inversion
Source: Department of Defense; Community and Environmental Noise Primer. http://dodnoise.org/chapter/talking-about-noise

'Good' Firing Conditions

- Clear skies with billowy cloud formations, especially during warm periods of the year.
- A rising barometer immediately following a storm.

'Bad' Firing Conditions

- Days of steady winds (5-10 mph) with gusts of greater velocities (above 20 mph) in the direction of nearby residences.
- Clear days on which "layering" of smoke or fog are observed.
- Cold, hazy, or foggy mornings.
- Days following a day when large extremes of temperature (about 36°F) between day and night are observed.
- Generally high barometer readings with low temperatures.

4.3 Land Use, Noise and Safety Assessment

Incompatible land uses result in conflicts between the mission sustainability of Fort Novosel and the health and welfare of the surrounding communities. Land use may include both the current use of property and its potential for future use. Due to the nature of Fort Novosel training and operations missions, some land uses are more compatible than others depending on the proximity to the installation, airfield or stagefield. Unlike most military installations, the impact of Fort Novosel is not solely concentrated around the perimeter of the post itself. In fact, most land use, noise and safety impacts from Fort Novosel occur near the outlying airfields, stagefields, and remote training sites used for aviation training. There are five airfields: Hanchey, Knox, and Lowe AHPs, located on the south end of the Fort Novosel installation; Shell AHP, located three miles west of the installation; and Cairns Army Airfield (AAF), located two miles due south of the cantonment. The 18 stagefields, located throughout five counties, are primarily used for practicing standard maneuvers. Depending on the stagefield, the aircraft capacity varies from nine to 18 aircraft.

Incompatible land uses most often occur where there is a large congregation of people such as residential neighborhoods, schools, hospitals or nursing homes, and shopping centers. The incompatibility feature in these highly populated areas is generally noise from helicopter training. Incompatible land uses can also include infrastructure such as highly-traveled roadways, telecommunication towers and even electrical substations and transmission lines. Agricultural land uses can also sometimes be incompatible based on the nature of the farm and the type and amount of livestock present.

Safety is also a factor in land use compatibility due to the accident potential of aircraft. Although aviation accidents are rare, the potentially severe impact of such an accident over a civilian area makes a strong case for ensuring that incompatible land uses are not present. Historically, the areas with the highest potential for aviation accidents are areas adjacent to the end of landing lanes, or runways. There are three primary safety criteria used to define accident risk, as listed and described below:

- **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 CZ.
- **Accident Potential Zones (APZs)**
  Accident Potential Zones extend beyond the CZ and show areas that are not as critical as the CZ but still have high potential for aviation accidents. The APZ I is the area closest to the CZ 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.

For the 2019 Fort Novosel ICUZ, sound was measured for four different noise sources: (1) small arms; (2) large arms and demolition (CDNL); (3) the loudest aircraft, the CH-47 (Chinook); and (4) for the UH-72 (Lakota) which would represent the quietest scenario for aircraft. The Department of Defense has guidelines for compatible land use standards that involve managing safety and noise issues. For more details on how the noise study was conducted and information on sound measurements, refer to the ***Fort Rucker Installation Compatible Use Zone Study, 2019***. The ICUZ program defines the following four Noise Zones:

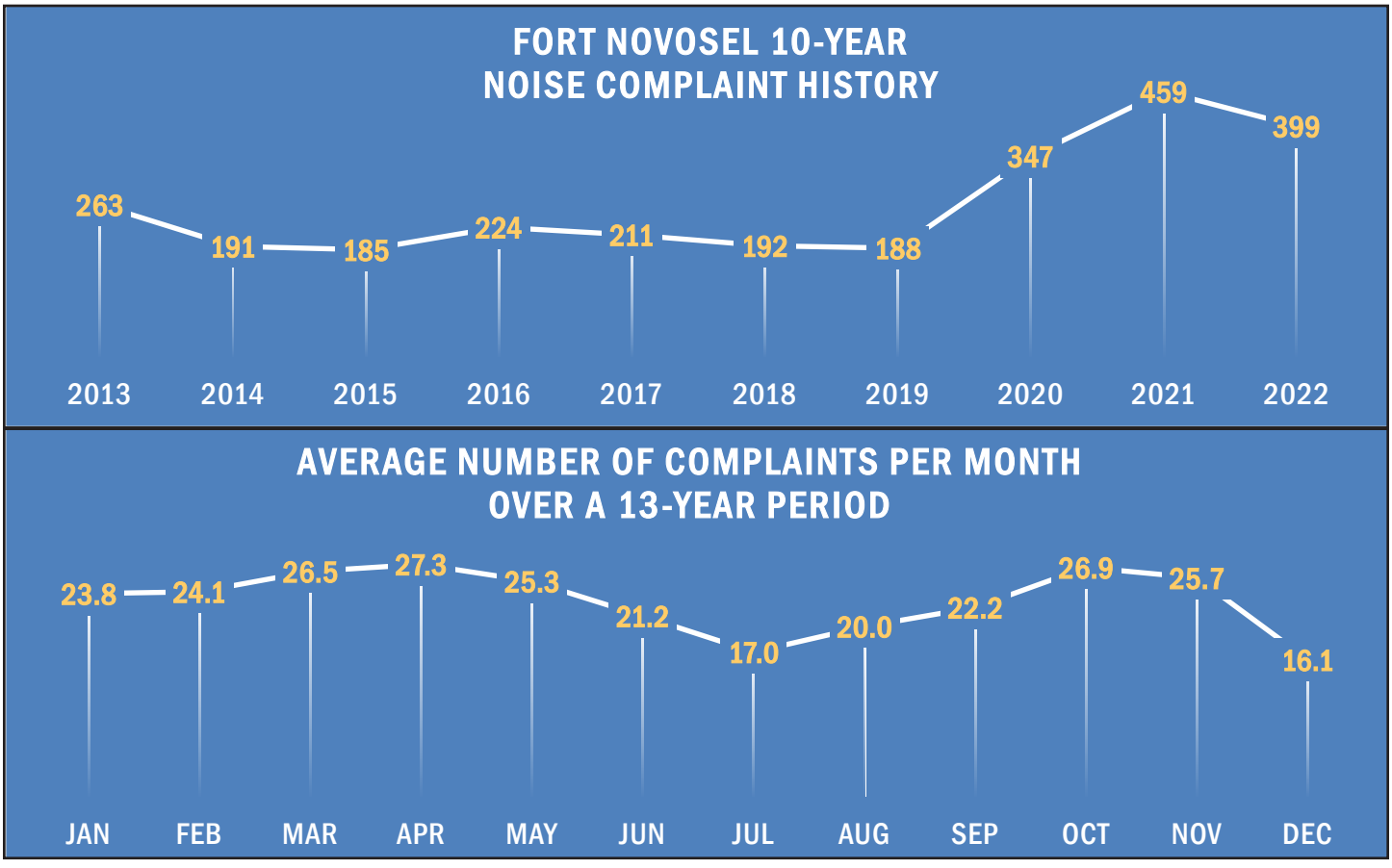
- **Zone III**
  Noise-sensitive land uses are not recommended (incompatible).
- **Zone II**
  Although local conditions such as availability of developable land or cost may require noise-sensitive land uses in Zone II, this type of land use is generally not compatible and is strongly discouraged on the installation and in surrounding communities. All viable alternatives should be considered to limit development in Zone II to non-sensitive activities such as industry, manufacturing, transportation and agriculture.
- **Zone I**
  Noise-sensitive land uses are acceptable within the Zone I. However, though an area may only receive Zone I levels, military operations may be loud enough to be heard - or even judged loud on occasion. Zone I is not one of the contours shown on the map; rather it is the entire area outside of the Zone II contour.

- **Land Use Planning Zone (LUPZ)**
  The LUPZ represents an area starting at the lower limit of Zone II and extends outward to a distance significant enough to allow for a 5 decibel (dB) reduction in sound level for large caliber and aircraft noise (There is no LUPZ for small arms activity noise zones). Within this area, noise-sensitive land uses are generally acceptable. Communities and individuals, however, often have different views regarding what level of noise is acceptable. To address this, some local governments have implemented land use planning measures out beyond the Zone II limits.

Noise complaints are handled by the Fort Novosel noise mitigation officer. Substantiated complaints containing sufficient information are investigated by the airfield mitigating officer, or are forwarded to the commander/director of the unit involved. At a minimum, the following information is collected: identity of aviators involved; validity of complaint; if appropriate regulations/guidelines were followed; what corrective action, if appropriate, was taken; procedural adjustments to routes, corridors, etc., if necessary and/or possible in view of safety, training, and noise impacts; and how to avoid similar complaints.

Multiple, irreconcilable complaints can be a factor in future base realignment and closure (BRAC) considerations. Figure 4.2 provides a history of Fort Novosel noise complaints over a 13-year period. Between 2020 and 2021, the number of complaints increased; however, in 2022, complaints decreased by 13.0 percent and are continuing to decrease in 2023 according to early reports. In April 2023, there were 267 fewer complaints than in April 2022, representing a 67.0 percent reduction. According to the Noise Complaint Logs, approximately two-thirds of noise complaints each month are from repeat complainants. There are, on average, only three to four first time complaints each month. The majority of noise complaints come from sparsely populated areas near Nap-of-Earth routes or remote training sites. It is in these areas that helicopters fly lowest during combat flight training. For those residents who are not aware of the USAACE training routines, the noise and vibration can be disconcerting. Through the Fly Neighborly Program, USAACE has attempted to accommodate most complaints as much as possible. Mitigation has included altering flight paths and/or rescheduling training to accommodate an event. There is no way, however, to mitigate all noise caused by USAACE training activities.

Figure 4.2 Noise Complaints



Source: US Army Aviation Center of Excellence, Noise Complaint Logs

Over time, development in Daleville, Enterprise, and Ozark have been driven by the opportunity to provide retail and commercial services closer to serve a target population of residents and workers on Fort Novosel. As a result of the Fort Novosel mission and training growth, the towns and cities surrounding the installation have grown in both population and area. The Fort Novosel Land Cover Map, Figure 4.3, shows the medium and high intensity development (areas in red) that has occurred in Daleville, Enterprise, and Ozark around the southern half of the Fort Novosel installation where the cantonment area lies. Medium and high intensity development is also found along US Highway 84, south of Fort Novosel in Enterprise, Level Plains, Daleville, and Dothan; along US Highway 231, east of Fort Novosel in Ozark; along Rucker Boulevard in Enterprise; and along Alabama Highway 85 (Main Street) in Daleville. To a lesser degree, the land cover map also shows medium and high intensity development along Alabama Highway 123 from Ozark to Newton; along Alabama Highway 134 from Newton to Daleville, and along Alabama Highway 167 from Enterprise to Troy.

Land cover around the northern part of the installation is primarily pasture, hay, shrub/scrub, mixed forest, and evergreen forest land. There is, however, considerable single lot, rural residential development located along state and county roads. Some of the residential development is associated with the existing agricultural land uses, but much of it is rural residential development for those persons who want to live in an unincorporated area and have a few acres of land. Rural residential landowners located near the main installation or one of the airfields or stagefields will likely experience varying degrees of noise and vibration, depending on proximity. The north end of the installation is used for flight, demolition and weaponry training. It is in this area where training noise will be loudest and have the most impact on surrounding properties.

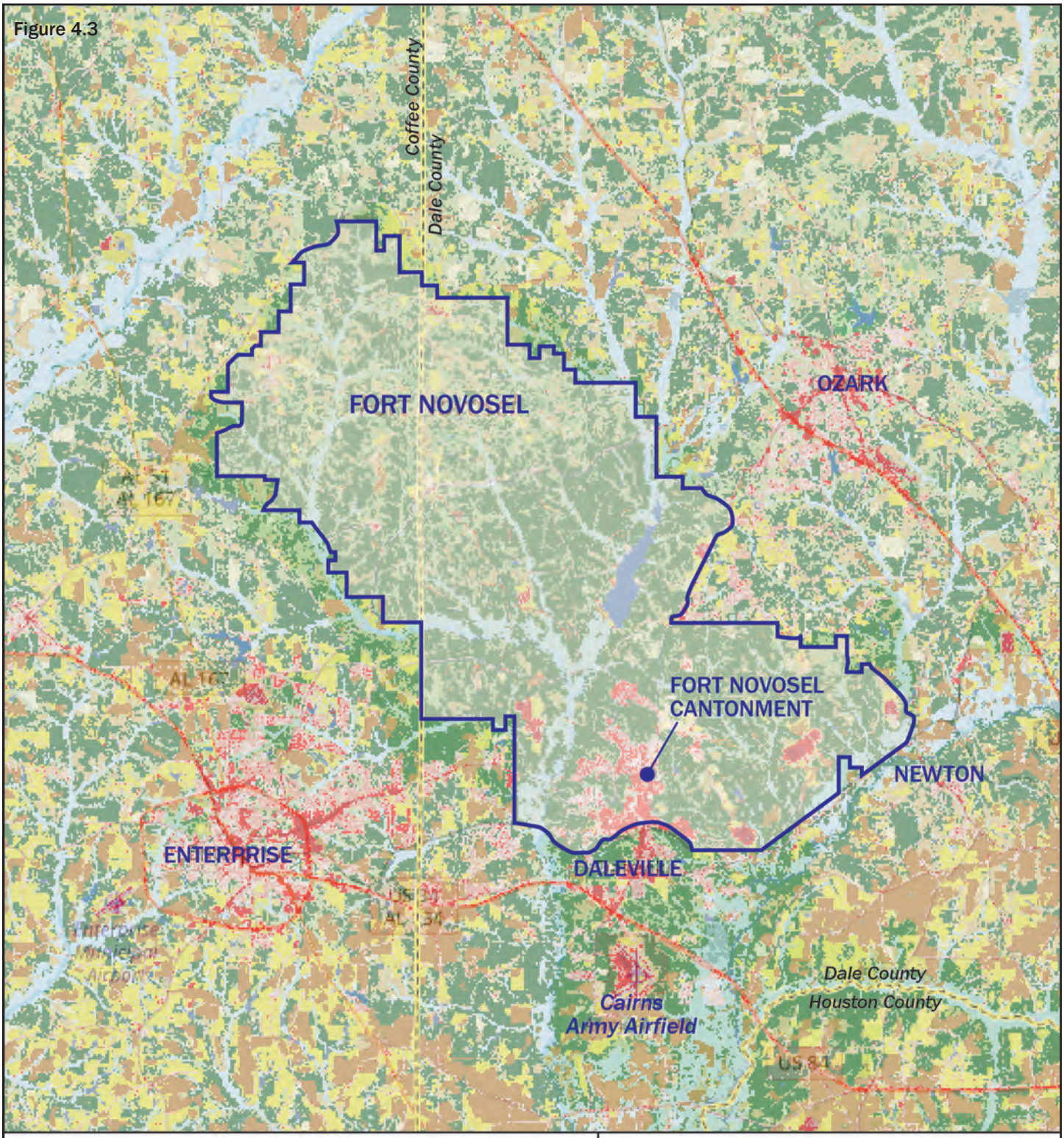
Beyond noise and safety zones, development is more than the construction of a few houses or businesses. It also entails extension of power lines, both service and transmission lines; the extensions of water and sewer services which can bring new water tanks; and, the need for increased communication connectivity which can mean new communication towers. These vertical obstructions can pose a danger to both residents and helicopter pilots. Further, urban development around the post increases the potential for noise complaints as more people are impacted by the noise and vibration caused by Fort Novosel training activities. For that reason, it is important to identify and recognize any incompatible land uses around the Fort Novosel main installation, as well as the airfields and stagefields.

Land use issues for the main Fort Novosel installation include the following:

- Rural residential development surrounding the northern side of the installation is particularly susceptible to noise and vibration
- Development that has occurred around and up to the installation boundaries has the potential to limit the future growth of Fort Novosel
- Lack of buffer area surrounding post due to existing development
- Traffic congestion on roadways that provide access to Fort Novosel
- Continued urbanization of Daleville, Enterprise, Newton and Ozark toward Fort Novosel is likely to compound existing issues
- Fort Novosel mission and training activities could be limited by potential impacts on existing development
- Some landing lane clear zones and accident potential zones extend beyond facility boundaries presenting a safety issue

The following assessments for each airfield and stagefield site include (1) a snapshot of structures within a 2-mile radius of each site based on Microsoft Building Footprints available on the USGS National Map Advanced Viewer; (2) identification of structures within clear and accident potential zones; and (3) identification of structures within the air space boundaries and designated noise zones. Rather than the land use of every parcel, structures are identified by type with the air space boundary on an illustrative map to provide an idea of structural density. Agricultural and forested lands are not identified, as they are clearly visible on the aerial map. Potentially incompatible land uses are identified and may include concentrations of population such as apartment complexes, schools, or industry; vertical obstructions; and annual average daily traffic (AADT) of nearby roadways, where applicable. The airfield and stagefield sites are initially assessed based on noise zones developed for the UH-72 Lakota helicopter. Assessments are also provided for combined noise zones for the CH-47 Chinook helicopter, small arms, and large arms and demolition to identify significant incompatible land uses within these areas. The land uses surrounding the 62 remote training sites are not included in the assessment.

Figure 4.3



NLCD LAND COVER

- Open Water
- Perennial Ice/Snow
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Unconsolidated Shore
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Dwarf Scrub (AK only)
- Shrub/Scrub
- Grasslands/Herbaceous
- Sedge/Herbaceous (AK only)
- Lichens (AK only)
- Moss (AK only)
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

Fort Novosel CLUS
August 2023

Fort Novosel
Land Cover
Noise and Land Use Assessment

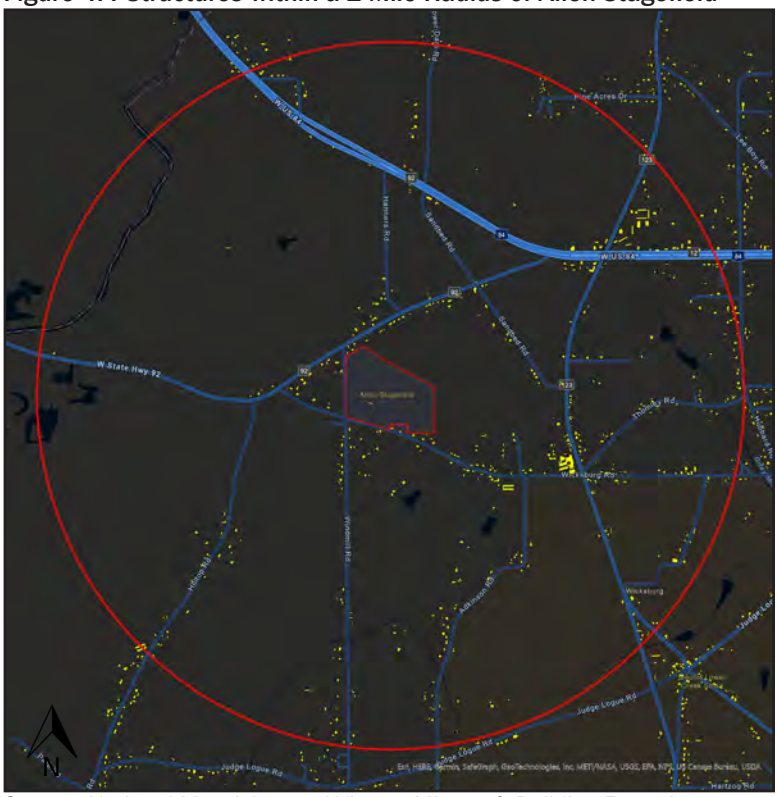
Source: U.S. Geological Survey, The National Map Advanced Viewer, National Land Cover Database (NCLD) Land Cover

4.3.1 Land Use, Noise and Safety: Allen Stagefield Assessment

Allen Stagefield is located east of Clayhatchee on Alabama Highway 92, south of its intersection with US Highway 84 in Houston County. There are no incorporated areas within a 2-mile radius of the stagefield, however, the Wicksburg community is located to the southeast of the stagefield.

- 566 structures within 2-mile radius, 230 (40.6%) of which are within noise zones
- All or portions of seven residential structures located in northwest accident potential zone
- Heavy residential uses along with recreational and educational uses in Noise Zone II
- Residential development has occurred adjacent to stagefield boundary on three sides
- Power transmission lines with electrical substation
- Residential, commercial, institutional and recreational land uses in LUPZ
- Commercial and industrial development at US 84/AL 123 intersection in Air Space Boundary
- AADT: US Highway 84 = 19,107 trips per day

Figure 4.4 Structures within a 2-Mile Radius of Allen Stagefield

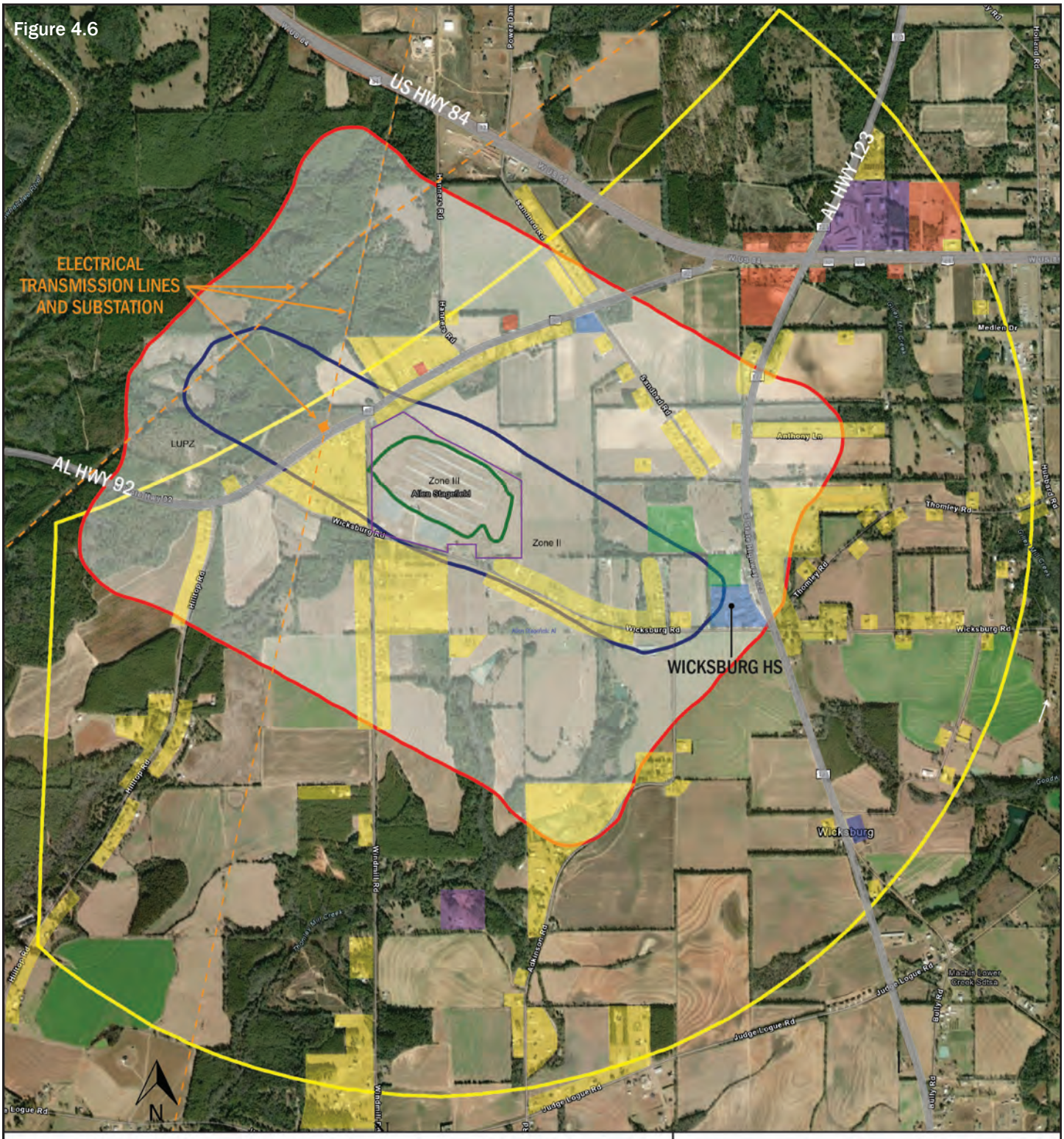


Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.5

Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.6



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Allen Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.2 Land Use, Noise and Safety: Brown Stagefield Assessment

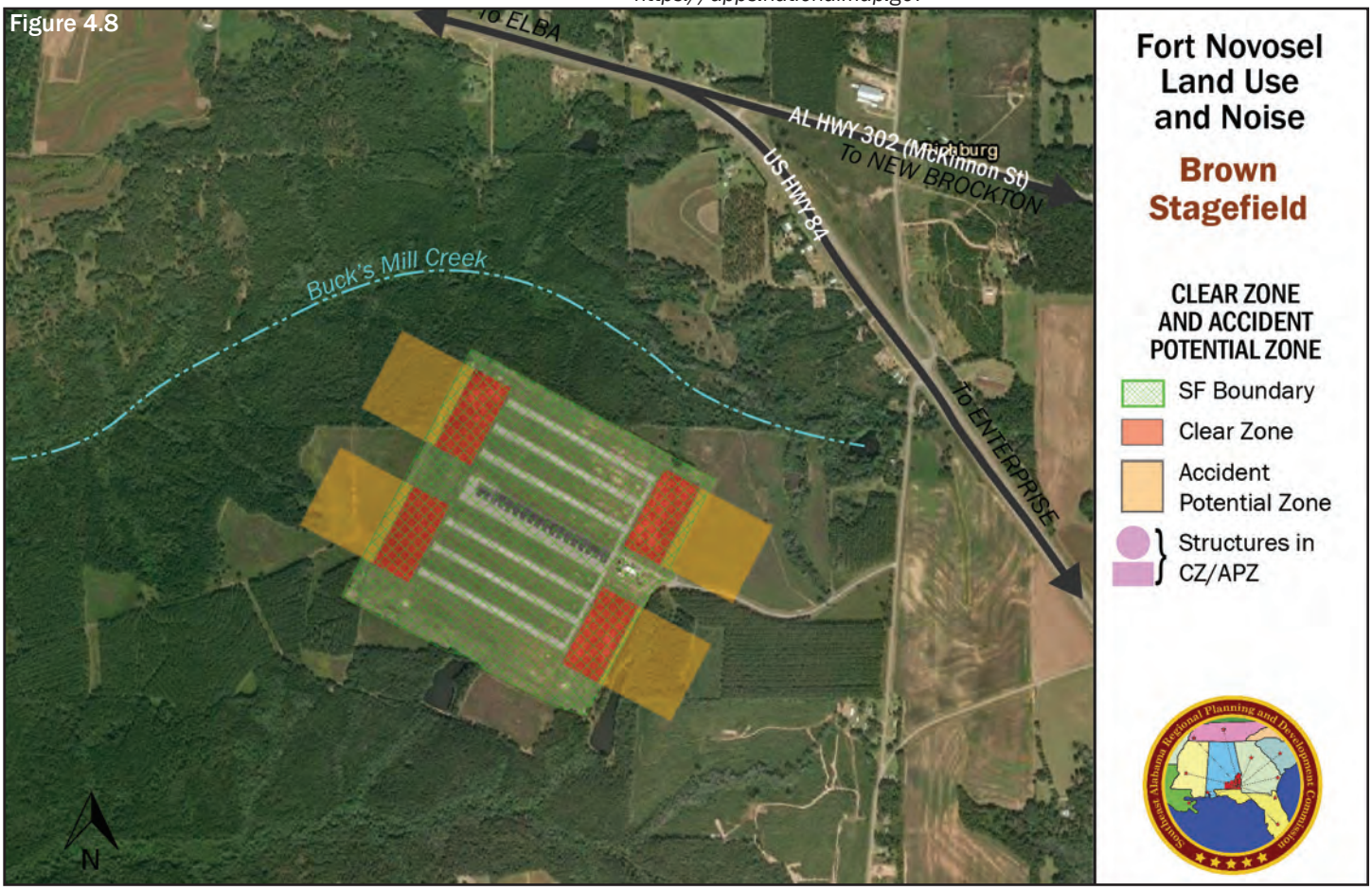
Brown Stagefield is located on Coffee County Road 515, one-third mile south of its intersection with US Highway 84. The location is approximately 1.5 miles west of the corporate limits of the Town of New Brockton. There are three commercial land uses, none of which are incompatible at the current time, along with one church in the LUPZ. Key development within the air space boundary with potential for conflict includes an industry (Ben E. Keith), New Brockton High School, and a water tower. Otherwise, surrounding land uses are primarily residential, agricultural or wooded.

- 290 structures within 2-mile radius
- 7 residential structures within NZ II
- Three commercial, one institutional and an estimated 41 residential structures within LUPZ
- Water tower approximately 1.7 miles east of stagefield landing lanes
- Ben E. Keith Foods, employing 390 people, and New Brockton High School, with 400 students, is 1.5 miles east of stagefield
- 2022 AADT: US Highway 84 = 6,143

Figure 4.7 Structures within a 2-Mile Radius of Brown Stagefield

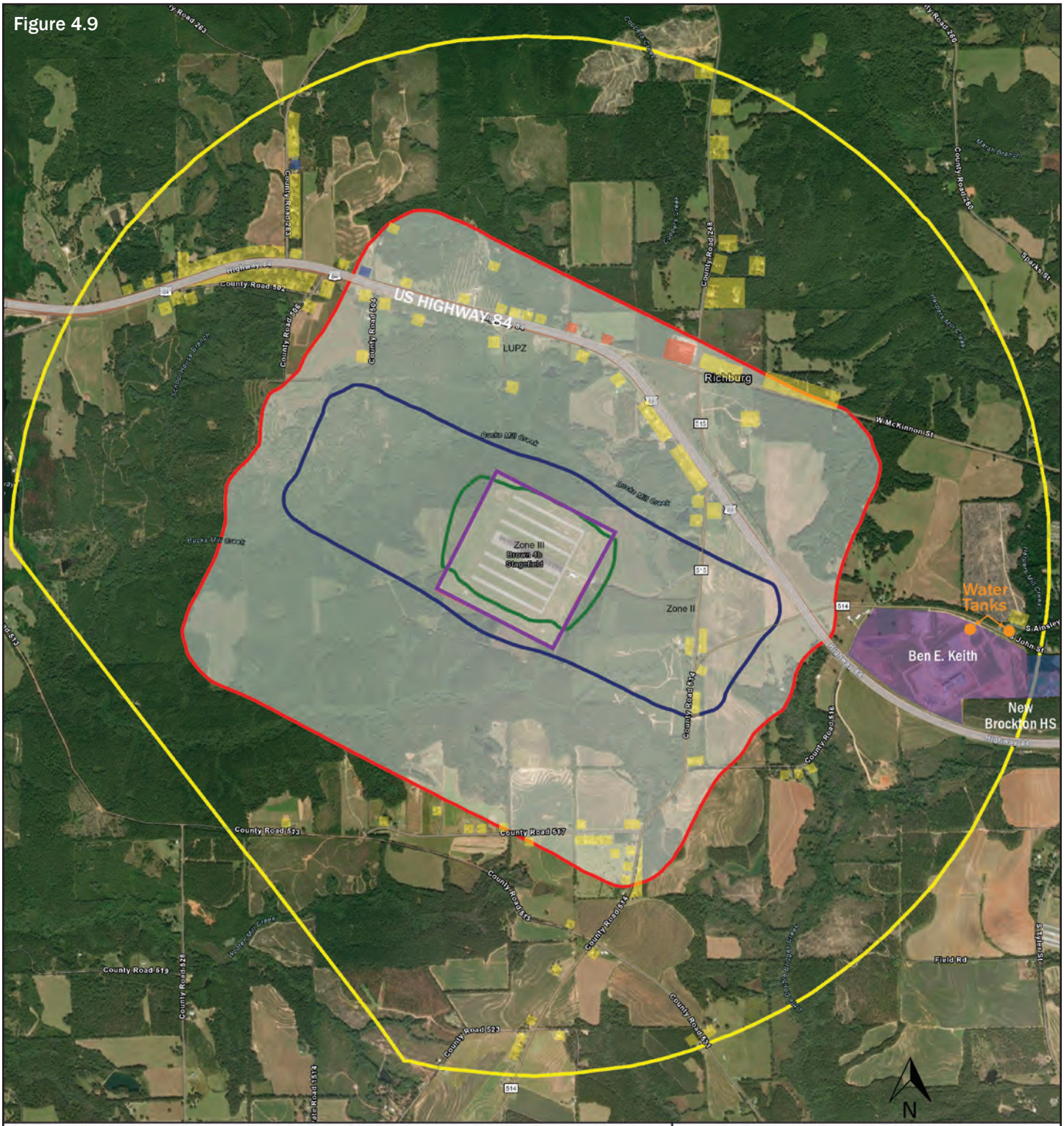
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.8



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.9



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Brown Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

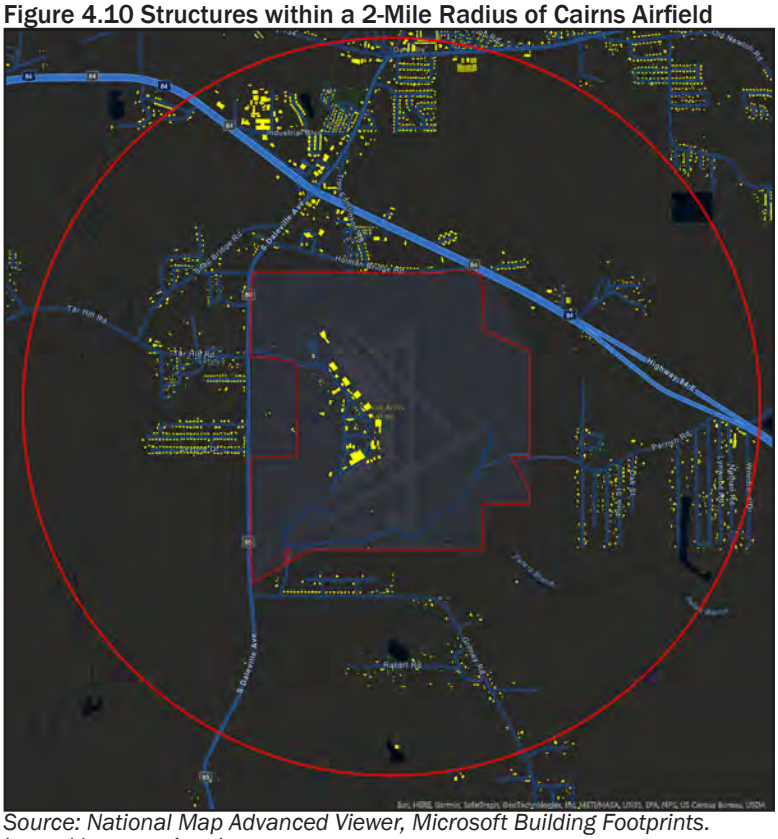
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.3 Land Use, Noise and Safety: Cairns Airfield Assessment

Cairns Army Airfield is located on AL Highway 85, south of US Highway 84. The City of Daleville corporate limits wrap around the airfield on three sides, limiting any physical expansion of the airfield. Although not within a noise zone, there is heavy commercial development, including a radio tower to the north of the airfield.

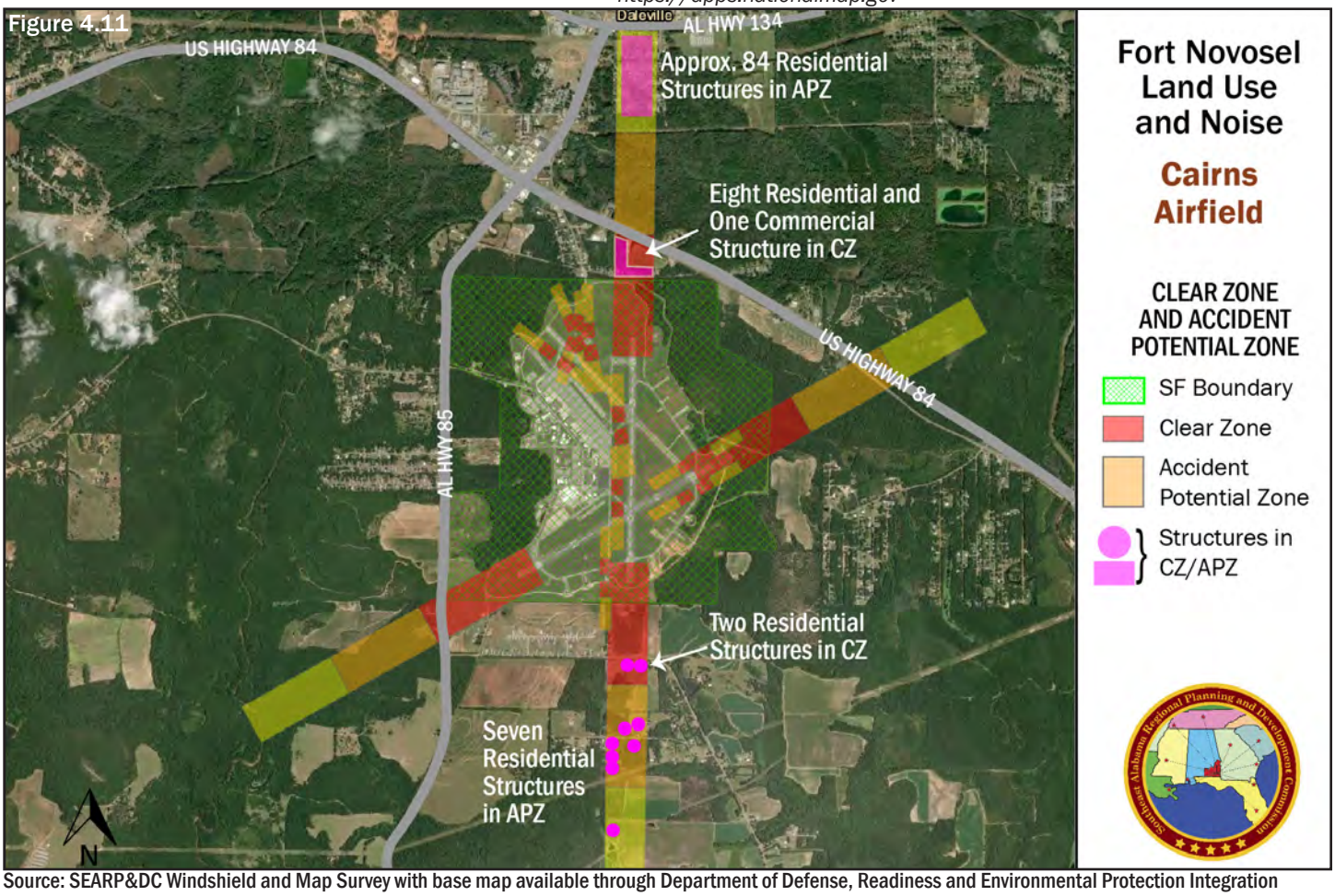
- 1,419 structures within 2-mile radius, of which 22.4 percent are within a noise zone
- 1 commercial and 8 residential structures in north clear zone;
- 2 residential structures in south CZ
- 7 residential structures in south accident potential zone; approximately 84 residential structures in north accident potential zone
- 3 commercial, 1 institutional, and 228 residential structures in NZ II, including one apartment complex
- 1 commercial, 2 institutional, and 82 residential structures, including one apartment complex in LUPZ
- 2022 AADT: US Highway 84 = 16,521
- 2022 AADT: AL Highway 85 = 6,916

Figure 4.10 Structures within a 2-Mile Radius of Cairns Airfield



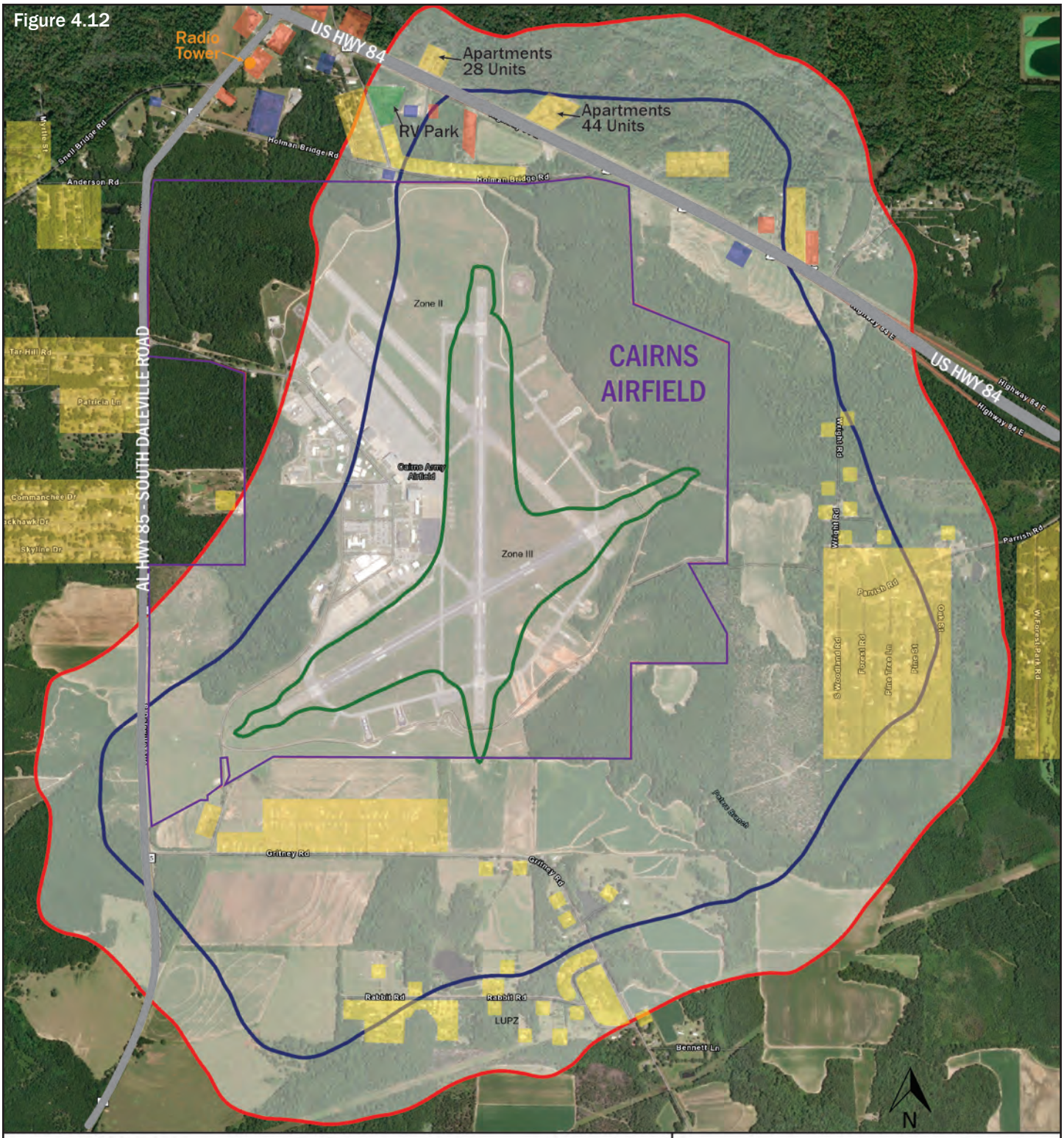
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.11



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.12



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Cairns Airfield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

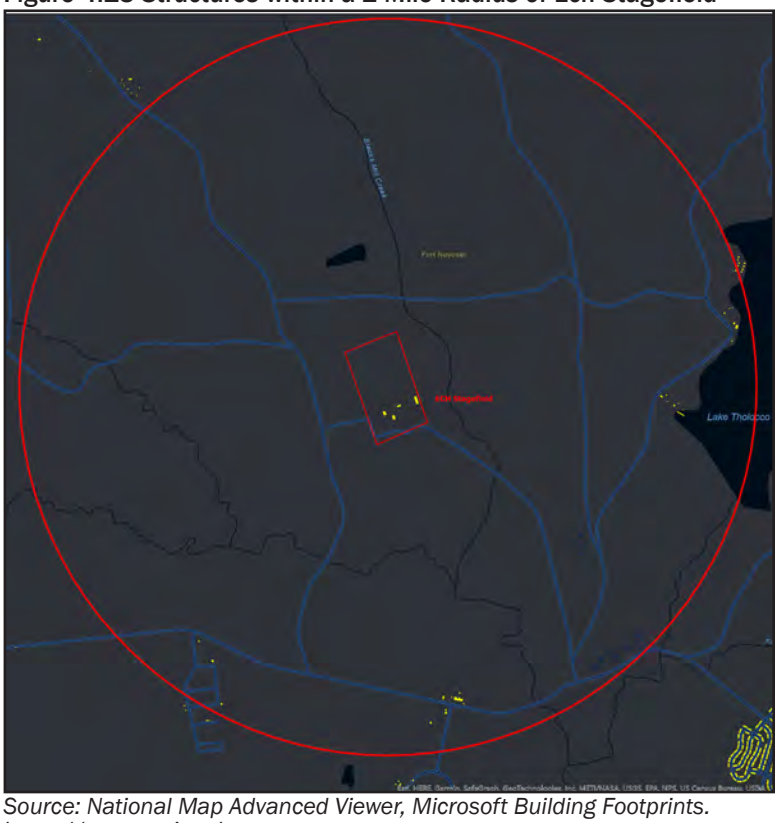
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.4 Land Use, Noise and Safety: Ech Stagefield Assessment

Ech Stagefield is located in the central part of Fort Novosel west of Lake Tholocco, and is entirely within the perimeter of the installation boundary. It is most accessible from the Faulkner Gate.

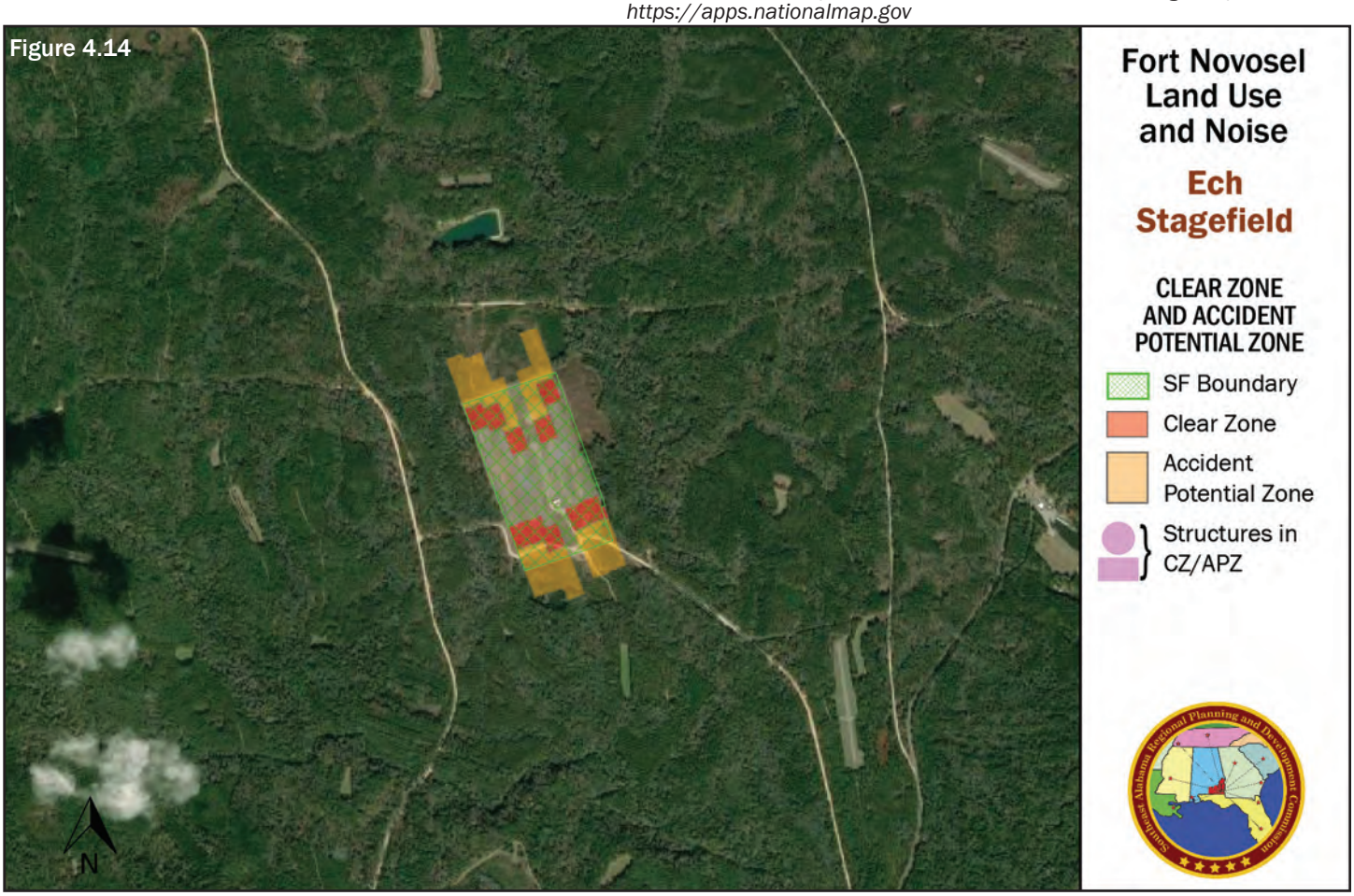
- 35 structures within 2-mile radius, all of which are located on Fort Novosel
- 2 recreational structures are present on Lake Tholocco, just outside the Ech air space boundary.

Figure 4.13 Structures within a 2-Mile Radius of Ech Stagefield



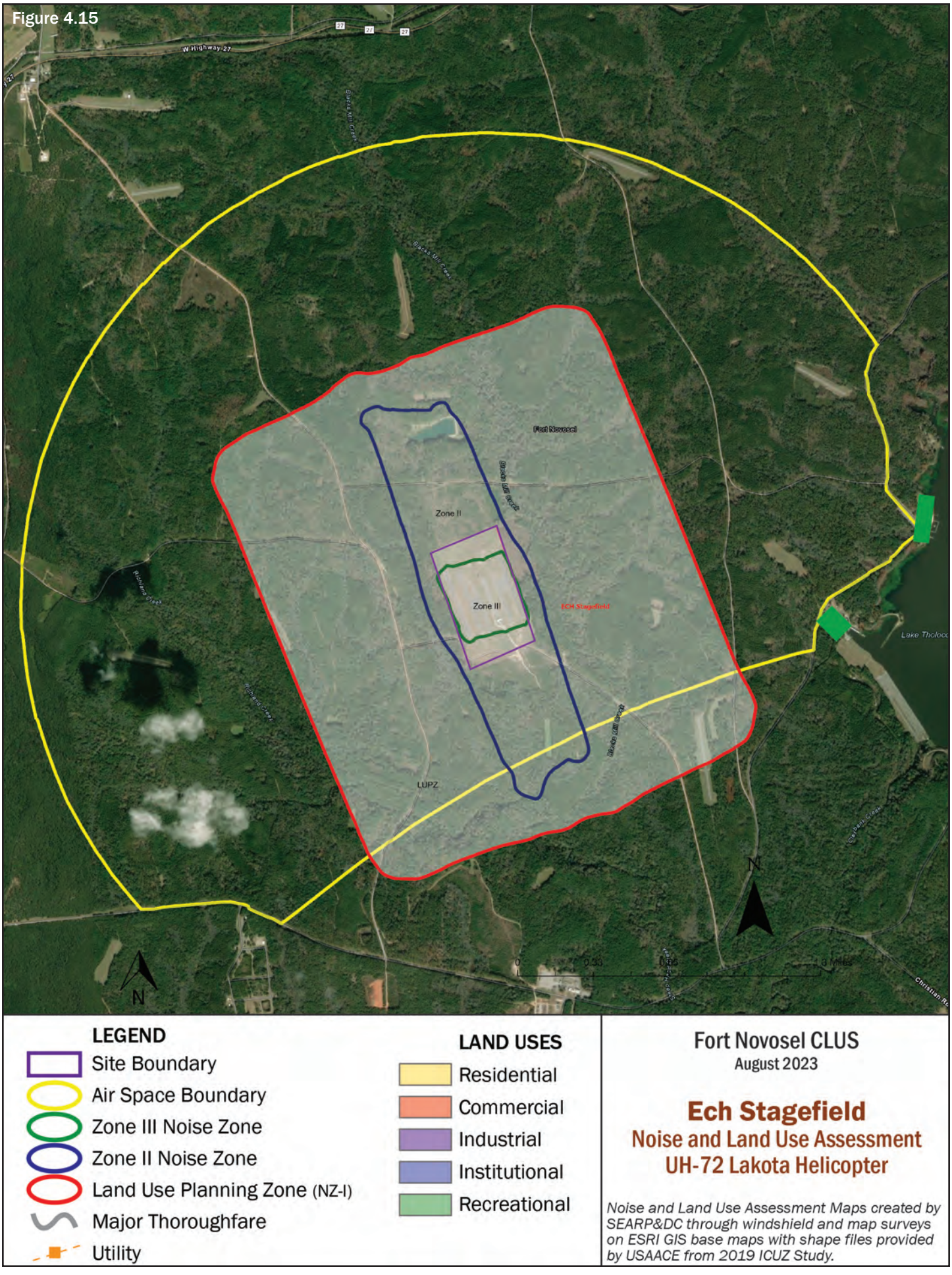
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.14



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.15



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Ech Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

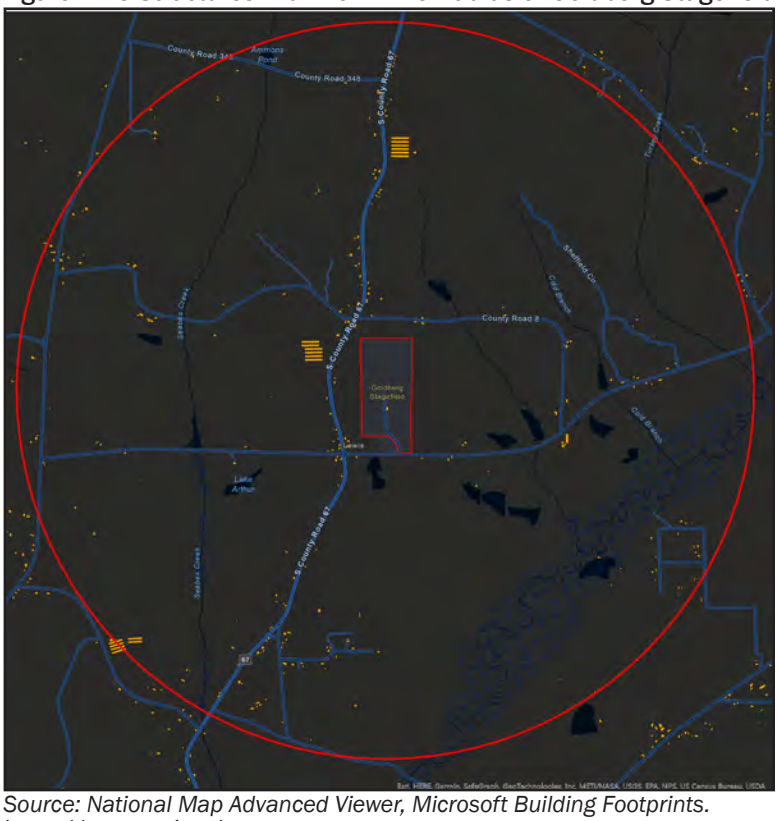
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.5 Land Use, Noise and Safety: Goldberg Stagefield Assessment

Goldberg Stagefield is located in a rural area east of the City of Ozark in unincorporated east-central Dale County. It is accessed by Dale County Road 16, near its intersection with South Dale County Road 67. Many of the structures within the air space boundary are for agricultural use, with particular emphasis on poultry houses. The surrounding area is characterized by residential-agricultural land uses, although there is some evidence of smaller parcel residential development occurring.

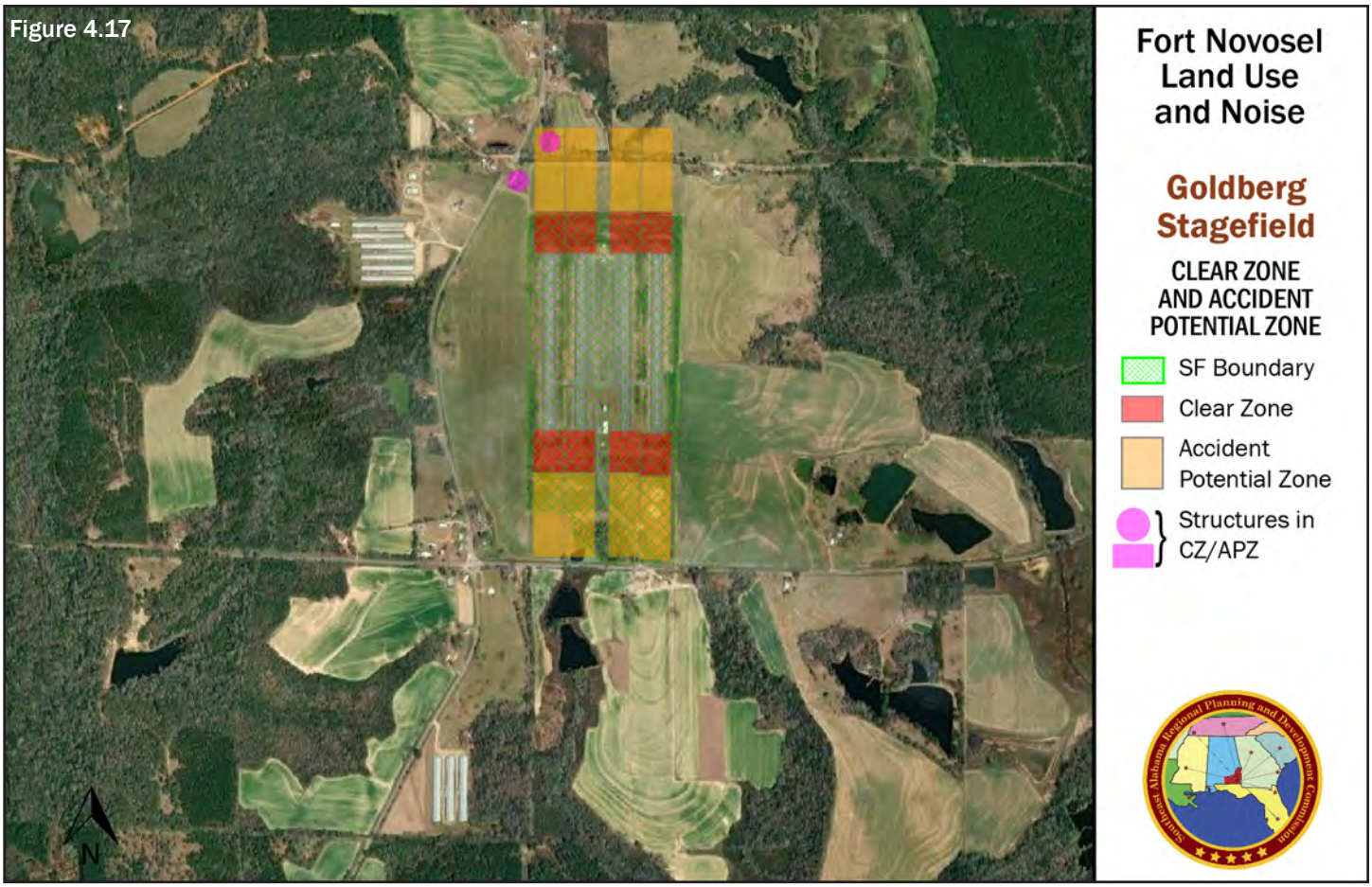
- 275 structures within 2-mile radius, of which 13.1 percent are within a noise zone
- 1 residential structure in northwest accident potential zone, and 1 residential structure directly adjacent.
- 2 residential structures in NZ II
- 33 residential structures in LUPZ

Figure 4.16 Structures within a 2-Mile Radius of Goldberg Stagefield



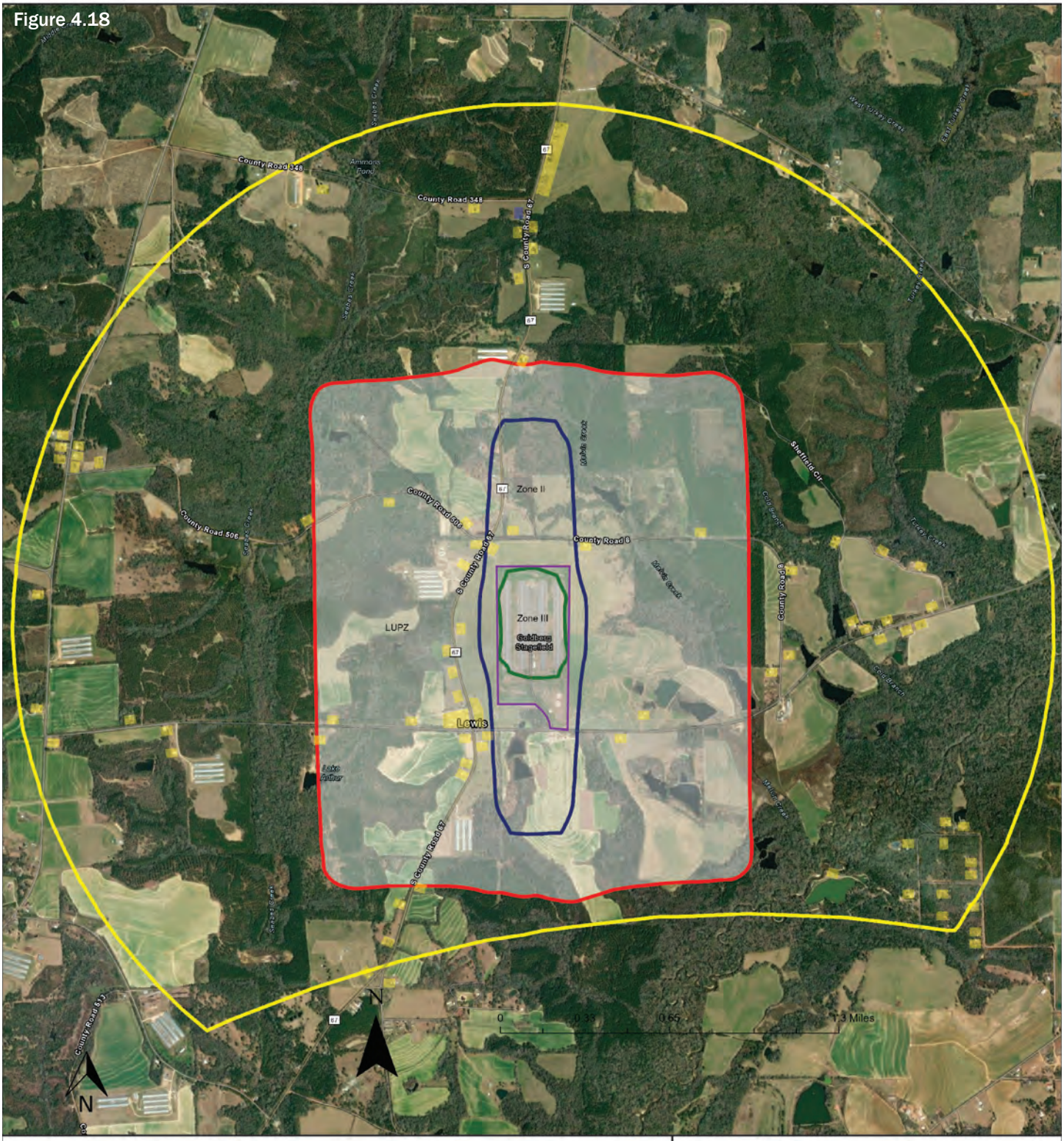
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.17



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.18



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Goldberg Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

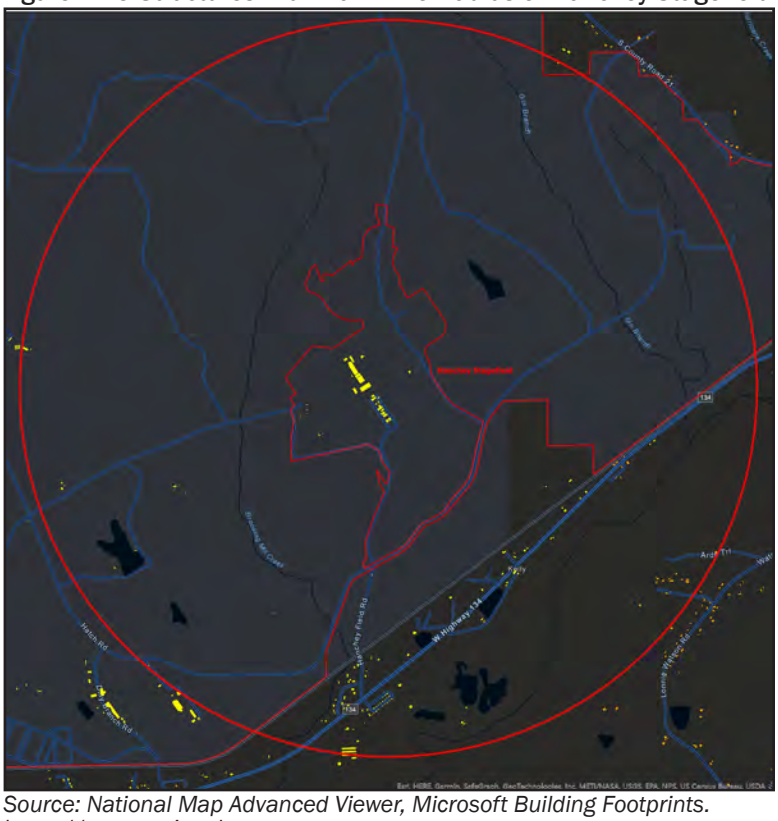
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.6 Land Use, Noise and Safety: Hanchey Airfield Assessment

Hanchey Airfield is located along the southern boundary of the Fort Novosel main installation, just north of the Newton Gate. More than 100 helicopters use Hanchey Airfield as a home base. Downtown Newton is just three miles southeast of Hanchey Airfield, although the Town's corporate limit abut the Fort Novosel perimeter border.

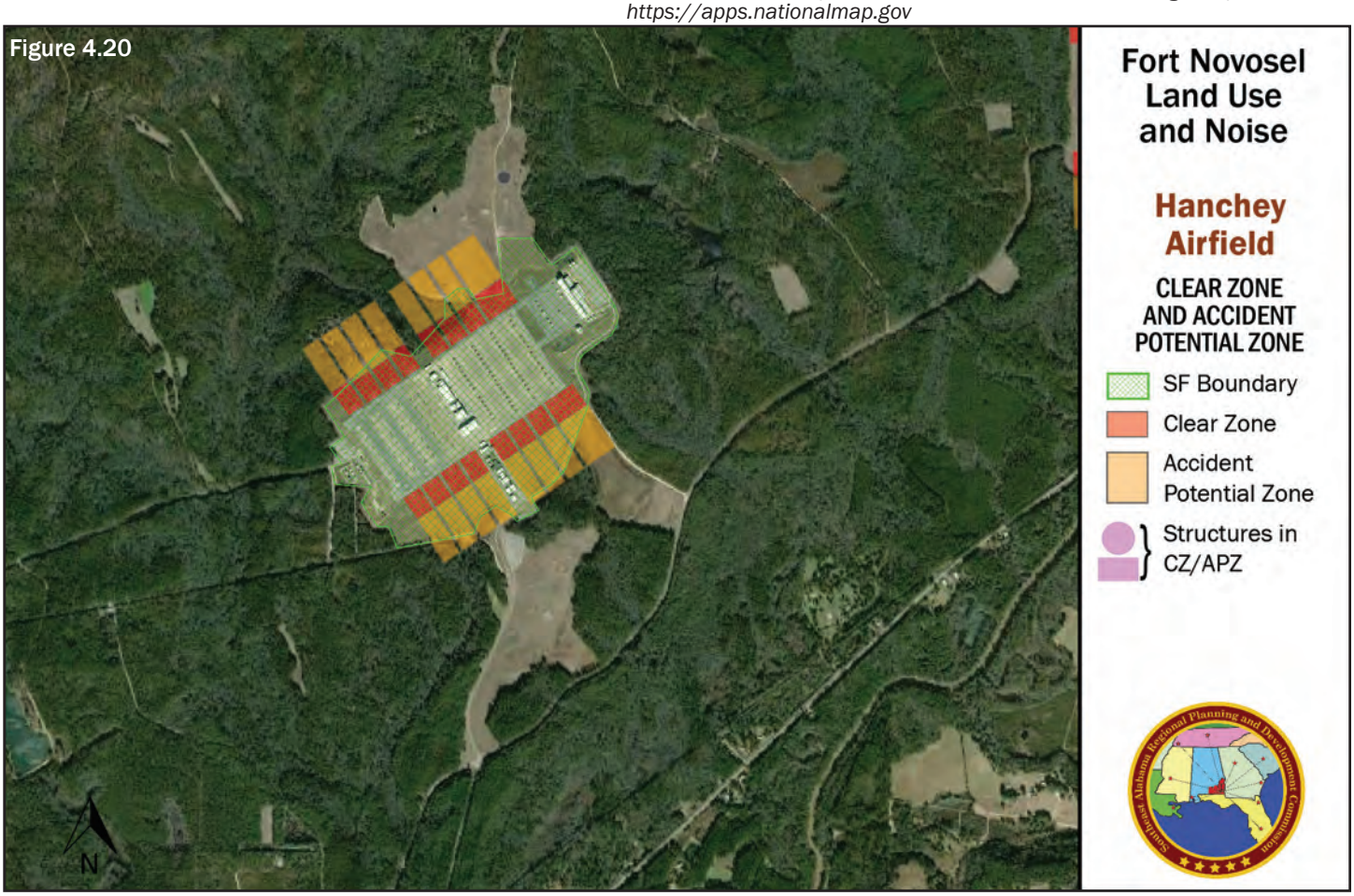
- 155 structures within 2-mile radius, none of which are in a noise zone
- 2 residential and 2 commercial and land uses are found in the air space boundary
- Riverside Motorcross Park is located on the eastern air space boundary
- Choctawhatchee River flows through the south eastern part of the air space boundary

Figure 4.19 Structures within a 2-Mile Radius of Hanchey Stagefield



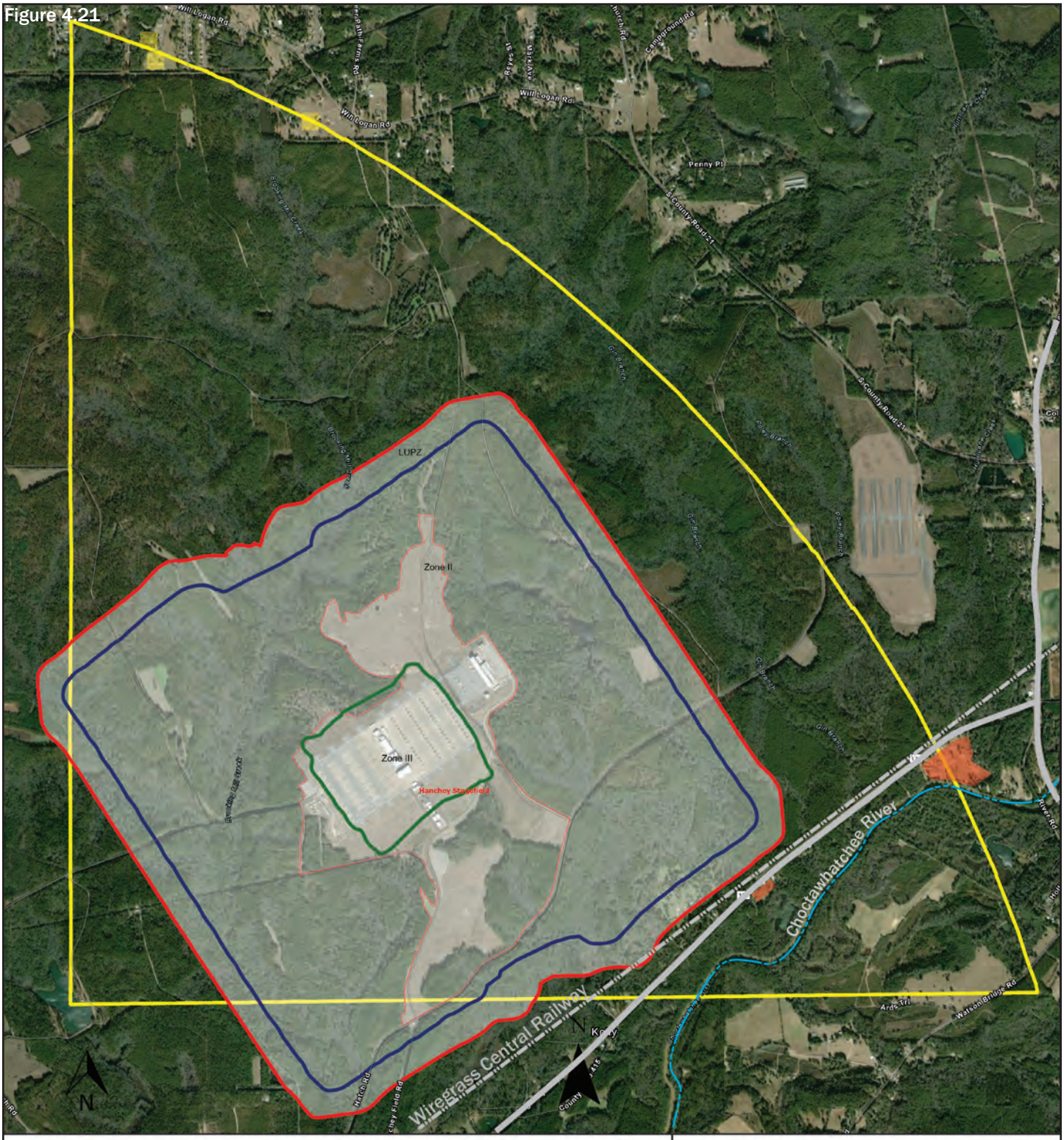
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.20



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.21



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Hanchey Airfield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

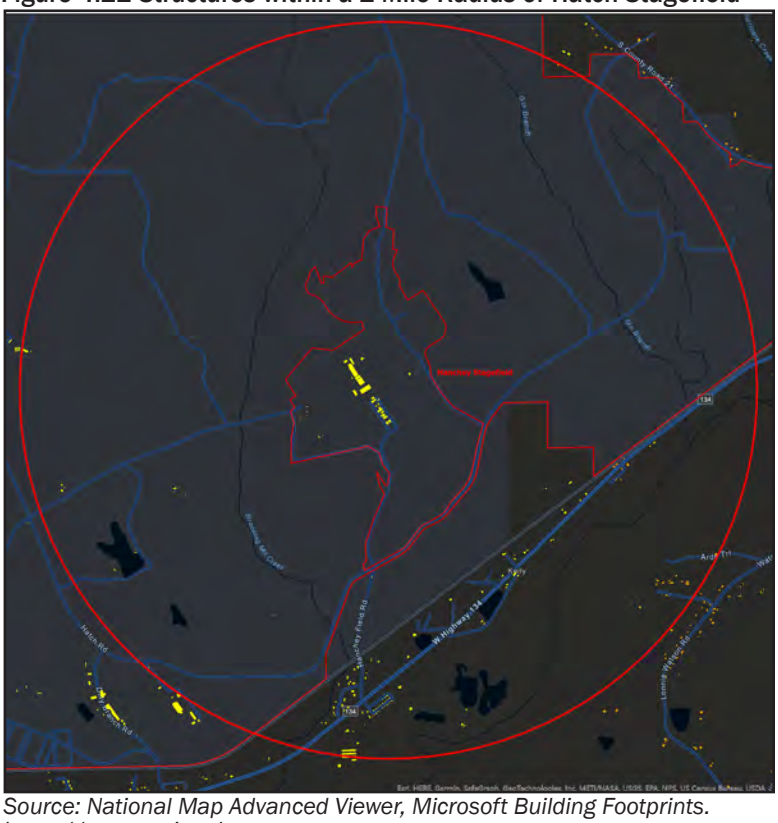
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.7 Land Use, Noise and Safety: Hatch Stagefield Assessment

Hatch Stagefield is located on Fort Novosel along its southeastern perimeter. The Town of Newton lies directly east and south of the stagefield. While the stagefield site lies entirely within Fort Novosel, its LUPZ extends north into the Town of Newton, whose western corporate limits abut the eastern perimeter of Fort Novosel. AL Highway 123 lies to the east of the stagefield and AL Highway 134 lies to the south.

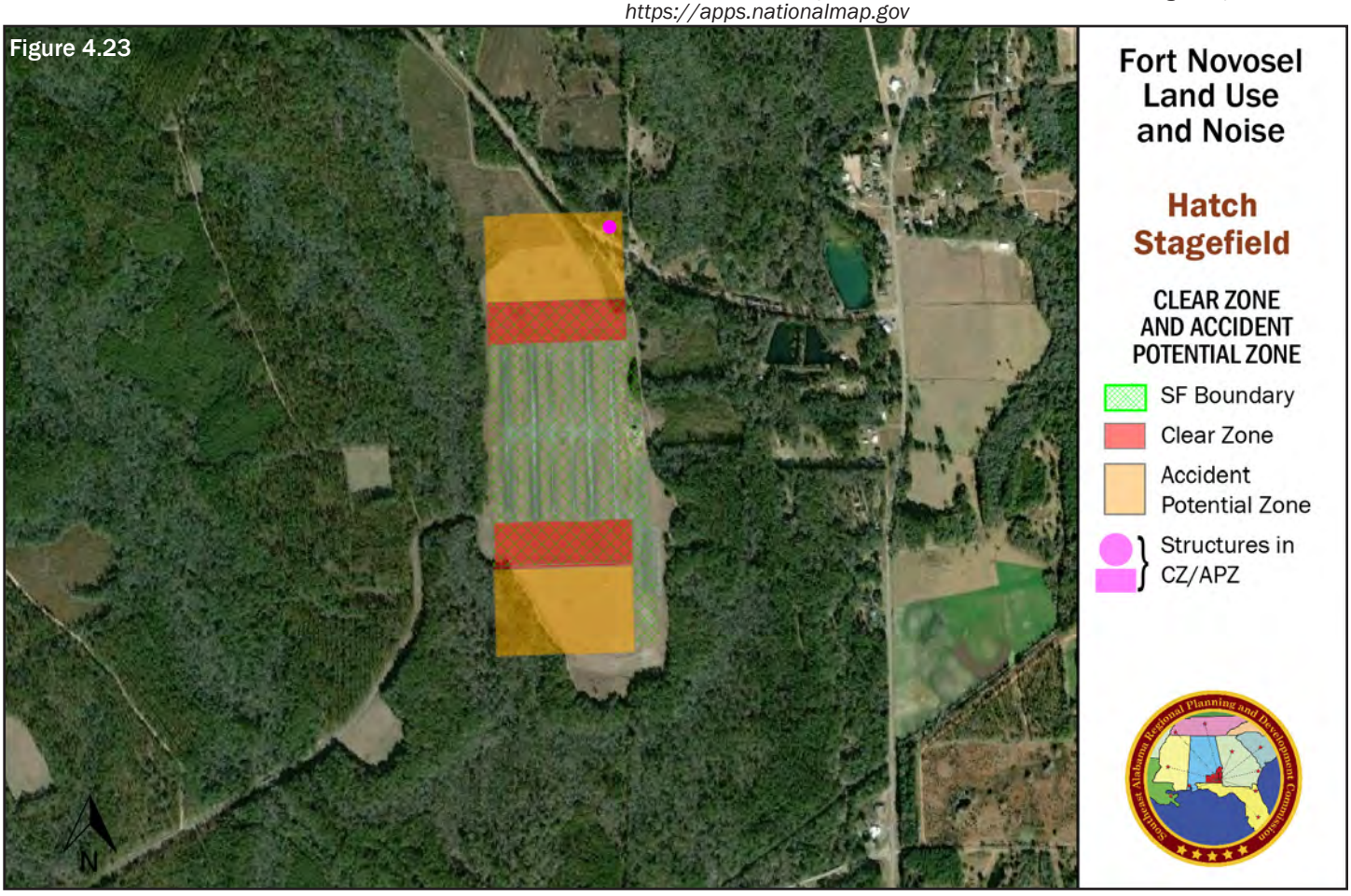
- 453 structures within 2-mile radius
- 1 residential structure in accident potential zone
- Estimated 194 structures within air space boundary, most of which are residential
- 2 recreational, 6 commercial, and 3 institutional land uses are found in air space boundary area
- Electric transmission line runs north-south through the air space boundary
- Choctawhatchee River lies south of the stagefield

Figure 4.22 Structures within a 2-Mile Radius of Hatch Stagefield



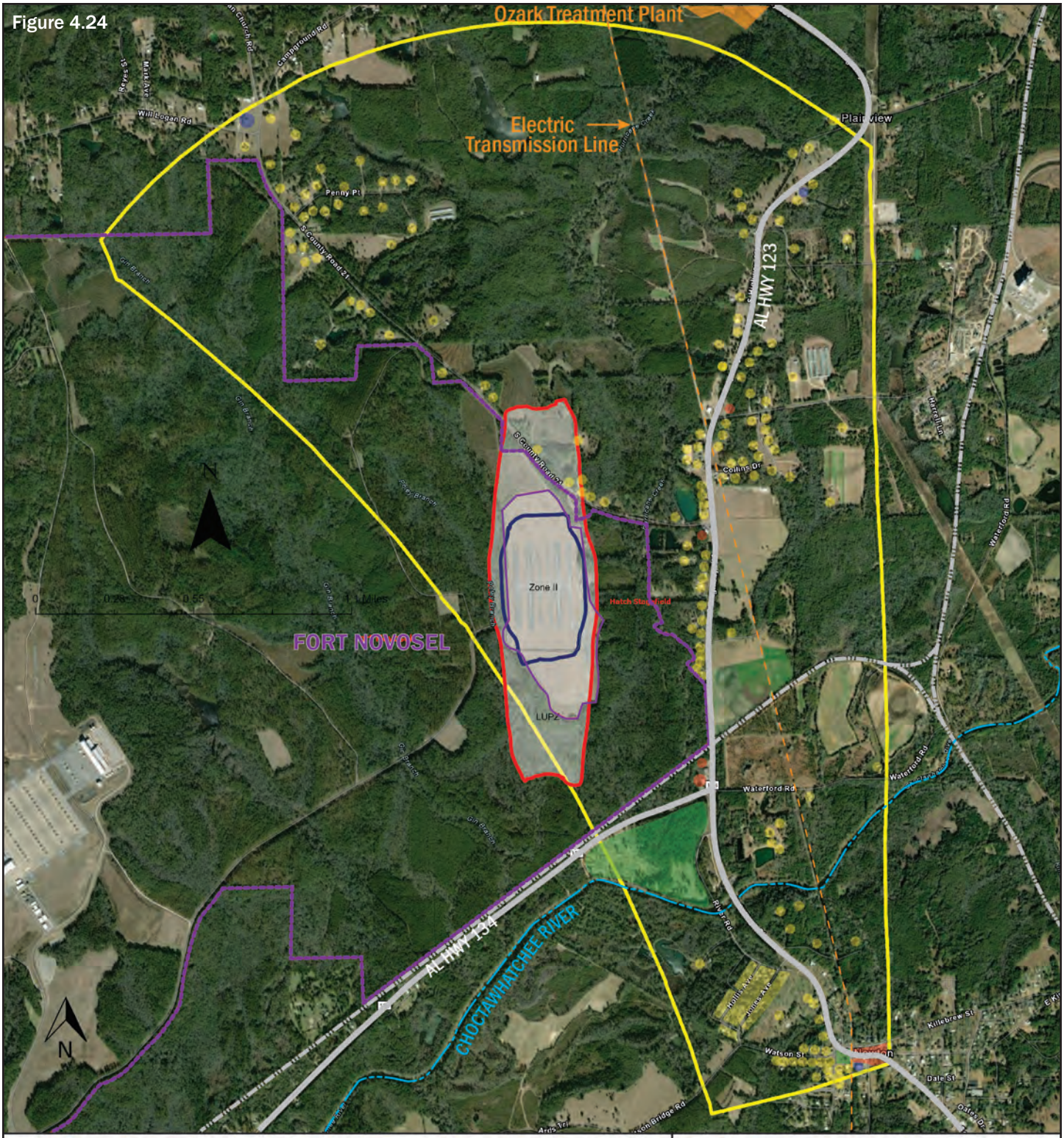
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.23



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.24



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Hatch Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.8 Land Use, Noise and Safety: Highbluff Stagefield Assessment

Highbluff Stagefield is located on Geneva County Road 41, just southwest of its intersection with AL Highway 167 between Enterprise and Hartford. The surrounding area is generally either agricultural or wooded land uses with spotted residential structures. Almost all development is south of CR 41.

- 165 structures within 2-mile radius; 6.1 percent within noise zones
- 4 residential structures in NZ II
- 10 residential structures in LUPZ
- 2 commercial and approximately 82 residential structures in air space boundary
- AADT: AL Highway 167 = 4,562

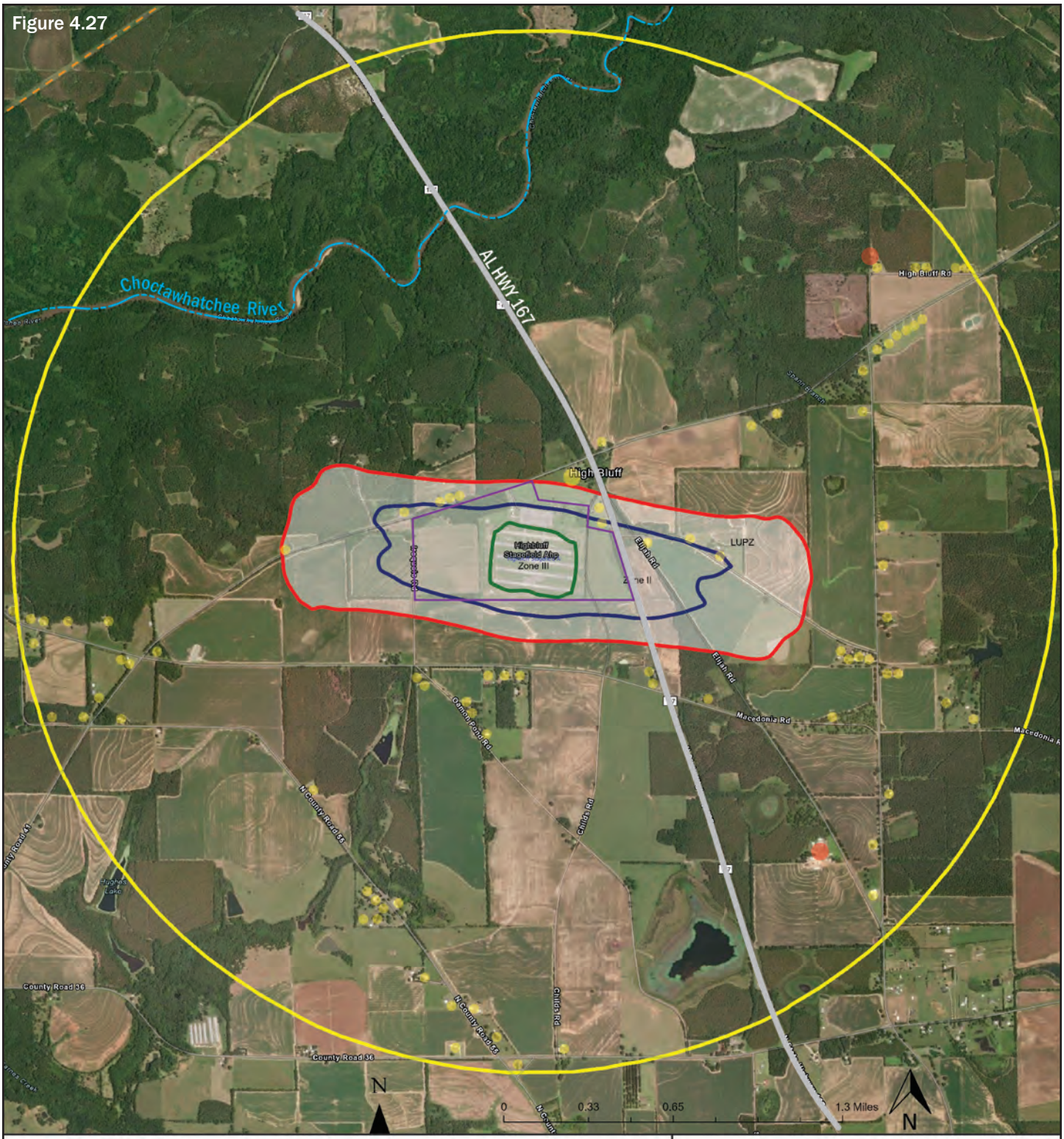
Figure 4.25 Structures within a 2-Mile Radius of Highbluff Stagefield

Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.26

Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.27



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Highbluff Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

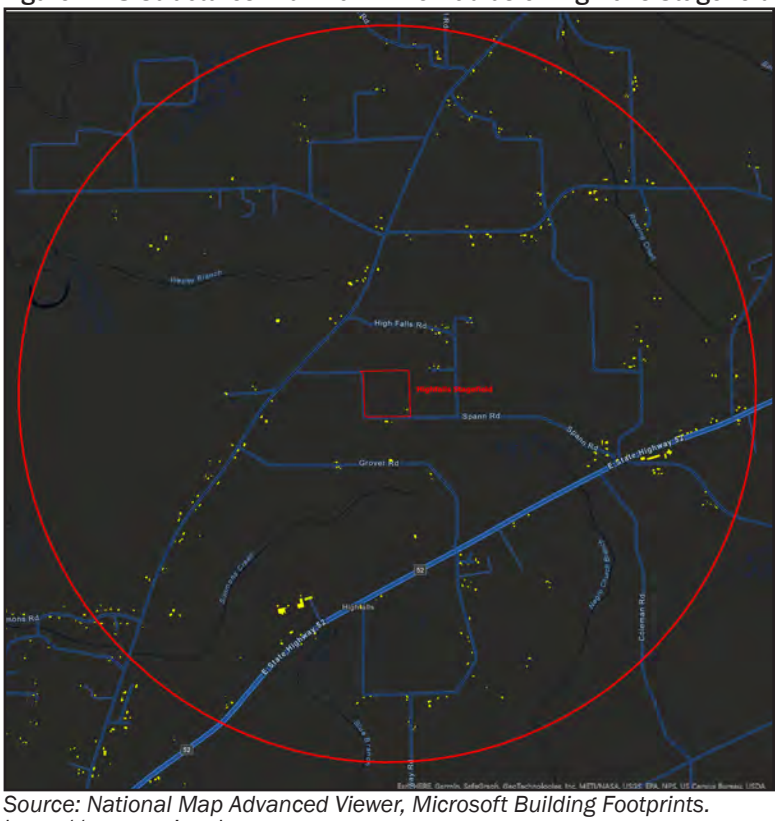
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.9 Land Use, Noise and Safety: Highfalls Stagefield Assessment

Highfalls Stagefield is located in Geneva County on Spann Road, off of Geneva County Road 41. This stagefield is approximately six miles southwest of Highbluff Stagefield, which is also located on CR 41. The surrounding area is predominantly agricultural or wooded with residential properties fronting local roadways. There are no densely developed subdivisions within a 2-mile radius of the stagefield.

- 303 structures within 2-mile radius
- 2 residential structures within accident potential zone
- Communications tower located southeast of stagefield
- Noise zones were not developed for Highfalls Stagefield due to its limited use

Figure 4.28 Structures within a 2-Mile Radius of Highfalls Stagefield



Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.29

Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.30

LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Highfalls Stagefield
Noise and Land Use Assessment

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.10 Land Use, Noise and Safety: Hooper Stagefield Assessment

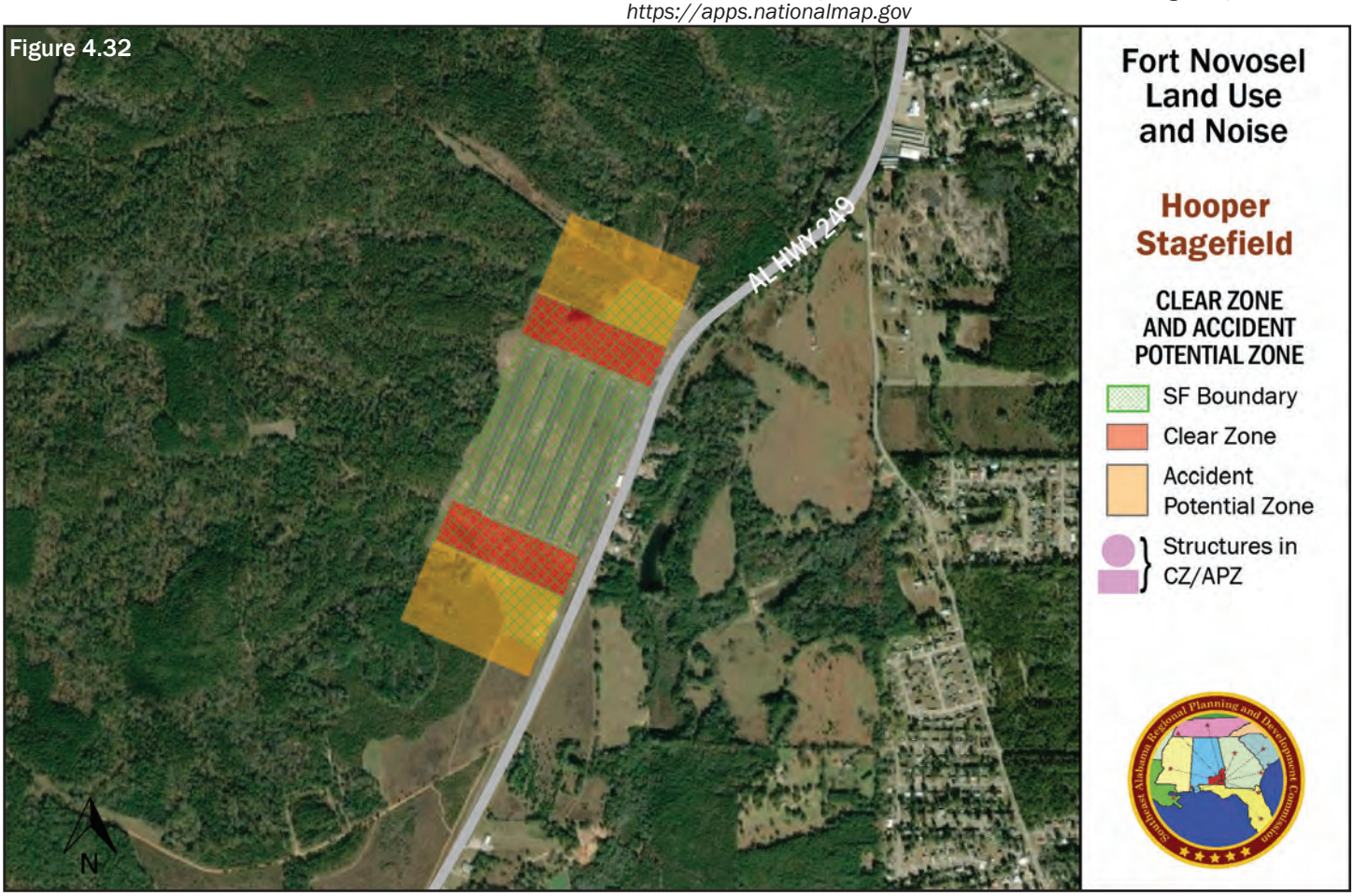
Hooper Stagefield is located on the east side of the Fort Novosel perimeter, abutting Alabama Highway 249 and the City of Ozark. Key existing structures that may present compatibility issues include a child care center and a small apartment complex in the Noise Zone II boundary.

- 1,553 structures within 2-mile radius
- Within NZ II, there are two commercial land uses, two institutional land uses, and nine residential land uses
- Within LUPZ, there are 4 commercial and 3 institutional land uses, along with 296 residential structures
- All or part of five small neighborhoods with medium density lots are in LUPZ
- Water tank located just east of LUPZ

Figure 4.31 Structures within a 2-Mile Radius of Hooper Stagefield

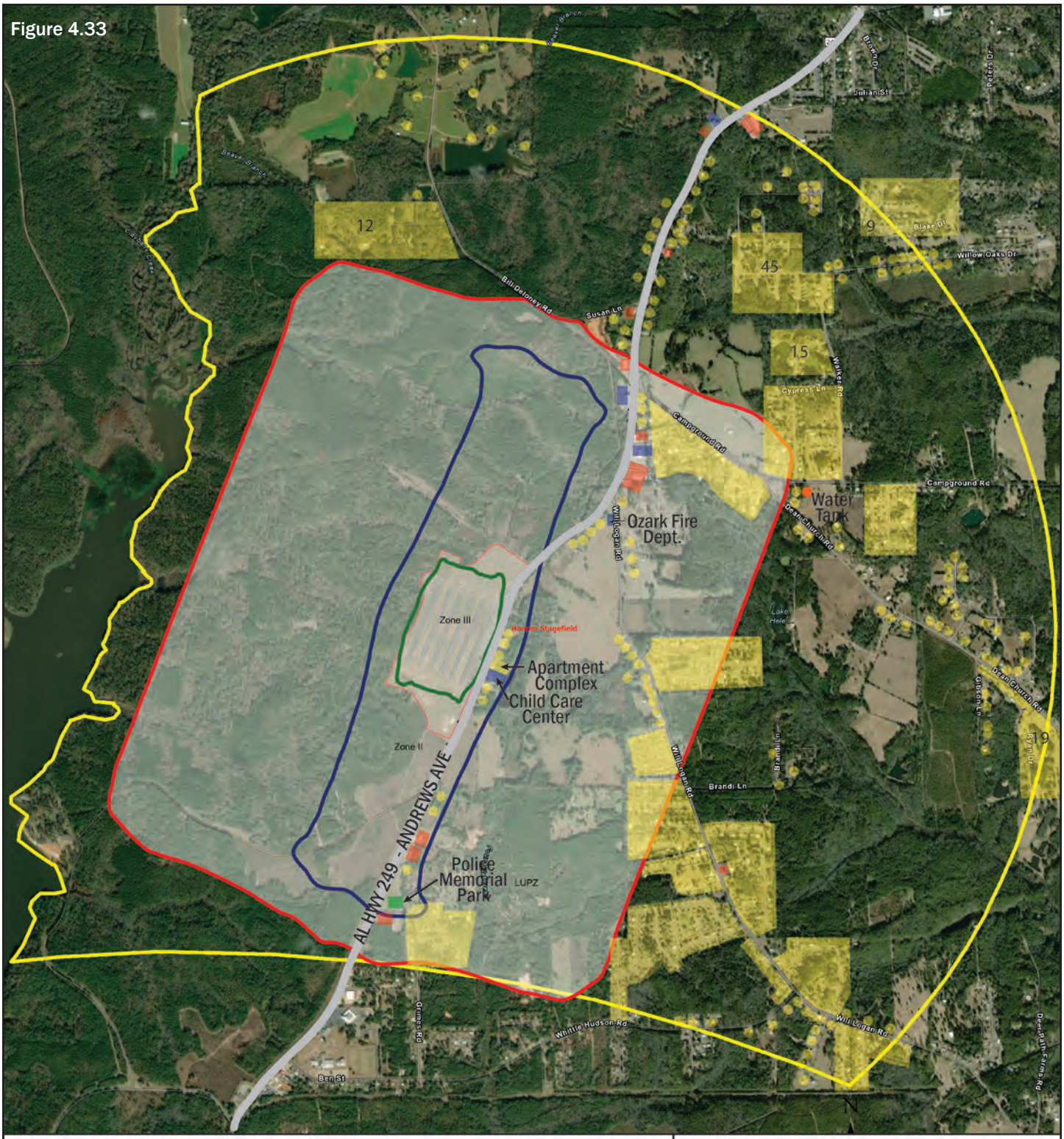
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.32



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.33



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Hooper Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.11 Land Use, Noise and Safety: Hunt Stagefield Assessment

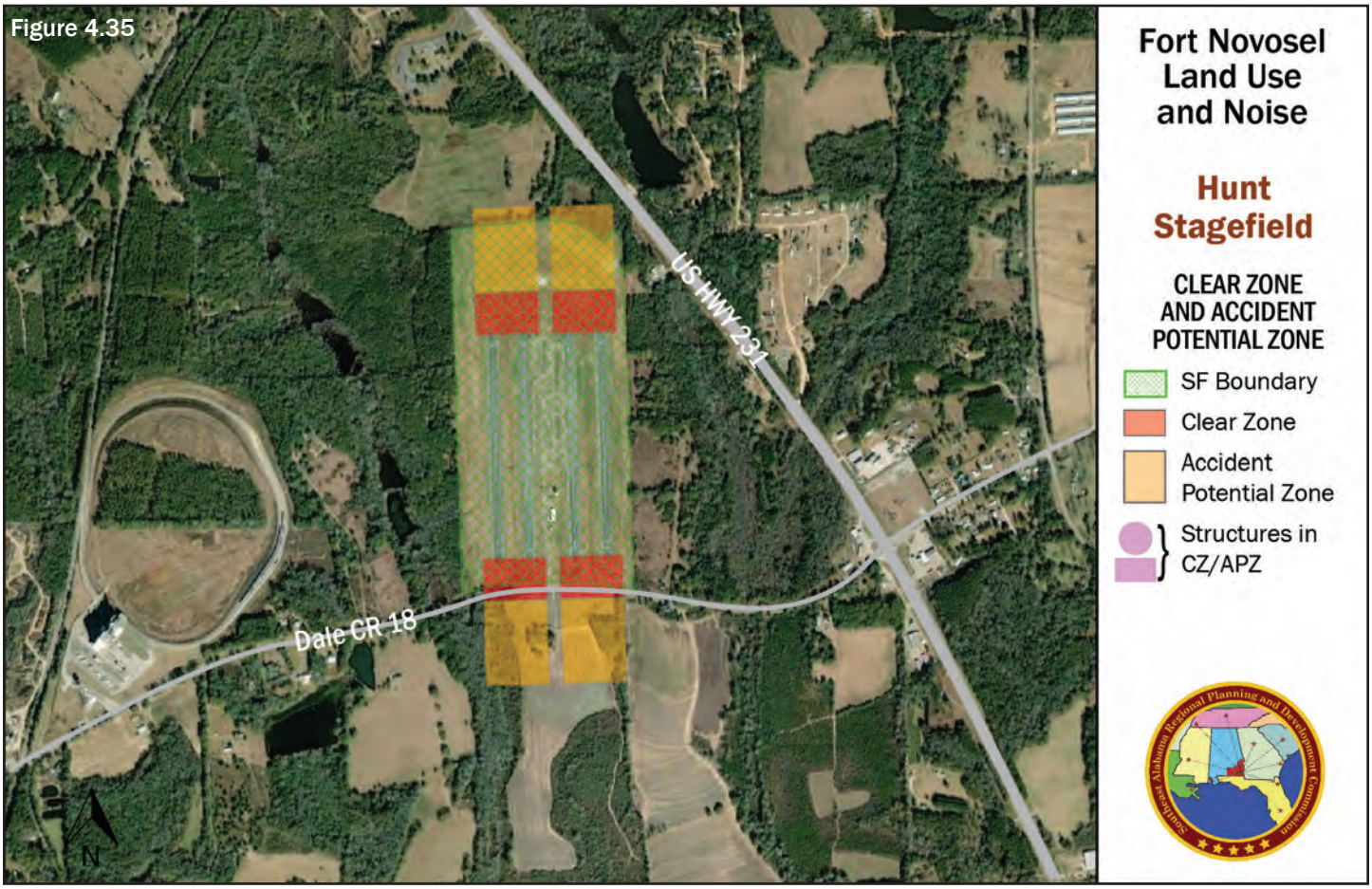
Hunt Stagefield is located on Dale County Road 18, west of US Highway 231 and southeast of the City of Ozark. Surrounding land uses include agricultural, highway commercial, industrial, and residential. Within the air space boundary, but not in noise zones are Wayne's Farm Feed Mill to west of stage field and a manufactured home park to the east of the site.

- 526 structures within 2-mile radius
- 1 residential structure in NZ II
- 17 residential structures in LUPZ
- Dale County US 231 Rest Area lies in both NZ II and LUPZ due north of the stagefield site
- 2022 AADT: US Highway 231 = 20,557
- 2022 AADT: US 231 Rest Area = 348
- West Fork of the Choctawhatchee River runs south of the stagefield within the air space boundary
- Power transmission line with substation runs along the west perimeter of the air space boundary

Figure 4.34 Structures within a 2-Mile Radius of Hunt Stagefield

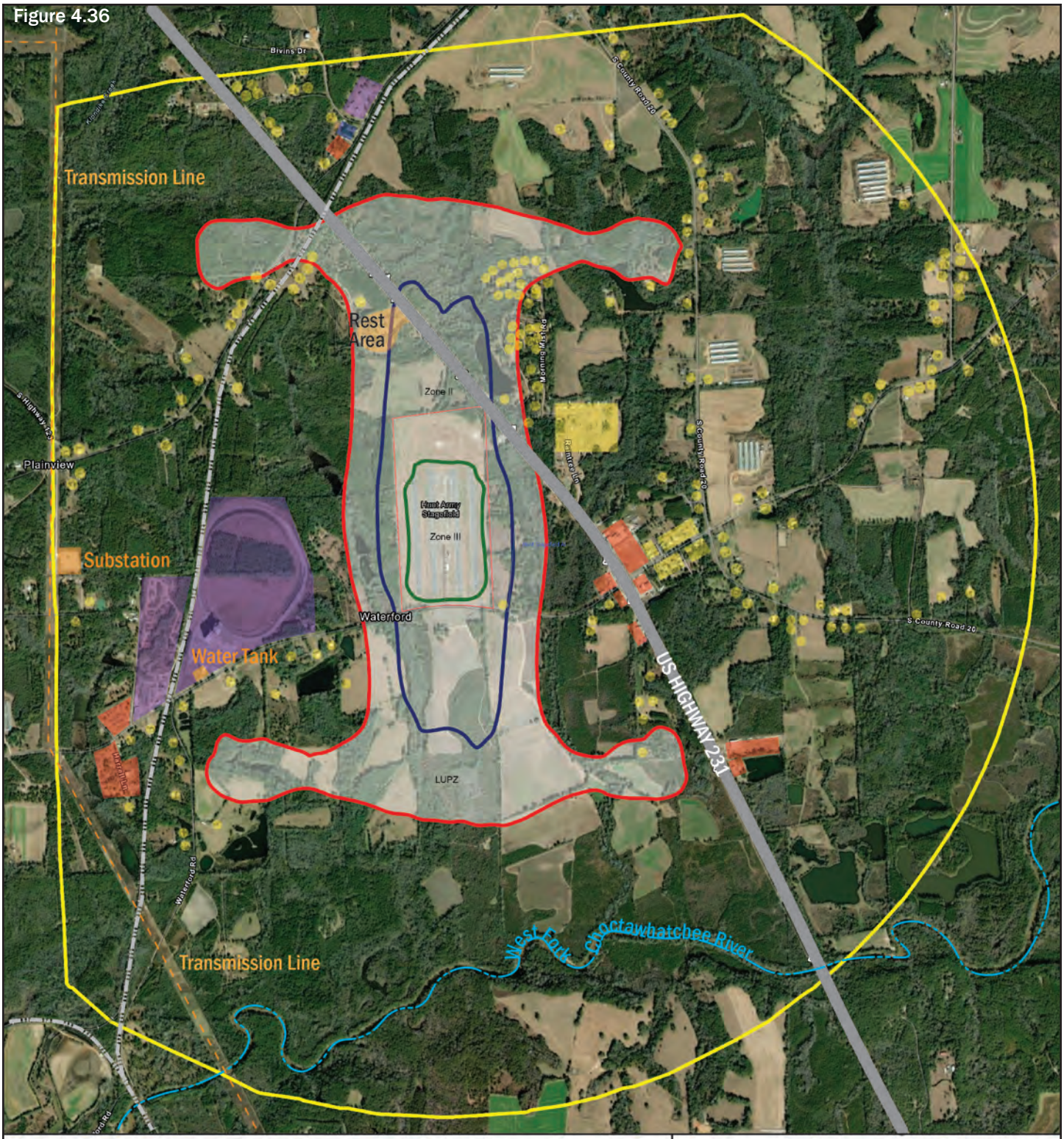
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.35



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.36



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Hunt Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

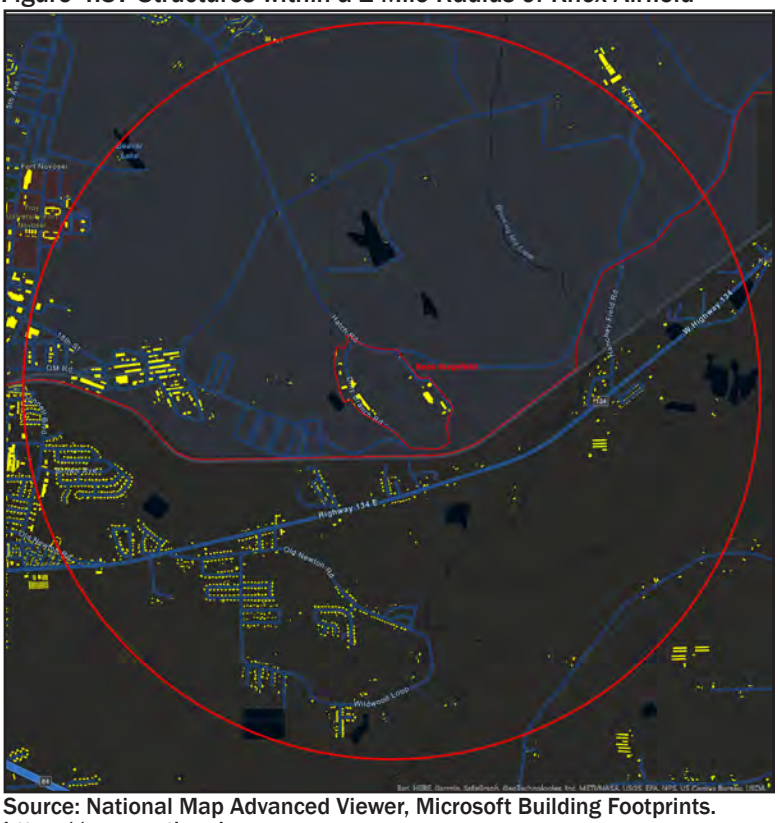
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.12 Land Use, Noise and Safety: Knox Airfield Assessment

Knox Airfield is located at the south end of the Fort Novosel installation, just west of the Newton Gate. Surrounding land uses are vacant on Fort Novosel and primarily residential off-post inside the City of Daleville to the south and the City of Ozark to the north.

- 1,038 structures within 2-mile radius
- 1 structure in accident potential zone
- 7 structures in NZ II
- 5 structures in LUPZ
- 212 structures, mostly residential, located within the air space boundary
- Electric substation and transmission lines at both the north and south ends of the air space boundary
- Choctawhatchee River lies just south of the airfield
- 2022 AADT: AL Highway 134 = 4,434

Figure 4.37 Structures within a 2-Mile Radius of Knox Airfield

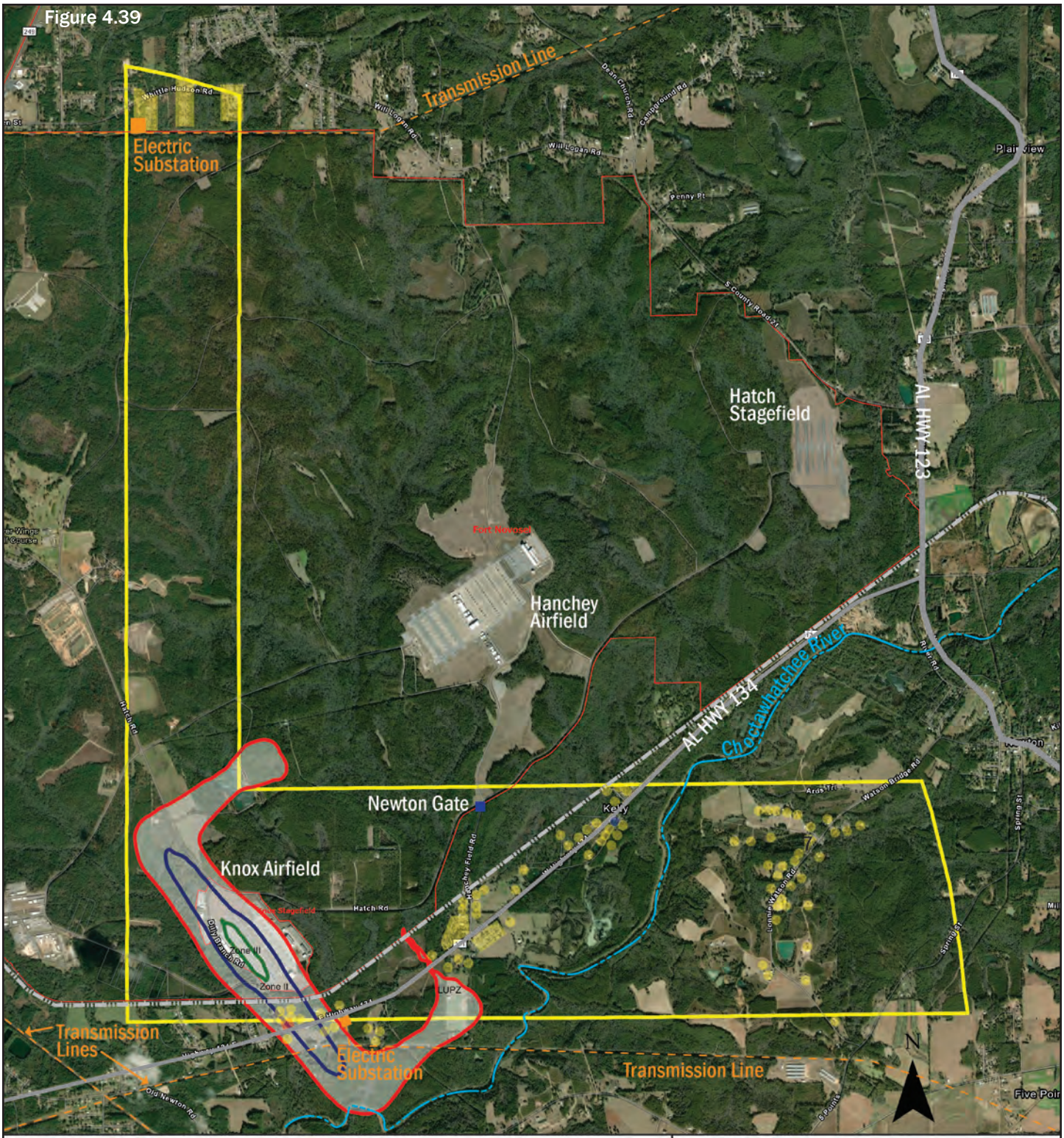


Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.38

Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.39



Fort Novosel CLUS
August 2023

Knox Airfield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

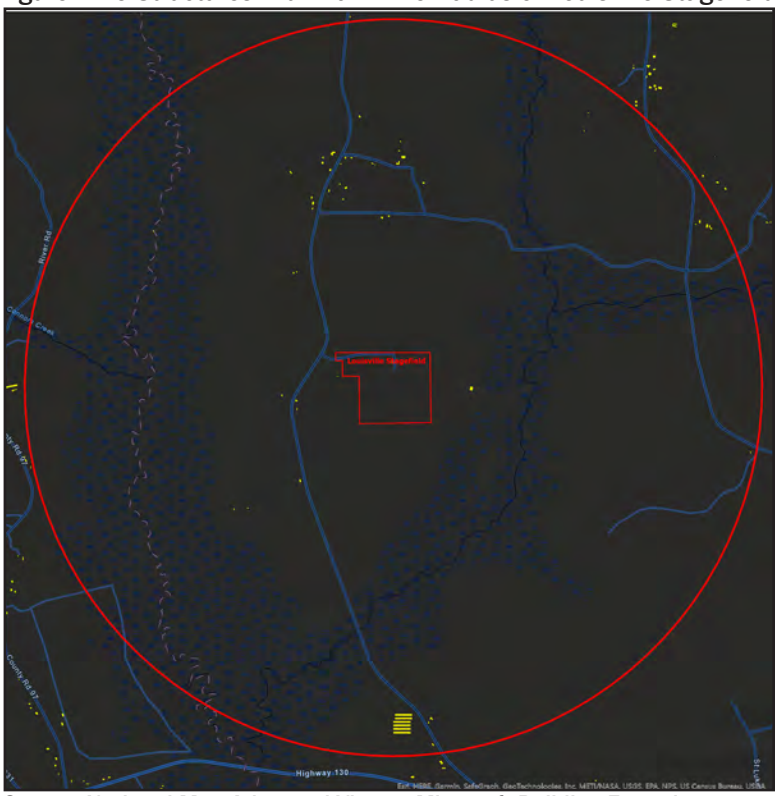
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.13 Land Use, Noise and Safety: Louisville Stagefield Assessment

Louisville Stagefield is located in southwest Barbour County, approximately six miles west of the Town of Louisville and eight miles northwest of the Town of Clio. The stagefield lies between two floodplains, associated with the Pea River, Pea Creek, and Hurricane Creek. The surrounding land is either wooded or in agricultural use, with limited residential uses. There are no large concentrations of people within the 2-mile radius of the stagefield.

- 55 structures within 2-mile radius
- 25 residential structures within air space boundary
- 2 institutional land uses within air space boundary: fire station and church
- Electrical transmission line located east of stagefield, running north-south
- Noise zones were not developed for Louisville Stagefield due to its limited use

Figure 4.40 Structures within a 2-Mile Radius of Louisville Stagefield

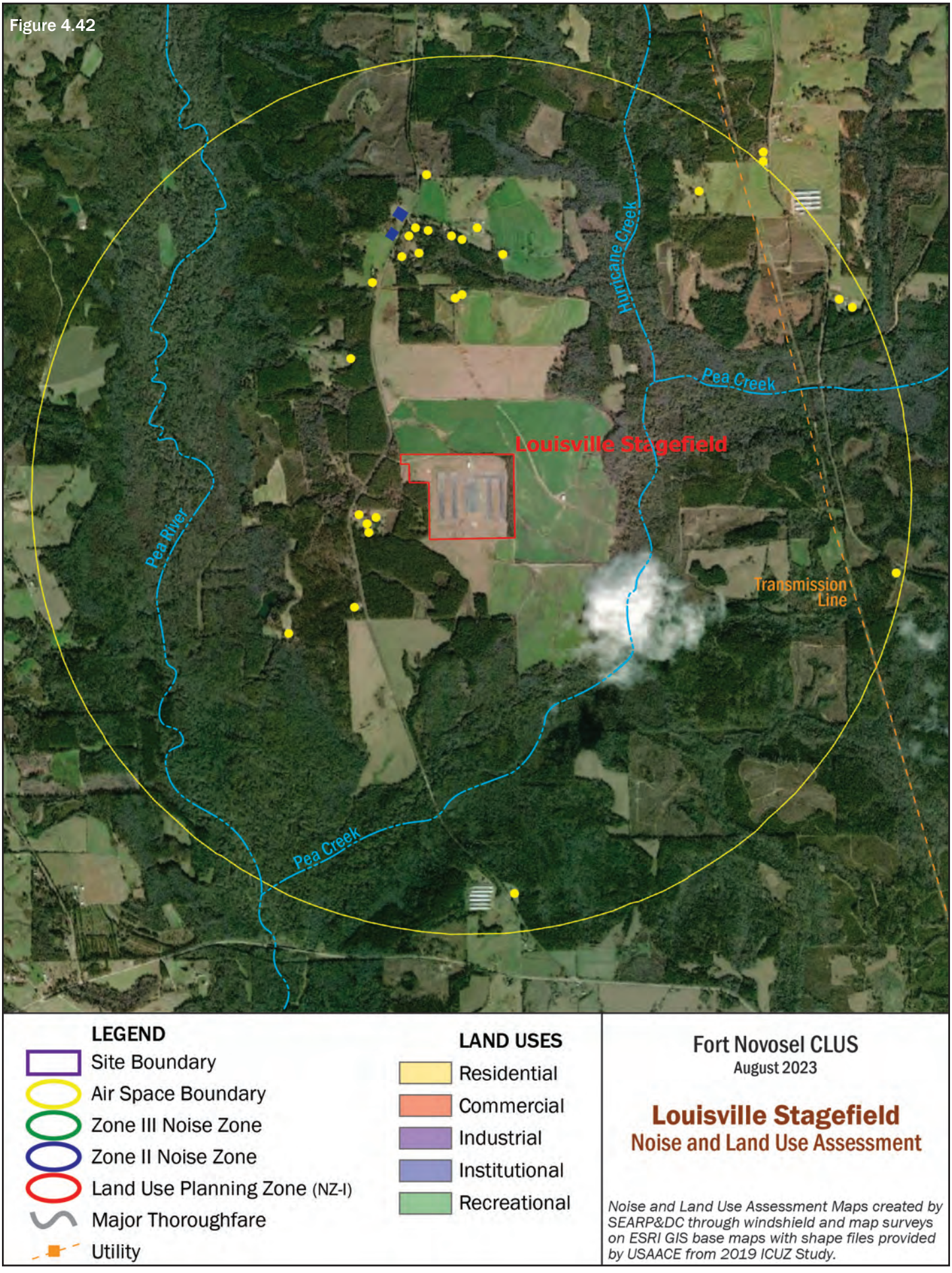


Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.41

Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.42


Hurricane Creek
Pea Creek
Louisville Stagefield
Pea River
Transmission Line
Pea Creek
LEGEND
Site Boundary
Air Space Boundary
Zone III Noise Zone
Zone II Noise Zone
Land Use Planning Zone (NZ-I)
Major Thoroughfare
Utility
LAND USES
Residential
Commercial
Industrial
Institutional
Recreational
Fort Novosel CLUS
August 2023
Louisville Stagefield
Noise and Land Use Assessment
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.14 Land Use, Noise and Safety: Lowe Army Airfield Assessment

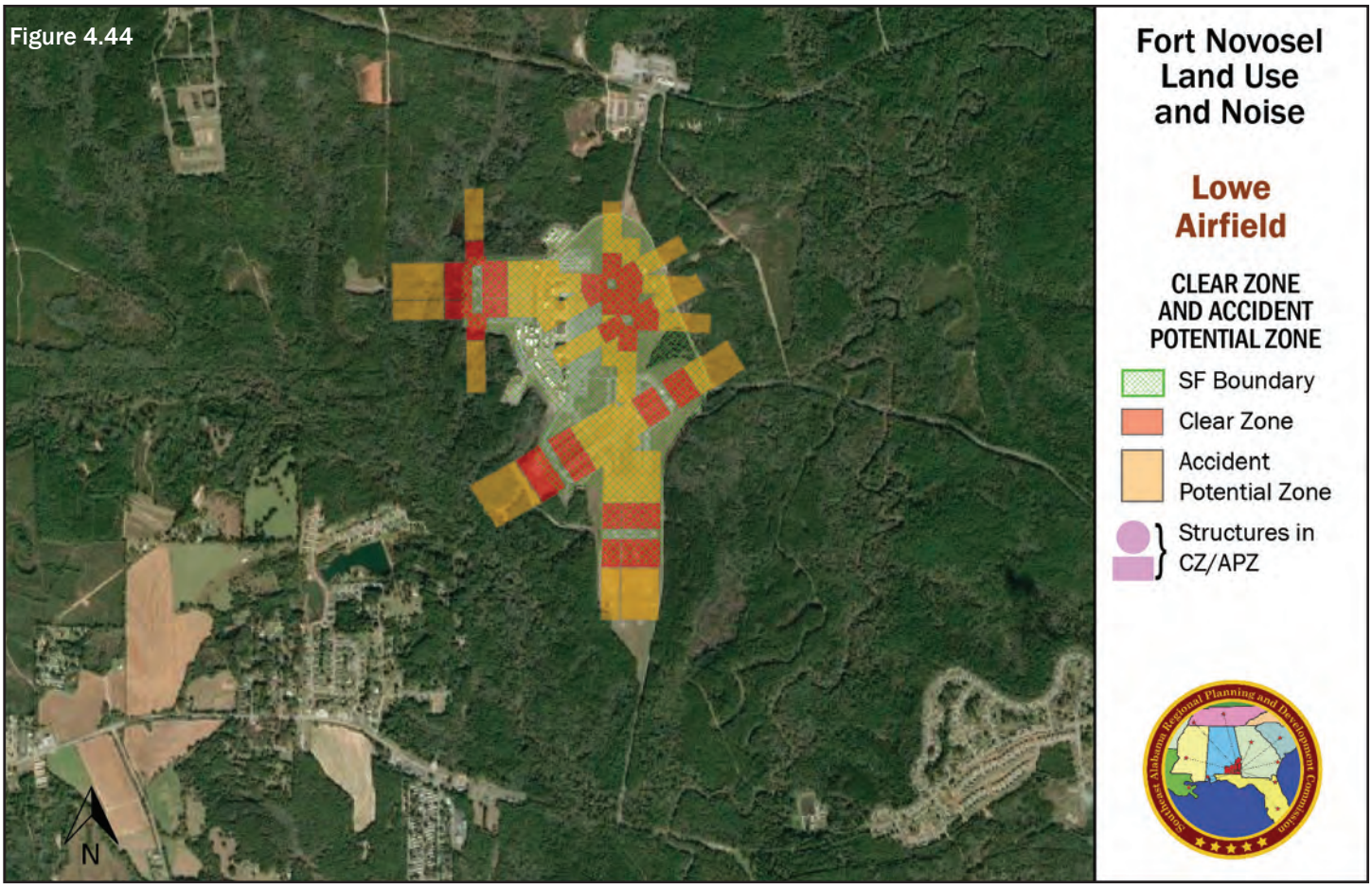
Lowe Army Airfield is located on the main Fort Novosel installation just north of the Enterprise Gate and southeast of the Faulkner Gate. The airfield is west of the cantonment area. Off-post, the surrounding non-residential land uses include a mixture of retail commercial along Rucker Boulevard, institutional land uses such as churches, and limited industrial uses. Residential land uses range from large agricultural holdings to neighborhood developments to concentrated populations in apartments and townhouse developments.

- 1,170 structures within 2-mile radius
- 18 residential structures in NZ II
- 124 residential, 6 commercial and 1 institutional structures in the LUPZ
- Multiple large apartment complexes, along with townhouse developments are located within air space boundary
- Fairly dense urban type development found off-post in air space boundary
- 2 water tanks and 2 electric substations are located west and southwest of the airfield

Figure 4.43 Structures within a 2-Mile Radius of Lowe Airfield

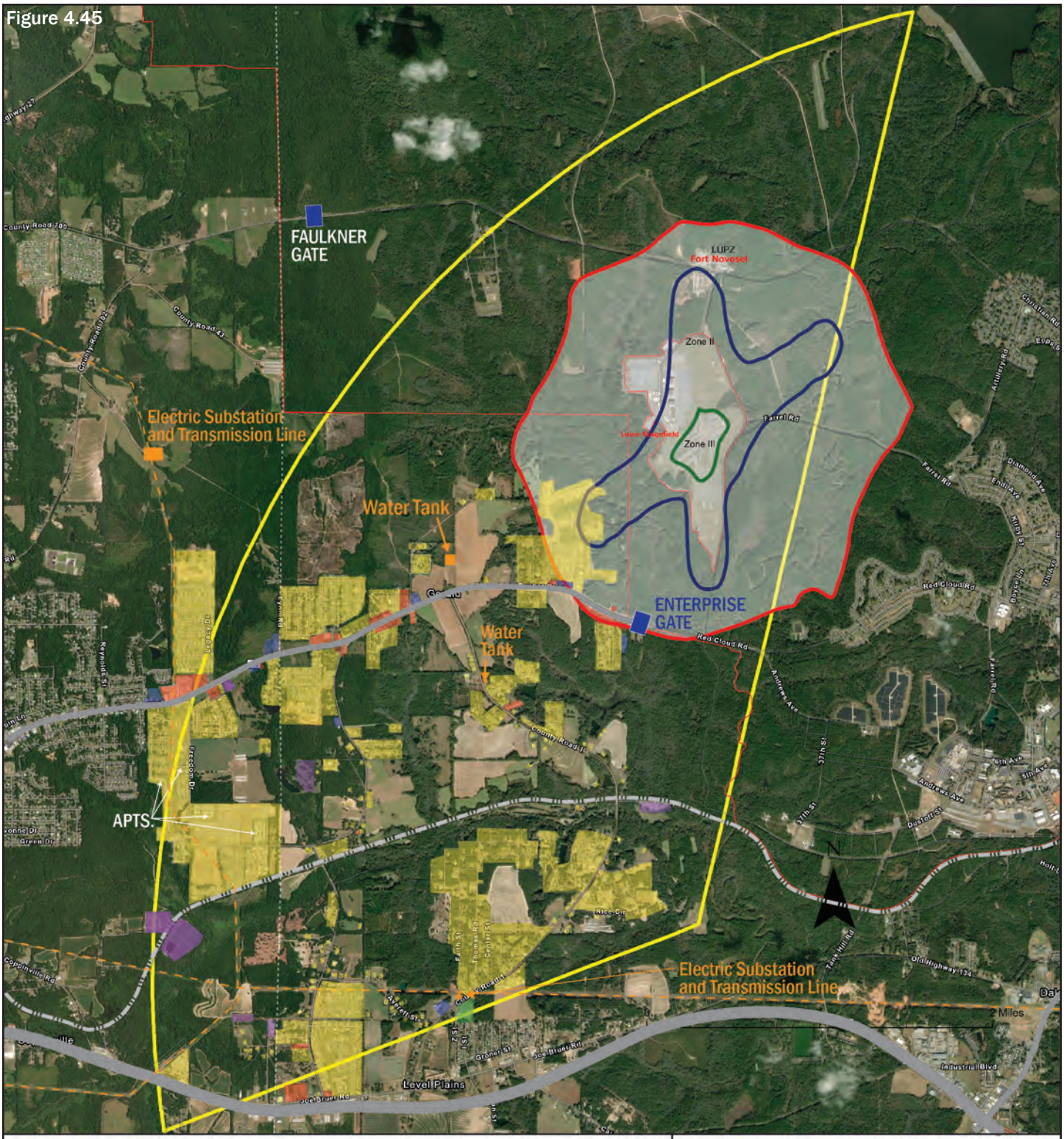
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.44



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.45



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Lowe Airfield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

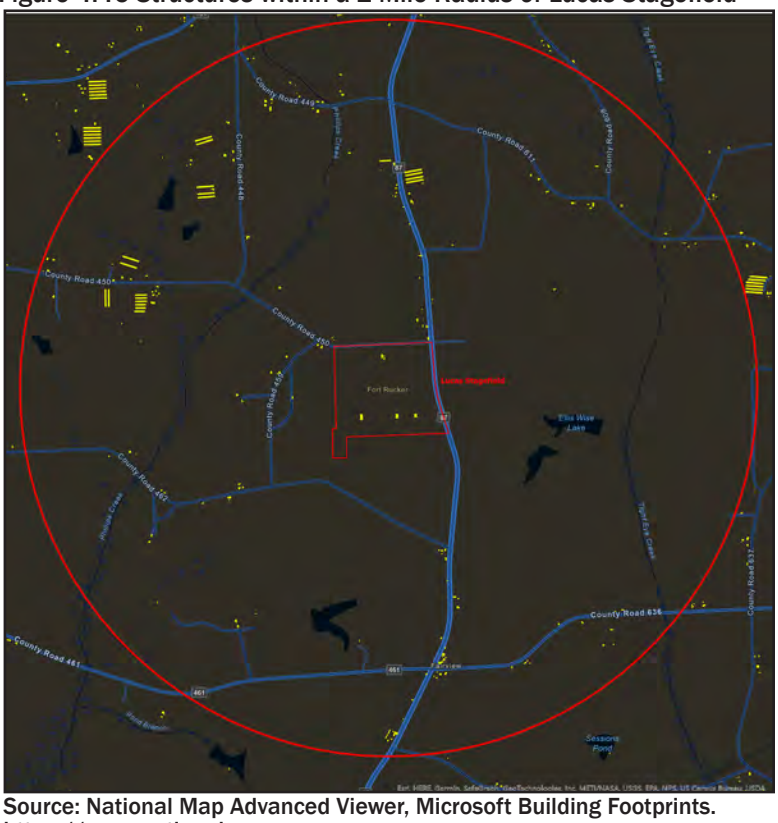
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.15 Land Use, Noise and Safety: Lucas Stagefield Assessment

Lucas Stagefield is located in rural Coffee County, approximately 10 miles south of Elba, 10 miles west of Enterprise, and 10 miles east of Opp. The Ino community is three miles east of the stagefield. The surrounding land uses are almost exclusively agricultural with associated residential, making Lucas Stagefield one of the more remote of the 23 air/stagefields.

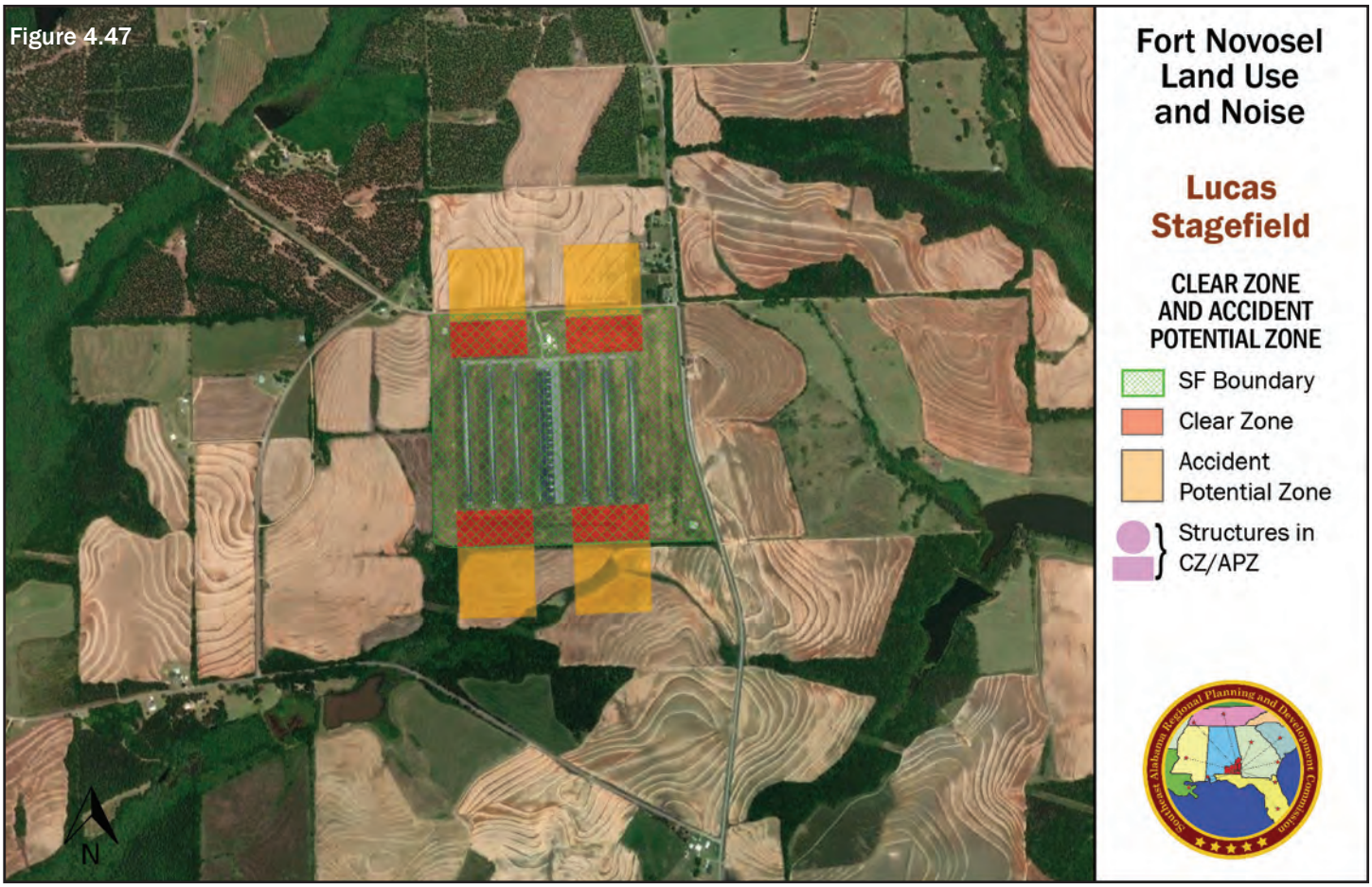
- 200 structures within 2-mile radius
- 9 residential structures in NZ II
- 13 residential structures in LUPZ
- 71 structures within air space boundary
- 2 power transmission lines run east-west just south of the stagefield

Figure 4.46 Structures within a 2-Mile Radius of Lucas Stagefield



Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.47



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.48

LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Lucas Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

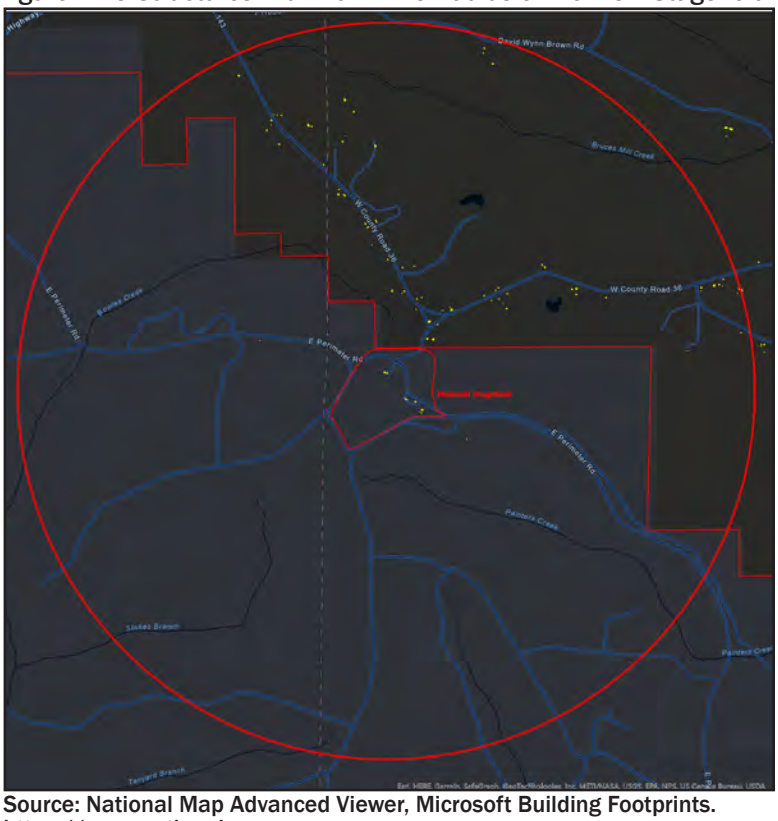
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.16 Land Use, Noise and Safety: Molinelli Stagefield Assessment

Molinelli Stagefield is located at the north end of the Fort Novosel installation on the county line of Coffee and Dale counties. With the exception of one church, surrounding land uses are a mixture of residential and agricultural. Much of the surrounding land is wooded. Although the stagefield appears isolated, it is only 2.5 miles from AL Highway 51 and 5.5 mile from US Highway 231. Molinelli Stagefield is also a forward arming and refueling point (FARP) which enables the refueling of helicopters during training without a return to its home base. As such, it is a support facility for aerial gunnery training, all of which impacts the frequency and loudness of noise in the area.

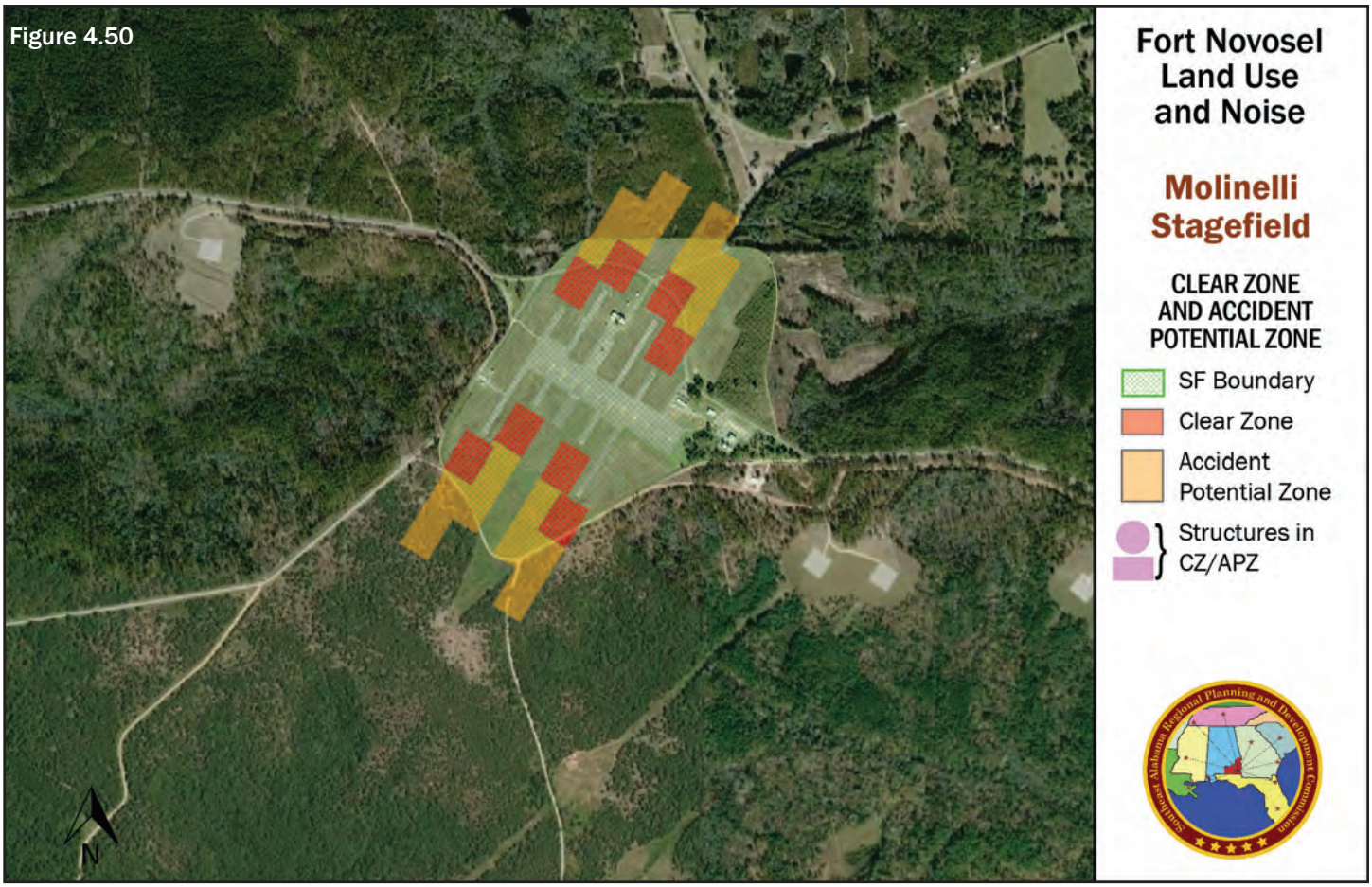
- 80 structures within 2-mile radius
- 1 church and 12 residential structures in NZ II
- 2 residential structures in LUPZ

Figure 4.49 Structures within a 2-Mile Radius of Molinelli Stagefield



Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.50



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.51

LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Molinelli Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

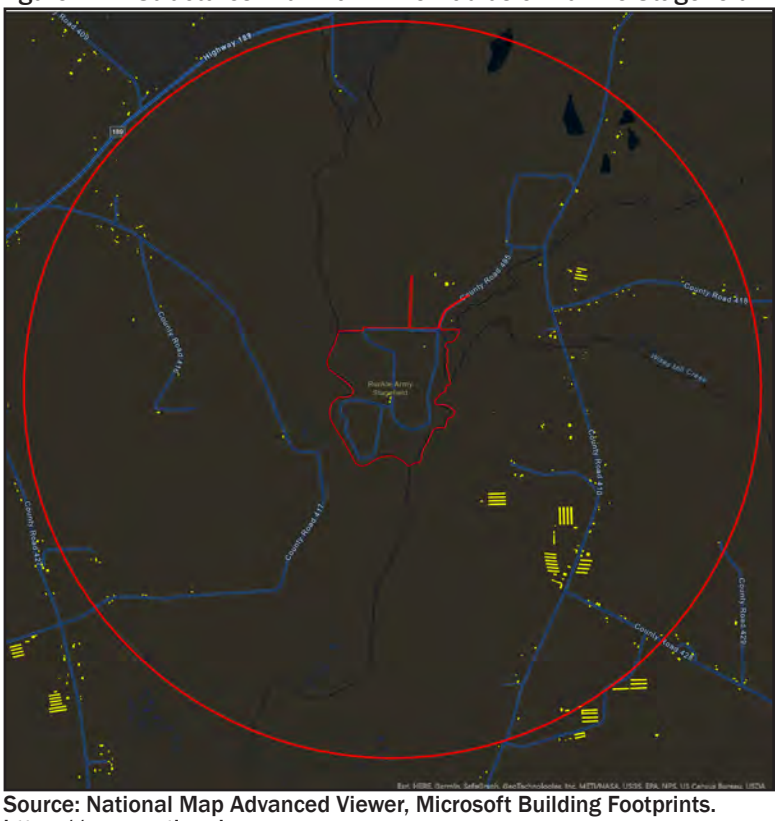
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.17 Land Use, Noise and Safety: Runkle Stagefield Assessment

Runkle Stagefield is located in rural Coffee County, between Alabama Highways 87 and 189, approximately five miles south of Elba. Stinson Stagefield is 4.7 miles to the northeast and Lucas Stagefield is 5.6 miles to the southeast. The Pea River lies just west of the stagefield, and at one point, forms its southwest boundary. Surrounding land uses are almost all agricultural or wooded with rural residential development along roadways.

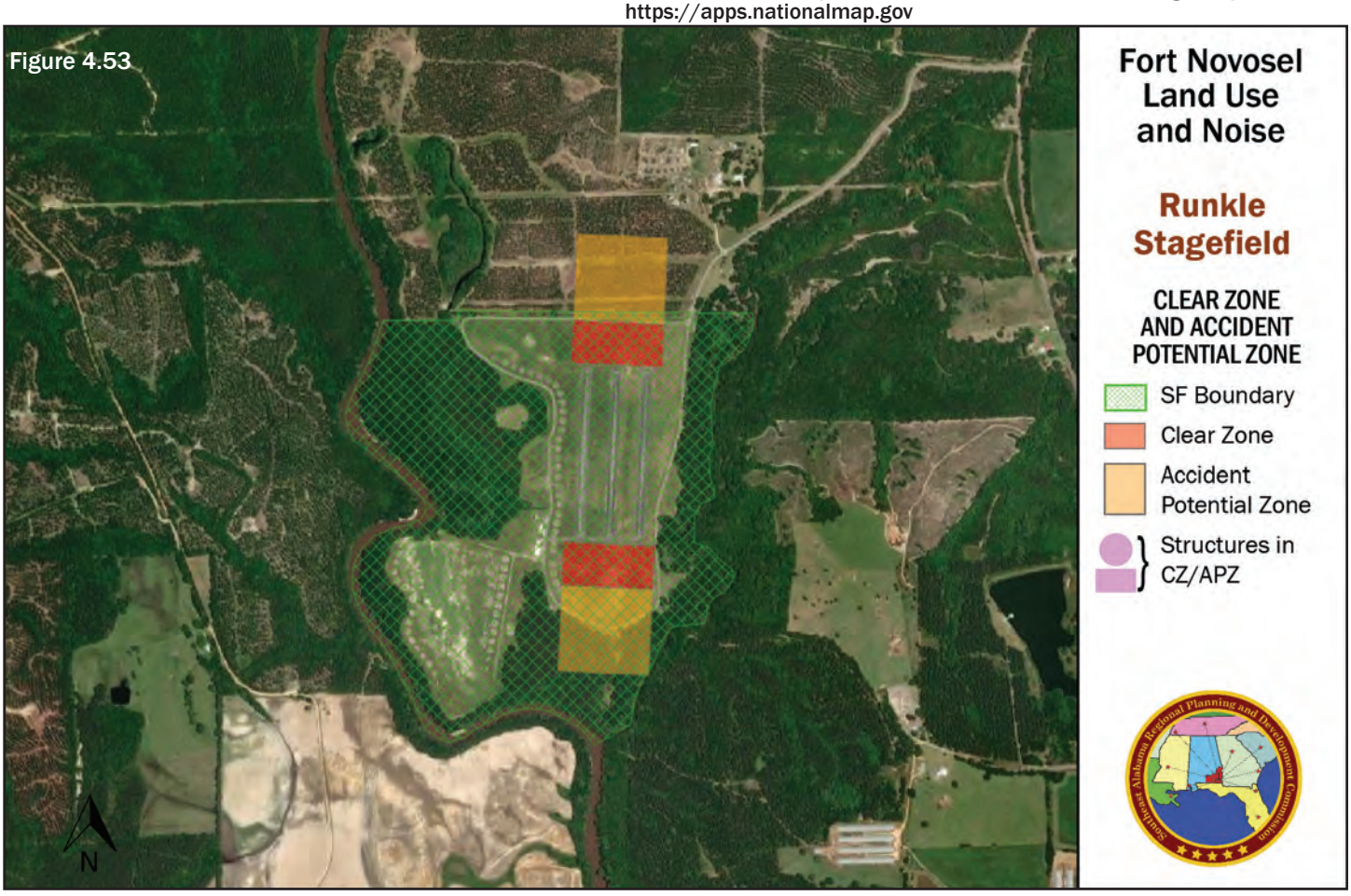
- 170 structures within 2-mile radius
- No structures within the designated noise zones
- 75 residential structures and one church are located within the air space boundary
- The Elba Hydroelectric Power Plant is located on the Pea River 1.5 miles north of the stagefield

Figure 4.52 Structures within a 2-Mile Radius of Runkle Stagefield



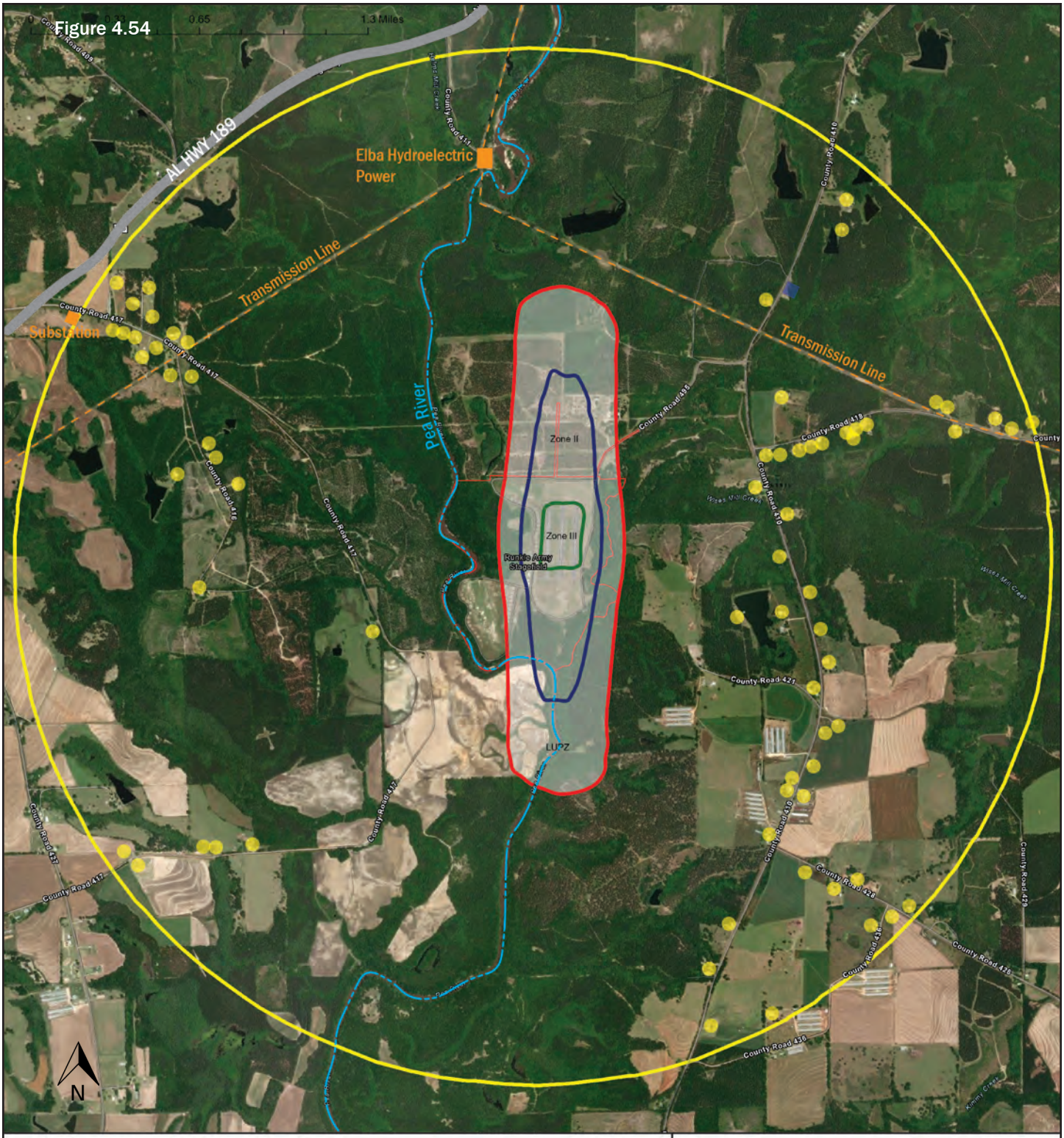
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.53



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.54



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Runkle Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.18 Land Use, Noise and Safety: Shell Army Airfield Assessment

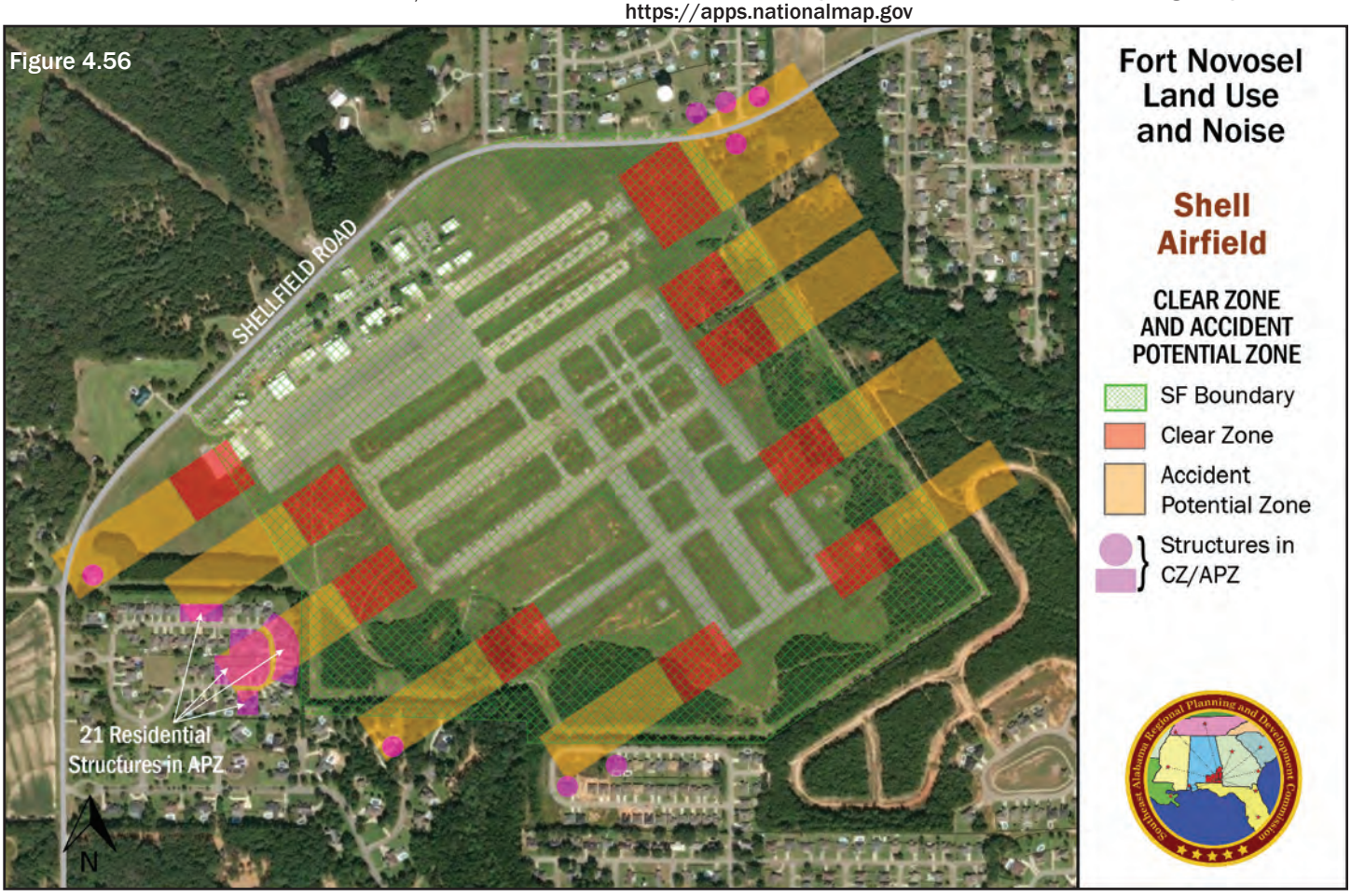
Shell Army Airfield is located completely within the corporate limits of the City of Enterprise, just two miles north of Boll Weevil Circle. Residential development has occurred up to the stagefield boundaries on all sides in dense concentrations, particularly south of the stagefield. Other surrounding land uses include industrial, institutional, and recreational development to the southwest of the stagefield. Commercial development has occurred on a limited basis within the air space boundary. The most significant incompatibility is the activity level at Shell Airfield vs. the density of surrounding housing.

- 3,177 structures within 2-mile radius
- 29 housing units in accident potential zone
- 194 structures within Noise Zone II
- 1,137 structures within LUPZ
- Water tank on Shellfield Road almost directly across the street from the flight lanes
- Shell Airfield is one of the larger off-post facilities, capable of being home base to more than 130 helicopters
- 2022 AADT: Shellfield Road = 4,606

Figure 4.55 Structures within a 2-Mile Radius of Shell Airfield

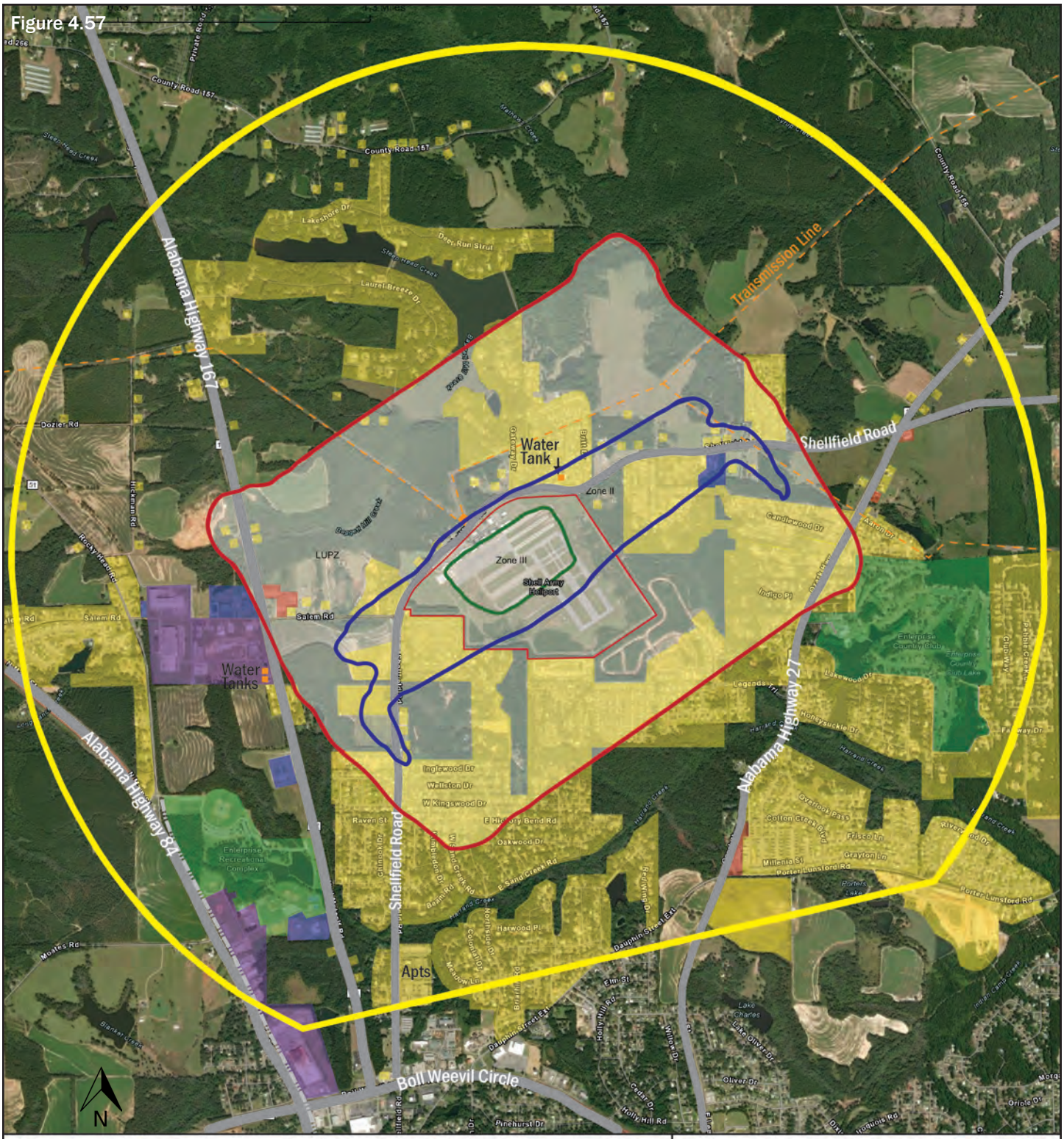
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.56



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.57



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Shell Airfield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

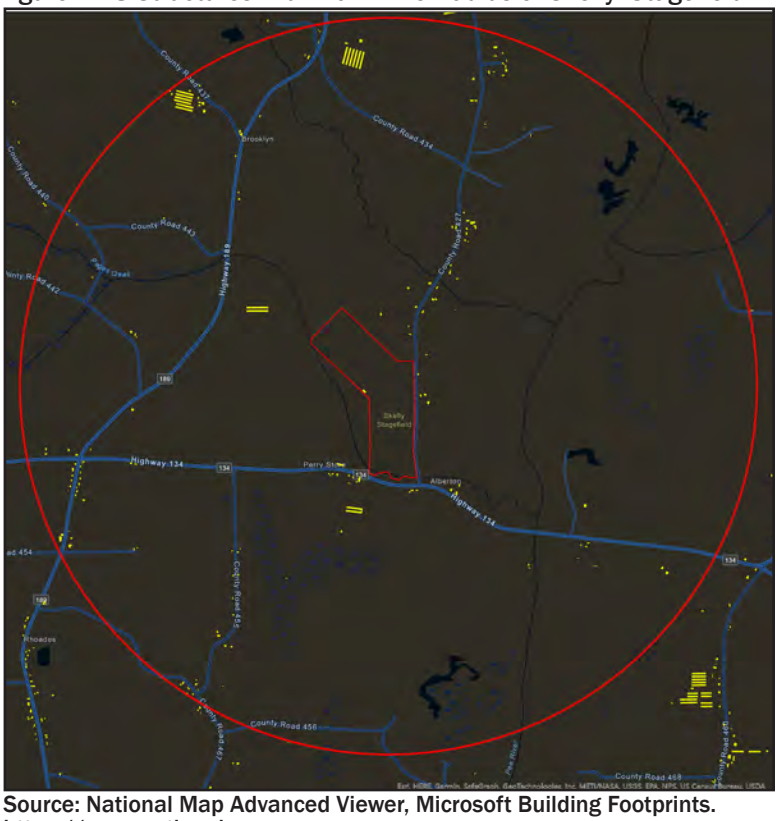
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.19 Land Use, Noise and Safety: Skelly Stagefield Assessment

Skelly Stagefield is located in southeast Coffee County, near the intersection of Alabama Highways 134 and 189. The Town of Kinston is located 5.3 miles to the southwest and the Pea River flows east of the stagefield. Surrounding land uses are primarily agricultural with associated residential.

- 108 structures within 2-mile radius
- 2 structures in accidental potential zone and 2 structures adjacent to accident potential zone
- 1 church and 5 residential structures located within NZ II
- 1 church and 9 residential structures located within LUPZ
- 93 structures within air space boundary: 2 commercial, 2 institutional, 89 residential
- 2022 AADT: AL Highway 134 = 4,732

Figure 4.58 Structures within a 2-Mile Radius of Skelly Stagefield

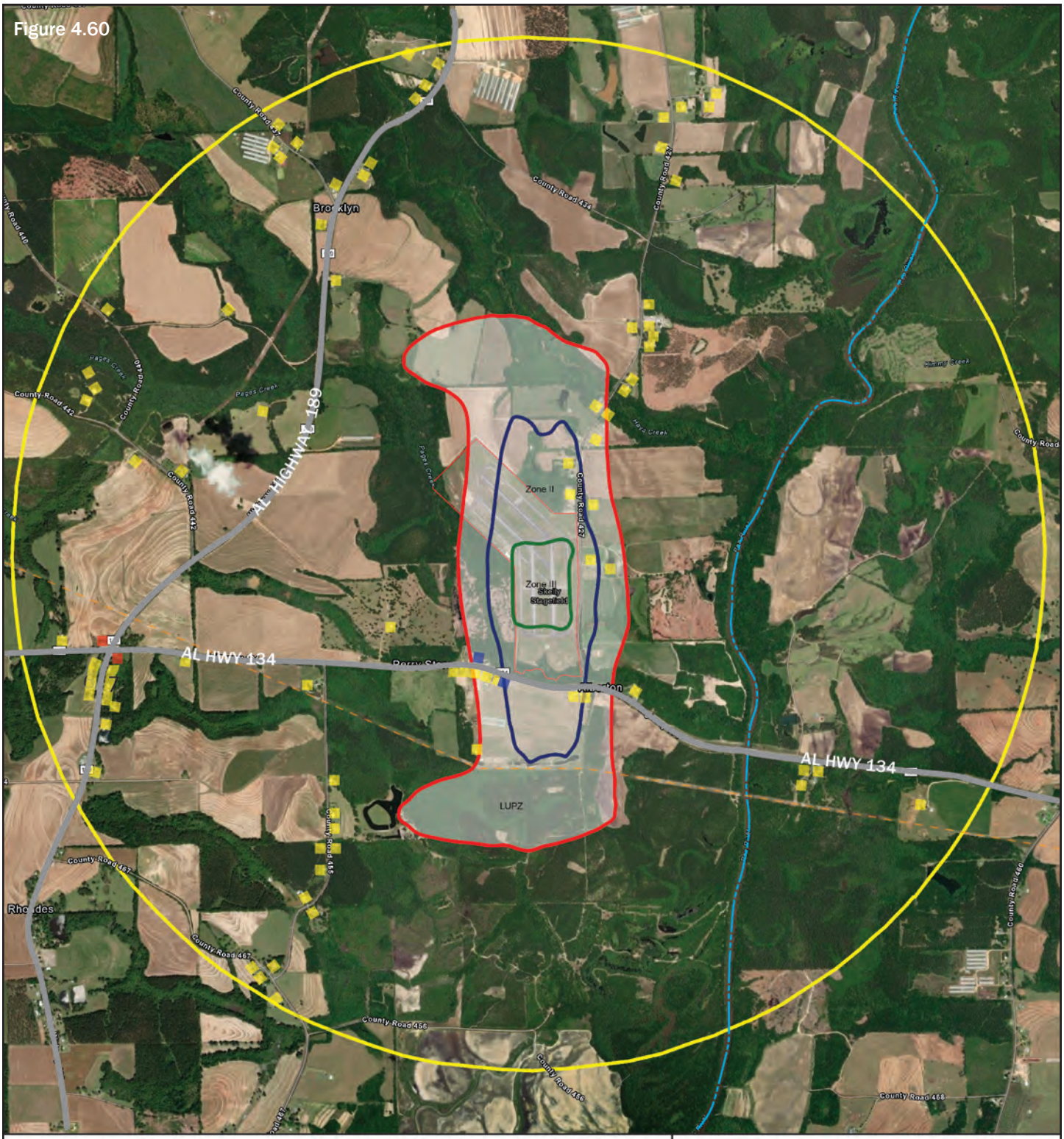


Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.59

Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.60



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Skelly Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.20 Land Use, Noise and Safety: Stinson Stagefield Assessment

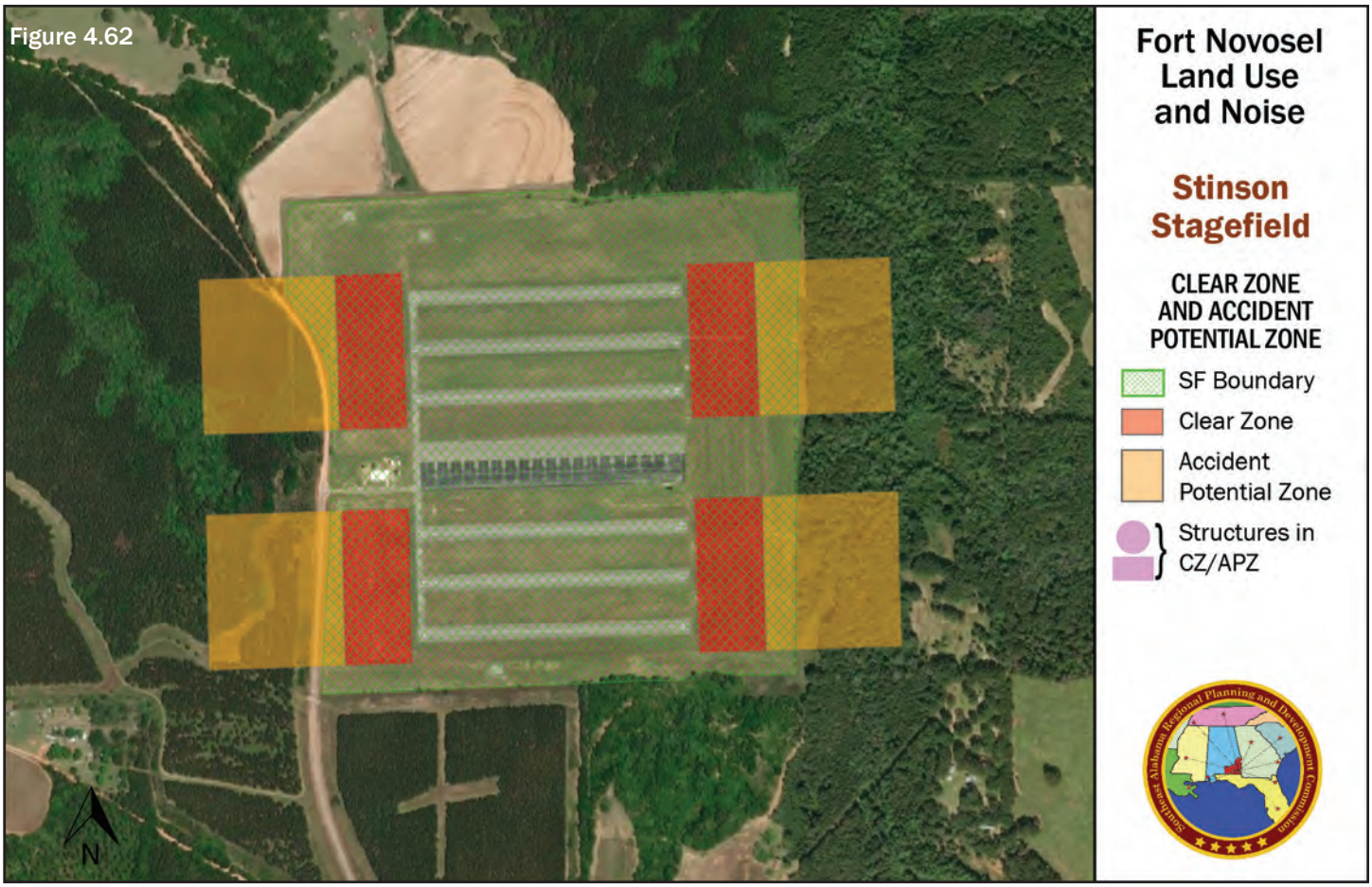
Stinson Stagefield is located in Coffee County, southeast of Elba and west of New Brockton. Alabama Highway 87 runs north-south about two miles west of the stagefield. Land use on the north and west side of Stinson Stagefield is almost entirely wooded property. Agricultural and rural residential land uses are found to the east and south of the stagefield.

- 219 structures within 2-mile radius, of which 24.2 percent are within noise zones
- 9 structures within Noise Zone II
- 44 residential structures within LUPZ
- 1 commercial, 2 institutional, 2 utility, and 136 residential structures are located within air space boundary
- water tank is located one mile southeast of stagefield

Figure 4.61 Structures within a 2-Mile Radius of Stinson Stagefield

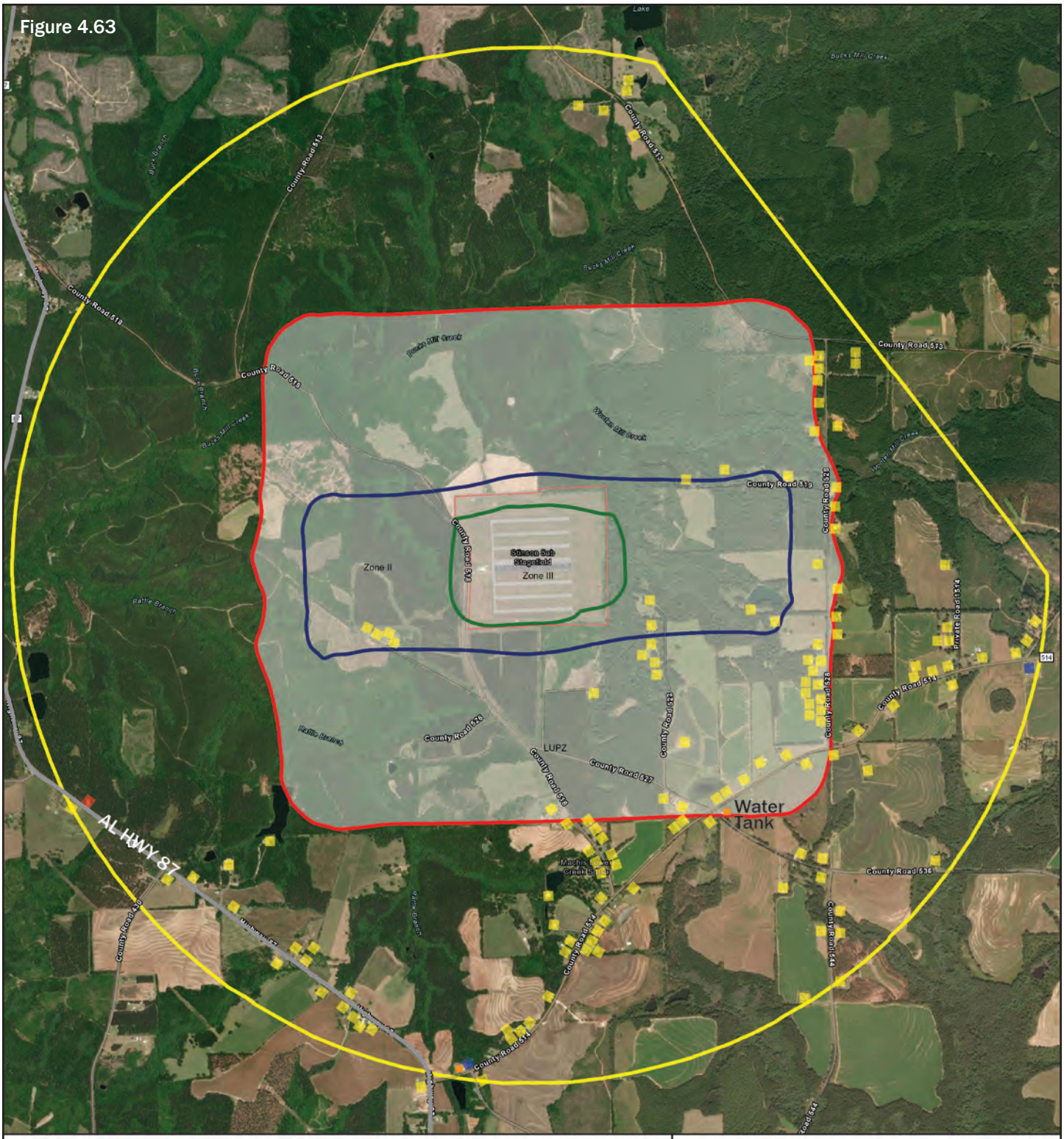
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.62



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.63



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Stinson Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

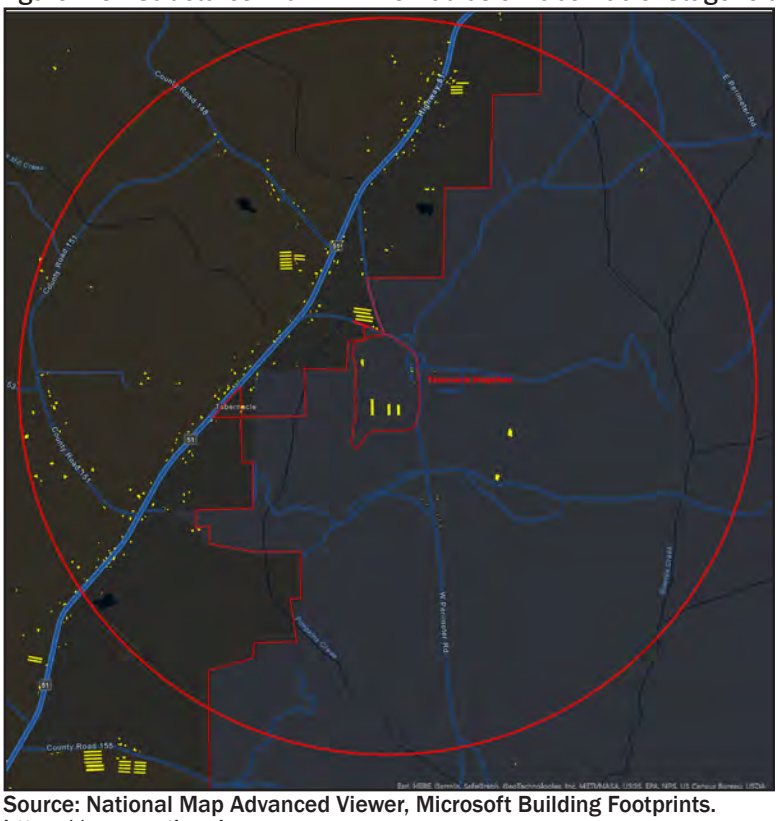
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.21 Land Use, Noise and Safety: Tabernacle Stagefield Assessment

Tabernacle Stagefield is located off Alabama Highway 51 at the north end of the Fort Novosel installation in Coffee County. Shell Airfield, in Enterprise, is located 6.5 miles due south of Tabernacle Stagefield. Off-post land uses are primarily rural residential, along with some agricultural land use. In a 1.75-mile stretch of Alabama Highway 51 that passes through the air space boundary, there are 72 residential units. That equates to 26 units per mile which is fairly dense for rural residential development.

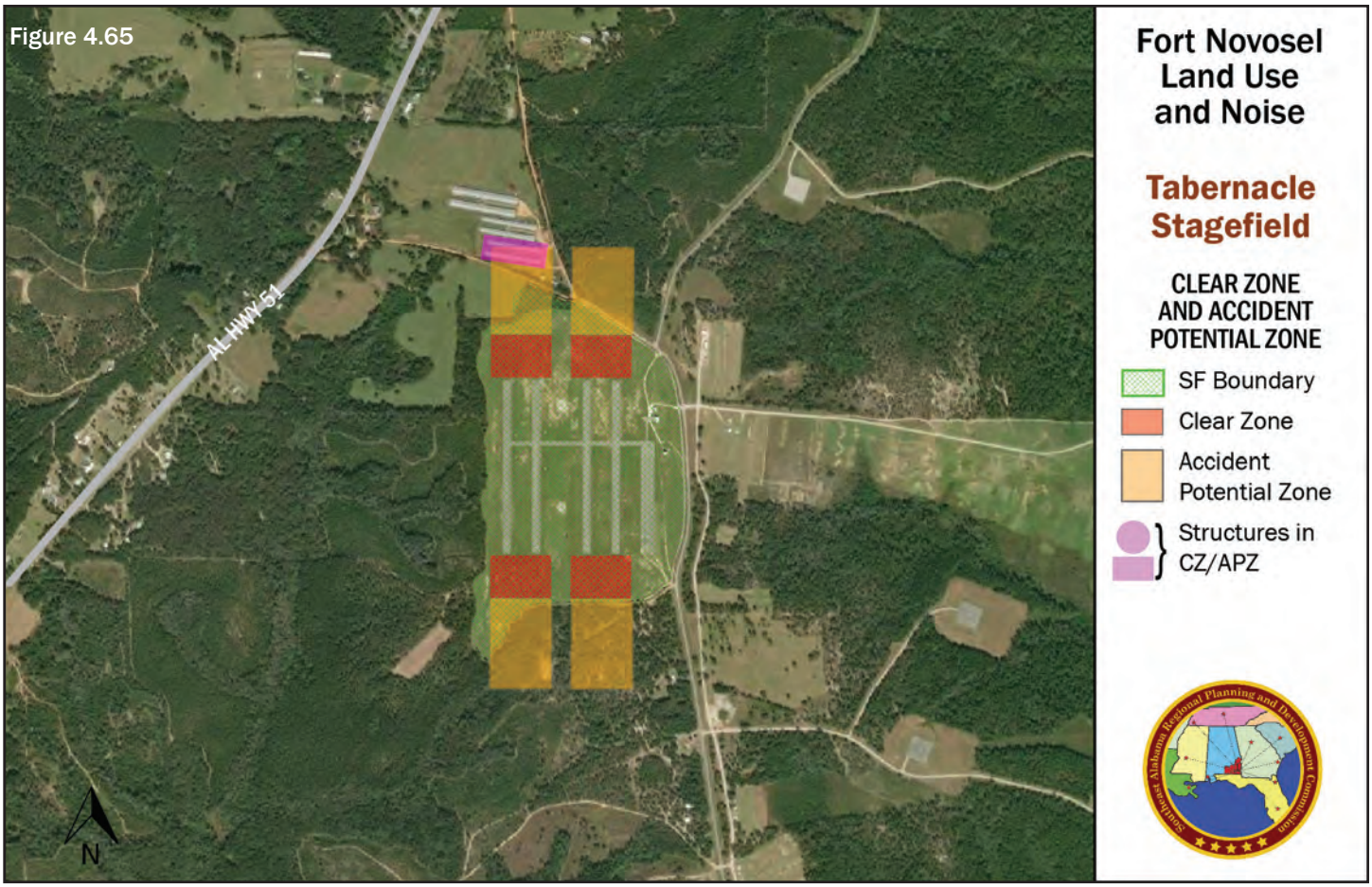
- 256 structures within 2-mile radius, of which 16.4 percent are in a noise zone
- Water tank located 1.25 miles due north of Tabernacle Stagefield landing lanes
- Poultry houses located within accident potential zone north of landing lanes
- 1 residential unit located in Noise Zone II
- 40 residential units and water tank located within LUPZ boundary
- 90 residential structures in air space boundary

Figure 4.64 Structures within 2-Mile Radius of Tabernacle Stagefield



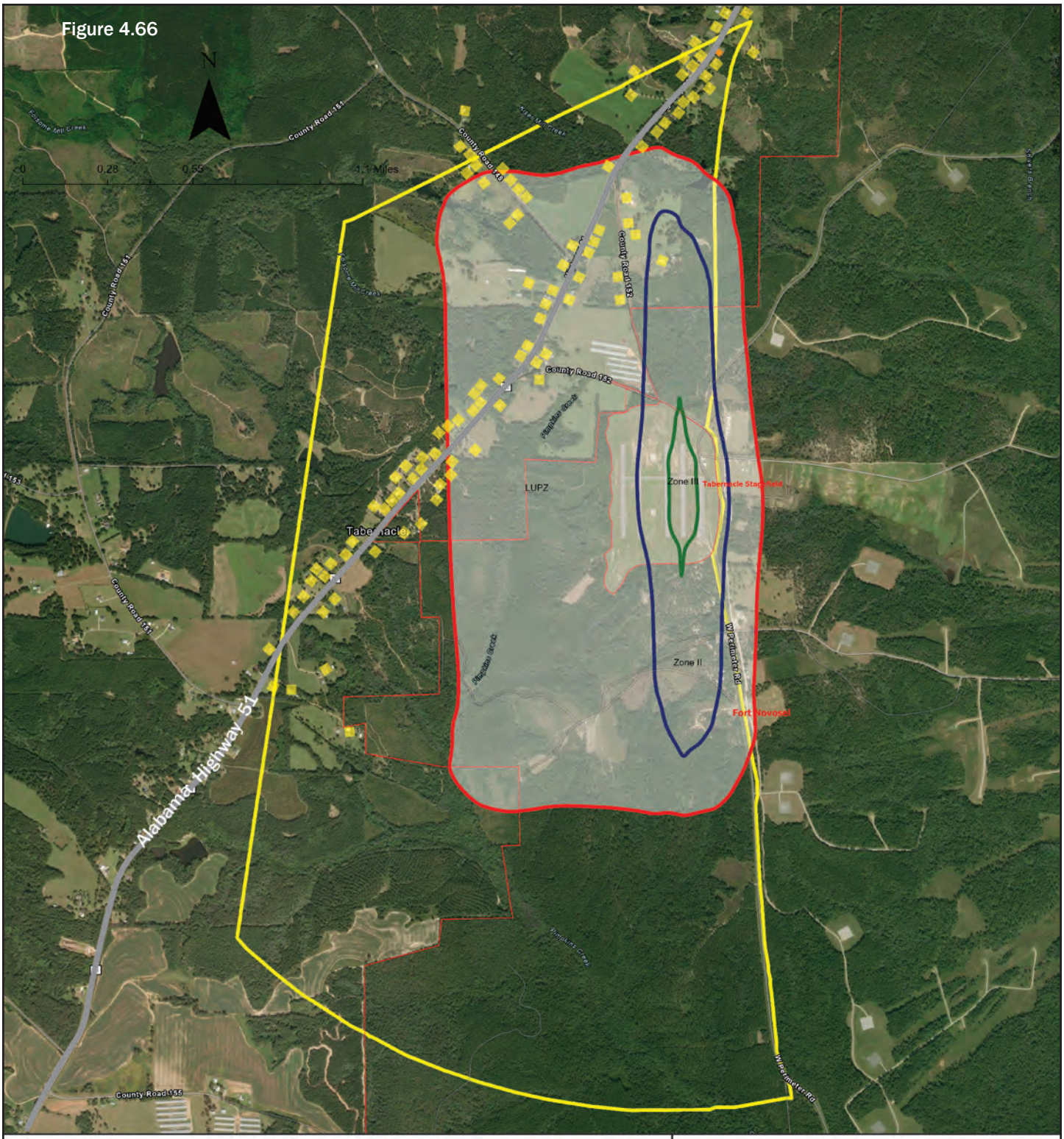
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.65



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.66



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Tabernacle Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

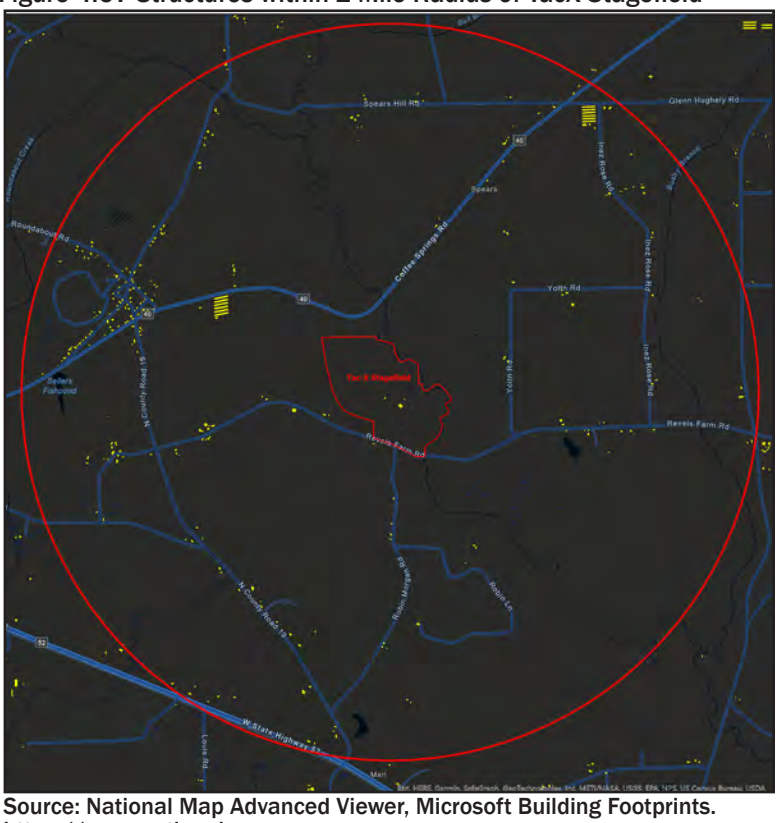
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.22 Land Use, Noise and Safety: TacX Stagefield Assessment

TacX Stagefield is located north of Alabama Highway 52 in Geneva County, four miles east of the Town of Samson. Surrounding land uses are rural residential, agricultural, and wooded lands. There is one subdivision west of TacX Stagefield that is home to approximately 55 housing units.

- 296 structures within 2-mile radius
- 148 residential structures within air space boundary
- 3 churches and 1 dairy within air space boundary
- Noise zones were not developed for TacX Stagefield due to its limited use

Figure 4.67 Structures within 2-Mile Radius of TacX Stagefield

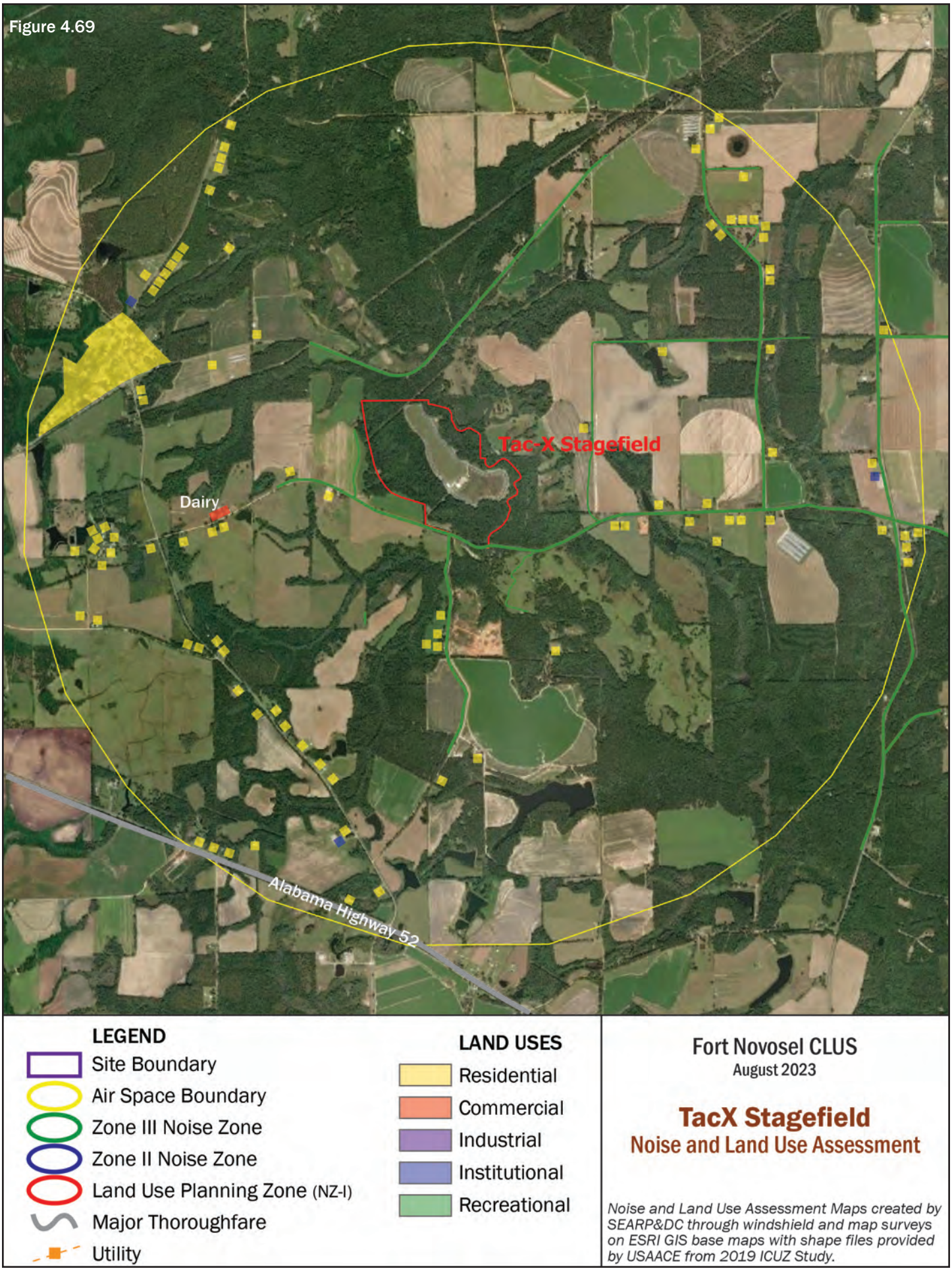


Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.68

Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.69

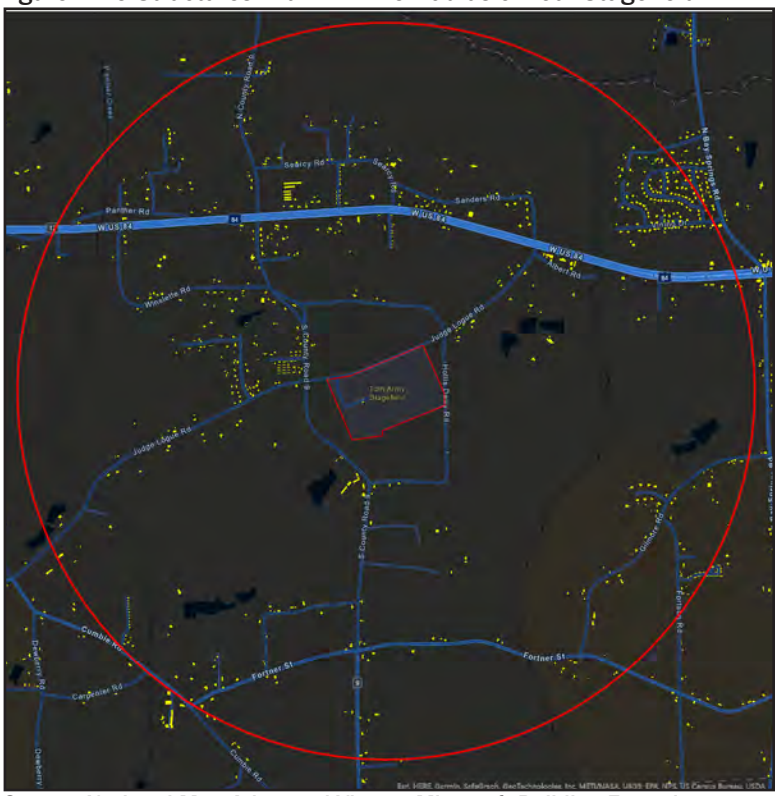

Tac-X Stagefield
Dairy
Alabama Highway 52
LEGEND
Site Boundary
Air Space Boundary
Zone III Noise Zone
Zone II Noise Zone
Land Use Planning Zone (NZ-I)
Major Thoroughfare
Utility
LAND USES
Residential
Commercial
Industrial
Institutional
Recreational
Fort Novosel CLUS
August 2023
TacX Stagefield
Noise and Land Use Assessment
Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.23 Land Use, Noise and Safety: Toth Stagefield Assessment

Toth Stagefield is located in Houston County, one mile south of US Highway 84, in an unincorporated area between Dothan and the Wicksburg community. Toth Stagefield lies between Panther Creek to the west and Bear Creek to the east, both of which flow north to the Little Choctawhatchee River. There are an estimated 604 housing units in the air space boundary, many of which are manufactured homes. The area appears to have once been predominantly agricultural but is quickly becoming rural residential with commercial growth along US Highway 84 as growth spreads westward from Dothan and eastward from Wicksburg.

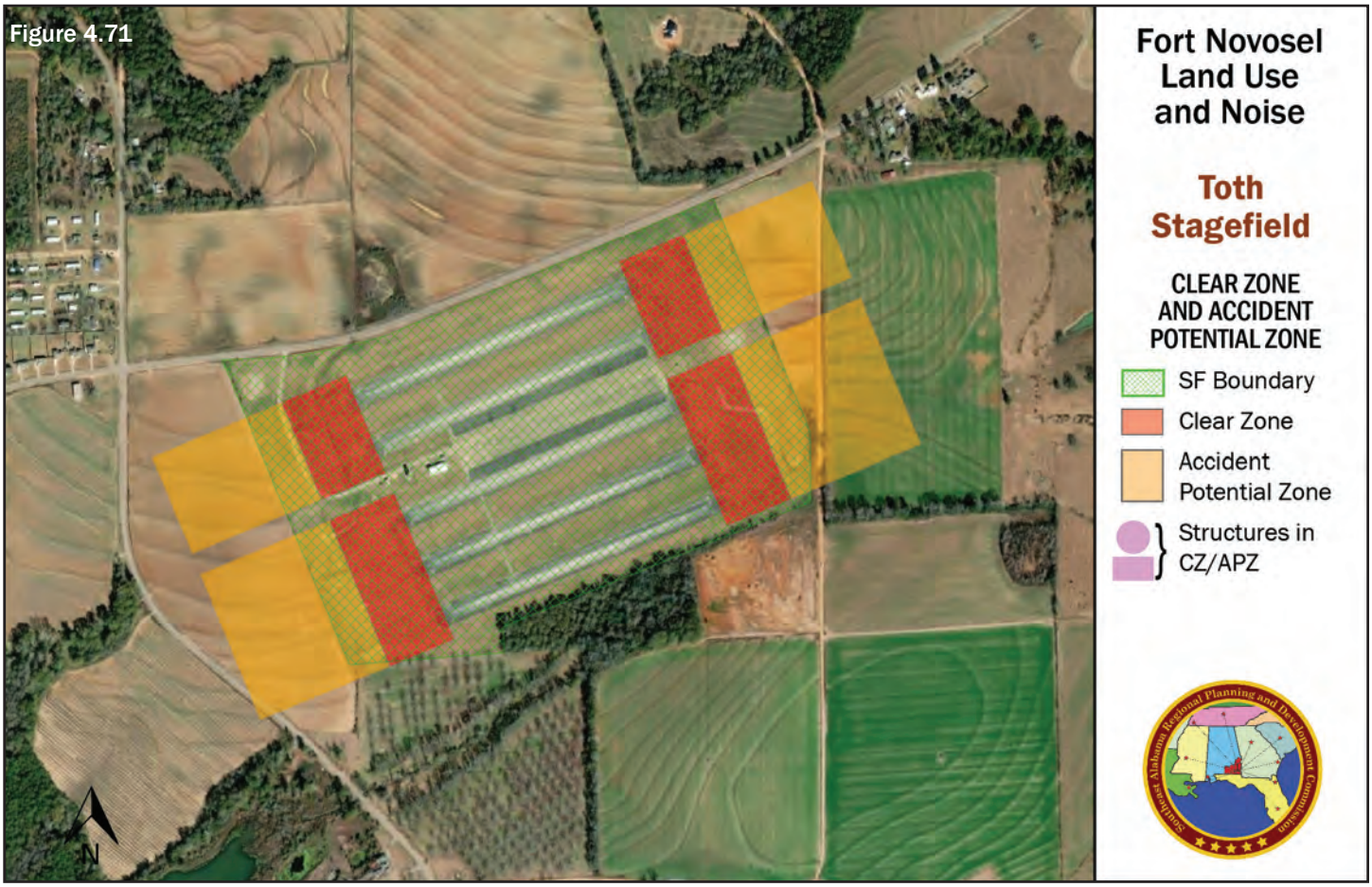
- 749 structures within 2-mile radius, of which 6.0 percent are within a noise zone
- Power transmission lines 1.3 miles southwest and 1.0 miles northeast of landing lanes
- Communication tower located 1.25 miles north
- 627 non-agricultural structures in the air space boundary
- 1 institutional, 8 residential structures in NZ II
- 36 structures in LUPZ: 2 industrial, 1 commercial, 33 residential

Figure 4.70 Structures within 2-Mile Radius of Toth Stagefield



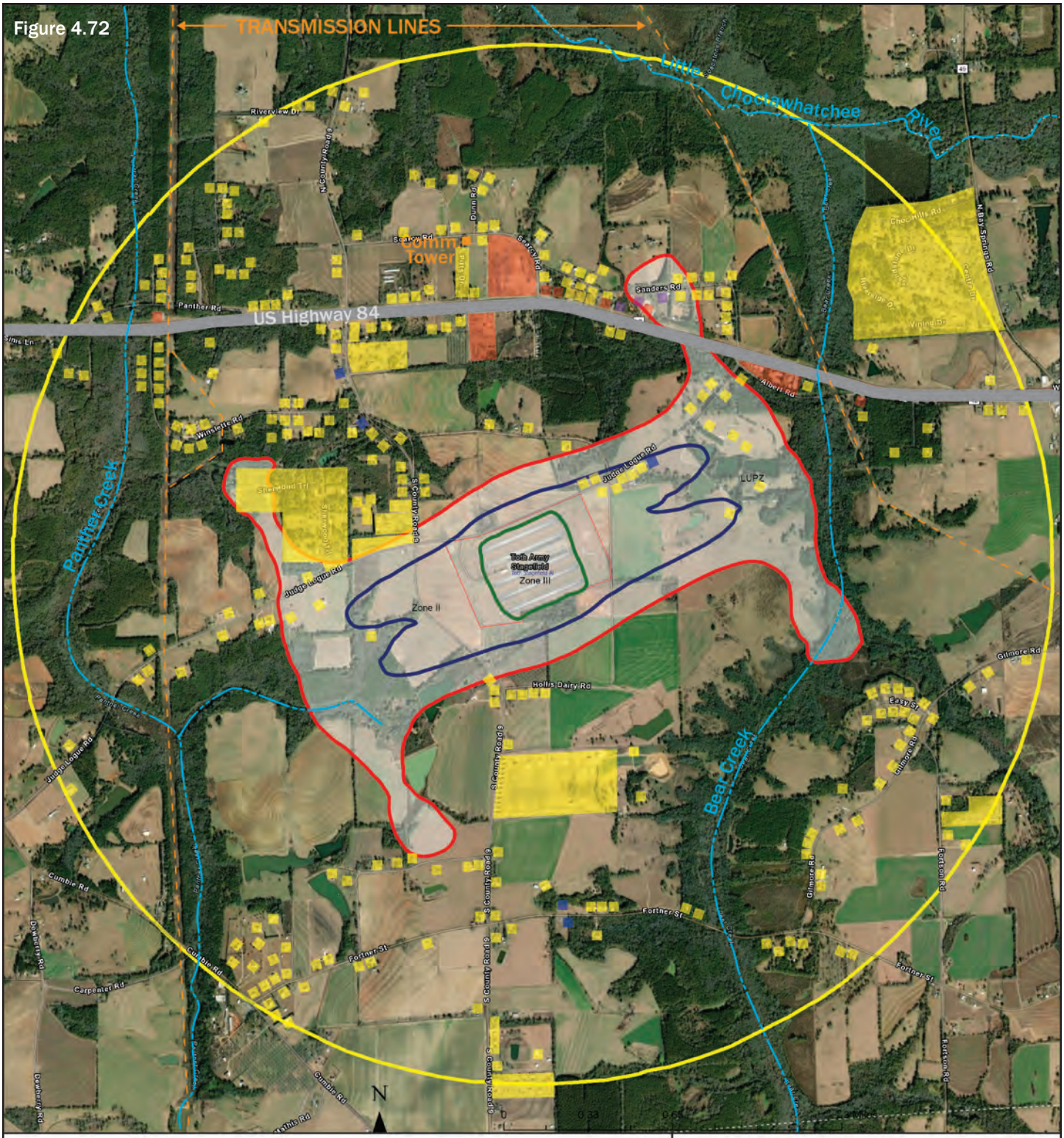
Source: National Map Advanced Viewer, Microsoft Building Footprints. https://apps.nationalmap.gov

Figure 4.71



Source: SEARP&DC Windshield and Map Survey with base map available through Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

Figure 4.72



LEGEND

- Site Boundary
- Air Space Boundary
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare
- Utility

LAND USES

- Residential
- Commercial
- Industrial
- Institutional
- Recreational

Fort Novosel CLUS
August 2023

Toth Stagefield
Noise and Land Use Assessment
UH-72 Lakota Helicopter

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE from 2019 ICUZ Study.

4.3.24 Land Use, Noise and Safety: CH-47 Chinook Helicopter Assessment

Noise zones for the CH-47 Chinook Helicopter are larger than those for the UH-72 Lakota that were reviewed in Sections 4.3.1 through 4.3.23. In fact, the CH-47 LUPZ zones, and sometimes the Zone II noise boundaries, often overlap to mesh into one another between airfields or stagefields. As a frame of reference, the largest noise zone for the UH-72 (the LUPZ) is often smaller than the Zone III noise zone (the smallest) for the CH-47. A comparison of the acreage impacted by the noise zones of both the UH-72 and the CH-47, as well as small and large arms, is provided in Figure 4.80. Because detailed land uses and structures were investigated for each of stagefields individually for the UH-72 noise zones, it will not be done again for the CH-47 noise zones. Instead, in Figures 4.73 and 4.74, the three noise zones for each applicable stage field are overlaid on a map that shows building footprints that are available at the map scale to provide a sense of structural density within the noise zones. Noise zones for the CH-47 were not developed for three stagefields: Louisville Stagefield in Barbour County, and Highfalls and TacX stagefields in Geneva County.

The Skelly-Lucas-Runkle-Stinson-Brown noise zones for the CH-47, shown in Figure 4.74, are mostly located over rural agricultural, forested, or rural residential properties. It is estimated that the Zone III noise zones for Lucas, Stinson, and Brown stagefields each encompass more than 3,000 acres, with the Brown Stagefield impacting the most developed area. The combined LUPZ encompasses almost all of the land in the 17 mile between New Brockton and Kinston between Alabama Highways 87 and 189.

The Lowe-ECH-Hooper Stagefield noise zones are mostly located within the Fort Novosel main installation perimeter but do extend over the onpost housing and elementary school. The combined LUPZ, however, extends from western Ozark approximately ten miles to the Rucker Boulevard area in east Enterprise and includes most of the Town of Level Plains.

Figure 4.73: CH-47 Chinook Ground Disturbance

Photo Credit: DVIDS; Photo by Spc. Randis Monroe; May.30.2015. https://www.dvidshub.net/image/2313375/takeoff

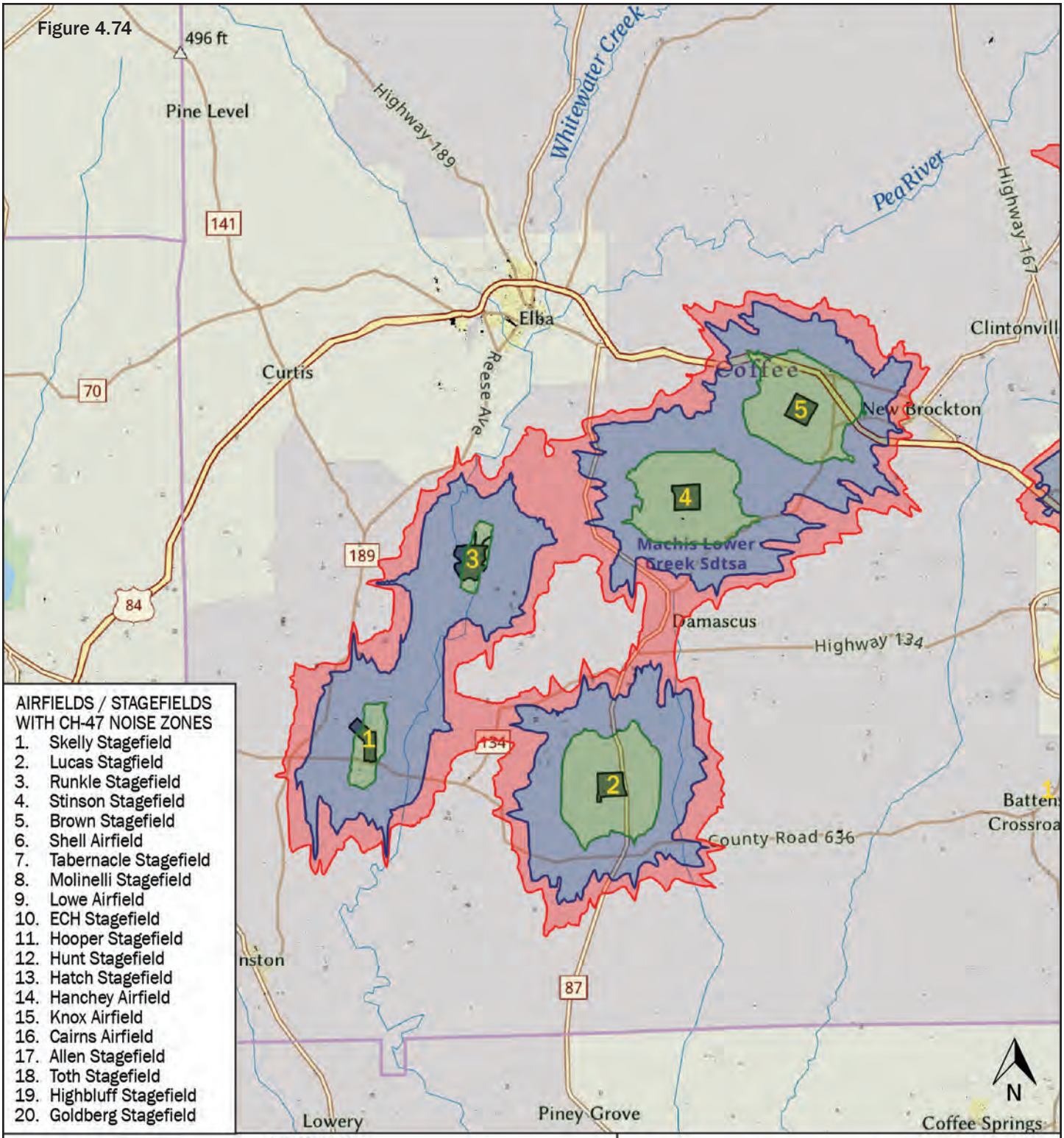
The Hunt-Hatch-Hanchey-Knox-Cairns-Allen noise zones is the largest combined group, with the LUPZ extending approximately 15 miles from the Ewell community, southeast of Ozark, to Clayhatchee and Wicksburg. The Cairns Noise Zone III includes a large portion of US Highway 84 and the Hunt Noise Zone III includes a large portion of US Highway 231 southeast of Ozark. The Cairns and Allen noise zones encompass areas along US Highway 84 that have seen tremendous growth.

The noise zones of the remaining six air/stagefields do not mesh with any others. Each LUPZ encompasses approximately 12 square miles, or 7,500 to 8,000 acres. Molinelli and Tabernacle stagefields are both located on the north end of the Fort Novosel main installation. Noise zones extend northwest across Alabama Highway 51 for Tabernacle and northeast across Coffee County Road 36. Land uses in the area are predominant agricultural, forested or rural residential. There is at least one church in the area.

Shell Airfield and Toth Stagefield noise zones have the potential to impact large developed areas. The Shell Airfield LUPZ is approximately, 4.5 miles wide, stretching from US Highway 84 from encompass to County Road 700 (almost to the Faulkner Gate). It is estimated that the Shell Zone III noise zone impacts more than 200 structures, most of which are residential. The LUPZ includes more than 1,140 non-agricultural structures, of which about 80 percent are urban residential and the remainder are a mixture of commercial, industrial and institutional. The Toth Stagefield Noise Zone III encompasses about 45 non-agricultural structures and the LUPZ encompasses more than 625 non-agricultural structures, most all of which are rural residential, although a limited amount of rural neighborhoods and commercial and industrial development is present. The Toth noise zones also lie across US Highway 84, which is a heavily traveled roadway carrying commuter traffic.

The Highbluff and Goldberg stagefields are located in rural areas of Geneva and Dale Counties, respectively. Noise zones of each stagefield impact less than 50 agricultural or rural residential properties. The Highbluff Noise Zone III does lie over Alabama Highway 167, which carries a considerable amount to travelers to Florida's beaches.

Figure 4.74



AIRFIELDS / STAGEFIELDS WITH CH-47 NOISE ZONES

1. Skelly Stagefield
2. Lucas Stagfield
3. Runkle Stagefield
4. Stinson Stagefield
5. Brown Stagefield
6. Shell Airfield
7. Tabernacle Stagefield
8. Molinelli Stagefield
9. Lowe Airfield
10. ECH Stagefield
11. Hooper Stagefield
12. Hunt Stagefield
13. Hatch Stagefield
14. Hanchey Airfield
15. Knox Airfield
16. Cairns Airfield
17. Allen Stagefield
18. Toth Stagefield
19. Highbluff Stagefield
20. Goldberg Stagefield

LEGEND

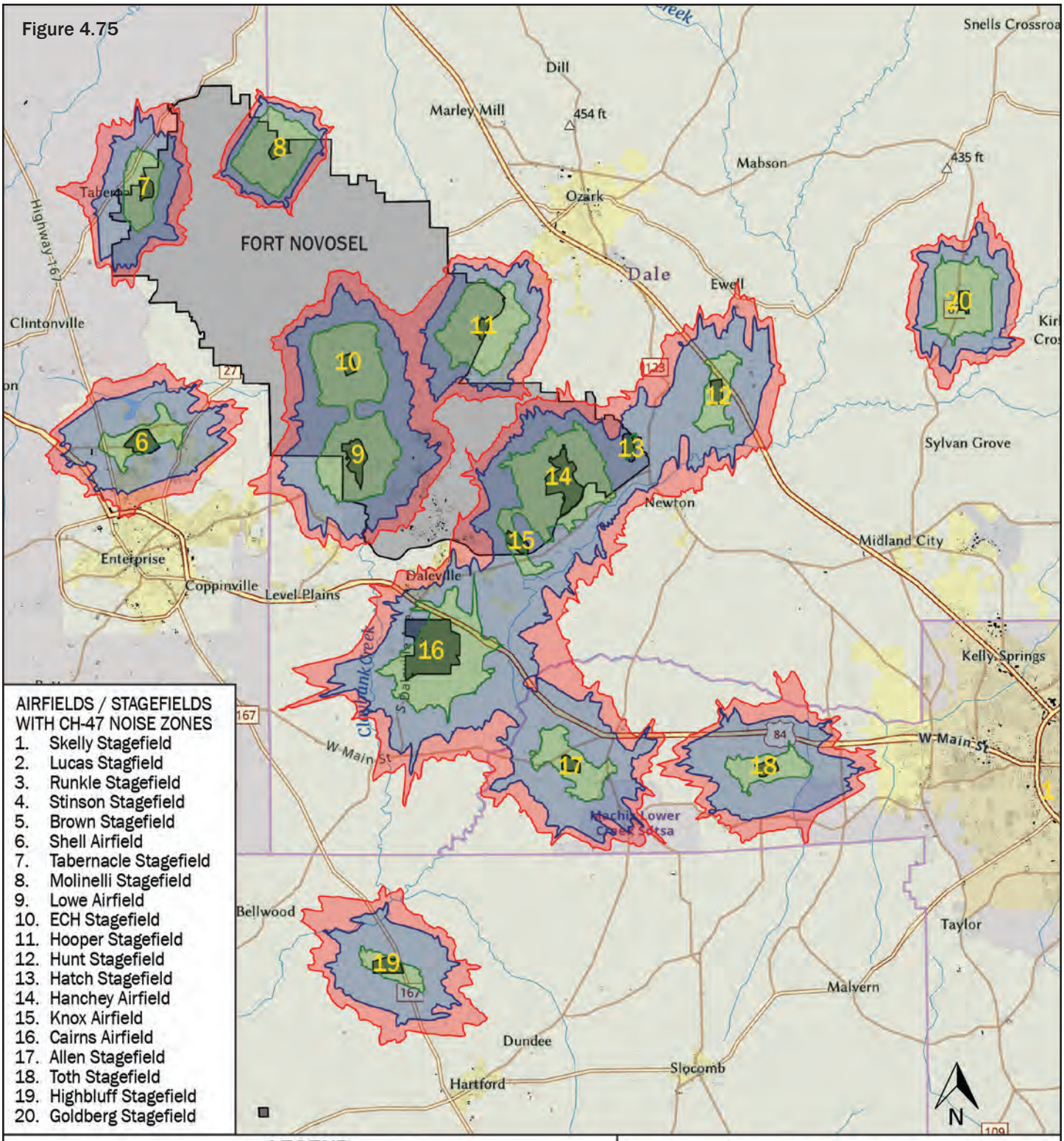
- Fort Novosel
- Air/Stagefield
- 1 Air/Stagefield Number
- Developed Area
- Building Footprint
- Zone III Noise Zone
- Zone II Noise Zone
- Land Use Planning Zone (NZ-I)
- Major Thoroughfare

Fort Novosel CLUS
August 2023

CH-47 Chinook Helicopter
Noise and Land Use Assessment
West Study Area

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE.

Figure 4.75



Fort Novosel CLUS
August 2023

CH-47 Chinook Helicopter
Noise and Land Use Assessment
East Study Area

Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE.

OBSERVATIONS:

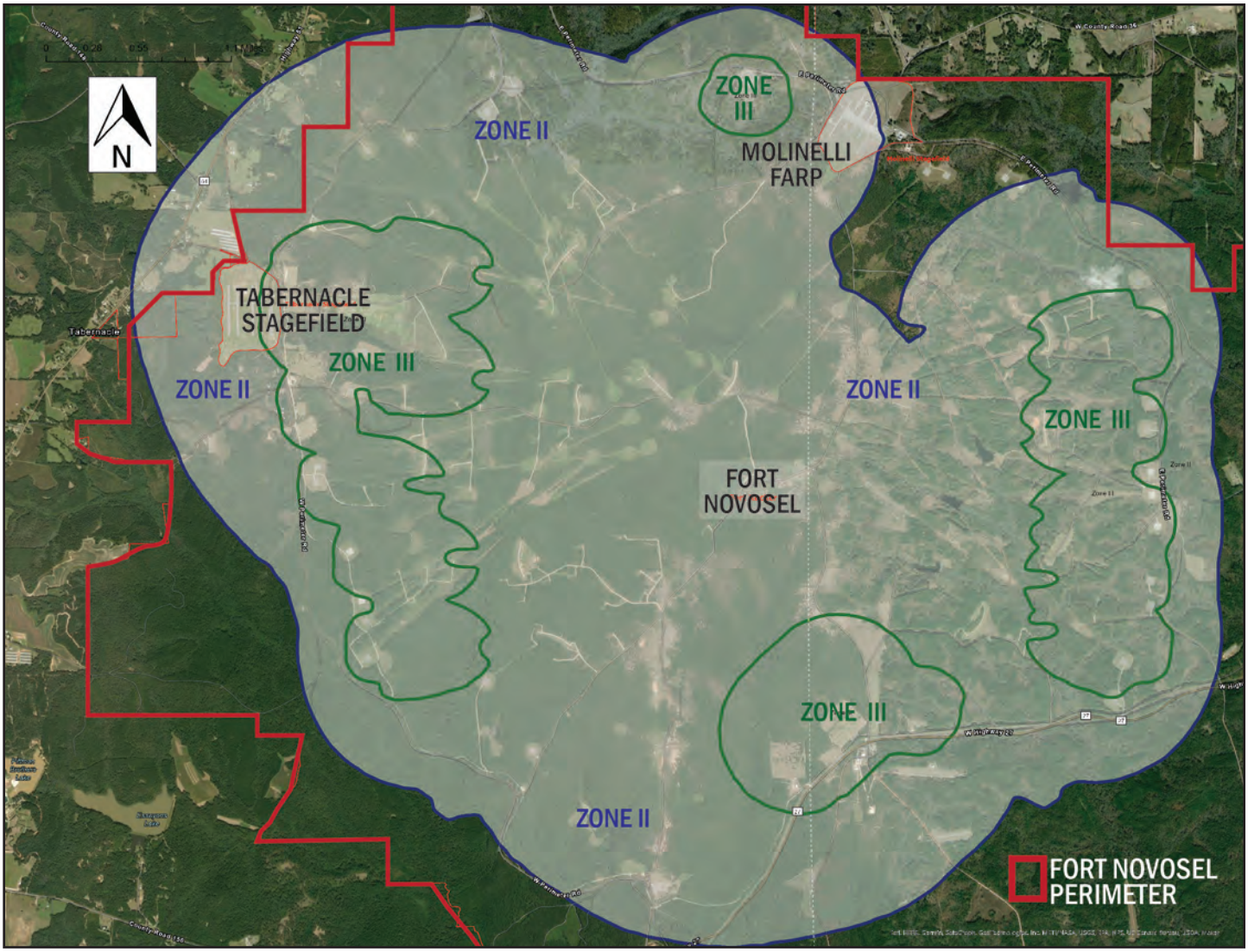
- Ground disturbance, or rotor wash, from takeoff and landing of the CH-47 produces erosion issues for the stagefields and excessive runoff into nearby streams
- Impact on future development along US Highway 84 in New Brockton, and between Daleville and Dothan
- Noise Zone III of Hunt Stagefield extends over heavily traveled US Highway 231 south of Ozark
- Noise Zone III of Cairns Stagefield extends over heavily traveled US Highway 84 south of Daleville
- US Highway 84 development between Dothan and Daleville is impacted by Cairns and Allen noise zones
- Development (rural residential) that abuts the Fort Novosel perimeter boundary in all directions
- Impact on existing development around Shell Airfield in Enterprise and Hooper Stagefield in Ozark
- Impact on high volume of commuter/beach traffic on US 231 near Ozark and AL 167 south of Enterprise

4.3.25 Land Use and Noise: Small Arms, Large Arms, and Demolition Assessment

Training activities for small arms, large arms and demolition are all concentrated on the ranges within the Aviation Gunnery Range Complex (AGRC) located at the north end of the Fort Novosel main installation around Tabernacle Stagefield and Molinelli FARP. Sensitive land uses are generally compatible within the LUPZ, or Noise Zone I, of small and large arms and demolition activities, and are not compatible within the Noise Zones II and III.

The small arms designation includes weapons of .50 caliber or less. This may include a variety of rifles, machine guns, pistols, shotguns, and aircraft-mounted weapons. Small arms live-fire operations at Fort Novosel are concentrated at the ranges located at the ranges located at the north end of the main installation. The 2019 ICUZ study reported that for the FY 2017-2018 range records,

Figure 4.76 Small Arms Noise Zones



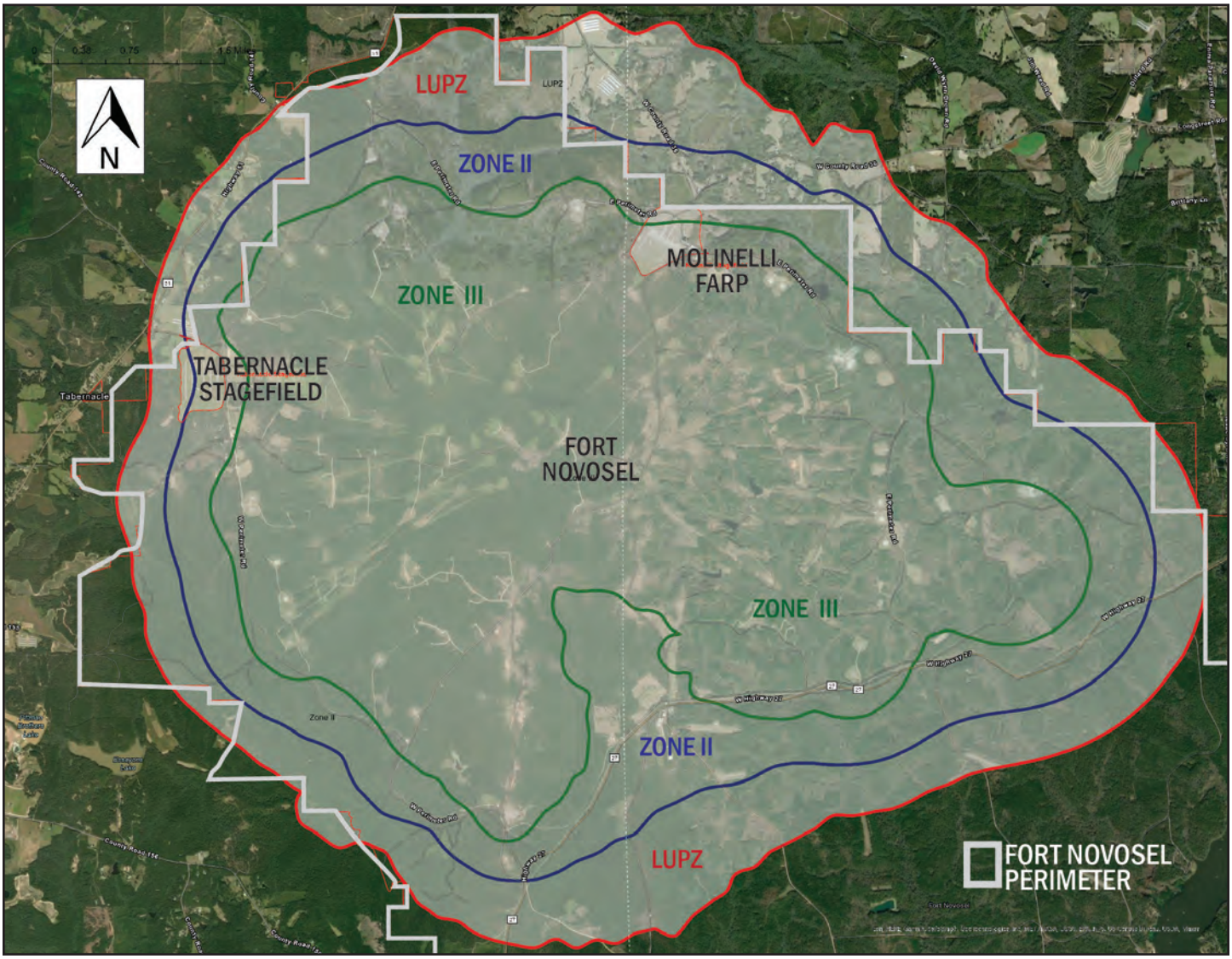
Source: Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE.

small arms ammunition expenditures average in excess of 2.8 million rounds per year, or about 7,671 rounds per day. Noise Zone III for small arms is located wholly within the installation perimeter. Noise Zone II for small arms extends beyond the northwest boundary of the installation to include a portion of Alabama Highway 51. It is estimated that there are 42 agricultural and rural residential properties that are located in this area. The Noise Zone II also extends beyond the northeast boundary a small distance beyond Perimeter Road, however, there are no structures in this area and the property is all forested land. The ICUZ reports that there are 612 acres of off-post land, all of which is unincorporated, located within the small arms noise zones. An LUPZ was not developed for small arms.

The large arms designation includes weapons 20 mm or greater and any weapon that contains explosive charges. This designation also includes all demolition charges. At Fort Novosel, training is conducted with a multitude of large caliber weapons including artillery, explosive demolition charges, grenades, rockets, and aerial gunnery firing. Training operations can occur all year round, during daytime or nighttime hours. On average, there are just over 1,500 rounds of large caliber ammunition fired each day, of which 5.9 percent is fired at night.

Noise zone III extends very slightly past the installation boundary encompassing about 89 wooded acres. Noise Zone II for large arms encompasses approximately 920 acres off-post and the LUPZ encompasses about 22,510 off-post acres. Land uses that surround the installation in this area are primarily agricultural or rural residential, however, there is one church located in Noise Zone II. Sound travels further at night; therefore, there may be more population disturbance during that time.

Figure 4.77 Large Arms CDNL Noise Zones



Source: Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE.

Figure 4.78
Large Arms PK50
Noise Zones

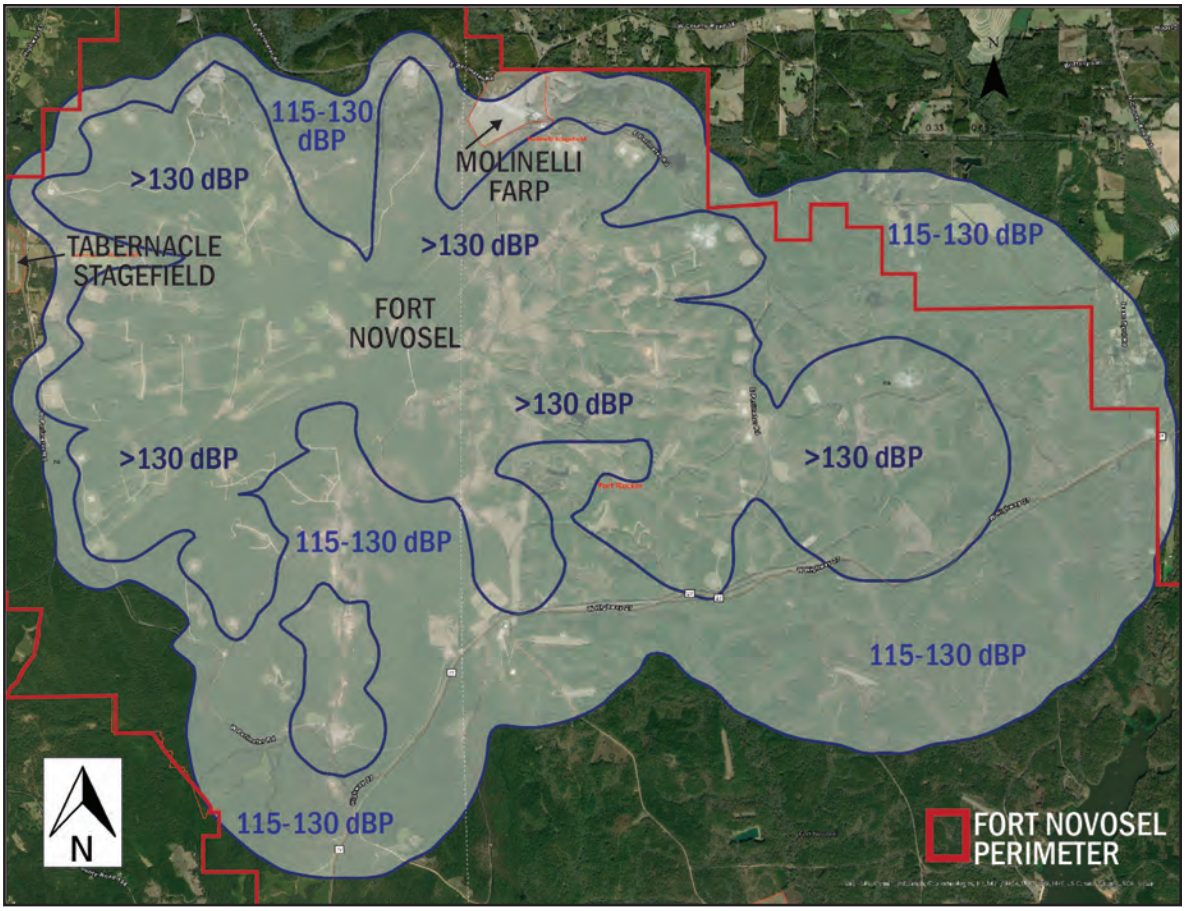
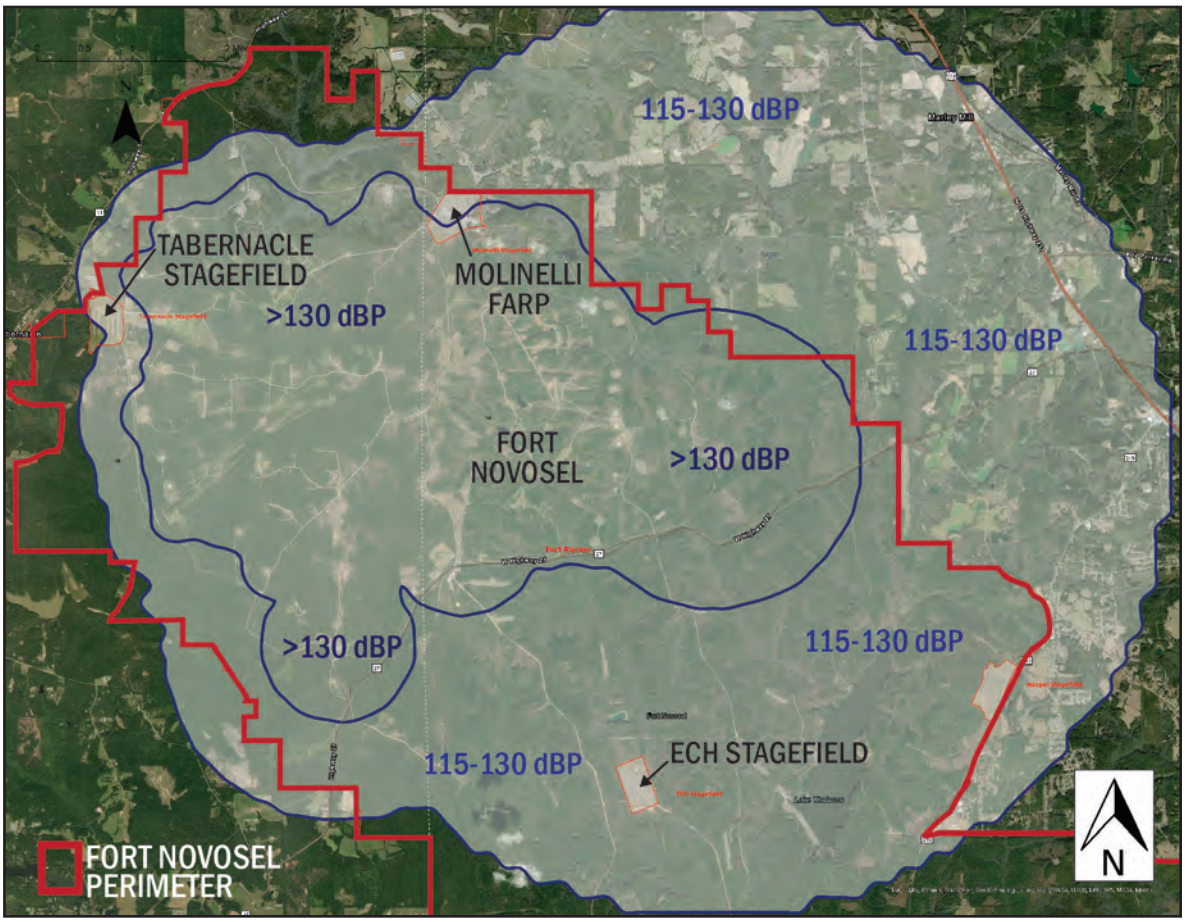


Figure 4.79
Large Arms PK15
Noise Zones



Source: Noise and Land Use Assessment Maps created by SEARP&DC through windshield and map surveys on ESRI GIS base maps with shape files provided by USAACE.

4.3.26 Acreage and Structures Potentially Impacted by Aviation and Gunnery Noise

Figure 4.80: Total Noise Zone Acreage

Zone	Noise/Aircraft Type	Total	Off Post	Incorporated Municipal Boundary	On Post Cantonment
Zone III	UH-72	1,652	101	0	0
	CH-47	35,736	20,610	4,427	0
	Small Arms	3,620	0	n/a	n/a
	Large Caliber and Demolition	14,333	89	n/a	n/a
Zone II	UH-72	10,497	5,234	1,235	0
	CH-47	81,106	68,613	12,915	402
	Small Arms	13,119	612	n/a	n/a
	Large Caliber and Demolition	6,799	920	n/a	n/a
LUPZ	UH-72	24,567	17,078	3,188	0
	CH-47	57,494	48,868	6,944	688
	Small Arms	n/a	n/a	n/a	n/a
	Large Caliber and Demolition	6,847	2,510	n/a	n/a

Source: US Army Aviation Center of Excellence and Fort Rucker Installation Compatible Use Zone Study, Army Public Health Center, Environmental Noise Branch, June 2019.

Figure 4.81: Structures within UH-72 Lakota Noise Zones

Facility Name/Type	Structures in 2-Mile Radius	Number of Structures per Designated Noise Zone				Number and Type of Structures in Land Use Planning Zone (LUPZ)				Structures in Any Noise Zone	
		CZ	APZ	NZ III	NZ II	Res	Comm	Ind	Inst	#	%
Allen Stagefield	566	0	7	0	52	165	2	0	4	230	40.6%
Brown Stagefield	290	0	0	0	7	41	3	0	1	52	17.9%
Cairns Airfield	1,419	0	0	0	228	82	5	0	3	318	22.4%
Ech Stagefield	35	0	0	0	0	0	0	0	0	0	0.0%
Goldberg Stagefield	275	0	1	0	2	33	0	0	0	36	13.1%
Hanchey Airfield	155	0	0	0	0	0	0	0	0	0	0.0%
Hatch Stagefield	453	0	0	0	0	5	0	0	0	5	1.1%
Highbluff Stagefield	165	0	0	0	4	6	0	0	0	10	6.1%
Highfalls Stagefield	303	0	2	0	0	159	1	3	4	169	55.8%
Hooper Stagefield	1,553	0	0	0	15	274	4	0	3	296	19.1%
Hunt Stagefield	526	0	0	0	1	20	0	0	0	21	4.0%
Knox Airfield	1,038	0	1	0	7	4	1	0	0	13	1.3%
Louisville Stagefield	55	0	0	0	0	25	0	0	2	27	49.1%
Lowe Airfield	1,170	0	0	0	18	124	6	0	1	149	12.7%
Lucas Stagefield	200	0	0	0	9	13	0	0	0	22	11.0%
Molinelli Stagefield	80	0	0	0	13	2	0	0	0	15	18.8%
Runkle Stagefield	170	0	0	0	0	0	0	0	0	0	0.0%
Shell Airfield	3,177	0	29	0	194	911	2	0	1	1,137	35.8%
Skelly Stagefield	108	0	2	0	6	10	0	0	1	19	17.6%
Stinson Stagefield	219	0	0	0	9	44	0	0	0	53	24.2%
Tabernacle Stagefield	256	0	1	0	1	40	0	0	0	42	16.4%
TacX Stagefield	296	0	0	0	0	148	1	0	3	152	51.4%
Toth Stagefield	749	0	0	0	9	33	1	2	0	45	6.0%
Total	**13,258**	**0**	**43**	**0**	**575**	**2,139**	**26**	**5**	**23**	**2,811**	**21.2%**

Source: Southeast Alabama Regional Planning & Development Commission, Windshield and Map Survey Estimates, 2023.

4.4 Communication and Coordination Assessment

Communication and coordination is essential aspect in all facets of both community life and military operations. Two-way communication and coordination between local communities and Fort Novosel is even more vital. In this assessment, the extent, or degree, of interaction between local government officials and agencies and the Fort Novosel command points of contact is reviewed to determine where successful practices have been implemented and where additional communication and coordination efforts are necessary to develop an environment that is mutually beneficial for future growth and development.

Relations between Fort Novosel and the surrounding communities appear to be excellent. There is some doubt, however, if the relationships extend into the everyday working habits that would encourage shared knowledge of local growth and development plans or upcoming military operations. Without this vital exchange of information, it is impossible to determine where incompatibilities may occur until they are already in place. Past efforts to increase communication have included a regional memorandum of understanding to establish procedures for information sharing and land use consultation; participation by Fort Novosel representatives on local planning commissions; distribution of a Fort Novosel Master Plan; distribution of noise and accident potential mapping; an informative joint website between Fort Novosel and the surrounding local communities. Unfortunately, there is not strong evidence that these suggestions have been successfully implemented.

CONSIDERATIONS:

- Fort Novosel is not represented on local planning commissions or in local stakeholder groups; Fort Novosel has not made exceptional efforts to attend public planning commission meetings
- A formalized flowchart of information exchange has not been developed
- Desegregated responsibilities on Fort Novosel are confusing to civilian workers on who to contact regarding future development or even natural resource management
- Degree of military confidentiality about ongoing operations hinders open communication
- Average citizen is not fully aware of Fort Novosel operations and needs
- Previous efforts have not been implemented

4.5 Frequency Spectrum Capacity/Interference

The electromagnetic spectrum is a series of frequencies ranging from radio waves to microwaves, visible light, X-rays, and gamma rays. As the wavelength of the electromagnetic radiation shortens, the waves have a higher frequency (how quickly electromagnetic waves follow each other) and therefore more energy. Anything that gives off energy does so at a particular frequency. Light, sound, television, and radio transmissions are some of the most common; X-rays, microwaves, and infrared signals are also included. The frequency spectrum is how these and other emissions are plotted and classified.

What the frequency spectrum means to the layperson is often perceived in their ability to obtain and retain a signal via radio, cell phone, or even a drone. For the army, the need for clear signals -- open frequency -- is seen in the aviation transmissions and radio communications, among a myriad of other uses. Fort Novosel uses multiple frequencies for aviation communications and other support systems. Increasing proximity of civilian development and expanded usage of frequencies increases the potential impedance or interference of transmission. Increased telecommunication towers and increased drone usage have the potential to cause interference with Fort Novosel users. Drones are now being used more and more for agricultural purposes in surveying pastures and fields, in real estate and construction for taking pictures or videos of properties or construction progress, and for recreational purposes.

While, Fort Novosel is a “No Drone Zone”, it is unclear if drone users realize that the no fly areas extend to the rural airfields and stagefields that are located throughout the six counties. To date, Fort Novosel has not reported any incidences of frequency interference or impedance to their operations. It is recognized, however, that the potential exists for complications for both frequency interference and frequency capacity.

CONSIDERATIONS:

- Frequency interference from telecommunications towers or other frequency-emitting facilities
- Growing concern over interference from drone usage, particularly around rural stagefields
- Concern over capacity of local frequency providers to carry all usage from Fort Novosel without civilian interference

Figure 4.82: Housing Vacancy, 2021

	Alabama	Daleville	Dothan	Enterprise	Level Plains	Newton	Ozark	Pinckard	United States
All Housing Vacancy	16.5%	14.6%	15.7%	9.9%	12.2%	11.4%	13.0%	15.7%	11.2%
Homeowner Vacancy	1.4%	1.8%	2.5%	1.5%	0.0%	0.0%	0.1%	0.0%	1.2%
Rental Vacancy	9.3%	18.1%	10.4%	7.2%	13.5%	0.0%	12.3%	35.6%	5.7%

Source: U.S. Census, American Community Survey 2021 5-Year Estimates, Table DP04: Selected Housing Characteristics.

4.6 Housing Availability

Housing availability is a measure of available, unoccupied residential properties, or other space for occupancy. Housing availability can also address the affordability of available housing units in comparison to median household incomes. The supply and demand of housing can be as volatile as the upswings and downturns of the local, state and national economies. The generally positive economy of the Wiregrass region can be attributed, in large part, to the presence of Fort Novosel and its related industries. The other side of that coin is the provision of adequate and appropriate housing.

The Wiregrass region is a highly commutable area giving military residents a variety of options in housing choice while still being in a reasonable driving distance to the post. Accessibility to Fort Novosel is also important to a high proportion of civilians in the area that are dependent on Fort Novosel or its contractors for employment. And finally, the Wiregrass region is also home to a large population of military veterans and retirees that visit the post regularly.

Fort Novosel reports 2,207 residential units on post that are available for active duty personnel and families. A healthy housing vacancy rate (varies according to the source) is usually between 5 to 10 percent, meaning there are enough available properties to meet demand but not so many that there is an oversupply of units. Fort Novosel has an overall vacancy rate of 3.8 percent and a rental vacancy rate of 1.0 percent. In the closest municipalities of Daleville, Enterprise, Level Plains, Newton, Ozark and Pinckard, and in the Dothan metropolitan area, housing vacancy ranges from 9.9 percent to 15.7 percent, as of 2021. Homeowner vacancy, however, is much lower than rental vacancy rates. With the very low vacancy and availability of housing on Fort Novosel, it can be safely assumed that military personnel provide some level of competition for available housing in the nearby communities, which keeps homeowner vacancy rates low. In that competition for available housing, there is some thought that the salaries of Fort Novosel and its contractors have made housing prices unattainable for the average citizen in nearby areas. Another aspect of available housing is location. As new construction continues to keep up with housing demand, developers are building further away from municipalities into rural areas where land prices are often less expensive. This development practice has resulted in infrastructure extensions and a haphazard development pattern that further encroaches on Fort Novosel's boundaries, as well as those of the airfields and stagefields.

CONSIDERATIONS:

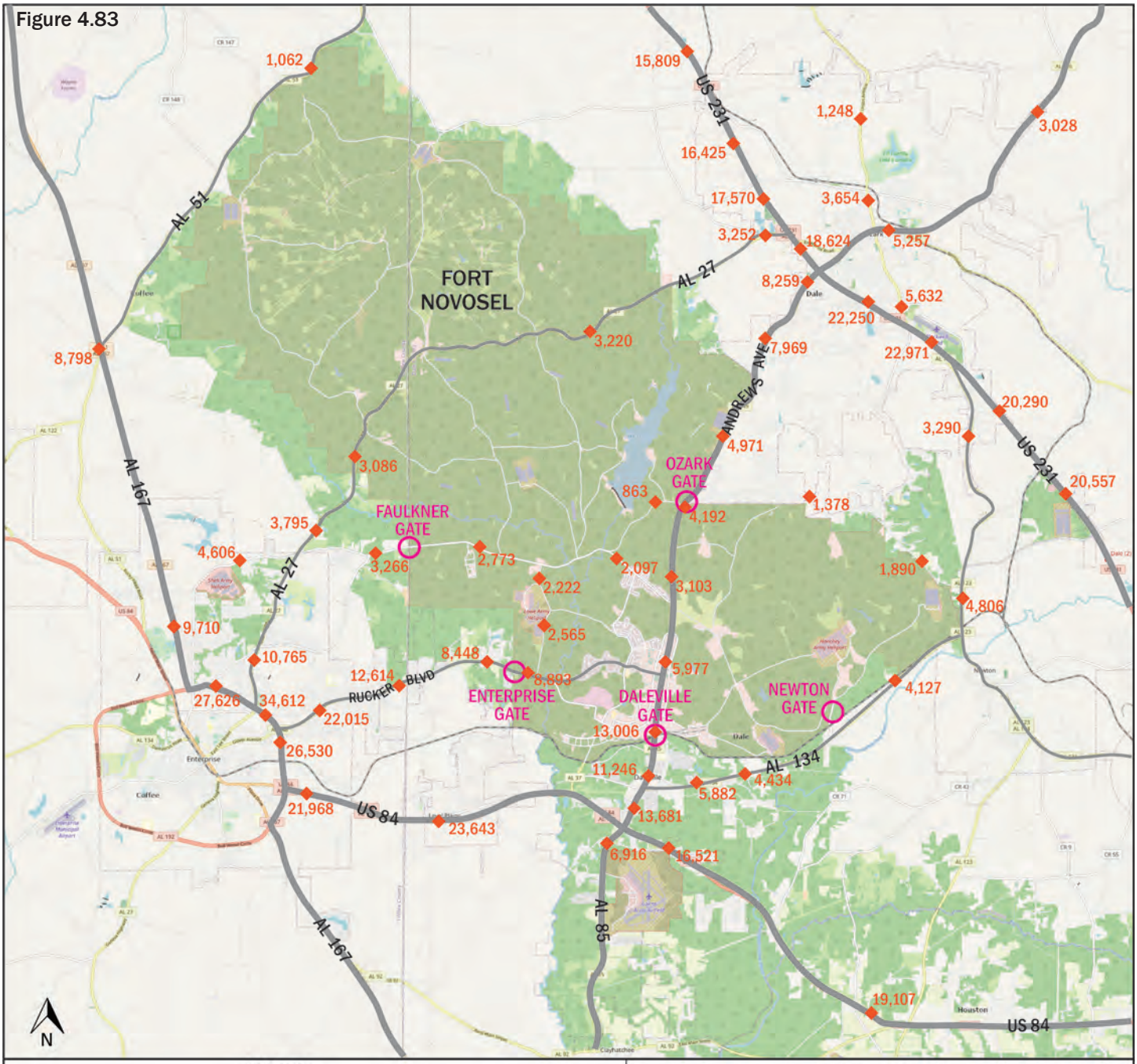
- Housing cost is out of line with local incomes
- Lack of moderate, affordable housing
- Fort Novosel salaries have driven housing costs up
- Lower land prices drive development, which has extended housing construction in areas that were formerly rural.

4.7 Infrastructure and Roadways

Infrastructure refers to the physical and organizational structures and facilities necessary to provide an area with basic utility and transportation services. As discussed in Chapter 3, Fort Novosel has privatized the management of the installation's water and sanitary sewer services. To date, all capacity levels in both water and sewer are adequate to meet current needs and allow for some degree of growth. The most urgent infrastructure need for Fort Novosel is to develop a redundant source of power to the installation. Currently, Fort Novosel is served with one transmission line. Should this line be damaged in storms or other natural disaster, the post would be left without power for an undetermined amount of time. Preliminary plans have been made to provide a secondary transmission line, but those plans have not yet been finalized. The lack of a redundancy in the electrical system is a high priority infrastructure need to be addressed as soon as possible.

With five gates to the installation, the majority of the daytime population of more than 22,300 people is funneled to one of these points for entrance and exit. As a result, daily traffic congestion is found on Andrews, Avenue (Ozark), North Daleville Avenue (Daleville), Rucker Boulevard (Enterprise) during peak hours, and to a lesser degree on Christian Road (Enterprise) and Hanchey Field Road (Newton). Congestion also bleeds to the intersecting main thoroughfares in each city, including US Highways 84 and 231, Alabama Highway 27, 85 and 134, Rucker Boulevard and the east side of Boll Weevil Circle, further impeding local traffic flow. The Alabama Department of Transportation (ALDOT) traffic volume data indicates that there were a total of approximately 33,484 annual average daily traffic (AADT) in 2022, which is a 9.3 percent increase from 30,640 AADT in 2016. It can, therefore, be estimated that there are approximately 16,742 people who come and leave the post each day.

Figure 4.83



The Daleville Gate had the highest gate traffic volume in 2022 at 13,066 AADT, which is an 18.2 percent increase since 2016. The Faulkner Gate had the highest percentage increase, at 20.5 percent from 2,710 AADT in 2016 to 3,266 AADT in 2022. Traffic volume at the Enterprise and Ozark Gates decreased by just over 1 percent each between 2016 and 2022. The 2022 traffic volume at the Enterprise Gate is 8,893 AADT, and at the Ozark Gate is 4,192. The Newton Gate has the highest percentage of heavy truck traffic, at 12.4 percent of the total AADT, in comparison to 2 to 4 percent at the other gates.

Outside the Fort Novosel installation, traffic volume is heaviest on Boll Weevil Circle in Enterprise, at 27,636 AADT; US Highway 84 between Daleville and Enterprise, at 23,643 AADT; and on US Highway 231 south of its intersection with Andrews Avenue in Ozark, at 22,250 AADT. US 84 and US 231 are 4-lane divided highways capable of carrying the high volume. Boll Weevil Circle is a commercial area that adds to the high traffic volume. Alabama Highways 85, 123, 134 and 249 (Andrews Avenue) are smaller state highways that are not as capable of carrying heavy traffic volume nor are the county roads that bring traffic to the state and federal highways.

Traffic congestion that is primarily attributable to Fort Novosel occurs on Daleville Avenue (AL 85) between the Daleville Gate and US Highway 84, where the traffic volume is 13,681 AADT, and on Rucker Boulevard (AL 248) between Boll Weevil Circle and Fort Novosel, where traffic volume reaches 22,015 AADT. The commercial land uses and frequent ingress/egress points combined with the heavy traffic volume greatly increases the potential for accidents.

CONSIDERATIONS:

- Lack of power redundancy source to Fort Novosel
- Capacity of infrastructure facilities to allow for installation growth
- Traffic study needed to determine carrying capacity of regional traffic to Fort Novosel
- Road improvements necessary to facilitate traffic onto and off of the post during peak hours
- Funding for roadway improvements

4.8 Land and Air Spaces

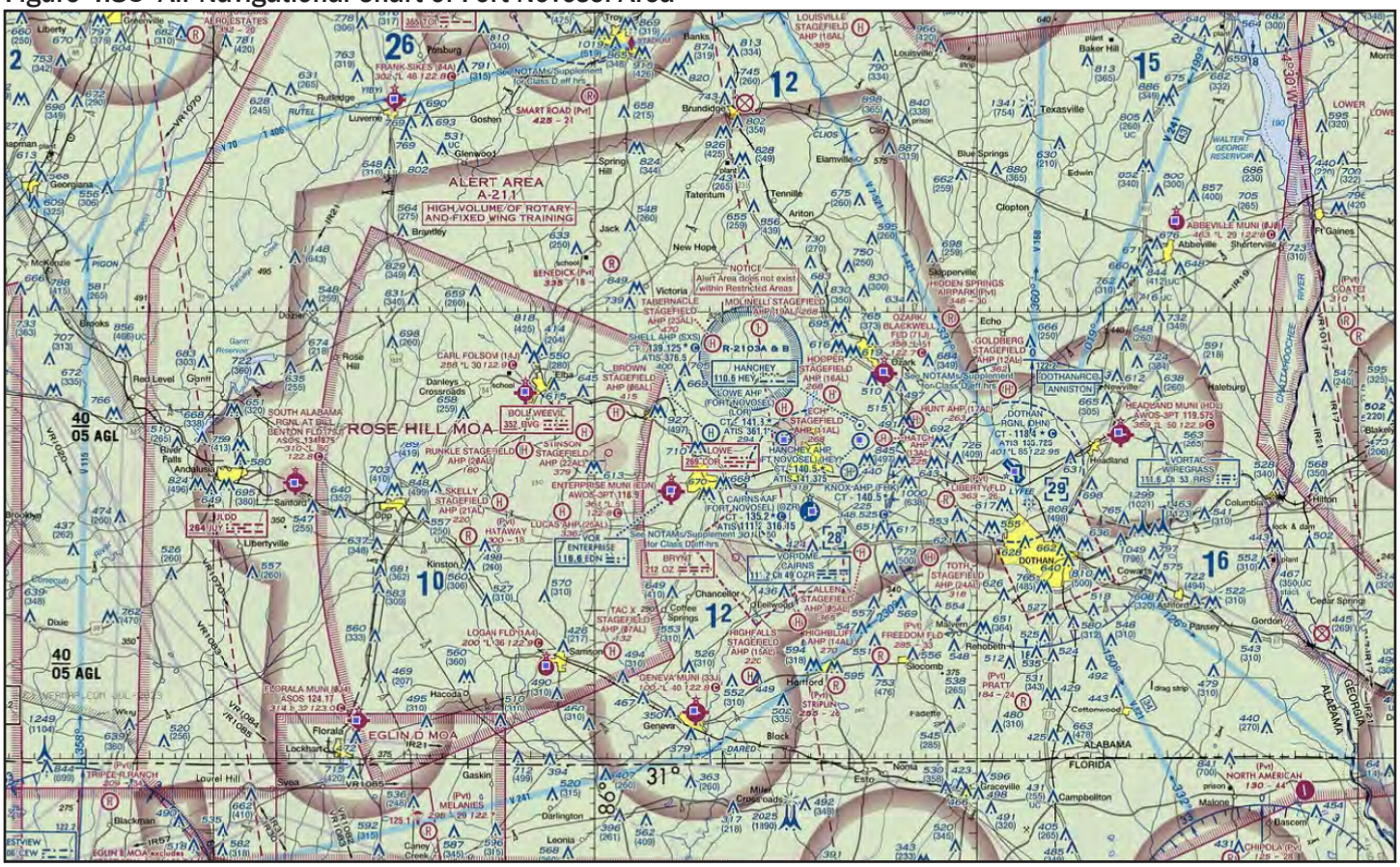
Fort Novosel holds a large footprint of land in Coffee and Dale counties, and smaller areas in the remaining four counties of the study area, to execute their mission in training army aviators. The area surrounding the Fort Novosel properties is also under a limited jurisdiction to prevent land uses that would jeopardize their mission. The airspace above these properties is protected by the FAA under the terms of a Special Activity Area, Special Use Airspace and a Military Operations Area. For clarity, the definitions of these air spaces, as found in the FAA Pilot/Controller Glossary are provided here:

- **Special Activity Airspace (SAA):** Airspace with defined dimensions within the National Airspace System wherein limitations may be imposed upon operations for national defense, homeland security, public interest, or public safety. Special activity airspace includes but is not limited to the following; Air Traffic Control Assigned Airspace, Altitude Reservations, **Military Training Routes**, Air Refueling Tracks and Anchors, Temporary Flight Restrictions, Special Security Instructions, etc.
- **Special Use Airspace (SUA):** Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Types of special use airspace are:
    1. **Alert Area:** Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of nonparticipating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and pilots of participating aircraft as well as pilots transiting the area are equally responsible for collision avoidance.

Figure 4.84 Hanchey Airfield

2. **Controlled Firing Area:** Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons and property on the ground.
3. **Military Operations Area (MOA):** Permanent and temporary MOAs are airspace established outside of Class A airspace area to separate or segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. Permanent MOAs are depicted on Sectional Aeronautical, VFR Terminal Area, and applicable En Route Low Altitude Charts.
4. **National Security Area (NSA):** Airspace of defined vertical and lateral dimensions established at locations where there is a requirement for increased security of ground facilities. Pilots are requested to voluntarily avoid flying through the depicted NSA. When a greater level of security is required, flight through an NSA may be temporarily prohibited by establishing a TFR under the provisions of 14 CFR Section 99.7. Such prohibitions will be issued by FAA Headquarters and disseminated via the U.S. NOTAM System.
5. **Prohibited Area:** Airspace designated under 14 CFR Part 73 within which no person may operate an aircraft without the permission of the using agency.
6. **Restricted Area:** Permanent and temporary restricted areas are airspace designated under 14 CFR Part 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use and IFR/VFR operations in the area may be authorized by the controlling ATC facility when it is not being utilized by the using agency. Permanent restricted areas are depicted on Sectional Aeronautical, VFR Terminal Area, and applicable En Route charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.
7. **Warning Area:** Airspace of defined dimensions extending from 3 nautical miles outward from the coast of the United States, that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning area is to warn nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both.

Figure 4.85 Air Navigational Chart of Fort Novosel Area



Source: airnav.com

There are eight general aviation airports and one regional airport in the 6-county Fort Novosel CLUS study area in addition to the 23 Fort Novosel airfields and stagefields. With the high demand for air space within the region for both military and civilian purposes, it is important for even the average civilian to understand that the largest part of the area is within an aviation Alert Area, as previously defined and shown in Figure 4.85. The alert area is within an even larger Military Operations Area (MOA), which also includes the Rose Hill MOA. The aviation navigation system, along with the Cairns Army Radar Approach Control (ARAC), has enabled positive and healthy interaction and coordination between Fort Novosel and civilian air interests. ARAC directs airspace throughout the area capably managing the high volume of air traffic. Fort Novosel also provides technical assistance to many of the small airport operations within the region.

The only air space conflict noted has been the use of recreational drones within air spaces dedicated to military usage. The drone usage also relates to land usage competition, since recreational drone pilots are usually somewhere in the vicinity of the drone that is being flown. In the more remote, rural areas and even at the north end of the main installation, the airfields/stagefields and installation boundaries are not always clearly marked. Therefore, recreational drone pilots may not be aware of the possibility of interfering with military aviation training.

Land use conflicts also arise in rural areas around stagefields and remote training sites. Although Fort Novosel owns or leases the a parcel of land to be used for training purposes, the impact of the training is also felt by surrounding property owners. In some instances, this can limit the use of their personal property or, most often, will have a negative impact on their living environment.

CONSIDERATIONS:

- Recreational drone operators flying in military operation areas.
- Lack of awareness of nearby airfields and stagefields in rural areas.
- Lack of awareness of Fort Novosel perimeter boundaries
- Land use conflicts among property owners surrounding stagefields
- Negative impact on surrounding property owners of stagefields and remote training sites due to noise and vibration.

4.9 Legislative Initiatives

Since Alabama is a limited home rule state and applies the principle of Dillon's Rule, which means that local governments may only exercise powers that are expressly granted by the state, the authority to regulate land uses, and growth and development must be granted by the state legislature. Municipalities in Alabama have been granted the authority and jurisdiction to adopt and enforce comprehensive plans, subdivision regulations, and zoning ordinances but are not mandated to do so.

Counties do not have that same authority nor any other authority over individual land use, except for zoning authority around an airport. Title 4, Chapter 6 of the Code of Alabama, 1975, as amended, gives authority to counties and municipalities to enact zoning regulations in an unincorporated area within two miles of an airport (airport hazard area). The question arises if this zoning authority extends to counties in which a military airport is located, and would the stagefields be defined as airports? The City of Enterprise has partnered with Coffee County to enact airport zoning in the unincorporated part of the county around the Enterprise Municipal Airport. An example of airport zoning is provided in the appendix.

Some states require that military installations be notified about potential land use changes within a specified distance of the installation boundaries. At the state level, Alabama has similar legislation requirements Title 11, Chapter 106 of the Code of Alabama which is known as Military Land Use Planning. This code section requires that any local government within two miles of any, or a portion of, military installation notify the commanding officer, or flying mission commanding officer, of any local impact issue. The code section, however, does not further define exactly what a local impact issue may be. Further, this legislation is not well known and is often not enforced.

CONSIDERATIONS:

- Interpretation of definition of airport
- Does airport zoning apply only to a public airport? Or also to the interests of the public good, regardless of airport ownership?
- Planning and zoning legislation for counties and planning legislation for regions
- Enforcement of Military Land Use Planning Code

4.10 Light and Glare

Light and glare from residential, commercial, or other sources, such as home security lighting, street lights, or industrial lighting can disrupt aviation training, particularly at night. As growth and development continues to occur, artificial outdoor lighting increases as well. An abundance of artificial lighting is often regarded as light pollution. One organization, DarkSky, states that light pollution disrupt wildlife, impacts human health, wastes money and energy, contributes to climate change, and blocks the human view of the universe.

During the day, pilots can be distracted by glare off of sources on the ground. With the increasing development of solar farms for energy resources, there have been issues with glare from the solar panels, or solar glare. Solar glare refers to the reflection of sunlight from photovoltaic solar panels and has the potential to impact aircraft operations.

When flying a helicopter pilot at night, artificial light can be confusing and disorienting to a pilot. If a pilot mistakes isolated ground lights for stars, it can affect the way the horizon is perceived causing the pilot to align the helicopter with a road rather than the horizon. Aviators incorporate the use of night vision goggles (NVGs) and other devices during their night training. Lighting sources from the ground may cause glare to the pilot, negatively affecting their safety and the training environment. Another issue with nighttime flying is the incidence of an individual who may shine a spotlight or laser at a helicopter overhead. This illegal action has the potential to create visibility issues for the pilot or eve cause temporary blindness. Spotlighting or lasering a pilot is a federal offense, classified as a Class I Misdemeanor and is punishable by up to five years in prison. The U.S. Army Aviation Center of Excellence G3, which is responsible for responsible for Aviation flight and leader development training, maintains a log of monthly noise complaints and flight incidences. Spotlights/laser/threats is one of ten categories that included in the monthly complaint report. When a spotlight or laser incident occurs, local law enforcement and military security are both informed. The incident is also documented in the FBI E-Guardian System.

CONSIDERATIONS:

- Glare from solar panels or other objects on land
- Light pollution
- Increase in artificial lighting due to community and economic growth
- Spotlighting or lasering helicopter pilots

4.11 Vertical Obstructions

Vertical obstructions are structures or other features that extend into navigable airspace, and may include cell and other communication towers, buildings, water tanks, and even electrical power transmission lines. The need for facilities such as these is driven by the need to serve residents in an area. When expanding growth occurs, so does the need for additional facilities. Unfortunately, these facilities present potential conflicts to aviation training, as they may be located along flight routes creating navigation hazards to aviators and citizens located near those structures. Generally, local governments will attempt to locate these facilities in areas that do not have an undue negative impact on a development. Figure 4.86 shows where vertical obstructions should be avoided.

Although the FAA does not have the regulatory jurisdiction to restrict above ground structures, such as communications towers or water tanks, it is a requirement to notify the FAA of plans for construction or alteration of such a facility at least 45 days in advance of construction. The FAA does have the ability to determine whether a structure is an obstruction to air navigation and can require lighting and markings on the structures. Should a vertical obstruction be constructed within a flight area, the FAA will issue a NOTAM (Notice to Air Missions). A NOTAM is a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means. Fort Novosel, similar to the FAA, does not have regulatory authority on above ground structures off-site of their property.

CONSIDERATIONS:

- Increased development brings need for increased communications towers, water tanks, and power substations and transmission lines
- Lack of notification of new vertical obstructions
- Lack of process for local notification of plans for construction of a vertical obstruction
- Lack of local regulations about towers, obstructions

4.12 Vibration

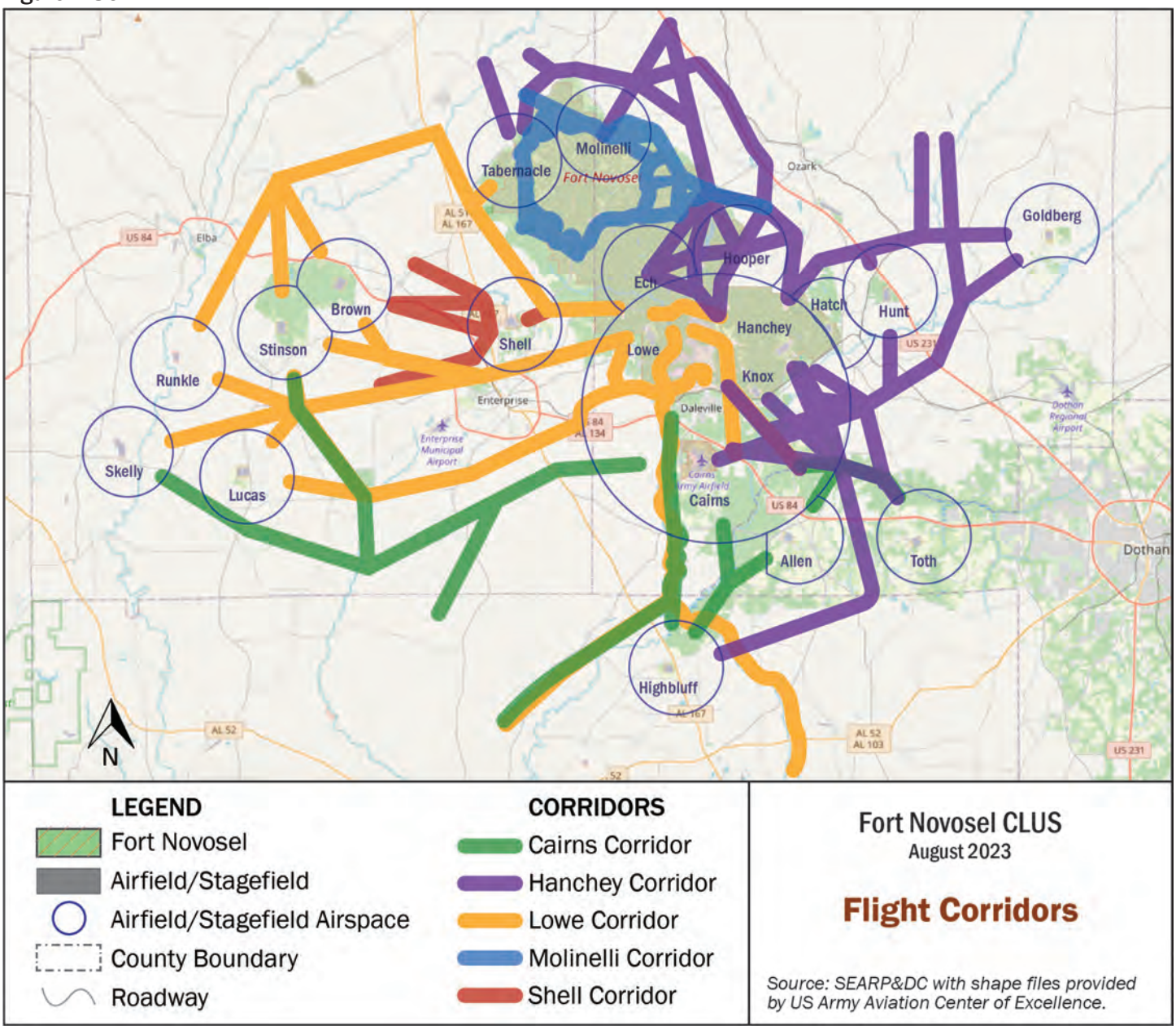
Vibration is defined as the repetitive back-and-forth motion of particles or objects around an equilibrium position and is the phenomenon by which sound is produced and perceived. Not always, but in some instances, the vibration that causes loud noises can be felt by the human body and can be seen in the shaking of structures or of items within a structure.

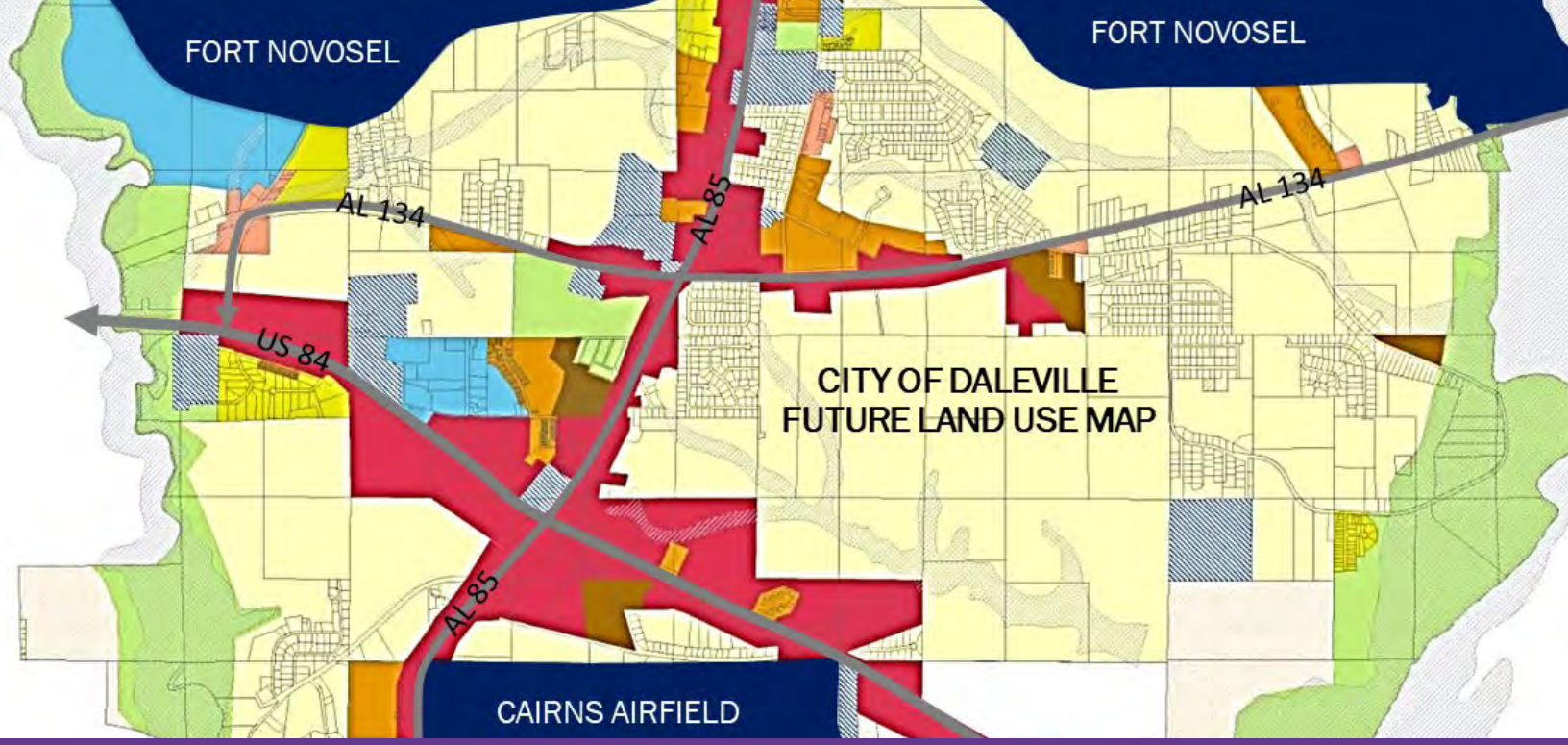
In relation to Fort Novosel, the sounds from large arms, demolitions, and other impulsive sounds generally create the largest complaint issues because the sound can travel far, is difficult to mitigate and can be accompanied by vibration that may increase the public's annoyance. Peak sound pressure levels directly correlate with airborne vibration which is the dominant cause of structural response from military training. Peak sound pressure levels above 120 dB may rattle windows or loose ornaments (e.g. pictures on walls) and annoy occupants but will not cause structural damage. It is widely recognized that structural damage is improbable when peak sound pressure levels do not exceed 140 dB. It is worth noting that even though a land use may be compatible within a particular noise zone (see Section 4.3), there may still remain a location issue, depending on the proposed activity, due to vibration. Vibration observations and complaints are generally related to low-flying helicopters, particularly around remote training sites, and large and small arms noises. Areas that may be most susceptible to vibration are located along Alabama Highway 27 and Alabama Highway 51 due to the weaponry training and the FARP located at the Molinelli Stagefield.

CONSIDERATIONS:

- Vibration from weapons training
- Vibration around remote training activities due to low-flying helicopters
- Soil erosion from rotorwash, or helicopter vibration as it takes off, hovers or lands

Figure 4.86





5. PROGRAMS AND POLICIES

This chapter provides a review of existing programs and policies, some of which are already in place within the project study area. Together, they provide a toolbox of resources for implementation on both a regulatory and voluntary basis. The programs and policies are grouped into six categories based on the level of implementation authority: (1) Federal, (2) Fort Novosel, (3) State of Alabama, (4) Regional Programs, (5) Local Governments and (6) Other Resources. Many of these programs will be referenced again in the Implementation Plan in Chapter 6. Program descriptions provided herein are generally taken directly from the program websites or other program materials; research has not been conducted with the individual agencies to determine how receptive they may be to partnerships or coordination with Fort Novosel or the surrounding communities.

5.1 Federal Programs

Federal programs area available through numerous agencies, some as regulatory programs and some as voluntary participation. Additionally, some programs provide partial funding with grants. Most regulatory federal programs are developed for the purpose of protecting or safeguarding the general health and welfare of a population or a resource.

■ Clean Air Act (CAA)

The Clean Air Act is a comprehensive federal law that gives the U.S. Environmental Protection Agency (EPA) authority to regulate air pollutants and polluting industries. Federal legislation to address air quality dates back to 1955 but the CAA as we know it largely comes from bipartisan amendments enacted in 1970, 1977, and 1990. The law has been instrumental in dramatically reducing the country's air pollution over the past few decades. It also plays an important part in the U.S. economy by reducing health-care costs and absences from work or school. It authorizes the federal government to regulate and reduce greenhouse gas emissions—critical to the global mission to combat climate change. And strong regulations especially benefit low-income communities and communities of color, where polluting facilities are often located.

Under the CAA, the U.S. Environmental Protection Agency (EPA) establishes limits on six criteria pollutants through the National Ambient Air Quality Standards. The standards are set to protect public health and welfare. The CAA also gives EPA the authority to limit emissions of air pollutants coming from sources like chemical plants, utilities,

and steel mills. Individual states may have stronger air pollution laws, but not weaker pollution limits than those set by EPA. The Act requires each state to develop a State Implementation Plan that outlines how it will control air pollution under the CAA.

■ **Clean Water Act (CWA)**

The Clean Water Act (CWA) is the primary Federal statute regulating the protection of the nation's water. The CWA aims to prevent, reduce, and eliminate pollution in the nation's water in order to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters", as described in CWA Section 101(a). A stated goal of the CWA is to eliminate discharge of pollutants into navigable waters, as that term is defined in CWA § 502(7) and corresponding case law. Federal facilities have regulatory responsibilities under the CWA, including: preventing water pollution; obtaining discharge permits; meeting applicable water quality standards; developing risk management plans; and maintaining records. CWA is the primary Federal statute governing the restoration and maintenance of the "chemical, physical, and biological integrity of the Nation's waters." One of its principal objectives is to prohibit the discharge of pollutants into waters of the U.S., except in compliance with a permit.

The CWA establishes several major integrated regulatory programs, standards, and plans, which include the following:

- National Pollutant Discharge Elimination System (NPDES) Program
- National and Local Pretreatment Standards
- Dredge or Fill Discharge Permit Program
- Sewage Sludge Use and Disposal Program
- Water Quality Management

■ **DOD Readiness and Environmental Protection Integration (REPI)**

The REPI Program's mission is to make military installations more resilient to climate change and land use conversion, both of which can restrict the military's ability to carry out testing and training activities necessary to prepare the war fighter for combat. The REPI Program supports cost-sharing partnerships between military services, private conservation groups, and state and local governments to protect military test and training capabilities and conserve land. These win-win partnerships acquire easements or other interests in land from willing sellers to preserve compatible land uses and sustain wildlife habitat near installations and ranges where the military operates, tests, and trains. The Office of the Secretary of Defense created REPI to organize and administer congressional funding for authorized projects. OSD provides Department of Defense policies and standards, stakeholder engagement and regional partnerships, and integration of various tools to enhance mission-supportive partnerships.

■ **DOD Partners in Flight (PIF)**

The Partners in Flight Program consists of a cooperative network of natural resources personnel from military installations across the United States. Specifically, DOD PIF facilitates the development of cooperative agreements for implementing bird conservation programs and projects on military lands, facilitates communication and information sharing across geographic and political boundaries, participates and provides leadership in PIF committees and working groups, and provides military natural resources professionals with the most up-to-date information on bird conservation.

■ **DOI/DOD Readiness and Recreation Initiative**

A partnership of the Department of the Interior and the Department of Defense brought a new program in 2023 that is aimed at preserving land around military installations and improve access to outdoor recreation. The REPI Program secures land adjacent to military bases to serve as buffers to development, enhance recreational access, protect at-risk species, and improve resistance to impacts from climate change and severe weather events. With the approval of this program, Congress is allowing REPI funding to be used as a non-federal cost share match, allowing states and local governments to leverage these dollars to meet the required 50 percent match for LWCF formula grants. The program is intended to encourage planning and coordination across local, state and federal agencies to preserve natural areas that increase outdoor recreational opportunities, sustain native wildlife and habitats, and guard against climate impacts and severe weather events such as wildfire and flooding. Applications for the Readiness and Recreation Initiative Program must come from a state for a project that supports an eligible REPI project that provides appropriate public outdoor recreational opportunities without compromising military operations. Funding could support projects on private, state, or local lands.

■ **DOI/DOD/USDA Sentinel Landscapes Partnership**

The Sentinel Landscapes Partnership is a coalition of federal agencies, state and local governments, and nongovernmental organizations that work to advance mutually beneficial land use goals in project areas known as sentinel landscapes. Founded in 2013 by the U.S.

Department of Agriculture, Department of Defense, and Department of the Interior, the partnership's mission is to strengthen military readiness, conserve natural resources, bolster agricultural and forestry economies, and increase climate change resilience. Sentinel landscapes are areas where conservation, working lands, and national defense interests converge. They are anchored by at least one high-value military installation or range and contain high priority lands for USDA, DOD, and DOI. Critically, they encompass agricultural and/or forestry lands and are the appropriate size and scale needed to address the ecological restoration objectives defined for each landscape. The partnership's mission is to strengthen military readiness, conserve natural resources, bolster agricultural and forestry economies, increase public access to recreation, and enhance resilience to climate change. The goals and objectives of each sentinel landscape are established by local partnerships that may include federal, state, and local government agencies, tribal governments, nonprofit organizations, and academic institutions that represent relevant working lands, conservation, recreation, and landowner interests.

■ Federal Aviation Act

The Federal Aviation Act, which created the Federal Aviation Administration (FAA) provides methods for overseeing and regulating civilian and military use of airspace. The Act requires the Secretary of Transportation to make long-range plans that formulate policy for the orderly development and use of navigable air space. The intent is to serve the needs of both civilian aeronautics and national defense. Military planning strives to work alongside local, state, and federal aviation regulations and policies, but sometimes must supersede these due to national security interests.

The prime objectives of the FAA are to promote air safety and the efficient use of the navigable airspace. Another important outcome of the Act is Title 14 CFR Part 77, commonly referred to simply as Part 77, which provides the basis for evaluating if a proposed structure or object will result in a vertical obstruction or flight hazard to navigable airspace; and further, which requires any person or organization who intends to sponsor any of the following construction or alterations to notify the Administrator of the FAA:

- Any construction or alteration exceeding 200 ft above ground level
- Any construction or alteration
  * within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 ft.
  * within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft.
  * within 5,000 ft of a public use heliport which exceeds a 25:1 surface
- Any highway, railroad or other traverse way whose prescribed adjusted height would exceed that above noted standards
- When requested by the FAA
- Any construction or alteration located on a public use airport or heliport regardless of height or location

When FAA identifies concerns, it may require avoidance or minimization, lighting, or other measures to ensure airspace safety for military and civilian purposes. If potential impacts to military operations are identified, the project must also undergo formal or informal review by the U.S. Department of Defense Siting Clearinghouse, to evaluate the compatibility of the proposed project with military missions. The Part 77 review process by law requires that military interests be addressed if a proposed project may impact them.

■ Federal Aviation Administration (FAA) Modernization and Reform Act of 2012

The Federal Aviation Administration Modernization and Reform Act of 2012 established rules for the non-commercial/recreational use of model aircraft, which includes civilian use of unmanned aerial systems(UASs). Under these rules, civilian UASs must be manually operated to ensure that they do not interfere with any manned aircraft. The Act also requires an operator to receive a Section 333 exemption–a "full COA" issued by the FAA–and a letter of agreement with the airport sponsor before flying a UAS within five miles of an airport. The operator must also maintain visual line of sight with the UAS. Federal Aviation Regulation (FAR) Part 107 includes some additional rules for certain types of model aircraft that meet specific criteria such as being flown strictly for hobby or recreational use and/or weighing less than 55 pounds. Federal Aviation Administration regulations state that if a civilian or commercial user wants to use a UAS within five miles of an airport or airfield, they must coordinate and get prior approval from the airport/airfield operator before conducting such activity.

■ **Federal Aviation Administration (FAA) Small Unmanned Aircraft Rule**

In 2016, 14 CFR Part 107 outlined the requirements and limitations for both the pilot/operator and the unmanned aircraft. A person operating a small UAS must either hold a remote pilot airman certificate with a small UAS rating or be under the direct supervision of a person who does hold a remote pilot certificate (remote pilot in command). To qualify for a remote pilot certificate, a person must:

- Demonstrate aeronautical knowledge by either:
  * Passing an initial aeronautical knowledge test at FAA-approved knowledge testing center; or
  * Hold a part 61 pilot certificate other than student pilot, complete a flight review within the previous 24 months, and complete a small UAS online FAA training course.
- Be vetted by the TSA.
- Be at least 16 years old.

Primary operational requirements include the following.

- Unmanned aircraft must weigh less than 55 lbs.
- Person manipulating controls must maintain visual line-of-sight with the unmanned aircraft; or the unmanned aircraft must remain within the visual line of the visual observer. No person may act as a remote pilot in command or visual observer for more than one unmanned aircraft operation at a time.
- Small unmanned aircraft may not operate over any persons not directly participating in the operation, not under a covered structure, and not inside a covered stationary vehicle.
- Daylight-only operations, or civil twilight with appropriate anti-collision lighting.
- Must yield right of way to other aircraft.
- Maximum ground speed of 100 mph (87 knots).
- Maximum altitude of 400 feet above ground level (AGL) or, if higher than 400 feet AGL, remain within 400 feet of a structure.
- Minimum weather visibility of 3 miles from control station.
- Operations in Class B, C, D and E airspace are allowed with the required ATC permission.
- Operations in Class G airspace are allowed without ATC permission.

■ **National Environmental Policy Act (NEPA)**

The National Environmental Policy Act was one of the first laws ever written that establishes the broad national framework for protecting our environment. Enforced by the Council on Environmental Quality, NEPA's basic policy is to assure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment. NEPA requirements are invoked when airports, buildings, military complexes, highways, parkland purchases, and other federal activities are proposed. Environmental Assessments (EAs) and Environmental Impact Statements (EISs), which are assessments of the likelihood of impacts from alternative courses of action, are required from all Federal agencies and are the most visible NEPA requirements.

The U.S. Army Environmental Command provides a step by step process for NEPA analysis and how that analysis coincides with the Army's decision-making process. (*https://aec.army.mil/index.php/support/NEPA/nepa-process)* The purpose of the National Environmental Policy Act (NEPA) is to include environmental considerations into federal agency planning and action. This is done by providing decision-makers and other stakeholders with information they need to understand any potentially significant environmental impacts resulting from an action. Title 32, CFR Part 651 is the Army's NEPA regulation.

The presumption is that decision-makers make better decisions when they have clear information about the consequences and trade-offs associated with taking any given course of action. Giving decision makers this kind of information is the foundation of the Army's decision-making process. NEPA procedures must ensure that environmental information is available to public officials and citizens This is the one part of the NEPA process that varies significantly from the Army's decision-making process because the general public is involved. The public has 30 days to review and comment on an EA and 45 days to review and comment on an EIS, and an installation point of contact must be provided to receive public input.

■ **National Historic Preservation Act (NHPA)**

The National Historic Preservation Act of 1966 requires federal agencies to consider the effects of a proposed project on properties listed in, or eligible for listing in, the National Register of Historic Places. The U.S. Army has a Strategic Agenda to improve its compliance with the NHPA. The strategy designates Army NHPA leadership roles and responsibilities, and assigns necessary authorities for implementation; enhances leadership oversight and engagement in critical NHPA and historic preservation related issues; mandates the pursuit of programmatic Army-wide NHPA compliance solutions with the Advisory Council on Historic Preservation for

Army historic properties; and ensures effective Army-wide NHPA compliance through increased awareness and knowledge among Army Commanders. The Army Federal Preservation Officer is designated as the Army lead for strategy implementation.

■ **The Sikes Act**

The Sikes Act requires the DOD to develop and implement Integrated Natural Resources Management Plans (INRMPs) for military installations. The Act directs the Secretary of Defense, in cooperation with the U.S. Fish and Wildlife Service and state fish and wildlife agencies, to carry out a program for the conservation and rehabilitation of natural resources on military installations. The Sikes Act allows for the sustainable, multipurpose use of natural resources subject to military security and safety requirements. The Act also authorized the collection of hunting and fishing fees on military lands and directed the Department of Defense to expend such fees in furtherance of the purposes of the Act.

At Fort Novosel, the DPW-ENRD Natural Resources Branch manages land, forests, and wildlife using an INRMP as required by the Sikes Act. The INRMP is one of the operational controls used to help minimize impacts to the environment as a result of military actions. The INRMP is installation specific, and is the road map for performing the necessary actions associated with:

- Forest management
- Fish and wildlife management
- Land management (to include training lands, wetlands, and agricultural lands)
- Erosion control
- Soil conservation
- Wetlands protection

There are a number of federally listed mussel species for which streams on Fort Novosel provide suitable habitat. The southern sandshell, southern kidneyshell, Choctaw bean, tapered pigtoe, and fuzzy pigtoe occur in the Choctawhatchee watershed, of which Claybank Creek and Steephead Creek on the Installation are part. The Choctaw bean and fuzzy pigtoe have been recorded on Fort Novosel in recent invertebrate surveys. However, the other species have not been found in any recent surveys. Also, the Gopher tortoise is a Species of Concern and is located on the installation.

■ **Sustainable Range Program**

The DOD Sustainable Ranges Initiative is a response to encroachment toward military training and firing ranges. The program encourages and facilitates cooperation and collaboration among U.S. military installations and local and regional stakeholders to protect military readiness and advance DOD's record of environmental stewardship. Numerous tools and training resources are available to both military personnel and the stakeholders in communities surrounding military installations.

5.2 Fort Novosel Programs

In addition to federal programs that promote compatible land use practices between military installations and local jurisdictions, Fort Novosel has a number of programs that are administered through the U.S. Army. Some of these are extensions of a broader range of federal programs.

■ **Army Compatible Use Buffer (ACUB)**

The Army Compatible Use Buffer program authorizes the DOD to form agreements with non-federal governments or private organizations to limit encroachments and other constraints on military training, testing, and operations by establishing buffers around installations. The ACUB program allows installations to work with partners to encumber off-post land to protect habitat and buffer training without acquiring any new land for Army ownership. Through ACUB, the Army reaches out to partners to identify mutual objectives of land conservation and to prevent development of critical open areas. The Army can contribute funds to the partner's purchase of easements or properties from willing landowners. These partnerships preserve high-value habitat and limit incompatible development in the vicinity of military installations. Establishing buffer areas around Army installations limits the effects of encroachment and maximizes land inside the installation that can be used to support the installation's mission.

To date, Fort Novosel has not yet completed an ACUB project. The DPW Environmental and Natural Resources Division is, however, in process of determining locations of encroachment and their applicability to the ACUB program. If it is determined that these are viable locations, then a proposal will be developed that identifies priority locations and potential partners. The anticipated time frame for approval in early 2024. This program serves multiple purposes, as affected lands would also meet conservation objectives.

■ **Fly Neighborly Program**

Fort Novosel has adopted a Fly Neighborly Program, which is a voluntary noise reduction program that seeks to create better relationships between communities and helicopter

operators by establishing noise mitigation techniques and increasing effective communication. The programs was created by the FAA and endorsed by the Helicopter Association International. The objective of Fly Neighborly training is to a helicopter operator with noise abatement procedures and situational awareness tools that can be used to significantly enhance operations. A pilot learns to apply flight techniques that minimize the effects of helicopter noise emissions that affect communities. The Fort Novosel Fly Neighborly Program also instructs Army helicopter pilots to minimize noise complaints by taking appropriate steps to avoid flying in developed areas when possible. Based upon complaints received, the Fort Novosel Fly Neighborly Program may also alter flight corridors for avoidance measures or alter training exercise dates so as to not interfere with a community, or other local, event.

■ **Installation Compatible Use Zone Study (ICUZ)**

The Fort Novosel Installation Compatible Use Zone Study, formerly known as an Installation Operational Noise Management Plan, prepared by the Environmental Noise Branch of the Environmental Health Sciences Division of the Army Public Health Center in June 2019. The ICUZ study provides a strategy for noise management in the areas surrounding Fort Novosel and its aircraft training facilities. Elements of the ICUZ program include military noise analysis, education about noise and Army noise metrics, complaint management, and when necessary, noise abatement procedures. The report is provided to assist both installation personnel and local community officials. Specifically, the ICUZ provides a methodology for analyzing noise exposure associated with military operations and provides land use guidelines for achieving compatibility between the noise generated by the Army and the surrounding communities.

It is suggested that the ICUZ be utilized by local communities as they prepare and modify comprehensive development plans and zoning ordinances. It is also suggested that Fort Novosel should update the ICUZ should there be a change in the installation's mission that affects the extent, geography, and other impacts to the surrounding areas. At a minimum, it is recommended that the ICUZ and/or Noise Zones be update every five years to incorporate pertinent changes to the noise environment.

■ **Noise Complaint Management Program**

Fort Novosel 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 Novosel also distributes planned training schedules for range training to neighboring property owners.

5.3 State of Alabama Programs

Programs available at the statewide level are most often conservation related. There are no statewide land use regulations and the State of Alabama's enabling legislation is only applicable to municipalities, which are covered under Section 5.4 Local Government Resources.

■ **Alabama Department of Conservation and Natural Resources (ADCNR)**

The Alabama Department of Conservation and Natural Resources is an executive and administrative state department that advises the governor and state legislature on management of freshwater fish, wildlife, marine resources, state lands, state parks, and other natural resources. The Department's scope of operations includes the administration, management and maintenance of 21 state parks, 23 public fishing lakes, three freshwater fish hatcheries, one aquatic biodiversity center, 162 public boat ramps, 35 wildlife management areas, seven special opportunity areas, 12 shooting ranges, a saltwater mariculture center, and 645,000 acres of trust lands managed for the benefit of several state agencies, and the state's General Fund and the Alabama Trust Fund. Other departmental functions include maintenance of a State Land Resource Information Center and administration of the Forever Wild Land Trust program. There are two programs that potentially offer opportunities for partnership with ADCNR for conservation of lands around Fort Novosel:

- **State Wildlife Grant Program (SWG)**
  The State Wildlife Grant (SWG) Program provides federal grant funds to state fish and wildlife agencies for developing and implementing programs that benefit *species in greatest conservation need* (SGCN) and their habitats. Grant funds may be used to address a variety of conservation priorities identified in the State Wildlife Action Plan (SWAP); such as research, fish and wildlife surveys, species restoration, habitat management, and monitoring. Identified and described in the SWAP, SGCNs have experienced significant population declines. Threats to these species are described, and include such factors as habitat loss or fragmentation,

competition from non-native species, and other stressors. The SWAP identifies their habitats, as well as actions needed to restore or maintain viable populations of these species.

- **Forever Wild Land Trust (FWLT)**
  The Forever Wild Land Trust, established in 1992, enabled the State of Alabama to acquire and protect selected wildlands with special recreational, scientific, educational, and natural value. Each tract obtained under the program is evaluated for its particular attributes and managed appropriately according to a primary designation as a natural preserve, state park, wildlife management area, or special recreational area. The land trust is managed by the Alabama Department of Conservation and Natural Resources (ADCNR) through its various divisions. To date, the program has secured more than 248,000 acres of land in Alabama for public use. The FWLT's acquisitions have also created more than 363 miles of recreational trails within 23 new recreation areas and nature preserves, while providing additions to nine State Parks and 20 Wildlife Management Areas.

  The Forever Wild program is funded with a portion of the interest earned by the Alabama Trust Fund, a special fund created with windfall money paid to the state from offshore natural gas leases. Forever Wild has no power to condemn or appropriate lands. Lands acquired by the program may come only through purchases or donations. Tracts nominated for possible acquisition by Forever Wild must be owned by a willing seller and then are evaluated for suitability according to such criteria as size, location, and physiographic characteristics, biological diversity and presence of critical species or special habitats, and landowner receptiveness to the nomination.

■ Alabama Cooperative Extension System (ACES)

The Alabama Cooperative Extension System is the primary outreach and engagement organization for the land-grant mission of Alabama A&M University and Auburn University in cooperation with Tuskegee University. ACES maintains an office in each county and has regional experts that may serve several counties on a given topic. As the extension arm of major universities, ACES staff provides strong relationships with occupational and interest groups in communities within each county. Specifically, ACES offers outreach efforts in Alabama 4-H, farming, food safety, forestry and wildlife, lawn and garden, home and family affairs, and fish and water resources.

■ Alabama Department of Environmental Management (ADEM)

Established in 1982, the Alabama Department of Environmental Management is the state's environmental agency that is charged with regulating certain activities that could impact human health or the environment. ADEM regulates these activities in the manner that is described both in state environmental laws and rules. ADEM is empowered by federal and state environmental laws to implement federal environmental laws on behalf of the state and to regulate activities not specifically regulated by the federal government. State law can also allow ADEM to impose additional standards that are stricter than federal standards, but no state can enact and enforce environmental laws that are less strict than federal standards. Although ADEM is primarily a regulatory agency, it does offer a limited number of programs to assist local governments in meeting the regulatory requirements and to minimize pollutants.

- **Clean Water State Revolving Fund (CWSRF)**
- **Drinking Water State Revolving Fund (DWSRF)**
  The Clean Water State Revolving Fund and the Drinking Water State Revolving Fund are low interest loan programs intended to finance public infrastructure improvements in Alabama. The programs are funded with a blend of state and federal capitalization funds. ADEM administers the CWSRF and DWSRF, performs the required technical/environmental reviews of projects, and disburses funds to recipients. Projects that strengthen compliance with federal and state regulations and/or enhance protection of public health are eligible for consideration to receive an SRF loan. If a project qualifies, the engineering, inspection, and construction costs are eligible for reimbursement.

- **CWA Section 319 Grants**
  ADEM also administers a Nonpoint Source Pollution (NPS) Program. In 1987, the Clean Water Act was amended to include Section 319(h) to address nonpoint source pollution. With this amendment, the establishment of annual CWA Section 319(h) grant funding for designated state and tribal agencies to implement their approved nonpoint source management programs. The Alabama NPS

Management Program uses a voluntary approach to address nonpoint source pollution. The program relies on best management practices, education and outreach, technology transfer, monitoring and assessments, and resource assistance using a balanced statewide and watershed-focused restoration approach. Local partnerships and citizen input are primary implementation components. CWA Section 319(h) grants are available to fund targeted, on-the-ground, implementation practices to restore impaired waterbodies in Alabama.

■ Alabama Military Stability Foundation

The Military Stability Foundation is a private, nonprofit foundation that assists with the sustainability and expansion of military installations and their surrounding communities. The primary goal of the Military Stability Foundation is to create and help implement processes and plans to develop strong collaborative associations, to secure present and future economic stability due to military installations in Alabama, and to assist with any future Base Realignment and Closure. The Military Stability Foundation has a Board of Directors that are representatives of areas that maintain a large footprint of defense concentration.

■ Alabama Wildlife Federation (AWF)

The Alabama Wildlife Federation is Alabama's largest non-profit conservation organization. Founded in 1935, the AWF strives to promote conservation and management of the state's wildlife and natural resources as well as to advance the interests of hunters, anglers, and other outdoor sports enthusiasts.

AWF creates educational and experiential learning programs throughout the state that work to preserve the state's natural areas. AWF uses its "Outdoor Classrooms" to present the programs and also hosts teacher-training workshops. The AWF also provides assistance to farmers and landowners who wish to implement conservation-oriented farming and land management practices that improve wildlife habitat and minimize damage to sensitive areas such as wetlands and forests. The primary program is the Land Stewardship Assistance Program, a partnership of public, private, state and federal agencies. This program focuses on such conservation efforts as border plantings along farm fields to provide food and shelter for wildlife, wetland preservation, timber management, and runoff and pollution control along waterways.

■ Military Land Use Planning Act

Title 11, Chapter 106 of the Code of Alabama, 1975, as amended, is the Military Land Use Planning Act, which states that local governments should cooperate with military installations located within the state in order to:

- encourage compatible land use,
- help prevent incompatible urban encroachment upon military installations, and
- facilitate the continued presence of major military installations within the state.

A major part of the legislation are the provisions for notification of the military installation's commanding officer, or flying mission commanding officer, of (1) any local impact issue within two miles of the installation, and (2) any proposed tall structure or wind energy facility regardless of the distance from the installation. Upon notification, the military installation shall have 30 days to review and comment on the development or structure before any public hearing or any final action is taken by the municipality.

■ Natural Resource Conservation Service (NRCS)

The Natural Resources Conservation Service (NRCS) is the USDA agency which works at the local level to help people conserve natural resources on private lands. NRCS natural resource conservation programs help people reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damage caused by floods and other natural disasters. Nearly three-fourths of the technical assistance provided by the agency goes to helping farmers and ranchers develop conservation systems uniquely suited to their land and individual ways of doing business. The agency also provides assistance to rural and urban communities to reduce erosion, conserve and protect water, and solve other resource problems. NRCS relies on many partners to help set conservation goals, work with people on the land, and provide assistance. Its partners include conservation districts, state and federal agencies, Earth Team volunteers, agricultural and environmental groups and professional societies. NRCS offers more than 20 programs and/or initiatives to provide assistance including the Sentinel Landscapes Initiative. Along with other partners, NRCS works jointly to identify natural resource needs in Sentinel Landscapes and reach out to eligible landowners and offer voluntary technical and financial assistance to address resource concerns. Conservation tools include conservation easements and many other conservation practices.

5.4 Regional Programs

Regional programs are those that include more than one local jurisdiction, either county or municipality, and in some cases, more than one state.

■ 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 Novosel 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 CLUS document. *An example MOU is provided in the Appendices.*

■ Southeast Alabama Comprehensive Economic Development Strategy (CEDS)

The Southeast Alabama Regional Planning & Development Commission (SEARP&DC) serves as the Economic Development District (EDD) for the following seven counties: Barbour, Coffee, Covington, Dale, Geneva, Henry and Houston. As such, SEARP&DC conducts an economic development planning process every five years to outline future economic development goals and needs, and how those needs might be met, for the development district. The economic development planning process culminates in the development of a Comprehensive Economic Development Strategy (CEDS) that is update each year. The most recent CEDS, completed in October 2022, includes five goals as listed below:

- Provide adequate infrastructure throughout the Region that will improve the quality of life for citizens and support the expansion needs of existing and development of new industries that will provide employment opportunities and increase tax revenues.
- Promote a balanced regional economy with a broad business, industry, and employment mix capable of supporting quality employment opportunities, including high wage, high skill jobs.
- Support efforts that encourage workers to join or remain in the labor force.
- Support efforts to expand availability of high speed broadband access in the Region for businesses, citizens, education and healthcare.
- Strengthen and sustain the long-term economic vitality and resiliency of the Region.

The SEARP&DC also works with local governments and other agencies to secure funds that will help meet the needs identified in the CEDS planning process.

■ Southeast Alabama Rural Planning Organization

The Southeast Alabama Rural Planning Organization (RPO) is a joint project between the SEARP&DC and ALDOT. The RPO serves as the formal link between ALDOT and rural local governments. This link allows more opportunity for rural communities to communicate with ALDOT. The objectives of the RPO are to:

- Improve communication between the rural areas of Southeast Alabama and ALDOT
- Develop documents and data that will be useful to ALDOT and the local governments
- Improve transportation planning in the rural areas,
- Highlight potential construction of needed highway and bridge projects in the rural areas
- Increase highway safety

The study area served by the RPO includes all of Barbour, Coffee, and Covington Counties, as well as most of Dale, Geneva, Henry, and Houston Counties.

■ Southeast Regional Partnership for Planning and Sustainability (SERPPAS)

The Southeast Regional Partnership for Planning and Sustainability is a unique 6-state voluntary partnership among Alabama, Florida, Georgia, Mississippi, North Carolina and South Carolina that promotes collaborative decision-making to support the conservation and resilience of national defense, natural resources, working lands and communities in the Southeastern United States. SERPPAS is an unconventional partnership that harnesses strategic planning and promotes collaborative decision-making between public and private partners to support the military mission, conserve key habitats and species, sustain rural economies and industries, and foster better coordination among local, state, and federal stakeholders in the region. SERPPAS serves as a forum to build effective working relationships between diverse partners, identify overlapping interests, and implement mutually beneficial actions that support the missions of all the partners. SERPPAS has five focus areas:

- Sentinel Landscapes in the Southeast
- At-Risk, Threatened and Endangered Species
- Southeast Prescribed Fire Initiative
- Coastal Resilience and Regional Adaptation
- Energy Development and Siting

SERPPAS maintains a current list of funding opportunities and upcoming deadlines.

■ **Southeast Wiregrass Area Metropolitan Planning Organization (MPO)**

The function of the Southeast Wiregrass Area MPO is to work with the governmental entities of the area and Alabama Department of Transportation to determine transportation needs and funding priorities through the Long Range Transportation Planning process. The policies and practices of the MPO are used to guide the development of a balanced transportation system, encourage the preservation of neighborhoods, protect the environment, enhance the community's quality of life and promote public transportation.

Voting members of the Southeast Wiregrass Area MPO include; ALDOT Seventh Division, City of Dothan, City of Ashford, Town of Cowarts, Town of Grimes, Town of Headland, Town of Kinsey, Town of Midland City, Town of Napier Field, Town of Pinckard, Town of Rehobeth, Town of Taylor, Town of Webb, Dale County, Henry County and Houston County. Non-Voting members include State of Alabama, Federal Highway Administration (FHWA), and the Southeast Alabama Regional Planning and Development Commission.

5.5 Local Government Resources

Much of the assistance that local governments can provide in ensuring compatible land uses around military installations are derived from the State of Alabama enabling legislation (Code of Alabama, 1975, as amended, Title 11, Chapter 52) which gives municipalities the authority to (1) develop long-range plans for the physical growth and development of their jurisdictions, (2) subdivide land, and (3) zone property for specific uses. In 1979, the Alabama Legislature also provided counties with the authority to subdivide property (Code of Alabama, 1975, as amended, Title 11, Chapter 24). There are a limited number of other resources that local governments can employ to safeguard lands surrounding military installations, as discussed here.

■ **Capital Improvements Program (CIP)**

Local governments have the opportunity to consider the effects of infrastructure expansion on compatible land use objectives during the development or update of a capital improvement program (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.

■ **Comprehensive Planning**

Section 11-52-8(a) of the Code of Alabama states that it shall be the function and duty of the (planning) commission to make and adopt a master plan for the physical development of the municipality, including any areas outside of its boundaries which, in the commission's judgment, bear relation to the planning of such municipality. As such a comprehensive plan, master plan, or land use plan, provide the basis for decision-making for land use regulations such as subdivision regulations and zoning. The State of Alabama authorizes but does not mandate creation of a comprehensive plan, which differs from most states. Many states, including Arizona and Florida, require local comprehensive plans to study compatibility with military facilities.

Comprehensive planning near military installations have the opportunity to develop long range plans that give due consideration to the impacts on military missions and operations. Comprehensive plans should address compatible development around military installations by designating or highlighting areas of military influence. These areas have been designated as the Air Space Boundary in the land use review section of this study and include delineated Accident Potential Zones (APZs) and Noise Zones (NZs).

Figure 5.1 indicates that Andalusia, Daleville, Dothan, Enterprise, Elba, New Brockton, Opp, and Ozark have a long-range plan in place; however, some of the plans are outdated and in need of update. As updates to existing plans and new plans are developed, consideration should be given to the following: 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, and potential height restrictions (in noise and safety zones, training routes, and other restricted areas). Though unincorporated areas have less land use authority than municipalities, an impact study of a military installation is not precluded and would provide an opportunity to develop strategies for land use compatibility.

Figure 5.1: Land Use Regulations Available by Jurisdiction

Jurisdiction	Comprehensive, Master Plan or Land Use Plan	Subdivision Regulations	Zoning Ordinance	Airport Zoning Ordinance
Barbour County	**N/A**	**Yes**	**N/A**	**No**
Coffee County	**N/A**	**Yes**	**N/A**	**Yes**
City of Enterprise	Yes	Yes	Yes	Yes
Town of New Brockton	Yes	Yes	Yes	No
City of Elba	Yes	Yes	Yes	No
Covington County	**N/A**	**Yes**	**N/A**	**No**
City of Andalusia	Yes	Yes	Yes	No
City of Opp	Yes	Yes	Yes	No
Dale County	**N/A**	**Yes**	**N/A**	**No**
Town of Clayhatchee	No	No	No	No
City of Daleville	Yes	Yes	Yes	No
City of Midland City	No	Yes	Yes	No
Town of Newton	No	Yes	Yes	No
City of Ozark	Yes	Yes	Yes	No
Town of Pinckard	No	No	No	No
Geneva County	**N/A**	**Yes**	**N/A**	**No**
Town of Samson	No	Yes	Yes	No
City of Hartford	No	Yes	Yes	No
Houston County	**N/A**	**Yes**	**N/A**	**No**
City of Dothan	Yes	Yes	Yes	No

*Note: Not every municipality in each county is included in the above matrix. Only those municipalities that are located near the Fort Novosel installation, its airfields, or its stagefields were reviewed for land use regulations.

■ County Airport Zoning Authority

Alabama counties do not have authority to plan for future land uses nor do they have the authority to zone property, except where special legislation has been passed. There are a limited number of counties in Alabama that have zoning legislation, however, none of them are located in the Wiregrass area. Title 4, Chapter 6, Section 4 of the Code of Alabama does include a section that allows zoning within two miles an airport in an unincorporated part of a county. In Section 4-6-2, the Code of Alabama defines an airport as "any area of land or water designed and set aside for the landing and taking-off of aircraft and utilized or to be utilized in the interest of the public for such purposes". The Code states that the airport zoning regulations may divide an airport hazard area into zones and specify the land uses permitted and regulate and restrict the height to which structures and trees may be erected or allowed to grow.

There is considerable debate over whether this legislation would be applicable to Fort Novosel airfields and stagefields because the facilities are not for public use. To date, the only location that has applied this legislation is the City of Enterprise is cooperation with Coffee County.

■ Outdoor Lighting Ordinances

An outdoor lighting ordinance is a written policy that specifies what type of light is acceptable within a community during nighttime hours. These may also be called a dark sky policy or ordinance. Outdoor lighting ordinances may vary from one community to another, depending on local needs, or they may be integrated into a local zoning ordinance. The purpose of these regulations is continue to provide a safe environment at night while minimizing the impact of nighttime lights on neighboring properties, and on local wildlife. Instituting an outdoor lighting ordinance would also be a benefit to Fort Novosel pilots by decreasing ground level lights and glare. Each community would have to investigate which methodologies would best fit their needs. *Sample Outdoor Lighting Ordinances can be found online at darksky.org.*

■ 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 Novosel 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 publicly 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 Novosel'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.*

■ 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. SLRs could also be implemented voluntarily by a developer or builder.

■ Subdivision Regulations

The power to govern the subdivision of land within a given territorial jurisdiction is known as subdivision regulations. A subdivision can be defined as any division, redivision, or consolidation of tracts, parcels, or lots of land by means of mapping, platting, conveyance, change, or rearrangement of boundaries. 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.

■ Telecommunications Ordinance

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.

■ Transfer of Development Rights

Transfer of Development Rights (TDR) is a zoning technique used to permanently protect land with conservation value (such as farmland, community open space, or other natural or cultural resources) by redirecting development that would otherwise occur on this land (the sending area) to an area planned to accommodate growth and development (the receiving area). TDR programs financially compensate landowners for choosing not to develop some or all of their land. These landowners are given an option under municipal zoning to legally sever the development rights from their land and sell these rights to another landowner or a real estate developer for use at a different location. The land from which the development rights have been severed is permanently protected through a conservation easement or a restrictive covenant. The development value of the land where the transferred development rights are applied is enhanced by allowing for new or special uses; greater density or intensity; or other regulatory flexibility that zoning without the TDR option would not have permitted.

TDR removes some of the windfalls and wipeouts associated with conventional zoning by allowing landowners in areas typically zoned for agricultural or very low-density residential use to capture some of the same financial rewards available to landowners located in areas zoned for suburban and urban land uses.

■ **Zoning**

Zoning is the process of dividing property within a jurisdiction into zones or districts and may provide the kind, character and use of structures and improvements that may be erected or made within the several zones or districts established. Zoning also enables a jurisdiction to regulate and restrict the height, number of stories and size of buildings and other structures, the percentage of lot that may be occupied, the size of yards, courts and other open spaces, the density of population and the location and use of buildings, structures, and land for trade, industry, residences, or other purposes. The purpose of zoning regulations is to lessen congestion in the streets, to secure safety from fire, panic and other dangers, to promote health and the general welfare, to provide adequate light and air, to prevent the overcrowding of land, to avoid undue concentration of population, and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements.

Of the local governments located within the Fort Novosel CLUS study area, only the municipalities have zoning authority. Municipalities can revise their existing zoning ordinances to include an overlay zone within a prescribed distance of Fort Novosel, its airfields or its stagefields, that would 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.

5.6 Other Resources and Tools

Some resources and methods may include multiple participants, or they may be implemented by private parties, or the program or tool may be under the guidance of a non-governmental entity, such as nonprofit organizations.

■ **Avigation Easement**

An avigation easement is a conveyance of a specified property interest for a particular area that restricts the use by the owner of the surface yet assures the owner of the easement the right and privilege of a specific use contained within the easement document. Avigation easements, which are conveyed by a property owner to the airport owner, are often used in noise mitigation programs in exchange for sound insulation, sales assistance, and purchase assurance. The easement may consist of right-of-flight of aircraft; right to cause noise, dust, etc.; and the right to remove all objects protruding into the airspace together (typically trees) with the right to prohibit future obstructions in the airspace. The easement may also contain any number of additional restrictions as the airport owner deems necessary. (See Appendices for sample agreement.)

■ **Conservation Easement**

A conservation easement involves a voluntary legal agreement between a property owner and another party 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 viewsheds, floodprone areas, and general open space protection. It is flexible instrument 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.

Normally, a government entity or a conservation group 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.

■ **Education and Public Awareness**

Public awareness and education projects are a way to bring an issue to the attention of a group of people. Efforts should be broad enough to reach the general public, including persons with disabilities, using a variety of methods. Methods to inform the general public may include posters, pamphlets, displays, billboards, toll free-numbers, social media, websites, videos, TV, radio, newspaper releases, and advertisements. The important thing is to get key prevention information out to your target audience. An education and public awareness campaign can be conducted by any stakeholder organization,

or even a group of organizations. The time frame for a campaign may be relatively short, and it can be an ongoing educational tool. Education and public awareness are great tools for bringing issues to the forefront and can be effective with a minimum of capital investment.

- **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.

- **Purchase of Development Rights**

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. Purchase of Development Rights (PDR) is an incentive based, voluntary program with the intent of permanently protecting productive, sensitive, or aesthetic landscapes, yet retaining private ownership and management. In this program, a landowner sells the development rights of a parcel of land to a public agency, land trust or unit of government. A conservation easement is recorded on the title of the property that limits development permanently. While the right to develop or subdivide that land is permanently restricted, the land owner retains all other rights and responsibilities associated with that land and can use or sell it for purposes allowed in the easement. PDR programs and conservation easements do not necessarily require public access, though it may be granted as part of the agreement or be a requirement of the funding source.

Figure 5.2:

Summary of Programs, Policies, Resources and Tools

FEDERAL	FORT NOVOSEL	STATE
■ Clean Air Act (CAA) ■ Clean Water Act (CWA) ■ DOD Readiness and Environmental Protection Integration (REPI) ■ DOD Partners in Flight (PIF) ■ DOI/DOD Readiness and Recreation Initiative ■ DOI/DOD/USDA Sentinel Landscapes Partnership ■ Federal Aviation Act ■ Federal Aviation Administration (FAA) Modernization and Reform Act of 2012 ■ Federal Aviation Administration (FAA) Small Unmanned Aircraft Rule ■ National Environmental Policy Act (NEPA) ■ National Historic Preservation Act (NHPA) ■ The Sikes Act ■ Sustainable Range Program	■ Army Compatible Use Buffer (ACUB) ■ Fly Neighborly Program ■ Installation Compatible Use Zone Study (ICUZ) ■ Fort Novosel Noise Complaint Management Program	■ Alabama Department of Conservation and Natural Resources (ADCNR) • State Wildlife Grant Program (SWG) • Forever Wild Land Trust (FWLT) ■ Alabama Cooperative Extension System (ACES) ■ Alabama Department of Environmental Management (ADEM) • Clean Water State Revolving Fund (CWSRF) • Drinking Water State Revolving Fund (DWSRF) • CWA Section 319 Grants ■ Alabama Military Stability Foundation ■ Alabama Wildlife Federation (AWF) ■ Military Land Use Planning Act ■ Natural Resource Conservation Service (NRCS)
REGIONAL	**LOCAL GOVERNMENT**	**OTHER/PRIVATE**
■ Regional Memorandum of Understanding ■ Southeast Alabama Comprehensive Economic Development Strategy (CEDS) ■ Southeast Alabama Rural Planning Organization ■ Southeast Regional Partnership for Planning and Sustainability (SERPPAS) ■ Southeast Wiregrass Area Metropolitan Planning Organization (MPO)	■ Comprehensive Planning ■ County Airport Zoning Authority ■ Capital Improvements Program (CIP) ■ Outdoor Lighting Ordinance ■ Property Disclosure Requirements ■ Sound Level Reduction ■ Subdivision Regulations ■ Telecommunications Ordinance ■ Transfer of Development Rights ■ Zoning	■ Avigation Easement ■ Conservation Easement ■ Education and Public Awareness ■ Fee Simple Acquisition ■ Purchase of Development Rights

CREDIT: DVIDS, U.S. Army photo by U.S. Air Force Airman 1st Class Derrick Bole

6. IMPLEMENTATION PLAN

An implementation plan is a written strategy for accomplishing a goal or completing a project. With so many integral stakeholders involved in creating an environment that is beneficial to and supports Fort Novosel while also fostering economic growth in the local communities that surround the installation, it is helpful to have an implementation document that can provide clear direction. When an issue occurs in more than one location, shared information becomes crucial. And, when a single issue affects more than one community, the resolution may require various communities and/or organizations working in partnerships. The implementation plan outlines how key stakeholders may interact and support one another for the benefit of all.

6.1 Issues and Anticipated Outcomes

The Compatible Land Use Study Implementation Plan is the culmination of the identification of issues and available tools and programs by meshing the appropriate tool with a responsible or benefitted organization to resolve an issue. It is recognized that not all issues can be realistically solved. In those instances, the suggestions made in the implementation plan should at least help minimize the impact.

The implemenation plan is organized by the 13 compatible land use factors that are relative to Fort Novosel and the surrounding communities. The assessment of these factors in Chapter 4 provided a "laundry list" of issues to be addressed. The issues, however, are seldom the result of only one cause or action, nor are the issues only relatable to one compatibility factor. Therefore, the list of 71 issues identified through the compatibility assessment and provided in Figure 6.1, differentiates between the primary factor associated with the issue and secondary factors. The compatibility assessment, identification of issues and committee discussions led to an outline of anticipated outcomes and preliminary recommendations. CLUS committee discussion was instrumental in development of community-based strategies that address multiple issues. The emphasis on community-based strategies will help build partnerships and cohesiveness among stakeholders.

Figure 6.1: List of Issues

LAND USE, NOISE AND SAFETY ISSUES

■ = Primary Compatibility Factor
● = Secondary Compatibility Factor

		Land Use	Noise	Safety	Communication/Coordination	Frequency Capacity/Impedance	Housing Availability	Infrastructure and Roadways	Land and Air Space	Legislative Initiatives	Light and Glare	Vertical Obstructions	Vibration
1	Rural residential development surrounding the northern side of the installation is particularly susceptible to noise and vibration	■	■										●
2	Development around and up to the installation boundaries may limit future growth of Fort Novosel	■											
3	Existing development has eliminated buffer around Fort Novosel main installation	■		●			●					●	
4	Continued urbanization of Daleville, Enterprise and Ozark toward Fort Novosel is likely to compound existing issues	■	■	●		●					●	●	
5	Landing lane clear zones extend beyond facility boundaries at some stagefields, presenting a safety issue and no control for land uses	■		●									
6	"Several stagefields have structures in accident potential zone: Allen Stagefield has seven housing units Goldberg Stagefield has one housing unit Hatch Stagefield has one housing unit Skelly Stagefield has two housing units Tabernacle Stagefield has poultry houses "	■	■	●									
7	"Noise Zone II Development: Molinelli Stagefield has one church and 12 housing units Skelly Stagefield has one church and five housing units Stinson Stagefield has nine housing units Toth Stagefield has one institutional land use (Chrysalis Transitional Home for Girls) and eight housing units"	■	■	●									
8	Dense rural residential development adjacent to Allen Stagefield boundary on three sides	■	■	●	●					●		●	●
9	Wicksburg High School in Allen Stagefield Noise Zone II		■										
10	High commercial and industrial growth area north of Allen Stagefield in Air Space Boundary on US Hwy 84	■	●			●					●	●	
11	High commercial and industrial growth area north of Brown SF in Air Space Boundary on US Hwy 84	■	●			●					●	●	
12	Brown Stagefield: Large industry and New Brockton High School with Air Space Boundary	■	■			●						●	
13	Brown Stagefield: Two water tanks located east of stagefield and in line with some landing lanes	■		●				●				●	
14	Cairns Airfield: one commercial land use and eight housing units are located in north clear zone; two housing units in south clear zone	■	●	■									
15	Cairns Airfield: approximately 91 structures in accident potential zone	■	●	■									
16	Cairns Airfield: heavy residential development, including multi-family surrounding airfield in NZ II and LUPZ (317 total structures)	■	■			●	●	●			●	●	
17	Rotorwash erosion causing runoff from stagefields into nearby creeks and streams: Hanchey Airfield, Hatch Stagfield, Knox Airfield into Choctawhatchee River; Hunt Stagefield into West Fork Choctawhatchee River; Lucas Stagefield into Phillips Creek and Tiger Eye Creek; Runkle Stagefield to Pea River onsite; and Toth Stagefield to Panther Creek and Bear Creek. Each of these stagefields are also used by CH-47 helicopters which increases erosion.	■											●
18	Hooper Stagefield: one childcare center, one apartment complex, two commercial and numerous residential land uses within NZ II	■	■				●						

Figure 6.1: List of Issues, continued

LAND USE, NOISE AND SAFETY ISSUES ■ = Primary Compatibility Factor ● = Secondary Compatibility Factor		Land Use	Noise	Safety	Communication/Coordination	Frequency Capacity/Impedance	Housing Availability	Infrastructure and Roadways	Land and Air Space	Legislative Initiatives	Light and Glare	Vertical Obstructions	Vibration
19	Knox Airfield: Power Substation and Transmission line perpendicular to flight corridor and landing lanes			■				●					
20	Lowe Airfield: heavy residential developmennt within NZ II and large growth area southwest of airfield, including multiple multi-family housing units, in Air Space Boundary	■	■			●		●			●		
21	Lucas Stagefield: Two power transmmission lines south of stagefield and perpendicular to landing lanes, but do not appear to conflict with flight corridors			■				●				●	
22	Runkle Stagefield: Elba Hydroelectric Plant is 1.5 miles to north in line with landing lanes but does not appear to conflict with flight corridors			■				●					
23	Shell Airfield: almost completely surrounded by dense urban residential development, including 29 housing units in accident potential zone and 194 units in NZ II	■	■	■		●	●				●		●
24	Shell Airfield: one of the larger, most active off-post airfield is surrounded with most urban development	■	■				●	●			●		●
25	Shell Airfield: water tank across the street but does not appear to conflict with flight corridors			■								●	
26	Stinson Stagefield: water tank located southeast of stagefield, not perpendicular to landing lanes, but may conflict with flight corridors			■				●				●	
27	Tabernacle Stagefield: water tank due north of landing lanes and in flight corrdor pathway			■				●				●	
28	Toth Stagefield: located in high growth and development area between Daleville and Dothan	■	■	●		●	●	●			●		●
29	Toth Stagefield: Power transmission lines perpendicular to landing lanes; communication tower 1.25 miles north of stagefield			■								●	
30	4,427 acres CH-47 NZ III located in municipal areas: Lowe Stagefield and Shell Airfield in Enterprise; Cairns Airfield in Daleville; Hooper Stagefield in Ozark; and Hunt in Newton		■										●
31	Large size of CH-47 noise zones impacts several high-growth areas including US Highway 84 near New Brockton and between Daleville and Dothan, and US Highway 231 south of Ozark	■	■				●						●
32	Areas north of Tabernacle and Molinelli may be impacted by large arms noise and vibration	●	■										■
COMMUNICATION AND COORDINATION ISSUES													
33	Lack of representation from Fort Novosel, or participation by Fort Novosel, in local planning commission activities	●			■								
34	Previous strategies were not implemented				■								
35	Lack of awareness of Fort Novosel operations and needs	●	●		■								
36	Confusion of who responsible parties are with Fort Novosel with regard to future development or natural resource planning	●			■								
37	No clear chain process on information exchange				■								
38	Military confidentiality hinders some communications	●			■			●					

Figure 6.1: List of Issues, continued

	FREQUENCY SPECTRUM CAPACITY/INTERFERENCE ■ = Primary Compatibility Factor ● = Secondary Compatibility Factor	Land Use	Noise	Safety	Communication/Coordination	Frequency Capacity/Impedance	Housing Availability	Infrastructure and Roadways	Land and Air Space	Legislative Initiatives	Light and Glare	Vertical Obstructions	Vibration
39	Interference from telecommunications towers or other frequency - emitting facilities					■			●				
40	Growing concern about interference from drone usage, particularly around rural stagefields	●				■							
41	Concern about capcity of local frequency providers to carry all usage from Fort Novosel without civilian interference					■		●					
	HOUSING AVAILABILITY ISSUES												
42	Housing cost is out of line with local incomes	●					■	●					
43	Lack of moderate, affordable housing	●					■	●					
44	Fort Novosel salaries have driven housing costs up	●					■						
45	Housing construction in areas that were once rural due to lower land prices	●					■	●					
	INFRASTRUCTURE AND ROADWAY ISSUES												
46	Electrical power redundancy							■					
47	Capacity of infrastructure facilities to allow for installation growth							■					
48	Traffic study needed to determine carrying capacity of regional traffic to Fort Novosel	●						■					
49	Road improvements necessary to facilitate traffic onto and off of the post during peak hours							■					
50	Funding for roadway improvements							■					
	LAND AND AIR SPACE ISSUES												
51	Recreational drone operators flying in military operation areas.								■				
52	Lack of awareness of nearby airfields and stagefields in rural areas.	●			●				■				
53	Lack of awareness of Fort Novosel perimeter boundaries				●				■				
54	Land use conflicts among property owners surrounding stagefields	●							■				
55	Negative impact on surrounding property owners of stagefields and remote training sites due to noise and vibration.	●							■				
	LEGISLATIVE INITIATIVES ISSUES												
56	Need clear interpretation of airport definition in Code of Alabama, 1975, Title 4, Chapter 6.	●								■			
57	Need clarity on where county airport zoning legislation is applicable	●								■			
58	Lack of planning and zoning legislation for counties	●								■			
59	Lack of planning legislation for regions	●								■			
60	Lack of enforcement of Military Land Use Planning Code	●								■			

Figure 6.1: List of Issues, continued ■ = Primary Compatibility Factor ● = Secondary Compatibility Factor		Land Use	Noise	Safety	Communication/Coordination	Frequency Capacity/Impedance	Housing Availability	Infrastructure and Roadways	Land and Air Space	Legislative Initiatives	Light and Glare	Vertical Obstructions	Vibration
LIGHT AND GLARE ISSUES													
61	Glare from solar panels or other objects on land							●			■		
62	Light pollution	●									■		
63	Increase in artificial lighting due to community and economic growth	●									■		
64	Spotlighting or lasering helicopter pilots				●						■		
VERTICAL OBSTRUCTION ISSUES													
65	Increased development brings need for increased communications towers, water tanks, and power substations and transmission lines	●										■	
66	Lack of notification of new vertical obstructions prior to construction											■	
67	Lack of process for local notification of plans for construction of a vertical obstruction											■	
68	Lack of local regulations about towers, obstructions	●										■	
VIBRATION ISSUES													
69	Vibration from weapons training	●			●								■
70	Vibration around remote training activities due to low-flying helicopters	●			●								■
71	Soil erosion from rotorwash, or helicopter vibration as it takes off, hovers or lands	●			●								■

The following anticipated outcomes are the results that are expected to be achieved through the implementation plan. The outcomes were derived from CLUS committee discussions and a review of issues. Recommendations and strategies were developed based on the steps and actions that are needed to achieve the outcome.

Land Use: An environment is developed that:

(1) protects the mission of Fort Novosel, enabling training practices to continue and grow;
(2) promotes economic growth of Fort Novosel's nearby communities; and
(3) recognizes the interdependence of the military and civilian processes.

Noise: Impact of Fort Novosel training noise is minimized to the extent possible.

Safety: Mechanisms in place to safeguard the boundaries of Fort Novosel in order to protect existing training mission and provide opportunity for mission growth with minimal danger to, and impact on, surrounding properties.

Communication and Coordination: Broad local knowledge and awareness of Fort Novosel missions and operations through a coordinated partnership of information sharing.

Frequency Spectrum Capacity and Impedance: Frequency infrastructure is in place that is capable of accommodating both Fort Novosel and continued community growth.

Housing Availability: An adequate supply and variety of housing choice to meet the needs of growing communities in locations that do not negatively impact Fort Novosel operations.

Infrastructure: Adequate infrastructure to support Fort Novosel and community growth is in place or planned in locations that do not encourage incompatible growth with Fort Novosel training activities.

Land-Air Space: Conflicts with surrounding land uses and drone users are minimized through shared information on training locations and schedules, as well as planned civilian usage.

Legislative Issues: Appropriate legislation that supports and protects the defense missions in the State of Alabama is enacted.

Light and Glare: Army aviators are able to train with little to no impact from ground sources of light and glare.

Vertical Obstructions: A safe environment for flight training with minimal air space or vertical obstructions is intentionally created.

Vibration: Impact of vibration from Fort Novosel training is minimized through shared knowledge of activities.

6.2 Recommendations and Strategies

Many of the identified issues are not the sole responsibility of one organization or local government but instead will require multiple agencies working together toward a common goal. Hence the need for community-based strategies encourage partnerships and cohesive decision-making among stakeholders. Further, the utilization of community-based strategies enables the implementation process to not only address the issues, which have a negative focus on fixing what is wrong, but also to maximize opportunities to reinforce the strengths of the study area. It is recognized that not all issues can be resolved in a partnership or through a community-based strategy. In those instances, the implementation of a recommended strategy rests with a single organization which is itemized in the discussion portion of the recommendation and in the implementation matrix.

In Sections 6.2.1 through 6.2.12, each of the compatibility factors as it relates to the conditions at and surrounding Fort Novosel is discussed, or explained. This discussion identifies what is incompatible and why. The discussion also provides examples of how the issues might be resolved. To gain a full understanding, it will be necessary to review the narrative text; however, each discussion is followed by a table that succinctly outlines the implementation strategies. Figure 6.3 provides an example of the implementation table and how to read it. For each proposed strategy, or action, there is a suggested implementation tool, an identified lead entity, a priority rating, and an estimated cost range from low to high.

Each recommendation is numbered 1 through 36; and each strategy is numbered by the recommendation that it falls under, and then numerically (ex. the third strategy of the fifth recommendation will be numbered 5.3). Implementation tools were reviewed in the policies and programs outlined in the previous chapter. Most often, implementation will require some number of organizations to work together toward completion of a strategy. But for each strategy, one organization is charged with the ultimate responsibility for implementation or ensuring that implementation is carried out. This is the lead agency for that strategy. Priority ratings include immediate, high, moderate, low and ongoing. There are a limited few strategies that have a priority rating of immediate with the understanding that the action is already ongoing or the action can be initiated without coordination of other stakeholders. A high priority rating implies that an action should be undertaken within one to three years; a moderate priority action should be implemented within three to five years; and, a low priority action is recommended for implementation with five to ten years. Strategies with an ongoing rating should begin as soon as feasible with the understanding that these are long-term strategies. The estimated cost range from low, shown as $, to high, shown as $$$, is somewhat relative. Generally however, low cost strategies are less than $50,000, medium cost strategies range from $50,000 to $100,000; and high cost strategies are expected to be more than $100,000. Section 6.3 provides a summary of high priority strategies that are rated as immediate or high priority.

Figure 6.2: Example Implementation Table

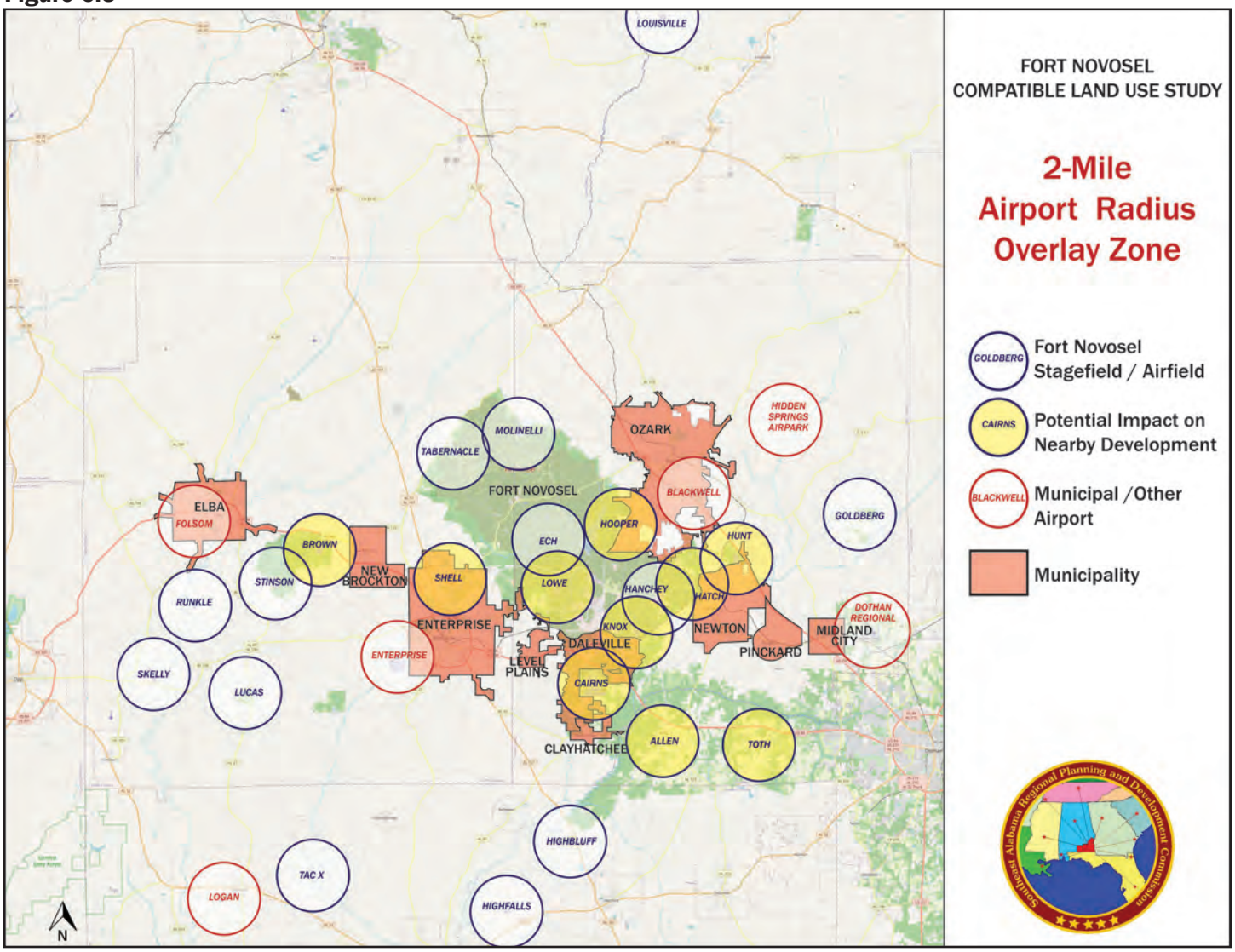
Compatibility Factor					
Outcome Anticipated Outcome Statement from Section 6.1.					
Recommendation 1: Recommendation Statement					
Strategy		**Tool**	**Lead**	**Priority**	**Cost**
1.1	Task or action that will help achieve the recommendation Strategies are numbered first by the number of the recommendation (1-36), then by the strategy number.	Primary tool that should be utilized to accomplish the strategy. Descriptions of most of the tools are provided in Chapter 5.	Organization primarily responsible for execution of strategy	Strategy rated as immediate, high, moderate, low or ongoing priority	Cost of strategy is estimated as high **($$$)**, medium **($$)**, or low **($)**

6.2.1 Land Use

Land use concerns relative to Fort Novosel activities are most often about noise, safety, and to a lesser degree, vibration in the vicinity of airfield, stagefields and remote training sites. Land uses most sensitive to Fort Novosel training include residential uses, particularly high-density residential, and institutional land uses, such as schools, child care centers, churches, nursing homes, or other health care facilities. As sensitive land uses become more prevalent in high-noise areas and public complaints about military noise sources increase, a negative impact on Fort Novosel is created. Impacts to military operations and readiness may include the creation of avoidance areas, prohibition of training events, restricted flight altitudes/airspeeds/timing, and suspensions or delays in conducting testing or training events. If Fort Novosel is ever forced to reduce operations, the economic impact on the Wiregrass region would be astronomic. The cyclical nature and interdependence of Fort Novosel and the region's population make it imperative to devise a land use plan that assists local communities in reaching their development goals but also assists Fort Novosel in carrying out their current missions, as well as being able to respond to future missions and expansion of programs.

Generally, the disturbance from Fort Novosel is greatest within stagfield noise zones, as reviewed in Chapter 4. Noise disturbances can reach much further. Both, the Military Land Use Act and Alabama County Airport Zoning Legislation provide land use review and regulation within a 2-mile radius of an airport or military facility. In the case of Fort Novosel, that would include airfields and stagefields, but possibly not remote training sites. Figure 6.3 provides a birds-eye view of a 2-mile radius around all airports, airfields and stagefields in the most concentrated part of the study area. As can be seen, the potential for a negative impact from noise can be found throughout the study area, but most especially in Coffee, Dale and western Houston counties. The Fort

Figure 6.3



Novosel facilities that are most likely to have an impact on incorporated areas include Cairns, Hatch, Hooper, Hunt, Knox, Lowe, and Shell airfields/stagefields. Allen, Brown and Toth stagefields have also been highlighted because of their potential for noise impact on high growth potential locations in unincorporated areas where there are no land use regulations.

There are numerous issues with creating a land use fabric that is conducive to both community and military growth and expansion. First, only municipalities have authority to regulate land uses in Alabama. This authority is afforded to most counties, therefore there is no oversight of the development of land in unincorporated areas. Further, there is no legislation allowing regional land use plans. This could be done, however, as a secondary purpose to a regional economic strategy such as the SEARP&DC Comprehensive Economic Development Strategy (CEDS). Municipalities that do have land use controls have not considered the full needs of Fort Novosel and its outlying facilities in their comprehensive plans and zoning ordinances. This appears to be mostly from a lack of information about what those needs may be.

The Military Land Use Act provides a review opportunity of development that occurs within a 2-mile radius of the installation and for any tall structures regardless of location within the 2-mile radius. While the Act does not give Fort Novosel land use authority over the area, it does provide an oportunity to comment on any potential negative impacts. This review opportunity has not been exercised by Fort Novosel; nor does Fort Novosel regularly attend planning commission meetings or public hearings where such development is discussed prior to approval. For unincorporated areas, plat approval under a county's subdivision regulations occurs at the county commission level. Therefore, following the county commission meetings and public hearings is also necessary.

After a review of the existing conditions and operations of Fort Novosel and the surrounding communities, the primary culprit for incompatible land uses appears to be the lack of exchange of information in a timely manner, coupled with a general lack of knowledge of the detailed activities of Fort Novosel and what the installation needs to carry out those activities on a daily basis. Most certainly, this information is not passed along to new residents. Perhaps the most effective tool in resolving land use issues would be a land use task force with knowledgeable representatives from all local governments as well as Fort Novosel. In this context, land use planning relates to the government's role in protecting the public's health, safety, and welfare through the strategic management of activities on and changes to the landscape. Local government comprehensive growth policy plans and zoning ordinances that are compatible with Fort Novosel would be the most effective tools for avoiding or resolving compatibility issues where the use of one property may impact the use of another (e.g. noise). Suggestions for consideration and resolution include:

- Long range growth and development plans
- Information exchange process
- Buffering Fort Novosel facilities
- Review process for new development
- Existing urban encroachment on military facilities
- Mutual support for growth and expansion

Another land use issue for consideration is the environmental impact that Fort Novosel has on natural resources. The Fort Novosel Land Management Program manages programs that include maintenance and conservation of all Fort Novosel land to address soil erosion, rotorwash, gully erosion, and sedimentation on existing Army-owned properties. There are, however, opportunities for Fort Novosel to (1) expand it environmental footprint in rural areas, and (2) ensure that surrounding properties are not developed with incompatible land uses. One means of doing so is utilization of conservation easements or the transfer of development rights for properties near Fort Novosel and its outlying aviation facilities. This tool could be effective in directing potential growth away from sensitive areas, while conserving open space and existing agricultural or silvicultural use. Other options to be considered are the Army Compatible Use Buffer (ACUB) program, the Sustainable Range Program, and the Sentinel Landscapes Partnership. Each of these programs offers a mechanism that allows installations to work with partners to encumber off-post land to protect habitat and buffer training without acquiring any new land. Areas of concern include land north of the Fort Novosel installation between Alabama Highway 51 and the Pea River, which is an impaired waterbody and stagefields where erosion and runoff into nearby streams could be an issue. Of particular concern for impaired waterbodies is Lowe Airfield, draining to Harrand Creek, and Runkle Stagefield draining to the Pea River. Of lesser concern are Hanchey and Knox Airfields and Hatch Stagefield, all of which drain to the Choctawhatchee River, which has impaired sections above and below the stretch between Newton and Daleville.

Land Use Recommendations and Strategies

Outcome

An environment is developed that:
(1) protects the mission of Fort Novosel, enabling training practices to continue and grow,
(2) promotes economic growth of Fort Novosel's nearby communities, and
(3) recognizes the interdependence of the military and civilian processes.

Recommendation 1:
Pursue development of a regionally cooperative guide for future land use and economic growth.

#	Strategy	Tool	Lead	Priority	Cost
1.1	Integrate regional land use planning into the SEARP&DC CEDS.	Regional CEDS	SEARP&DC	Moderate	$
1.2	Establish a representative land use task force to review land uses issues on a case-by-case basis and advocate for community resolution.	Education and Awareness	SEARP&DC	Immediate	$

Recommendation 2:
Increase knowledge and understanding of Fort Novosel training activities in areas with existing development around main installation and airfields/stagefields through a public awareness campaign.

#	Strategy	Tool	Lead	Priority	Cost
2.1	Publicize user-friendly detailed maps of Fort Novosel noise zones with surrounding land uses.	Noise Management Program	Fort Novosel	Low	$
2.2	Build recognition of the economic importance of Fort Novosel to the Wiregrass region.	Education and Public Awareness	Economic Developers	Ongoing	$
2.3	Create a newcomer's package to educate new residents about Fort Novosel and what to expect in terms of noise and vibration.	Education and Public Awareness	Realtors	Low	$

Recommendation 3:
Encourage each municipality to address and encourage land use that is compatible with Fort Novosel for their adjacent properties.

#	Strategy	Tool	Lead	Priority	Cost
3.1	Appoint a Fort Novosel representative as a member of local planning commissions.	Comprehensive Planning	Local Governments	High	$
3.2	A Fort Novosel representative should attend all planning commission meetings and public hearings for each municipality in study area.	Comprehensive Planning and Zoning	Fort Novosel	High	$
3.3	Monitor land use development within 2-mile buffer of installation and all stagefields.	Military Land Use Planning Act	Fort Novosel	High	$
3.4	Revisit existing land use plans to ensure compatibility with Fort Novosel requirements.	Comprehensive Planning	Local Governments	Moderate	$
3.5	Adopt zoning overlay district for 2-mile radius around stagefields to require to maintain low-density development and low structure height.	Zoning	Local Governments	Moderate	$

Recommendation 4:
Minimize environmental impacts of Fort Novosel training activities.

#	Strategy	Tool	Lead	Priority	Cost
4.1	Continue relations and partnership with the Southeast Regional Partnership for Planning and Sustainability (SERPPAS).	SERPPAS	Fort Novosel	Ongoing	$
4.2	Utilize all reasonable best management practices to minimize erosion caused by rotorwash at stagefields.	CWA Section 319, Fort Novosel Land Management Program	USAACE	Moderate	$$
4.3	Work with local nonprofits to identify and reduce impact on impaired waterbodies.	REPI, CWA Section 319	Fort Novosel	Moderate	$$
4.4	Investigate potential for ACUB program around north end of installation to include portions of AL Hwy 51 and the Pea River for a buffer, water quality improvements, species conservation and rehabilitation, and environmental stewardship.	REPI, ACUB, CWA Section 319	Fort Novosel	Moderate	$$$

6.2.2 Noise

Helicopter and artillery noise are unalterable byproducts of living with Fort Novosel. For the great majority of residents in the Wiregrass region, the noise is not a nuisance. In fact, responses from the Public Survey Question 10 about disturbance from Fort Novosel activities indicate that on a scale from 0 to 100 (with 0 being least disturbance and 100 being most disturbance), the average response was 16. Over half of the 408 responses reported zero disturbance. Even so, there are a few incompatible developments that have occurred within stagefield noise zones, such as a school, a childcare center, and high density residential apartments and town homes. Wicksburg High School is partially located within Allen Stagefield Noise Zone II. A childcare center, an apartment complex, and a park with a ballfield are location are located within Hooper Stagefield Noise Zone II. Appropriate measures should be taken to minimize the noise impact on this limited number of land uses. Measures may include sound insulation for the buildings, relocation of the inhabitants, or at the very least a signed waiver of liability from residents. Other airfields and stagefields that have a concentrated amount of residential development within the Noise Zone II boundary are Allen Stagefield (52 units), Cairns Airfield (228 units), and Shell Airfield (194 units).

Figure 6.4

Potential Noise Impact by Structural Density			
Name of Airfield or Stagefield	Number of Structures		
	in 2-Mile Radius	in LUPZ	% in LUPZ
Total from all Air/Stagefields	13,258	2,911	22.0%
Allen Stagefield	566	230	40.6%
Brown Stagefield	290	52	17.9%
Cairns AAF	1,419	417	29.4%
Ech Stagefield	35	0	0.0%
Goldberg Stagefield	275	36	13.1%
Hanchey AHP	155	0	0.0%
Hatch Stagefield	453	6	1.3%
Highbluff Stagefield	165	10	6.1%
Highfalls Stagefield	303	169	55.8%
Hooper Stagefield	1,553	296	19.1%
Hunt Stagefield	526	21	4.0%
Knox Airfield	1,038	13	1.3%
Louisville Stagefield	55	27	49.1%
Lowe Airfield	1,170	149	12.7%
Lucas Stagefield	200	22	11.0%
Molinelli Stagefield	80	15	18.8%
Runkle Stagefield	170	0	0.0%
Shell Airfield	3,177	1,137	35.8%
Skelly Stagefield	108	19	17.6%
Stinson Stagefield	219	53	24.2%
Tabernacle Stagefield	256	42	16.4%
TacX Stagefield	296	152	51.4%
Toth Stagefield	749	45	6.0%

One measure of potential noise impact is the number of structures within a 2-mile radius around an air/stagefield, based on the simple of logic that the more people that are present equals the greater the potential for noise disturbance. As seen in Figure 6.4, there are five stagefields that have more than 1,000 structures within the two mile radius area, the majority of which are residential. At an average household size of 2.53 persons for the 6-county study area, this means there is potential to adversely impact roughly 21,143 people, or 7.1 percent of the entire study area population, just by virtue of location. The best way to minimize the negative impact of noise on this large group of people is through knowledge and public awareness. One method of increasing awareness of noise zones is through signage at ground level, even though the helicopter noise may be coming from a few hundred feet in the air. The signage can be simple and moderately inexpensive but will serve as a daily reminder of the residents location in a noise zone and will also serve to inform newcomers to the area of existing noise zones. This type of signage has been effective with soil and water conservation districts, as well as with drainage basins in watershed protection efforts. Emphasis should be placed on building awareness first around densely developed air/stagefields, including Cairns, Hooper, Knox, Lowe, and Shell; and second around stagefields that are in areas of high growth potential, which includes Allen, Brown and Toth Stagefields.

The proposed Land Use Task Force from Strategy 1.2 should be well-versed in noise impacts on surrounding properties and the implications for the future growth of Fort Novosel. The Land Use Task Force should be prepared to share that information with local governments, local developers, and other key land use decision makers, particularly in areas that have high growth potential along US Highway 84. One means of enforcement is the Military Land Use Planning Act that provides a review and comment opportunity for all development within a 2-mile radius of a military facility, which should include all airfields and stagefields. Another opportunity would be the protection of certain lands within a noise zone to provide a buffer between Fort Novosel and development through the Army Compatible Use Buffer (ACUB) Program. The most likely area for this sort of protection buffer is between the north end of Fort Novosel and the Pea River which would minimize artillery noise on future development.

Noise Recommendations and Strategies

Outcome
Impact of Fort Novosel training noise is minimized to the extent possible.

Recommendation 5:
To the extent possible, retrofit existing noise sensitive structures, such as schools, located within Noise Zone II boundaries to minimize noise impact.

#	Strategy	Tool	Lead	Priority	Cost
5.1	Work with Houston County Board of Education to seek grant assistance to retrofit Wicksburg High School with sound insulation to minimize noise impact from Allen Stagefield.	Noise Management Program	Fort Novosel, Houston County Board of Education	Moderate	$$$
5.2	Retrofit for sound insulation or relocate Immanuel Child Development Center #2 from its location on Andrews Avenue in the Hooper Stagefield Noise Zone II, or obtain a liability waiver.	Noise Management Program	Fort Novosel, City of Ozark	High	$$$

Recommendation 6:
Increase awareness of noise zones in areas where development has already occurred.

#	Strategy	Tool	Lead	Priority	Cost
6.1	Build a public awareness campaign around noise zone locations and place noise zone signage at appropriate locations.	Education and Public Awareness	Fort Novosel	Moderate	$$
6.2	Place Noise Zone signs at Police Memorial Park in Ozark to ensure awareness of nearby noise zone from Hooper Stagefield.	Education and Public Awareness	City of Ozark	Moderate	$
6.3	Place Noise Zone signs at Dale County US 231 Rest Area between Ozark and Newton in unincorporated Dale County to ensure awareness of nearby noise zone from Hunt Stagefield.	Education and Public Awareness	ALDOT	Moderate	$
6.4	Create an educational pamphlet and distribute to existing households in Noise Zone II of airfields and stagefields.	Education and Public Awareness	Local Governments	Moderate	$
6.5	Design and place signage to build awareness of location in areas around low-flying helicopters.	Education and Public Awareness	Local Governments	High	$$
6.6	Target high density residential development within air space boundaries to build awareness of Fort Novosel location and noise zones, and the impact that it has and will continue to have on their homes.	Education and Public Awareness	Fort Novosel, Local Governments	Moderate	$

Recommendation 7:
Guide future development so that it is not impacted by noise by Fort Novosel current and future missions.

#	Strategy	Tool	Lead	Priority	Cost
7.1	Develop presentation to bring awareness of the impact of Fort Novosel, need for buffer areas and anticipated growth in the Wiregrass area.	Education and Public Awareness	SEARP&DC / Land Use Task Force	Moderate	$
7.2	Visit with county commission in Coffee and Dale counties to bring awareness of the issues related to incompatible development in high growth potential areas near Allen, Brown and Toth airfields.	Education and Public Awareness	Fort Novosel, SEARP&DC / Land Use Task Force	Moderate	$
7.3	Work with local developers to create an understanding of the impact on and from Fort Novosel on incompatible development.	Education and Public Awareness	Fort Novosel, Land Use Task Force	Moderate	$

Recommendation 8:
Protect buffer areas around Fort Novosel properties to minimize noise and other impacts on future development.

#	Strategy	Tool	Lead	Priority	Cost
8.1	Support potential ACUB program around the north end of the Fort Novosel installation.	ACUB	Land Use Task Force	High	$
8.2	Enforce Military Land Use Planning Act within two miles of all Fort Novosel facilities.	Military Land Use Planning Act	Fort Novosel	High	$

6.2.3 Safety

Noted safety issues are related to land use within clear zones and the density of land uses within accident prone zones. The most notable safety infractions are at Cairns Airfield where eight housing units and one commercial structure are located in the clear zone for Runway 18 and two housing units are located in the clear zone for Runway 36. These properties front Holman Bridge Road, US Highway 84, and Gritney Road. Additionally, there are more undeveloped properties located within the clear zones. The only means to ensure protection of air/stagefield clear zones is to acquire ownership of the property. The combined assessed value of the 11 developed parcels is $971,820 according to the Dale County Public GIS Parcel Maps. This is not necessarily the same as fair market value, or sale value, of the properties which is likely to be considerably higher. In addition to these properties near Cairn Airfield, there appears to be small portions of the designated clear zones that extend beyond the stagefield boundary at Allen, Highfalls, and Hunt stagefields. If the property owners are unwilling to sell, the only recourse would be to acquire the property through eminent domain in which the government has the right to take property that (1) will be used for a public purpose or use and (2) upon payment of just compensation.

There is also concern about the density, of development in some accident prone zones, most specifically Cairn and Shell Airfields. The only way to ensure that this type of dense residential development does not continue to occur around other stagefields is to control the land uses with zoning. For municipalities, amending the zoning ordinance to add a compatible low density district or add a military overlay zoning district, either of which could limit the use (type) density and height of structures.

Unless a county is willing and able to utilize airport zoning legislation, there is no means of controlling the density of development in clear zones or accident potential zones. The only remaining tools available to discourage this type of development are public information and awareness and utilizing the development review and comment option available through the Military Land Use Planning Act.

Safety Recommendations and Strategies

Outcome

Mechanisms are in place to safeguard the boundaries of Fort Novosel so that existing training missions and opportunities for mission growth are protected.

Recommendation 9:
Ensure that stagefield clear zones are free of structural development.

#	Strategy	Tool	Lead	Priority	Cost
9.1	Purchase properties in clear zones that extend beyond stagefield boundaries at Cairns Airfield.	Fee Simple Acquisition	Fort Novosel	Immediate	$$$
9.2	Protect properties in accident potential zones at Allen, Brown, Goldberg, Highbluff, Highfalls, Hunt, Lucas, Molinelli, Runkle, Skelly, Stinson, Tabernacle and Toth stagefields, and at Cairns, Knox, and Shell airfields.	Conservation Easement, Avigation Easement, or Purchase of Development Rights	Fort Novosel	High	$ - $$$

Recommendation 10:
Encourage municipalities to utilize land use regulations to limit development in accident prone zones.

#	Strategy	Tool	Lead	Priority	Cost
10.1	Enforce Military Land Use Planning Act within two miles of all Fort Novosel facilities.	Military Land Use Planning Act	Fort Novosel	High	$
10.2	Support Recommendation 3.4 to add a military overlay zone to municipal zoning ordinances.	Zoning	Fort Novosel	Moderate	$

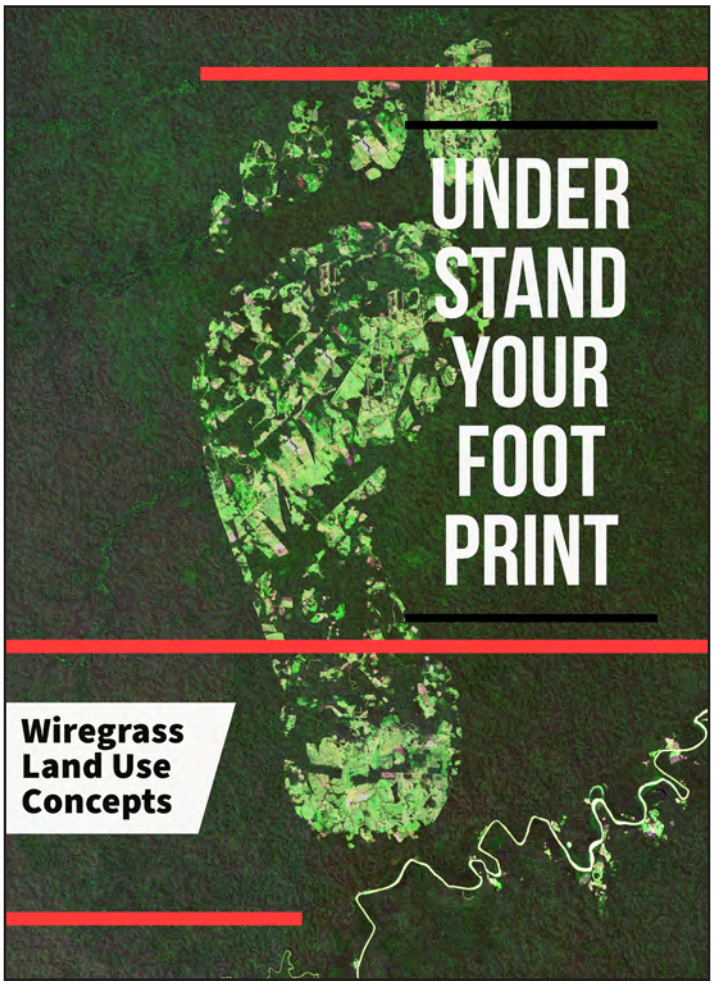
Recommendation 11:
In unincorporated areas, work with county commissions to adopt and enforce county airport zoning or other land use regulations.

#	Strategy	Tool	Lead	Priority	Cost
11.1	Seek legal counsel on implementation of county airport zoning legislation to clarify when and how it is applicable.	Education and Public Awareness	County Commissions, Fort Novosel	Moderate	$
11.2	If determined to be applicable, seek to have county airport zoning legislation enforced around stagefields in unincorporated areas that are also high growth potential areas, such as Allen, Brown and Toth stagefields.	County Airport Zoning	County Commissions, Fort Novosel	Moderate	$

6.2.4 Communication and Coordination

Communication and coordination refers to programs, plans, and partnerships that promote interagency communication and coordination and dissemination of information to the public, as well as other stakeholders. Interagency communication serves the general welfare by promoting a more comprehensive planning process, inclusive of all affected stakeholders. Interagency coordination also supports the development and inclusion of mutually beneficial policies for local communities and the military in local planning documents, such as comprehensive plans. Providing relevant and timely information to the public keeps them informed of activities and instills a sense of confidence and support.

Communication and coordination are essential to the success of many of the proposed recommendations and strategies. In fact, communication and coordination between Fort Novosel and the local governments should be the most sustainable outcome of the compatible land use study. Although Fort Novosel has a strong presence in the Wiregrass region, it often appears autonomous. In reality, there is an interdependence between the military and civilian worlds that results in benefits to both.



Recommendations and strategies are aimed at facilitating, and to some degree, formalizing, the communication process between Fort Novosel and local governments. In recognition of the mutual impact on one another, there should be a distinct format, or chain, for information exchange. This is particularly true in land use planning. Additionally, there should be a continuous information feed to the general public to build an awareness of Fort Novosel missions, what is needed to make those missions successful, and their anticipated impact.

Beyond communication and coordination efforts related to general awareness and information exchange, there are several recommendations that will need an assist from communication and coordination efforts to be successful. Those recommendations include:

- Increasing the understanding of Fort Novosel training activities,
- Increasing the awareness of noise zones and vibration in developed areas,
- Future land use decision-making and guidelines, and
- Awareness of consequences of light and glare.

In order to implement and sustain communication and coordination efforts, solutions should include the involvement of local chambers of commerce, economic development authorities, the real estate community, the development industry, and others that have frequent contact and influence on the general public. The point to all communication and coordination efforts is to build a broad target audience reach to better leverage efforts in helping local officials and the general public in understanding the impacts on and from Fort Novosel in the Wiregrass Region. Communication and coordination tools may include any one or combination of the following:

- Memorandums of agreement between Fort Novosel and local governments,
- Informational brochures and pamphlets, maps, welcome informational packages,
- Public service announcements, broadcast campaigns,
- Flowchart of information exchange with contact information for all communities and Fort Novosel,
- Informal communications,
- Ongoing communication committee or task force, and
- Annual presentations and updates.

Communication and Coordination Recommendations and Strategies

Outcome

Broad local knowledge and awareness of Fort Novosel missions and operations through a coordinated partnership of information sharing.

Recommendation 12:
Build awareness of Fort Novosel activities and training missions, and what is required for those to be successful.

#	Strategy	Tool	Lead	Priority	Cost
12.1	Create an education and public awareness task force to develop creative and interesting public service material that has a good reach.	Education and Public Awareness	Fort Novosel	Moderate	$
12.2	Work with Land Use Task Force to create and publish user-friendly detailed maps of Fort Novosel noise zones with surrounding land uses. (2.1)	Education and Public Awareness	Public Awareness Task Force	High	$
12.3	Work with Land Use Task Force to create an education and awareness strategy to recognize the importance to Fort Novosel to the Wiregrass Region. (2.2)	Education and Public Awareness	Public Awareness Task Force	High	$
12.4	Work with Land Use Task Force to create a newcomer's package to educate new residents about Fort Novosel and what to expect in terms of noise and vibration. (2.3)	Education and Public Awareness	Public Awareness Task Force	Moderate	$
12.5	Build a public awareness campaign around noise zone locations and placement of noise zone signage at appropriate locations. (6.1)	Education and Public Awareness	Public Awareness Task Force	Moderate	$
12.6	Create an educational pamphlet to distribute to existing households in Noise Zone II of airfields and stagefields. (6.4)	Education and Public Awareness	Public Awareness Task Force	Moderate	$
12.7	Develop presentation to bring awareness of the impact of Fort Novosel, buffer needs and anticipated growth in the Wiregrass area. (7.1)	Education and Public Awareness	Public Awareness Task Force	Low	$

Recommendation 13:
Develop system for exchange of information with checks and balances that ensures that both Fort Novosel and local communities are apprised of anticipated development.

#	Strategy	Tool	Lead	Priority	Cost
13.1	Designate a single contact for the review of all new development.	Military Land Use Planning Act, MOU	Fort Novosel	Immediate	$
13.2	In the enforcement of the Military Land Use Planning Act, develop a clear flow chart for review process by Fort Novosel, including contact information.	Military Land Use Planning Act, MOU	Fort Novosel	Immediate	$

Recommendation 14:
Publish consequences and dangers of intervening with training activities.

#	Strategy	Tool	Lead	Priority	Cost
14.1	Work with USAACE programs to determine the best way to address public knowledge of dangers associated with intervention of Fort Novosel training operations, such as laser strikes or other obstructions (30.1)	Education and Public Awareness	Public Awareness Task Force	Immediate	$

Recommendation 15:
Broadcast positive impacts of Fort Novosel within Wiregrass Region.

#	Strategy	Tool	Lead	Priority	Cost
15.1	Work with Wiregrass Region Economic Developers to build a recruitment package that includes the positive impacts that Fort Novosel has on the region.	Education and Public Awareness	PA Task Force, Economic Developers	Moderate	$
15.2	Work from economic development recruitment package to create a public information package for new and existing residents.	Education and Public Awareness	PA Task Force, Econ Developers	Moderate	$

6.2.5 Frequency Spectrum Capacity and Impedance

Fort Novosel operations are highly dependent on clear signals and communications. In fact, the DOD is one of the biggest users of the frequency spectrum in the United States. With the ever-increasing civilian use of technology and wireless technology, the potential for infringement on military communications runs high. Just a few competing frequency uses include public safety communications, biomedical telemetry, global positioning system (GPS), digital audio broadcast, fixed satellite services, commercial mobile radio service, and wireless and personal communications systems.

An article on the National Institute of Standards and Technology provides the following analogy:

The radio-frequency spectrum is divided into bands of different frequencies. Like different lanes in the road, some of these bands allow data to travel faster or for longer distances. Some are reserved for specific users. You don't want military communications stuck in digital traffic with the latest social media memes.

Why can't we just make more radio-frequency lanes? We don't have more radio-frequency spectrum to develop. It's a natural resource, and we have to share it.

When the frequency spectrum is recognized as a natural resource, the need for conservation and careful management becomes more clear. Fort Novosel will need to determine frequency spectrum and communications needs based on future growth and operations models. The needs analysis should be used as a starting point for development of a regional communications study that considers the Fort Novosel needs with other major users in the Wiregrass region and proposes how all those can be met, either through spectrum isolation or frequency sharing. The study should outline the capability of various providers to determine where any shortcomings may be.

The DOD is researching and performing tests on shared frequencies by the Navy with a three-tier approach. In this scenario, the first tier of the frequency spectrum belongs to the Navy radars and the Navy gets priority access. Second, commercial companies can get access to the Navy's frequency, when not in use by the Navy, under a priority license. And third, the public can use the spectrum any time it is not in use by the Navy or priority access holders. Studies are tracking the efficiency and effectiveness of the shared spectrum, as well as the speed at which the Navy can reclaim usage of the spectrum for priority needs.

Frequency Spectrum Capacity and Impedance Recommendations and Strategies

Outcome

Frequency infrastructure is in place that is capable of accommodating both Fort Novosel and continued community growth.

Recommendation 16:
Work with local providers to strengthen communications infrastructure as required by growth of military missions and local communities.

#	Strategy	Tool	Lead	Priority	Cost
16.1	Establish relationship with local communication providers to determine existing growth capacity and long range communications plans.	Communications	USAACE	Moderate	$
16.2	Conduct internal assessment of communication needs, given potential growth and expansion scenarios of Fort Novosel missions.	Planning	Fort Novosel	Moderate	$
16.3	Develop a regional communications plan that accounts for continued residential, commercial, industrial growth, as well as USAACE growth.	Planning	USAACE, SEARP&DC	Moderate	$

Recommendation 17:
Minimize potential for frequency impedance.

#	Strategy	Tool	Lead	Priority	Cost
17.1	During development of regional communications plan, identify any competing communications users that may cause frequency impedance.	Communications	USAACE	Moderate	$
17.2	Work out usage agreements with competing users to eliminate frequency impedance to the full extent possible.	Communications	USAACE	Moderate	$

6.2.6 Housing Availability

Issues regarding housing availability are related to housing cost, availability and affordability of housing, and development of housing in areas that are incompatible with the missions and training of Fort Novosel. Residents state that the presence of the army installation has driven the cost of housing up. As a result, individual homebuilders and developers have sought less expensive land in the unincorporated areas to build either a homestead type house, such as a house and a few acres of land, or small residential neighborhoods. This practice has escalated residential development in areas that were once rural. In some locations, the residential development is beginning to encroach on military air/stagefields and remote training sites that were located in rural areas because of their lack of development and less potential for noise impacts.

Unfortunately, the State of Alabama does not have planning legislation nor land use regulations for unincorporated areas. Therefore guidance for development must occur either through the review and comment opportunities of Military Land Use Act for areas within two miles of a military facility, or through public information and awareness. Within incorporated areas, municipalities should identify locations for infill development and actively recruit builders to provide affordable housing choice in those areas. Affordable housing and other housing development should also be included in the SEARP&DC Comprehensive Economic Development Strategy (CEDS), as recommended in Strategy 1.1 as a means to encourage and support the region's economic development efforts.

The only necessary infrastructure for development in outlying areas is a source of power, which would be difficult to minimize due to the widespread nature of the utility. Water and sanitary sewer systems can be handled onsite given adequate land area per housing unit, however, the cost of development is much lower if public water and sewer are available. Therefore, the only means to discourage higher-density residential construction in rural areas is to limit the availability of these services.

Housing Availability Recommendations and Strategies

Outcome

An adequate supply and variety of housing choice to meet the needs of growing communities in locations that do not negatively impact Fort Novosel operations.

Recommendation 18:
Encourage infill residential development as a means to provide adequate and moderately priced housing options in locations with existing infrastructure.

#	Strategy	Tool	Lead	Priority	Cost
18.1	Identify locations for infill development during regional land use planning process.	Planning	Land Use Task Force	Moderate	$
18.2	Include local residential developers in housing portion of regional land use planning process.	Planning	Land Use Task Force	Moderate	$

Recommendation 19:
Utilize local comprehensive plans and land use regulations to guide future residential development in high growth areas.

#	Strategy	Tool	Lead	Priority	Cost
19.1	Share regional land use plan with local communities to encourage them to update their comprehensive plans in accordance with regional goals for high growth potential areas.	Planning	Land Use Task Force	Moderate	$
19.2	Include detailed plans for unincorporated high growth potential areas around Allen, Brown and Toth stagefields in regional land use plan with emphasis on review by Fort Novosel under Military Land Use Planning Act.	Planning	Land Use Task Force, County Commissions	Moderate	$$

Recommendation 20:
Work with local providers to minimize the extension of infrastructure that encourages residential development in areas that are incompatible with Fort Novosel training areas.

#	Strategy	Tool	Lead	Priority	Cost
20.1	Share regional land use plan with local utility providers in an effort to minimize spread of infrastructural facilities into areas that are incompatible with Fort Novosel training operations.	Planning	Land Use Task Force	High	$

6.2.7 Infrastructure

Issues related to infrastructure are two-fold: (1) ensure that adequate utilities are available to support Fort Novosel in its current and future missions, as well as the surrounding communities, including back up sources, and (2) minimize the impact of existing utility infrastructure, such as transmission lines, water towers, and communications towers on flight paths. Beyond these two issues, however, the provision of infrastructure can both encourage and discourage future development, so providers need to carefully consider both the desired and undesired outcomes of utility services and expansions, especially in areas with high growth potential.

Although it is not a utility service, the existing and future transportation network is the backbone of an infrastructure system that often provides the framework for development. It is suggested that a regional transportation access study be conducted to determine any inadequacies based on anticipated future growth and as a means to guide development, particularly in high-growth potential locations in unincorporated areas.

Infrastructure Recommendations and Strategies

Outcome

Adequate infrastructure to support Fort Novosel and community growth is in place or planned in locations that do not encourage incompatible growth with Fort Novosel training activities

Recommendation 21:
Work with local providers and contractors to ensure that adequate infrastructure facilities are available to support and encourage Fort Novosel growth.

#	Strategy	Tool	Lead	Priority	Cost
21.1	As Fort Novosel plans for future operational growth and expansion, monitor contractors with privatized infrastructure to ensure that adequate facilities are available to support growth.	Communications	Fort Novosel	High	$
21.2	Make any infrastructural needs known to contractors and local providers well in advance of expansion dates.	Communications	Fort Novosel	High	$

Recommendation 22:
Suggest infrastructure expansions to appropriate locations to encourage moderate income housing and controlled development in high growth areas.

#	Strategy	Tool	Lead	Priority	Cost
22.1	Share regional land use plan concept with local utility providers to encourage infrastructure expansions to appropriate locations for moderate income housing without encroachment on Fort Novosel facilities.	Planning	Land Use Task Force, Fort Novosel	Moderate	$
22.2	Identify locations in high growth potential areas where development should be carefully planned to minimize encroachment and impact on Fort Novosel operations.	Planning	Land Use Task Force, Fort Novosel	Moderate	$

Recommendation 23:
Locate existing infrastructure hazards for flight training, such as transmission lines, water towers, and communications towers.

#	Strategy	Tool	Lead	Priority	Cost
23.1	Conduct an inventory and map all infrastructure hazards and obstructions to share with local providers and communities.	Planning	Fort Novosel	High	$

Recommendation 24:
Ensure that regional transportation system is adequate to efficiently carry traffic to and from Fort Novosel based on future growth expectations.

#	Strategy	Tool	Lead	Priority	Cost
24.1	Conduct a regional transportation accessibility study to determine carrying capacity of major collectors and arterials; identify existing and potential deficiencies.	Regional RPO	SEARP&DC	Moderate	$
24.2	Work with ALDOT to seek funding and improvements to roadways that are expected to become deficient in future carrying capacities.	Regional RPO	SEARP&DC, County Engineers	Moderate	$

6.2.8 Land and Air Space

With the number of both general aviation and military airports in the 6-county study area (31 total), the potential for air space conflicts is considerable. The potential for conflict is minimized, however, with the designation of the largest part of flight area as an aviation Alert Area, and an even larger area designated as a Military Operations Area, coupled with the Cairns Army Radar Approach Control (ARAC). ARAC is competent in managing the airspace and directing the heavy air traffic so that there is little opportunity for conflict throughout the area. Fort Novosel also provides technical assistance to many of the small airport operations within the region.

There has been discussion of the future operations of Unmanned Aerial Systems (UAS) at Fort Novosel. While there are currently no UAS operations occurring at Fort Novosel or in the surrounding airspace, future UAS operations at Novosel could include the larger, longer endurance UAS, which would need to launch and recover at the Cairns Army Airfield. Mission activities would be conducted within the confines of the R-2103 A/B airspace. Therefore, the only identified air space conflict is the occasional conflict in the use of recreational drones within air spaces dedicated to military usage. There is potential for this conflict to increase as more and more industries, such as agriculture, forestry and real estate, utilize drones for commercial purposes. The USAACE has stated that with adequate notification, the Army's Fly Friendly Program can accommodate nearby drone users. Notification, however, will be the key to minimizing the conflict. One, drone users must recognize military flight boundaries, especially around the rural stagefields. And two, drone users much know how to notify Fort Novosel to request accommodations. One method of information and awareness is by marking the air space boundaries on the ground with signage that includes contact information.

Land conflicts most often occur with low-flying helicopters over residential and some agricultural land uses. This is one of the primary sources of complaints to the Fly Friendly program. It is suggested that these complaints by resolved on a case-by-case basis through notification of property owners, or if the impact is severe enough, by obtaining an easement from the property owner.

Land and Air Space Recommendations and Strategies

Outcome

Conflicts with surrounding land uses and drone users are minimized through shared information on training locations and schedules, as well as planned civilian usage.

Recommendation 25:
Clearly delineate Fort Novosel properties and boundaries as a No Drone Zone.

#	Strategy	Tool	Lead	Priority	Cost
25.1	Use signage to define Fort Novosel boundaries and No Drone Zones, particularly around stagefields and north part of main installation.	Public Awareness	Fort Novosel	Moderate	$

Recommendation 26:
Consider notification or use easement of properties near remote training sites that are impacted by training activities but are not reimbursed as the property owner is.

#	Strategy	Tool	Lead	Priority	Cost
26.1	Survey properties near remote training sites to determine Fort Novosel's nuisance level.	Communication	Fort Novosel	Moderate	$
26.2	Based on survey results, determine if there are alternatives that reduce impact, such as notification, or compensation through easement.	Communication, Conservation Easement	Fort Novosel	Moderate	$

Recommendation 27:
Identify and work with agricultural, or other, drone users to minimize conflicts in scheduling.

#	Strategy	Tool	Lead	Priority	Cost
27.1	Work with the Alabama Cooperative Extension System to identify and maintain a list agricultural drone users that may be near stagefield sites.	Communication	Fort Novosel, ACES	Moderate	$
27.2	Develop agreement for drone users near Fort Novosel properties that includes notification or reoccurring schedule, so conflicting drone usage can be minimized.	Communication	Fort Novosel	Moderate	$
27.3	Identify other drone user groups that may operate near Fort Novosel facilities.	Communication	Fort Novosel	Moderate	$

6.2.9 Legislative Initiatives

Incompatible land uses that hinder the missions of Fort Novosel primarily result from the lack of adequate land use planning and development regulations. Even in municipal areas that have authority for planning and zoning, the impact of future development on Fort Novosel is often not considered. Historically, the entire state of Alabama has been adverse to strict land use regulations. A change to proactive land use planning and land use controls will only come with a statewide emphasis on land use planning and zoning and recognition that these tools are protective for property owners rather than restrictive. It is suggested that the State of Alabama research nearby states with stronger land use controls to determine the best land use controls and methods to support and protect Alabama's many military installations.

Until the emphasis on land use planning changes, there are a limited number of tools that can be used to guide growth and development. One of these is the Military Land Use Planning Act that has already been discussed. Another tool is legislation for county airport zoning, as found in Title 4, Chapter 6 of the Code of Alabama. There are a number of questions that needs to be resolved either through an Attorney General's opinion or other clarification of the legislation:

- Are helicopters and heliports considered the same as an airport?
- Can county airport zoning legislation for public airports be used for military airports and stagefields?
- Would county airport zoning have to be enacted at all military facilities, or could it only be enforced around those under threat of incompatible development?

These answers are not expected to come quickly. And, the answers certainly will not come without one or more advocacy groups pushing the issue. Key organizations to include in this effort will be the Alabama Military Stability Foundation, the Association of County Commissions of Alabama, and the Alabama League of Municipalities.

Legislative Initiatives Recommendations and Strategies

Outcome

Appropriate legislation that protects the defense missions in the State of Alabama is enacted.

Recommendation 28:
Work with Alabama Military Stability Foundation, the Association of County Commissions of Alabama, and the Alabama League of Municipalities to clarify airport zoning legislation found in the Code of Alabama, Title 4, Chapter 6, and where it is applicable.

#	Strategy	Tool	Lead	Priority	Cost
28.1	Seek Attorney General's opinion on use of County Airport Zoning legislation for military installations.	Zoning	**Alabama Military Stability Foundation**	High	**$**
28.2	Seek Attorney General's opinion on definition on airport, and if stagefields will qualify.	Zoning	**Alabama Military Stability Foundation**	High	**$**
28.3	Seek Attorney General's opinion that if county airport zoning can be enforced on behalf of stagefields, does it have to be enforced on all stagefields in the county?	Zoning	**Alabama Military Stability Foundation**	High	**$**

Recommendation 29:
Work with Alabama Military Stability Foundation to develop planning legislation, including regional and county planning, which serves to support and protect defense installations in Alabama.

#	Strategy	Tool	Lead	Priority	Cost
29.1	Investigate nearby states with county and regional planning legislation to determine if it is successful in guiding land development and what the pitfalls may be.	Planning	Land Use Task Force	Moderate	**$**
29.2	Petition Alabama Military Stability Foundation, or other organization, to encourage legislation for land use regulations on a regional and/or county basis that protects military installations.	Planning	Land Use Task Force	Moderate	**$**

6.2.10 Light and Glare

Issues from light and glare for USAACE aviators usually come from one of three sources. First, and most dangerous, is the occasional spotlighting or lasering of helicopters during flight training. When a laser beam reaches an aircraft at 1,000 feet, it looks much larger than the pinpoint that it appears to be when pointed at a wall or the floor. When a laser hits an aircraft windshield, the light is dispersed even more to the point of illuminating the full cockpit. The impact may include temporary blindness for a pilot, cause disorientation, afterimage, or at the very least be a major distraction. Although spotlighting and lasering are not frequent events, it does occur often enough to be a major concern - an average of about three times a year. Between 2020 and 2022, there were eight laser strikes in the Fort Novosel area and 205 strikes in Alabama.. It is thought that the increase in laser strikes may be attributed to the decreasing costs and increasing availability of laser pointers, or hand-held lasers.

When a spotlight or laser strike occurs, law enforcement is notified. As this is a federal offense, the alleged perpetrator is then turned over to the Federal Aviation Administration and the Federal Bureau of Investigation for prosecution. If convicted, a person can face up to five years in prison as well as civil penalties. The FAA fines are up to $11,000 per violation and $30,800 for multiple laser incidents. If the offender is not caught, then the offense is logged with Fort Novosel and entered into FBI E-Guardian System.

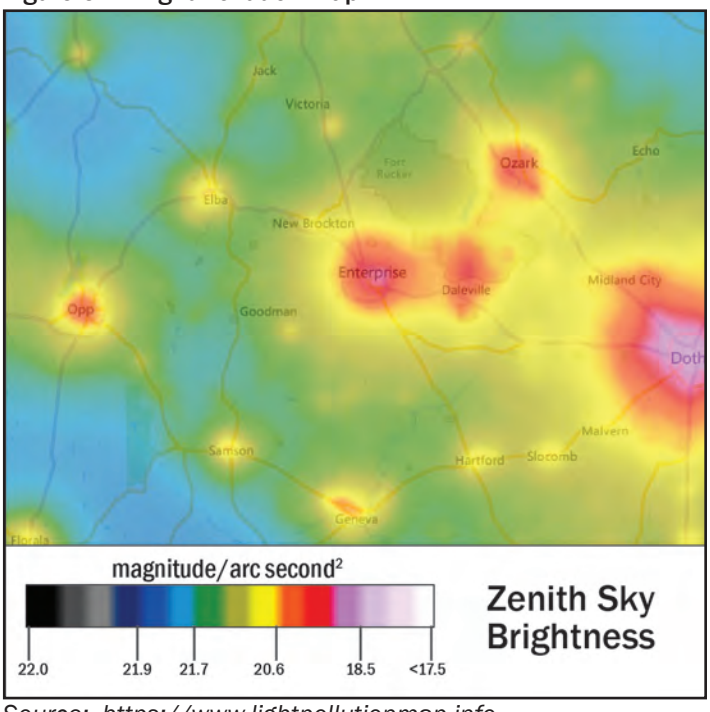
A second source occurs during daytime flying with glare from reflective surfaces on the ground, such as glass buildings, water, and most significantly, solar panels. Solar farms are a positive aspect in providing an alternative energy source, but they also can have a negative impact by creating glare depending on their type, location, angle and direction. Additionally, a solar farm must also have accompanying electrical transmission lines, which can also be an obstruction to helicopters, and can create electromagnetic interference in communications systems. Glare from solar panels can cause blinding conditions and other secondary visual problems such as temporary afterimage or retinal burn. Reflectivity can create glint and glare which can cause a brief loss of vision.

In most airport locations, a simple remedy would be to consider location and panel direction to avoid glare for the aircraft. In the case of Fort Novosel's many airfields and stagefields, the size of the training area, and the lower altitude of helicopters while training, however, location and panel direction for one stagefield may impact another or impact the numerous flight paths between stagefields and remote training sites. Therefore, for Fort Novosel, the impact of solar farms must be resolved through restrictive use or alternative materials. As technologies and usage options increase for solar energy, such as transparent panels that can replace household windows, the impact on aviation should be constantly monitored.

Another source of light and glare that has an impact on pilots is glare from ground lights during nighttime flying. As reported in the 2009 Fort Rucker/Wiregrass Area Joint Land Use Study, light and glare from residential, commercial, or other sources, such as home security lighting or street lights, may disrupt night training at Fort Novosel and its outlying aviation facilities. This remains true today. The light disruption may be increased by glare with the use of night vision goggles in the training exercises. To date, there have been no attempts to curb lighting from development or to retrofit existing lighted facilities.

Nighttime lighting is also reported to be detrimental to wildlife and the ecosystem, human health and the climate. Plants and animals depend on Earth's daily cycle of light and dark to govern life-sustaining behaviors such as reproduction, nourishment, sleep, and protection from predators. There are a number of organizations that advocate for dark skies at night and have developed technologies to help reduce the impacts of nighttime lighting. One such resource is a light pollution map,

Figure 6.5: Light Pollution Map



Source: https://www.lightpollutionmap.info

such as that in Figure 6.6 that shows sky brightness. The central areas of Daleville, Dothan, Enterprise, Opp, and Ozark are brightest with the outlying areas merging together. As can be seen there is very little flight area that would be in a truly dark sky (shown in blue). Other resources include certification programs, alternative light devices and usage, and recommendations on light siting. For more information, visit darksky.org.

In Chapter 12 of the FAA Helicopter Flying Handbook, it is stated that "Confusion with ground lights occurs when a pilot mistakes ground lights for stars. The pilot can place the helicopter in an extremely dangerous flight attitude if he or she aligns it with the wrong lights." The handbook also cites examples of impacts of ground lights at night to include isolated ground lights may appear as stars and loss of depth perception because ground lights appear larger and closer than they actually are.

The ongoing economic growth and development of the Wiregrass area is likely to lead to even more light pollution that will have a negative impact on the USAACE aviation training program unless recommendations are implemented to minimize night lighting.

Light and Glare Recommendations and Strategies

Outcome
Army aviators are able to train with minimal impact from ground sources of light and glare.

Recommendation 30:
Build awareness of consequences of light and glare on Army aviators.

#	Strategy	Tool	Lead	Priority	Cost
30.1	Investigate the efficacy of public education in decreasing laser strikes in other locations.	Education and Public Awareness	USAACE	Immediate	$
30.2	If feasible, develop a public awareness campaign about the dangers and consequences of shining spotlights or lasers at helicopters.	Education and Public Awareness	USAACE	Immediate	$
30.3	Maintain up-to-date knowledge of FAA requirements for location of solar energy facilities and new technologies.	Education and Public Awareness	USAACE	Ongoing	$
30.4	Investigate requirements and potential for DarkSky certification.	Education and Public Awareness	Cities and Towns	Ongoing	$

Recommendation 31:
Consider adoption of light pollution ordinances by municipalities or incorporation of light pollution standards into existing zoning ordinances.

#	Strategy	Tool	Lead	Priority	Cost
31.1	Update municipal zoning ordinances to minimize light pollution through the use of dark sky friendly lighting.	Zoning	Cities and Towns	Low	$
31.2	In lieu of updating zoning ordinances, adopt a light pollution ordinance.	Ordinance	Cities and Towns	Low	$
31.3	Share sample ordinances or dark sky program with other local governments to encourage participation across the region.	Education and Public Awareness	SEARP&DC	Ongoing	$

Recommendation 32:
Advocate usage of lighting techniques that do not contribute to light pollution in new developments or through retrofitting existing development.

#	Strategy	Tool	Lead	Priority	Cost
32.1	Investigate partnership or liaison with Starry Skies South to identify methods of advocating for dark skies for Fort Novosel purposes.	Education and Public Awareness	USAACE	Ongoing	$
32.2	Inventory existing publicly-owned lighted areas and determine impact of retrofitting with dark sky friendly lighting.	Capital Improvements Program/Construction	Each City and Town	Low	$
32.3	Retrofit large facilities such as ballparks and industrial sites with dark sky friendly lighting.	Capital Improvements Program/Construction	Each City and Town	Low	$$
32.4	Encourage certified dark sky friendly lighting in all new development.	Land Use Regulations	Local Gov'ts.	Mod	$

6.2.11 Vertical Obstructions

There are numerous tall structures, such as water tanks, electrical transmission lines, broadcast towers and communication towers, around Fort Novosel facilities as seen in the assessment portion of this study. Most do not appear to be obstructions. The FAA requires that all such structure have markers and be lighted. As seen in Figure 6.7, transmission lines are most dense south of the Fort Novosel main installation between Enterprise and Dothan along US Highway 84. The location of the transmission lines coincides with the most densely developed part of the study area, with the exception of the City of Dothan. To the extent possible, vertical structures were noted on the assessment illustrative maps, not necessarily to mark them as obstructions but to bring awareness to their presence.

In February 2014, the Alabama Legislature passed Act 2014-13, known as the Military Land Use Planning Act. The act requires that municipalities give military installations, including Fort Novosel, a 30-day review and comment period for any proposed land use changes within a 2-mile radius of a facility and notice of any vertical structure with a height of more than 200 feet regardless of distance from the military installation and regardless of the location of municipal boundaries. Further, the location of any tall structure must first be approved by the FAA.

Unfortunately, the Military Land Use Planning Act only applies to municipalities regarding changes in land use since counties do not have planning authority. It is recommended that (1) Fort Novosel maintain a mapped inventory of all potential vertical obstructions and (2) Fort Novosel planning personnel develop a review and comment process/flowchart for enforcement of the Military Land Use Planning Act to be shared with local communities. As development pressures continue to increase to meet the economic and housing needs of the local communities, it is likely there will continue to be an increase in vertical structures. The existing protocol for FAA approval and Fort Novosel review and comment should be sufficient to minimize vertical obstructions if the procedures are followed. Therefore, it is also recommended that Fort Novosel formalize the review procedures and provide presentations to local city/town councils, planning commissions, and county commissions on the impact of vertical obstructions, as well as the protocol for Fort Novosel review and comment.

Vertical Obstructions Recommendations and Strategies

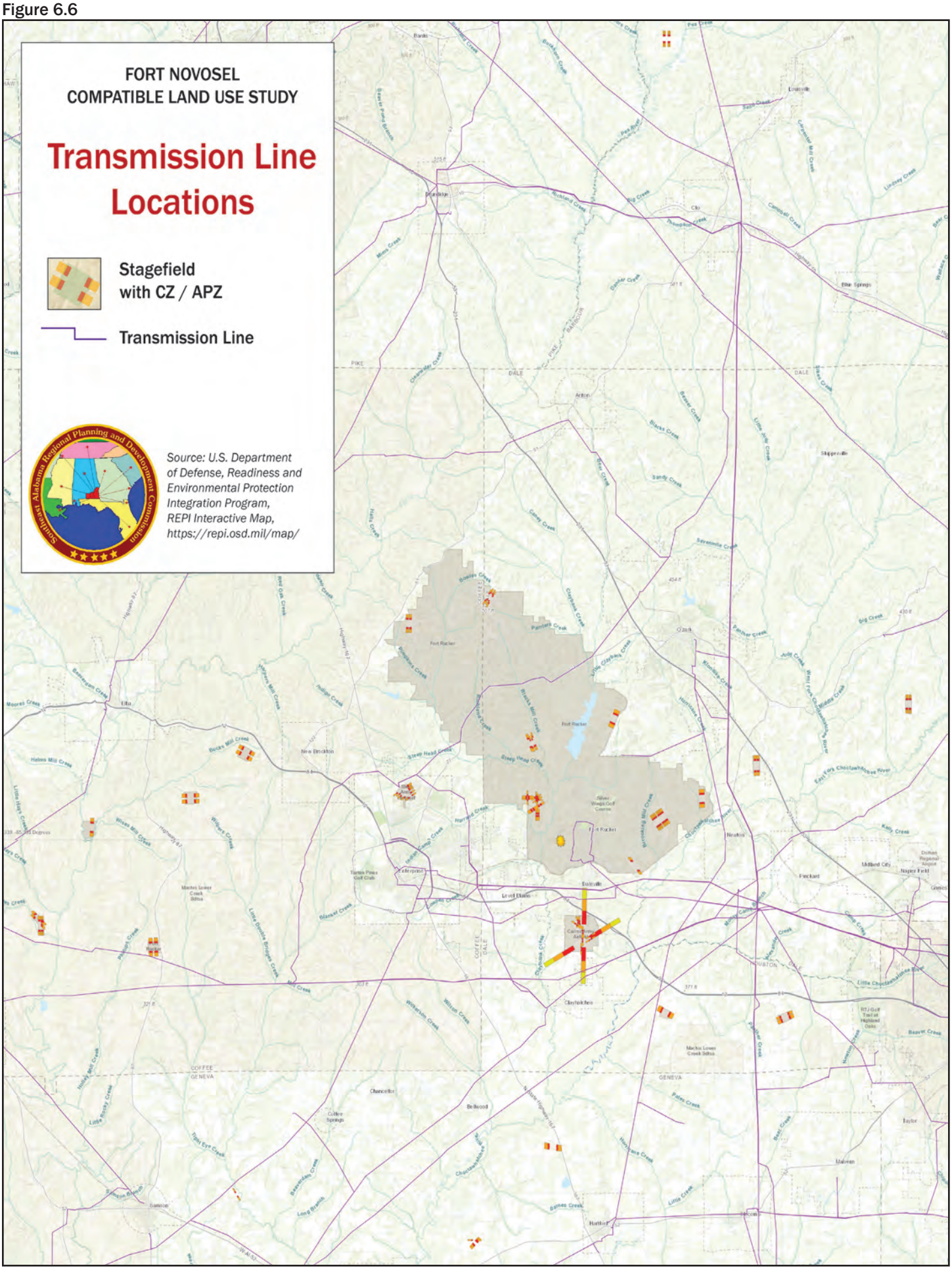
Outcome

A safe environment for flight training with minimal air space or vertical obstructions is intentionally created.

Recommendation 33:
Detail the process for enforcement of the Military Land Use Planning Act.

#	Strategy	Tool	Lead	Priority	Cost
33.1	Determine which division and position at Fort Novosel will be responsible for enforcement of the Military Land Use Planning Act.	Military Land Use Planning Act	Fort Novosel	Immediate	$
33.2	Outline a clear notification and review process for enforcement of the Military Land Use Planning Act with all local governments.	Military Land Use Planning Act, Communication	Fort Novosel	Immediate	$
33.3	Prepare presentation regarding implications of the Military Land Use Planning Act, including time frame for enforcement, and deliver to each local government, and planning commission, if applicable.	Education and Public Awareness	Fort Novosel	High	$
33.4	After initial enforcement of the Military Land Use Planning Act, review and refine process, as necessary, and notify local governments of any changes.	Military Land Use Planning Act, Communication	Fort Novosel	Moderate	$

Figure 6.6

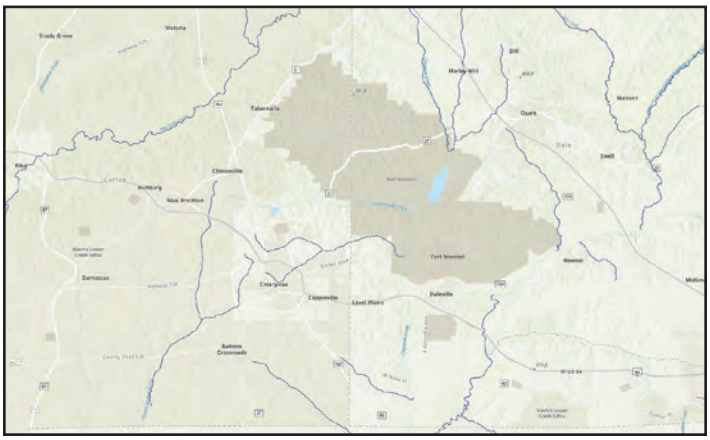

FORT NOVOSEL
COMPATIBLE LAND USE STUDY
Transmission Line Locations
Stagefield with CZ / APZ
Transmission Line
Source: U.S. Department of Defense, Readiness and Environmental Protection Integration Program, REPI Interactive Map, https://repi.osd.mil/map/

6.2.12 Vibration

It is not likely that the vibration caused by Fort Novosel training activities is going to be decreased at any point in the near future. Therefore, the best recommendation is to minimize the number of land uses that will be impacted and to build a foundational knowledge of what causes the vibration and where it occurs, allowing residents to make informed choices on housing locations. As with noise zones and no-drone areas, the best way to let the public know about the potential vibration impact is through public information and awareness. A portion of the public awareness effort could include signage that translates air activities to ground level to be seen by the existing and new residents.

Another result of vibration is the erosion and sedimentation caused by rotorwash as helicopters repeatedly take off and land in the same location. The run-off then flows into nearby creeks and streams. There are 43 impaired waterbodies in the Choctawhatchee River Basin, of which 39 are located in Barbour, Coffee, Dale, Geneva and Houston Counties. The Choctawhatchee River Basin includes the Choctawhatchee and Pea Rivers, along with numerous streams and creeks. Most sources cited are animal feeding operations, pasture grazing, sedimentation, urban runoff and atmospheric deposition. Fort Novosel operations, especially vibration, could be a contributing factor to sedimentation, urban runoff and atmospheric deposition.

Figure 6.7: Impaired Waterbodies



Source: Alabama Department of Environmental Management, 303(d) Information and Map. https://adem.alabama.gov/programs/water/303d.cnt

Vibration Recommendations and Strategies					
Outcome Impact of vibration from Fort Novosel training is minimized through shared knowledge of activities.					
Recommendation 34: **Minimize to the extent possible the impact of vibration on nearby properties through identification of potential locations and notification of anticipated impact.**					
#	**Strategy**	**Tool**	**Lead**	**Priority**	**Cost**
34.1	Identify locations where vibration is likely to have the most impact on existing development to include with emphasis on noise zone map in Strategy 2.1.	Noise Management Program	Fort Novosel	Moderate	$
34.2	Maintain a contact list of properties in anticipated vibration locations.	Noise Management Program	Fort Novosel	Ongoing	$
34.3	Develop a communication system with property owners in high vibration locations to keep them informed of anticipated vibration impact, particularly as new aircraft is brought online.	Communication, Noise Management Program	Fort Novosel	Ongoing	$
34.4	Continue to be responsive to complaints of undue vibration from property owners.	Noise Management Program	Fort Novosel	Ongoing	$
Recommendation 35: **Minimize impact of vibration on natural resources.**					
#	**Strategy**	**Tool**	**Lead**	**Priority**	**Cost**
35.1	Work with county offices of the Natural Resource and Conservation Service to examine and implement best methodologies to lessen impact of vibration on soil erosion around stagefields.	REPI, Fort Novosel Land Management	Fort Novosel	Moderate	$
35.2	Support Strategies 4.4 and 8.1 to develop an ACUB program around the north end of the Fort Novosel installation and in other areas as necessary to minimize impact of rotorwash.	ACUB, REPI, Fort Novosel Land Management	Fort Novosel	Moderate	$ - $$

6.3 Priority Strategy Summary

The implementation plan resulted in 35 recommendations with 94 individual strategies. Of the 94 strategies, ten strategies have a priority rating of immediate and 18 strategies have a high priority rating. Priority strategies are those that were rated as immediate or high priority and are listed in Figure 6.8. The highest priority strategies, those that are rated as immediate, are directed toward implementation of recommendations related to the following:

- establishing a land use task force,
- safety in stagefield clear zones and accident prone zones, system for information exchange,
- safety from laser strikes or spotlighting,
- awareness of the impact of light and glare, and implementation of the Military Land Use Planning Act.

Many of the strategies are interrelated are some are dependent upon another strategy being accomplished first. Therefore, those strategies that are rated as moderate or low are not so rated because they are unimportant but instead because the strategy is reliant on timing of another strategy.

In summary, all the strategies of the Fort Novosel Compatible Land Use Study can be truly categorized into the following four focus areas:

1. Safety,
2. Public Awareness, Information, Communication and Coordination,
3. Land Use Planning, and
4. Environmental Responsibility.

Figure 6.8

Priority Strategies

#	Strategy	Tool	Lead	Priority	Cost
1.2	Establish a representative land use task force to review land uses issues on a case-by-case basis and advocate for community resolution.	Education and Awareness	SEARP&DC	Immediate	**$**
9.1	Purchase properties in clear zones that extend beyond stagefield boundaries at Cairns Airfield.	Fee Simple Acquisition	Fort Novosel	Immediate	**$$$**
9.2	Protect properties in accident potential zones at Allen, Brown, Goldberg, Highbluff, Highfalls, Hunt, Lucas, Molinelli, Runkle, Skelly, Stinson, Tabernacle and Toth Stagefields, and at Cairns, Knox, and Shell Airfields.	Conservation Easement, Avigation Easement, or Purchase of Development Rights	Fort Novosel	Immediate	**$ - $$$**
13.1	Designate a single contact for the review of all new development.	Military Land Use Planning Act, MOU	Fort Novosel	Immediate	**$**
13.2	In the enforcement of the Military Land Use Planning Act, develop a clear flow chart for review process by Fort Novosel, including contact information.	Military Land Use Planning Act, MOU	Fort Novosel	Immediate	$
14.1	Work with USAACE programs to determine the best way to address public knowledge of dangers associated with intervention of Fort Novosel training operations, such as laser strikes or other obstructions (30.1)	Education and Public Awareness	Public Awareness Task Force	Immediate	**$**
30.1	Investigate the efficacy of public education in decreasing laser strikes in other locations.	Education and Public Awareness	USAACE	Immediate	**$**
30.2	If feasible, develop a public awareness campaign about the dangers and consequences of shining spotlights or lasers at helicopters.	Education and Public Awareness	USAACE	Immediate	**$**
33.1	Determine which division and position at Fort Novosel will be responsible for enforcement of the Military Land Use Planning Act.	Military Land Use Planning Act	Fort Novosel	Immediate	**$**
33.2	Outline a clear notification and review process for enforcement of the Military Land Use Planning Act with all local governments.	Military Land Use Planning Act, Communication	Fort Novosel	Immediate	**$**

Figure 6.8, continued

Priority Strategies					
#	Strategy	Tool	Lead	Priority	Cost
3.1	Appoint a Fort Novosel representative as a member of local planning commissions.	Comprehensive Planning	Local Governments	High	**$**
3.2	A Fort Novosel representative should attend all planning commission meetings and public hearings for each municipality in study area.	Comprehensive Planning and Zoning	Fort Novosel	High	**$**
3.3	Monitor land use development within 2-mile buffer of installation and all stagefields.	Military Land Use Planning Act	Fort Novosel	High	**$**
5.2	Retrofit for sound insulation or relocate Immanuel Child Development Center #2 from its location on Andrews Avenue in the Hooper Stagefield Noise Zone II, or obtain a liability waiver.	Noise Management Program	Fort Novosel, City of Ozark	High	**$$$**
8.1	Support potential ACUB program around the north end of the Fort Novosel installation.	ACUB	Land Use Task Force	High	$
8.2	Enforce Military Land Use Planning Act within two miles of all Fort Novosel facilities. (protect buffer areas)	Military Land Use Planning Act	Fort Novosel	High	**$**
10.1	Enforce Military Land Use Planning Act within two miles of all Fort Novosel facilities. (limit development in accident prone zones)	Military Land Use Planning Act	Fort Novosel	High	**$**
11.1	Seek legal counsel on implementation of county airport zoning legislation to clarify when and how it is applicable.	Education and Public Awareness	Fort Novosel	High	**$**
12.2	Work with Land Use Task Force to create and publish user-friendly detailed maps of Fort Novosel noise zones with surrounding land uses. (2.1)	Education and Public Awareness	Public Awareness Task Force	High	**$**
12.3	Work with Land Use Task Force to create an education and awareness strategy to recognize the importance to Fort Novosel to the Wiregrass region. (2.2)	Education and Public Awareness	Public Awareness Task Force	High	**$**
20.1	Share regional land use plan with local utility providers in an effort to minimize spread of infrastructural facilities into areas that are incompatible with Fort Novosel training operations.	Planning	Land Use Task Force	High	$
21.1	As Fort Novosel plans for future operational growth and expansion, monitor contractors with privatized infrastructure to ensure that adequate facilities are available to support growth.	Communications	Fort Novosel	High	$
21.2	Make any infrastructural needs known to contractors and local providers well in advance of expansion dates.	Communications	Fort Novosel	High	$
23.1	Conduct an inventory and map all infrastructure hazards and obstructions to share with local providers and communities.	Planning	Fort Novosel	High	$
28.1	Seek Attorney General's opinion on use of County Airport Zoning legislation for military installations.	Zoning	Alabama Military Stability Foundation	High	$
28.2	Seek Attorney General's opinion on definition on airport, and if stagefields will qualify.	Zoning	Alabama Military Stability Foundation	High	$
28.3	Seek Attorney General's opinion that if county airport zoning can be enforced on behalf of stagefields, does it have to be enforced on all stagefields in the county?	Zoning	Alabama Military Stability Foundation	High	$
33.3	Prepare presentation regarding implications of the Military Land Use Planning Act, including time frame for enforcement, and deliver to each local government, and planning commission, if applicable.	Education and Public Awareness	Fort Novosel	High	$

FORT NOVOSEL COMPATIBLE LAND USE STUDY APPENDICES 2023

A.1: NOTES AND REFERENCES

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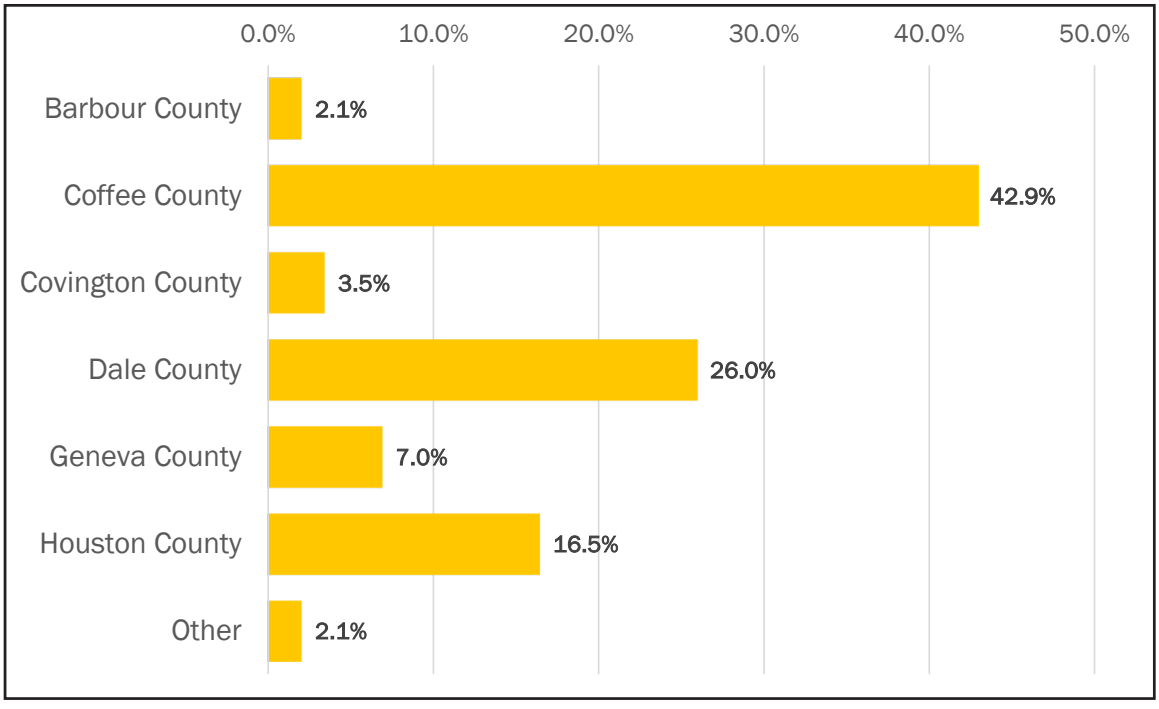
A.2: PUBLIC SURVEY RESULTS

To gather input from persons not serving on the Fort Novosel Compatible Land Use Study (CLUS) Committee, a public survey was conducted over a two-week period from Monday, June 26, 2023 through Monday, July 10, 2023, between the third and fourth committee meetings. The public survey was a brief (5-minute response time), non-scientific tool used to take the pulse of the general public about life with Fort Novosel. The survey was distributed by the CLUS Committee through emails and texts and posting on websites and social media. The public survey, which garnered 434 responses, was posted on the Southeast Alabama Regional Planning & Development Commission website, and a link to the survey was shared by the Dothan Eagle, the Enterprise Ledger, WDHN News, and WTVY News and on the following Facebook pages:

- Daleville Area Chamber of Commerce
- Dale County Commission
- Dale County Happenings
- City of Enterprise
- Ozark-Dale County Economic Development Corporation
- SEARP&DC
- USAACE and Fort Novosel

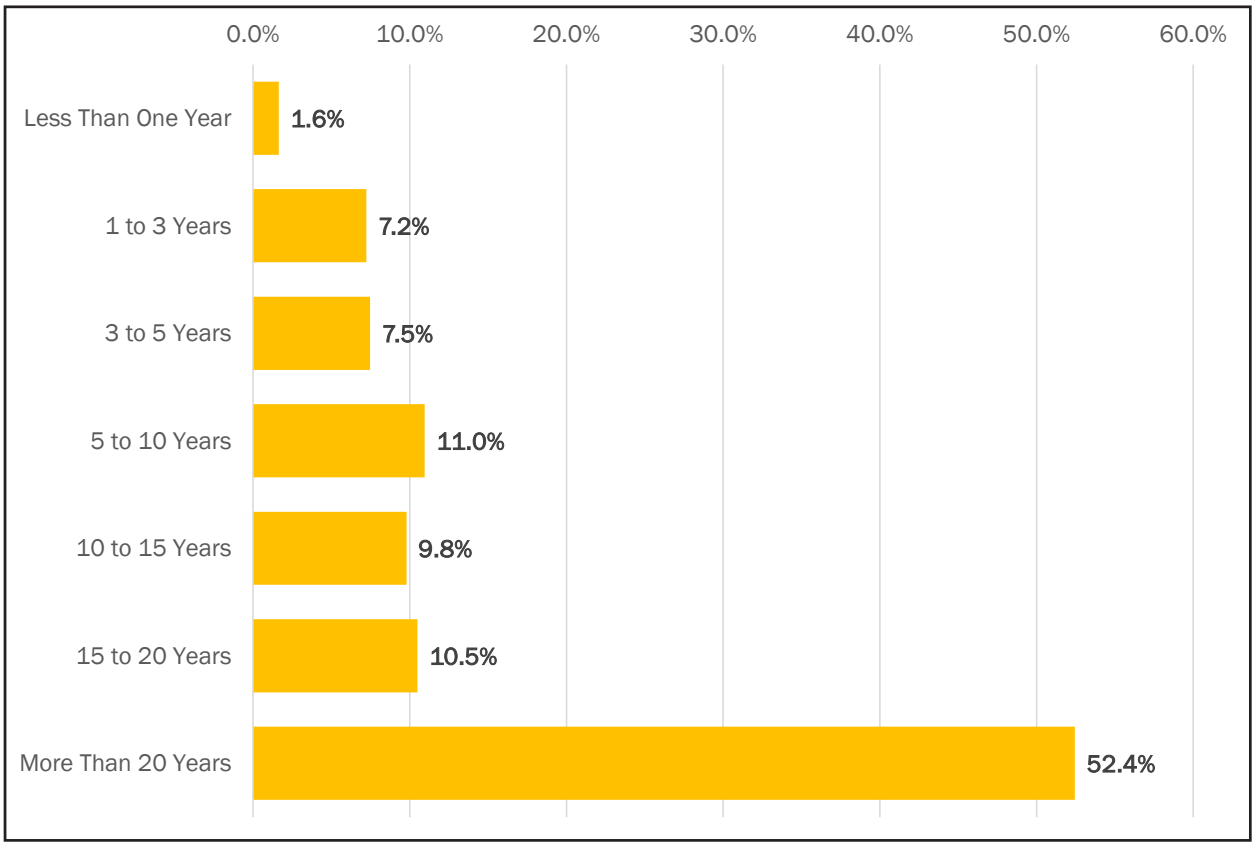
Q1. In what county do you live?



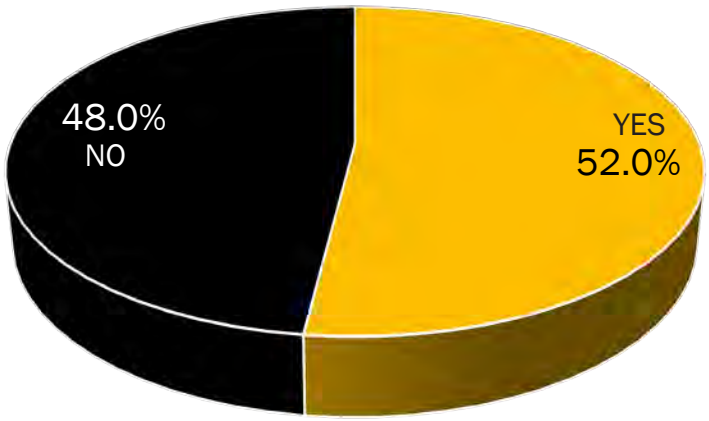
Other Responses:

- I own property in Geneva County. However, I do not live in Geneva County
- Henry
- Henry
- Pike
- Henry
- Fort Novosel
- Pike County on the edge of Coffee & Dale Counties
- Henry
- With land also in Dale County

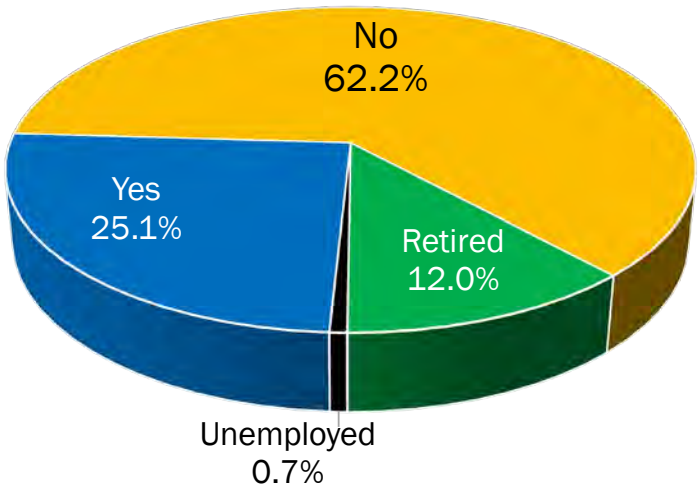
Q2. How many years have you lived in your home county?
429 Responses



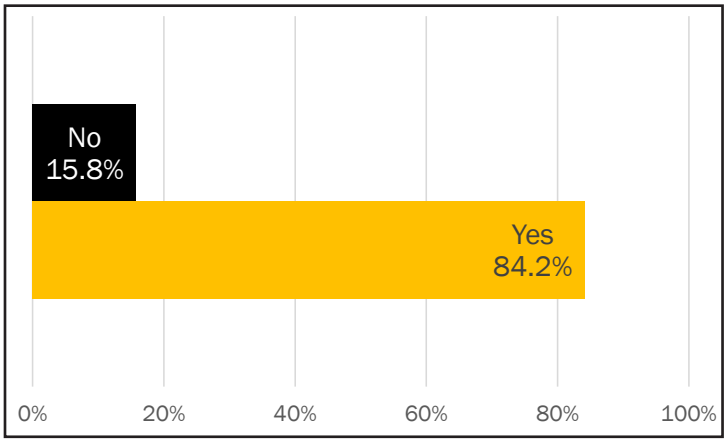
Q3. Are you currently serving or have your previously served in the military; are you a veteran; or are you a military dependent?
429 Responses



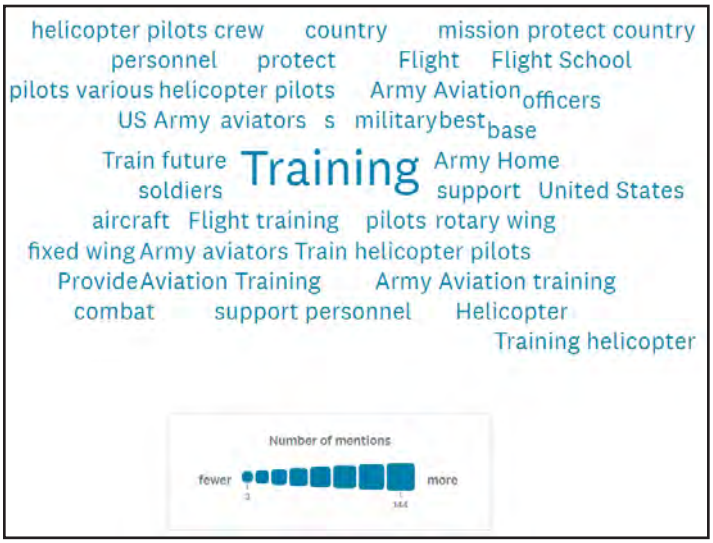
Q4. Do you work on Fort Novosel or for a Fort Novosel contractor?
426 Responses



Q5. Are you fully aware of the mission and training activities that take place on Fort Novosel? What do you perceive to be the primary mission of Fort Novosel?
429 Responses

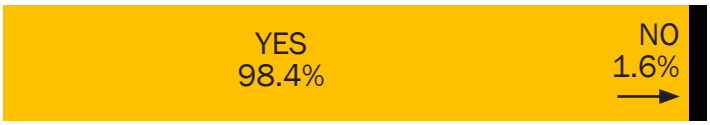


Mission Awareness



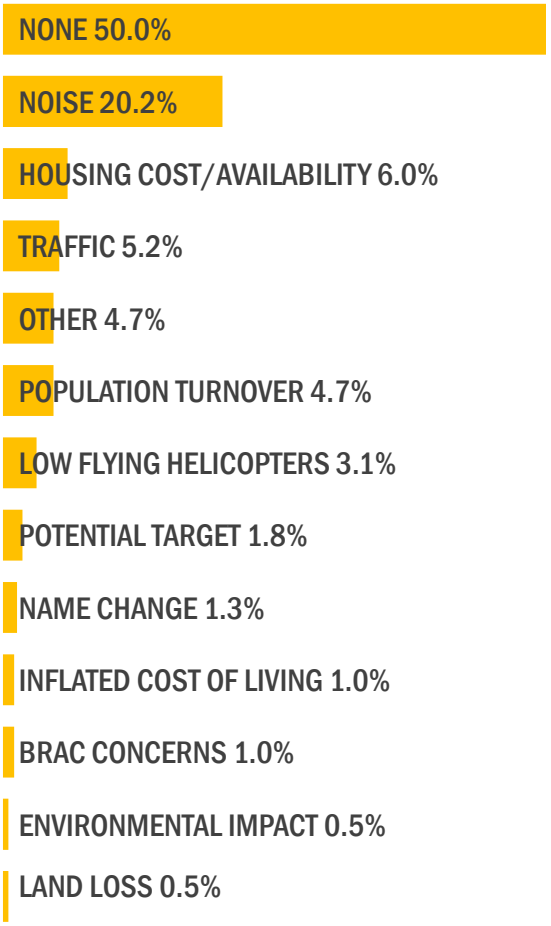
Perceived Mission of Fort Novosel

Q6. Do you feel that the presence of Fort Novosel is an economic benefit to the Wiregrass Region?
429 Responses

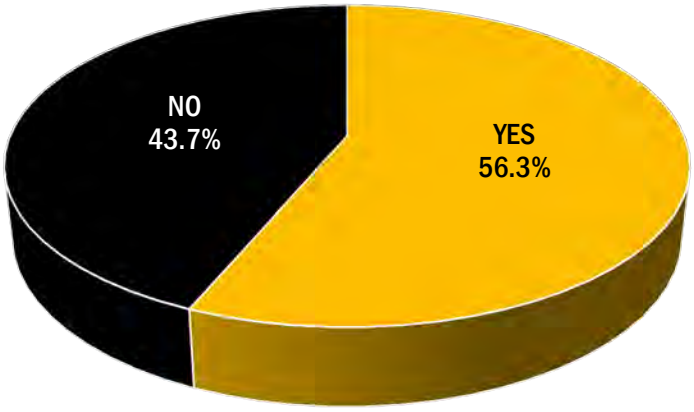


Q7. What do you think is the greatest benefit of having Fort Novosel in the area?
413 Responses

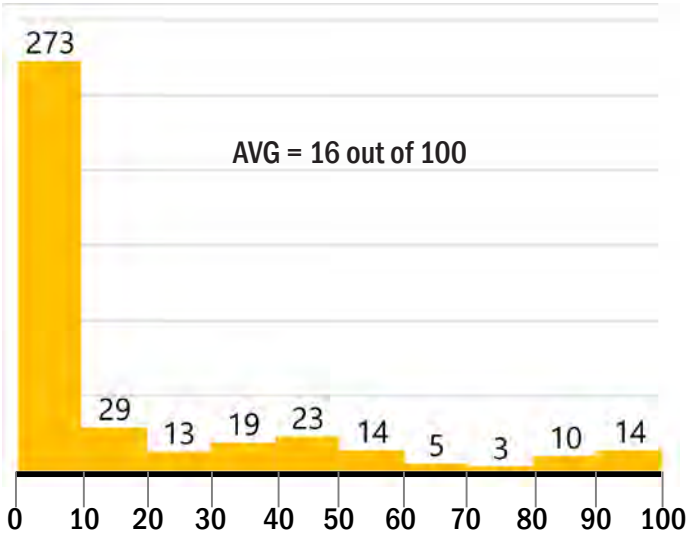
Q8. What do you think is the worst impact that comes from having Fort Novosel in the area?
386 Responses



Q9. Do you live within three miles of Fort Novosel or any of its airfields or stagefields?
426 Responses



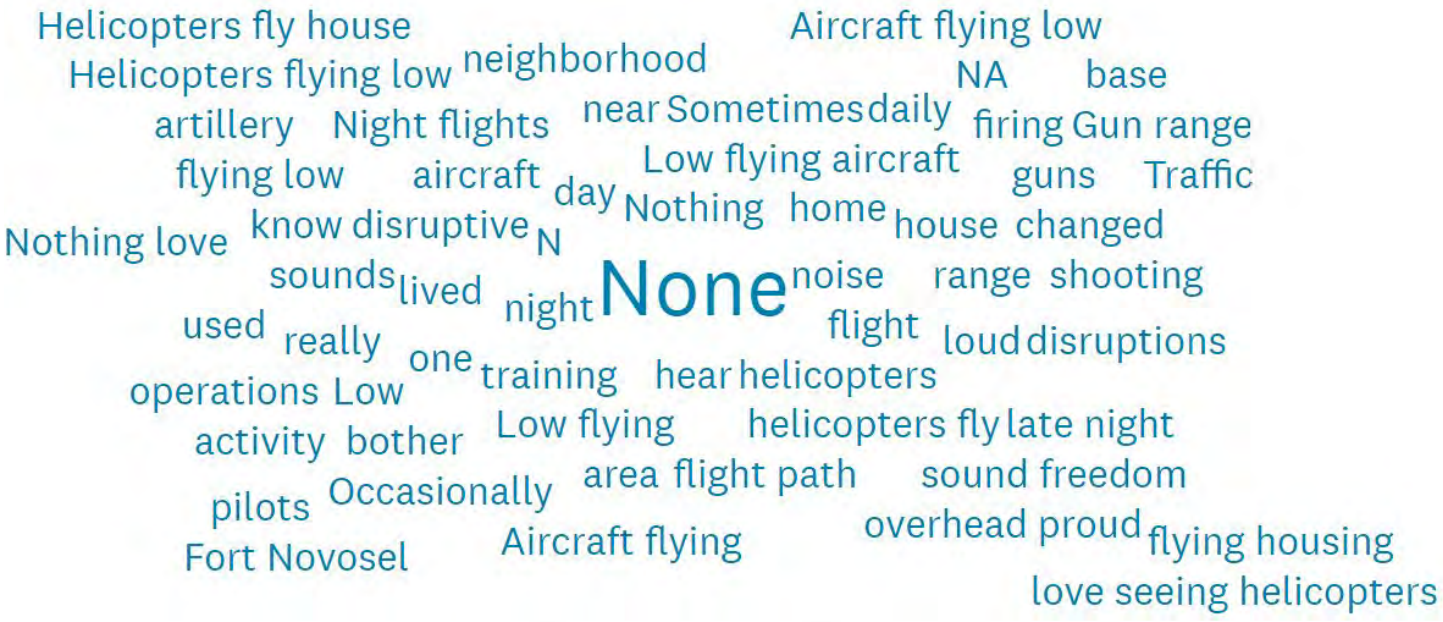
Q10. Have you ever been disturbed by the mission, operations and training exercises that take place on Fort Novosel and in the surrounding area? If so, please use the slider bar below to indicate to what extent Fort Novosel activities disrupt your daily life?
403 Responses

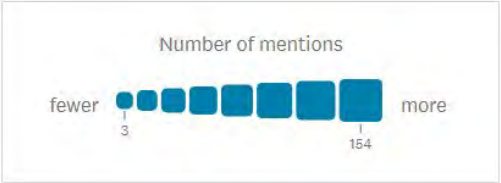


Q11. Have you ever been disturbed by the mission, operations and training exercises that take place on Fort Novosel and in the surrounding area? If so, please use the slider bar below to indicate to what extent Fort Novosel activities disrupt your daily life?
406 Responses

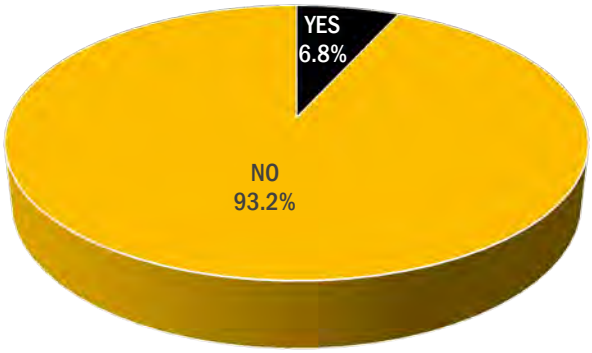
TOP RESPONSES

- 42.9% = NONE
- Helicopter Noise
- Artillery Noise
- Low Flying Helicopters
- Low Night Flights



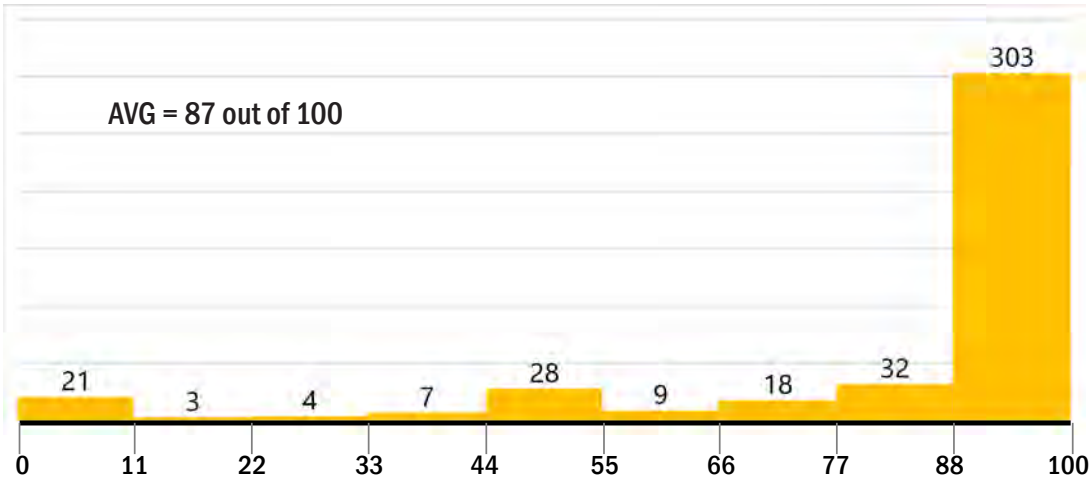


Q12. Do you feel that Fort Novosel presents a safety issue to you and your family? If so, why?
406 Responses

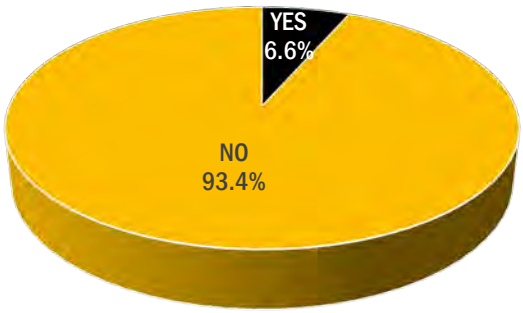


REPSONSES
Aircraft Accidents (9)
Terrorist Target (8)
Environmental Impact (3)
Firearms Not Allowed on Post (2)
Noise (2)
Other (2)

Q13. Would you support continued growth and expansion of Fort Novosel? Use the slider bar below to indicate the level of your support.
406 Responses

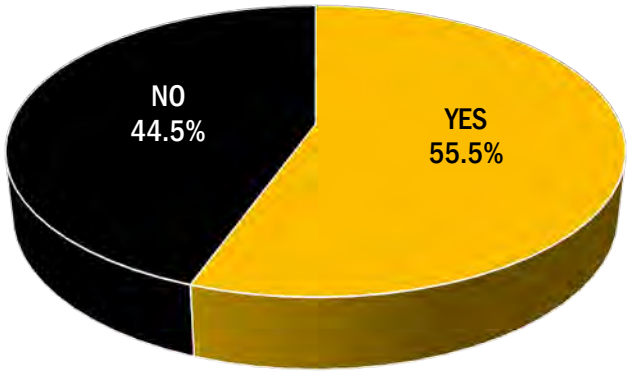


Q14. Do you know of any incompatible land uses surrounding Fort Novosel or its airfields and stage fields? If yes, please explain.
425 Responses



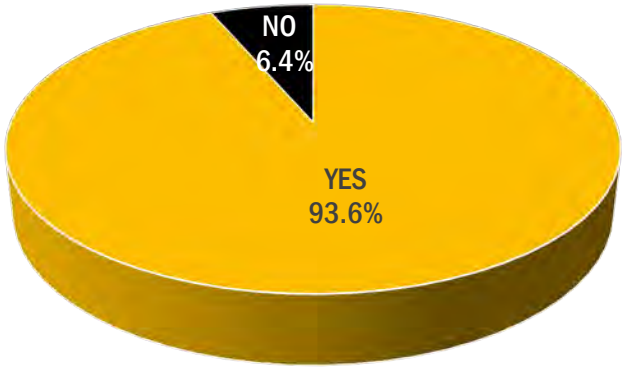
- Airfields or artillery sites to close to neighborhoods or farms
- Fellow landowners lease out their land to Ft Novosel to use as RTs, but also as hunting and numerous other things.
- Incident of unexploded ordinance found on fairways of Silver Wings Golf Course. Where else have impact areas been located and abandoned, or been reutilized for other purposes ?
- Raising livestock; They have stampeded our cattle on several occasions.
- Residential construction
- Government declared “Eminent Domain” and took private citizens’ land away from them to develop Fort Rucker and new stagefield(s) with the last 2-3 decades.
- Alabama is a timber producing State and the helicopters should not be allowed to damage stands of timber by hovering over them.
- Subdivision growth around Faulkner entry
- Molenelli firing range is too close to city limits.
- The impact on the land around Fort Novosel is minimal and any issues that arise seem to be addressed as needed on an ad hoc basis.
- Development around Cairns and Shell.
- Industry requiring significantly tall structures.
- Aircraft sometimes appear to disregard no fly zones in areas around Shell Field.

Q15. Do you think local governments should regulate how land around Fort Novosel is developed?
418 Responses



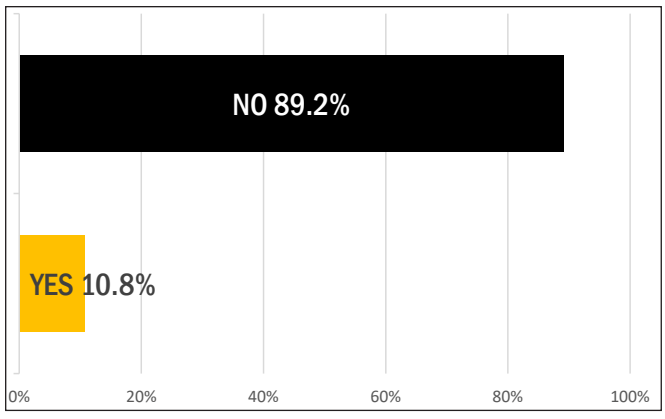
I feel that when land is expanded for the use of the military, the local government entities should not regulate, but be considered in this matter. Working together with the local community, great things can happen for everyone involved. I live in Rehobeth and our community supports Fort Novosel. However, I would love to see a Auxiliary Clinic/Pharmacy be considered for our town. This would help with the impact of having so many older members from having to drive that far. I know that our Town of Rehobeth would love to have y'all in our town.

Q16. Do you feel that the local governments in the Wiregrass Region adequately support Fort Novosel?
419 Responses



- The local governments have been begged to support military families and children and have consistently denied support. They value their local citizens over military families and allow our children and families to be harmed because they are outsiders. The local politicians support the schools stripping academic achievements from military students to give priority to local students; they support military students not being allowed to tryout or participate in sports to give benefit to the local children; and they don't support zoning and stopping military children from forced rezoning the way other states already do by protecting military children. The local politicians are corrupt and only benefit from local business staying local.
- I have heard numerous stories about discrimination at local schools.
- I feel that local governments adequately support Fort Novosel, but my concern is local governments adequately serving the needs of Wiregrass citizens.
- It seems to me that local government and Army personnel work well together to handle most problems
- I am not aware of any Wiregrass region that does not support and appreciate Ft Novosel.
- Certain communities support Novosel better than others.
- They have made strong coalition efforts to prevent a closure each time there has been a potential threat.
- Because they realize that without the base this area would dry up. Plus, many local government officials are retired military.
- In spirit for sure, but I'm not aware of actual laws that help Fort Novosel curb encroachment

Q17. Are you interested in learning more about how you might use your property for conservation purposes? If yes, please provide your name, phone number and/or email address below.
416 Responses



Survey resulted in 52 new contacts

A.3: LAND USE COMPATIBILITY TABLES

The following tables for recommended land use compatibility are derived from the Department of Defense Instruction 4165.57: Air Installations Compatible Use Zones (*https://oldcc.gov/resource/department-defense-instruction-416557-air-installations-compatible-use-zones-aicuz*), which became effective on December 13, 2021 and replaced the May 2, 2011 DOD Instruction 4165.57. The purpose of this directive is that in accordance with DOD Directive 5135.02, this issuance:

- Establishes policy, assigns responsibilities, and prescribes procedures for the DoD Air Installations Compatible Use Zones (AICUZ) program for air installations.
- Establishes policy and assigns responsibilities for educating air installation personnel and engaging local communities on issues related to noise, safety, and compatible land use in and around air installations.

A.3.a Recommended Land Use Compatibility in Accident Potential Zones (APZs)

Table 1 provides compatibility recommendations based on historic aircraft mishap locations on or near air installations. The primary land use objective is to discourage land uses involving substantial human presence in areas of high accident potential. While Table 1 uses the standard land use coding manual (SLUCM) categories for organization, it varies from SLUCM as the coding system does not differentiate based on population density. Some uses warrant additional evaluation due to variations in intermittent concentrations of people (e.g. crowds at a sporting event), intensity of use, or other characteristics that could impact safety of flight. Table 1 includes floor area ratio (FAR) recommendations to guide suggested maximum density for non-residential uses. General notes and specific footnotes at the end of Table 1 provide additional information and compatibility considerations. These recommendations are intended to support compatible land use planning both on and off base; they do not constitute a Federal determination that any use of land is acceptable or unacceptable under local zoning.

Table 1: Land Use Compatibility in APZs

Land Use Name and SLUCM Category	Clear Zone	APZ-I	APZ-II	Maximum Density
Residential use group (SLUCM Category 10)				
Residential uses, inclusive of all residential units i.e., any type of single or multiple dwelling units	N	N	Y1,2	Maximum density of 2 dwelling units per acre
Mobile home parks or courts	N	N	N	
Transient lodgings	N	N	N	
Manufacturing use group (SLUCM Categories 20 and 30)				
Food and kindred products; textile mill products; manufacturing; stone, clay, glass, primary metal and fabricated metal products; manufacturing	N	N	Y	Max FAR 0.56 in APZ II
Fabric products; leather and similar materials; chemicals and allied products; petroleum refining and related industries; rubber and miscellaneous plastic products; manufacturing; precision manufacturing	N	N	N	

Land Use Name and SLUCM Category	Clear Zone	APZ-I	APZ-II	Maximum Density
Lumber and wood products; manufacturing furniture and fixtures; paper and allied products; printing, publishing, and allied industries; miscellaneous manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I and 0.56 in APZ II
Transportation, communication, and utilities use group (SLUCM Category 40)				
Rail, motor vehicle, aircraft, marine etc. transportation, highway and street right-of-way, automobile parking, and utilities, telephone, cellular and radio communication	N3	Y4	Y	Maximum FAR of 0.28 in APZ I and 0.56 in APZ II
Solid waste disposal (e.g., landfills, incinerators.)	N	N	N	
Land use Name and SLUCM Category	Clear Zone	APZ-I	APZ-II	Maximum Density
Trade use group (SLUCM Category 50)				
Wholesale trade	N	Y	Y	Maximum FAR of 0.28 in APZ I and .56 in APZ II
Retail trade – building materials	N	Y	Y	Maximum FAR of 0.20 in APZ-I and 0.40 in APZ-II
Retail trade – hardware, paint, and farm equipment stores	N	Y	Y	Maximum FAR of 0.14 in APZ I and 0.28 in APZ II
Retail trade – including neighborhood centric shops	N	N	Y	Maximum FAR of 0.16 in APZ II
Mass retailing, super stores, strip malls, shopping centers5, discount clubs, home improvement stores, eating and drinking establishments, etc.	N	N	N	
"Retail trade – food such as groceries, bakeries, confectionaries, meat markets, and fast food establishments"	N	N	Y	Maximum FAR of 0.24 in APZ II
Retail trade – automotive, marine craft, aircraft, and accessories	N	Y	Y	Maximum FAR of 0.14 in APZ I and 0.28 in APZ II
Retail trade – apparel and accessories, furniture, home, furnishings and equipment	N	N	Y	Maximum FAR of 0.28 in APZ II
Other retail trade	N	N	Y	Maximum FAR of 0.16 in APZ II
Services use group (SLUCM Category 60)				
Finance, insurance, real estate, personal, professional and miscellaneous services (office uses only)	N	N	Y	Maximum FAR of 0.22 in APZ II
Cemeteries	N	Y6	Y6	
Warehousing and storage services	N	Y	Y	Maximum FAR of 1.0 in APZ I; 2.0 in APZ II
Repair services and contract construction	N	Y	Y	Maximum FAR of 0.11 APZ I; 0.22 in APZ II
"Hospitals, nursing homes, and other medical facilities; educational services, childcare services, child development centers, and nurseries"	N	N	N	
Government services	N	N	Y	Maximum FAR of 0.24 in APZ II
Cultural, entertainment, and recreational use group (SLUCM Category 70)				
Nature exhibits	N	Y7	Y7	
"Cultural activities, auditoriums, concert halls, places of worship; outdoor music shells, museums, outdoor displays, amphitheaters, sports arenas, spectator sports, resorts and group camps, or other places of assembly"	N	N	N	
Amusements (e.g., fairgrounds, miniature golf, driving ranges; amusement parks.)	N	N	Y11	50 people per acre

Land Use Name and SLUCM Category	Clear Zone	APZ-I	APZ-II	Maximum Density
Recreational activities (including golf courses, riding stables, water recreation), parks	N	Y7	Y7	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II
Land use Name and SLUCM Category	Clear Zone	APZ-I		Maximum Density
Other cultural, entertainment and recreation	N	Y6		
Resource production and extraction use group (SLUCM Category 80)				
Agriculture and livestock farming, including grazing and feedlots	Y8	Y8		
Agriculture related activities	N	Y		Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Forestry activities9	N	Y		Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Fishing activities	N10	Y		Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Mining activities	N	Y		Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Other resource production or extraction	N	Y		Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Other use group (SLUCM Category 90)				
Undeveloped land	Y	Y		
Water areas	N	N		

Key to Table 1 – Land use compatibility in APZs

Land use recommendations:

Y (Yes) Land use and related structures compatible without restrictions.

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

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

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

Notes for Table 1 – Land Use Compatibility in APZs

General notes for all uses:

a. The suggested maximum occupancy for commercial, service, or industrial buildings or structures in APZ I is 25 people per acre, and 50 people per acre in APZ II. Outside events should normally be limited to assemblies of not more than 25 people an acre in APZ I, and maximum assemblies of 50 people an acre in APZ II.

b. Recommended FARs are calculated using standard parking generation rates for various land uses, vehicle occupancy rates, and desired density in APZ I or II. For APZ I, the formula is FAR equals 25 people an acre divided by (Average vehicle occupancy times Average parking rate times (43560÷1000)). The formula for APZ II is FAR equals 50 divided by (Average vehicle occupancy times Average parking rate times (43560÷1000)).

c. No structures (except airfield lighting and navigational aids necessary for the safe operation of the airfield when there are no other siting options), buildings, or above ground utility and communications lines should normally be located in clear zone areas on or off the air installation. For pilot and public safety, the clear zone is subject to the most severe restrictions.

d. Safety of flight should be considered when evaluating development that includes explosive potential; generates smoke, steam, or dust; creates electronic interference; lighting or glare; or tall structures.

e. Development of renewable energy resources, including solar and geothermal facilities and wind turbines, may impact military operations through hazards to flight or electromagnetic interference. Each new development should be analyzed for compatibility on a case-by-case basis that considers both the proposal and potentially affected mission.

f. Water features and other activities that may present bird or wildlife aircraft strike hazards, or activities that produce dust or light emissions that could affect pilot vision are generally not compatible and should be evaluated on a case-by-case basis.

g. Evaluation of potential land management actions occurring on public and private lands, such as prescribed burns, should identify the hazard (e.g., visual impairment) to aircraft flight safety and de-conflict operations occurring at the base (e.g.,

scheduled exercises and training requirements).

h. This compatibility table identifies places of worship or tribal ceremonies as a cultural gathering. However, religious institutions provide a wide variety of services and in these instances refer to the applicable category.

Footnotes for Table 1 – Land Use Compatibility in APZs

Footnotes specific to certain land uses:

1. The suggested maximum density for detached single-family housing is two dwelling units per acre to encourage retention of farming and open space.
2. Where a parcel is partially located in an APZ II, clustered development is encouraged on the portion outside the APZ while maximizing open space within the APZ.
3. All roads within the clear zone are discouraged, but if required, they should not be wider than two lanes and the rights-of-way should be fenced (i.e., frangible) and not include sidewalks or bicycle trails. Nothing associated with these roads should violate obstacle clearance criteria.
4. Above ground passenger terminals and above ground power transmission or distribution lines are not recommended. Prohibited power lines include high-voltage transmission lines and distribution lines that provide power to cities, towns, or regional power for unincorporated areas.
5. A shopping center is an integrated group of commercial establishments that is a planned, developed, owned, or managed as a unit. Shopping center types include strip, neighborhood, community, regional, and super-regional facilities anchored by small businesses, a supermarket or drug store, discount retailer, department store, or several department stores, respectively. The maximum recommended FAR should be applied to the gross leasable area of the shopping center.
6. Land uses in the APZs should be passive open space; ancillary places of public assembly are not recommended.
7. Low occupancy facilities are compatible with these uses; however, playgrounds and marinas are not recommended.
8. Activities that attract concentrations of birds creating a hazard to aircraft operations are not compatible.
9. Lumber and timber products removed due to establishment, expansion, or maintenance of clear zone lands owned in fee will be disposed of in accordance with applicable DoD guidance.
10. Controlled hunting and fishing may occur for the purpose of wildlife management.
11. Amusement centers, family entertainment centers or amusement parks designed or operated at a scale that could attract or result in concentrations of people, including employees and visitors, greater than 50 people per acre at any given time are incompatible in APZ II. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.
12. “Eating and drinking establishments” are distinguished from retail trade or fast food based on the predominant purpose of the restaurant to provide food and beverage to persons seated on premises. This includes cafes, tea rooms, and outdoor cafes that involve low customer turnover and greater numbers of people dining on-site. Restaurants with drive-through service that offer quick, “fast-food” service, often accomplished by a limited menu of already prepared items and that have typically high customer turnover and lower numbers of customers dining on-site fall within the retail trade or fast food category.

A.3.a Recommended Land Use Compatibility in Accident Potential Zones (APZs)

Table 2 provides compatibility recommendations based on yearly DNL or CNEL on and around air installations. The primary land use objective is to discourage noise-sensitive land uses in areas of higher noise exposure. Table 2 is organized based on SLUCM categories; however, it varies from SLUCM as the coding system does not differentiate based on noise-sensitivity. Some uses warrant additional evaluation due to potential for annoyance and activity interference. General notes and specific footnotes at the end of Table 2 provide additional information and considerations for compatibility determinations. These recommendations are intended to support compatible land use planning both on- and off-base; they do not constitute a Federal determination that any use of land is acceptable or unacceptable in accordance with local zoning.

Table 2: Land Use Compatibility in Aircraft Noise Zones

Land Use Name and SLUCM Category	A-weighted DNL/CNEL levels					
	<65 decibel (dB)	65-70 dB	70-75 dB	75-80 dB	80-85 dB	85 dB
Residential use group (SLUCM Category 10)						
Residential uses, inclusive of all residential units (i.e. any type of single or multiple dwelling units).	Y	N1	N1	N	N	N
Mobile home parks or courts	Y	N	N	N	N	N
Transient lodgings	Y	N1	N1	N1	N	N
Manufacturing use group (SLUCM Categories 20 and 30)						
Manufacturing and industrial uses	Y	Y	Y2	Y3	Y4	N
Precision manufacturing	Y	Y	Y2	Y3	N	N
Transportation, communication and utilities use group (SLUCM Category 40)						
Rail, motor vehicle, aircraft, marine, and other transportation, and communication systems and utilities	Y	Y	Y2	Y 3	Y4	N
Highway and street right-of-way, automobile parking	Y	Y	Y	Y	Y	N
Telephone, cellular and radio communication	Y	Y	Y2	Y 3	N	N
Trade use group (SLUCM Category 50)						
Wholesale trade	Y	Y	Y2	Y3	Y4	N
Building materials, hardware and farm equipment sales	Y	Y	Y2	Y3	Y4	N
Mass retailing, super stores, strip malls, shopping centers, discount clubs, home improvement stores, eating and drinking establishments, etc.	Y	Y	Y2	Y3	N	N
Services use group (SLUCM Category 60)						
Finance, insurance and real estate, personal, professional and miscellaneous services; religious activities	Y	Y	Y2	Y3	N	N
Cemeteries	Y	Y	Y2	Y3	Y4	Y5
Warehousing or storage and repair services	Y	Y	Y2	Y3	Y4	N
Hospitals or medical, child care and development services, educational facilities	Y	Y2	Y3	N	N	N
Nursing homes	Y	N1	N1	N	N	N
Governmental	Y	Y	Y2	Y3	N	N

Land Use Name and SLUCM Category	A-weighted DNL/CNEL levels					
	<65 decibel (dB)	65-70 dB	70-75 dB	75-80 dB	80-85 dB	85 dB
Cultural, entertainment, and recreational use group (SLUCM Category 70)						
Cultural activities, auditoriums and concert halls	Y	Y2	Y3	N	N	N
Nature exhibits	Y	Y	N	N	N	N
Public assembly	Y	Y	N	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Outdoor sports arenas, spectator sports	Y	Y6	Y6	N	N	N
Amusements	Y	Y	Y	N	N	N
Outdoor recreational activities	Y	Y	Y2	Y3	N	N
Resorts, camps, parks and other cultural, entertainment, and recreational activities	Y	Y	Y2	N	N	N
Resource production and extraction use group (SLUCM Category 80)						
Agriculture and forestry	Y	Y7	Y8	Y9	Y9	Y9
Livestock farming, animal breeding	Y	Y7	Y8	N	N	N
Fishing, mining, and other resource production or extraction	Y	Y	Y	Y	Y	Y

Key to Table 2 – Land Use Compatibility in Aircraft Noise Zones

Land use recommendations:

Y (Yes) Land use and related structures compatible without restrictions.

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

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

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

Notes for Table 2 – Land Use Compatibility in Aircraft Noise Zones

General notes for all uses:

a. The suggested maximum occupancy for commercial, service, or industrial buildings or structures in APZ I is 25 people per acre, and 50 people per acre in APZ II. Outside events should normally be limited to assemblies of not more than 25 people an acre in APZ I, and maximum assemblies of 50 people an acre in APZ II.

a. Compatibility designations in Table 2 generally refer to the principal use of the site. If other uses with greater sensitivity to noise are proposed, a determination of compatibility should be based on that use which is most adversely affected by noise and its contribution to the successful use of the property.

b. Where a proposed development falls within two DNL or CNEL noise zones, the land use recommendations of the higher noise zone should be used. For example, if a proposed development is exposed to 70 dB DNL or CNEL, land use recommendations for the 70-75 dB DNL or CNEL noise zone should be applied.

c. When appropriate, noise level reduction (NLR) may be necessary to achieve compatibility. NLR (outdoor to indoor) is achieved through the incorporation of sound attenuation into the design and construction of a structure. Measures to achieve an indoor noise reduction do not necessarily solve noise issues outside the structure and additional evaluation may be warranted. Building location, site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure, particularly from aircraft ground maintenance run-ups. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.

d. All land uses are generally compatible with noise below 65dB DNL. However, localities, when evaluating the application of these guidelines, should consider possible annoyance tied to land uses that involve predominately outdoor activities, or where quiet is a basis for the use.

e. Land uses that involve outdoor activities in areas above 80dB DNL are not recommended.

Footnotes for Table 2 – Land Use Compatibility in Aircraft Noise Zones

Footnotes specific to certain land uses:

1. Residential
    a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-70 and strongly discouraged above DNL 70. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals. These evaluations should clearly demonstrate that the community's need for additional residential property could not be met if development were prohibited in these zones, and that the expense of additional noise attenuation will not undermine affordable housing goals.
    b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB in DNL 65-70 and 30 dB in DNL 70-75 should be incorporated into building codes, and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-80.
    c. Normal permanent construction can be expected to provide 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, upgraded sound transmission class ratings in windows and doors, and closed windows year-round. Additional consideration should be given to modifying NLR levels based on peak noise levels (as defined in the glossary) or vibrations.
2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
5. Buildings where public is received, are not recommended.
6. Land use is compatible provided special sound reinforcement systems are installed.
7. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 25 dB should be incorporated into the design.
8. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 30 dB should be incorporated into the design.
9. Residences are not compatible.

A.4: Sample Military Impact Real Estate Disclosure

Area of Military Impact Real Estate Disclosure Sample Form

The property at the following location is located within 3,000 feet of a Fort Novosel military facility or within a designated Clear Zone, Accident Potential Zone, Noise Zone, or other designated area associated with a Fort Novosel 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 _____ Page _____

Address: _____

_____

I, _____ , (owner / agent of the subject property) hereby certify that I have informed _____ (prospective purchaser / lessee / renter of the subject property) that the subject property is located within 3,000 feet of a military installation or within a designated Clear Zone, Accident Potential Zone, Noise Zone, or other designated area associated with a Fort Novosel military facility and may be exposed to the periodic low-level military aircraft over-flights and impacts associated with aviation and military training activities.

I, _____ , (prospective purchaser / lessee / renter of the subject property) hereby certify that I have informed _____(owner / agent of the subject property) that the subject property is located within 3,000 feet of a military installation or within a designated Clear Zone, Accident Potential Zone, Noise Zone, or other designated area associated with a Fort Novosel military facility and may be exposed to the periodic low-level military aircraft over-flights and impacts associated with aviation and military training activities.

_____

Owner / Agent Purchaser / Lessee / Renter Date

_____

Owner / Agent Purchaser / Lessee / Renter Date

Signed before me on this _____ day of _____, 20 ___, in the County of , Alabama.

_____, Notary Public, State of Alabama

My Commission Expires on . (SEAL)

_____

A.5: Regional Memorandum of Understanding (MOU)

SAMPLE MEMORANDUM OF UNDERSTANDING
BETWEEN
FORT NOVOSEL AND [LOCAL GOVERNMENT]

This Memorandum of Understanding between Fort Novosel 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 Novosel, 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 Novosel'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 Novosel on plans, programs, actions, and projects that may affect Fort Novosel 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 Novosel for review and comment, project notification, policies, plans, reports, studies, and similar information on development, infrastructure, and environmental activities within proximity of Fort Novosel 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 Novosel 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 Novosel and its outlying aviation facilities and recognizing potential impacts due to high-density development, extension of infrastructure, and zoning changes.

Fort Novosel 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 Novosel 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 Novosel Representative]
Witness	Witness

A.6: Sample Airport Zoning Ordinance

SAMPLE AIRPORT LAND USE AND HEIGHT OVERLAY ZONING ORDINANCE

from Iowa Department of Transportation, Office of Aviation

Source: USDOT, Federal Aviation Administration, Advisory Circular No. 150/5090-4B, September 16, 2022.

https://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5190_4b_Land_Use_Compatibility.pdf

1. Title and Authority:

The **[NAME]** AIRPORT LAND USE & HEIGHT OVERLAY ZONING ORDINANCE created by the **[NAME OF MUNICIPALITY OR COUNTY]** shall regulate and restrict the height of structures, objects, and growth of natural vegetation, as well as land uses; otherwise regulating the use of property, within the vicinity of the **[NAME]** Airport. Creation of appropriate zones and establishing the boundaries thereof, as well as providing for changes in the restrictions and boundaries of such zones is vested in this Ordinance. The **[NAME]** Airport Land Use & Height Zoning Map is incorporated into and made part of this Ordinance. It is intended that such restrictions will be coordinated with the restrictions existing under the **[NAME OF MUNICIPALITY OR COUNTY]** zoning ordinance.

2. Statement of Purpose and Findings

1. The **[NAME]** Airport is acknowledged as an essential public facility to the local community.
2. The creation or establishment of an airport hazard is a public nuisance and poses a potential concern to the surrounding communities served by **[NAME]** Airport.
3. There shall be no creation or establishment of a hazard that endangers public health, safety, welfare, or impacts an individual's quality of life, nor prevents the safe movement of aircraft at the **[NAME]** Airport.
4. For the protection of the public health, safety, and general welfare, and for the promotion of the most appropriate use of land, it is necessary to prevent the creation or establishment of airport hazards.
5. The prevention of airport hazards shall be accomplished, to the extent legally possible, by proper exercise of the police power.
6. The prevention of new airport hazards, and the elimination, removal, alteration, mitigation, or marking and lighting of existing airport hazards, are considered to be a public purpose for which **[NAME OF MUNICIPALITY OR COUNTY]** may raise and expend public funds, as an incident to the operation of airports, to acquire or property interest therein.

3. Applicability

This ordinance encompasses the prescribed areas defined in this ordinance around the **[NAME]** Airport. See Exhibit A.

4. Definitions

Airport Overlay Zones. Zones intended to place height and land use conditions on land impacted by airport operations while retaining the existing underlying zone. The Title 14 Code of Federal Regulations Part 77 (14 CFR Part 77) Surfaces and runway protection zones have been combined to create five airport overlay zones. The five specific zones create a comprehensive area focused on maintaining compatible land use around airports.

Approach and Runway Protection Zone Map. The Approach and Runway Protection Zone Map is compiled from the criteria in 14 CFR Part 77, "Objects Affecting Navigable Airspace." It shows the five-airport overlay zones affected by the Airport Overlay Zoning Ordinance, and includes the layout of runways, airport boundaries, elevations, and area topography. Applicable height limitation areas are shown in detail.

Conical Surface (Zone E). The conical surface extends upward and outward from the periphery of the horizontal surface at a slope of 20 feet horizontally for every one-foot vertically (20:1) for a distance of 4,000 feet. It is the outermost zone of the overlay areas and has the least number of land use restriction considerations.

Horizontal Surface (Zone D). The horizontal surface is a horizontal plane located 150 feet above the established airport elevation and begins at the edge of the transitional surfaces and primary surface for a distance of 5,000 feet for visual approach runways.

Primary Surface. The primary surface is longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway. When the runway has no specially prepared hard surface, the primary surface ends at each end of that runway. The width of the primary surface is 250 feet, or 50 feet beyond the marked edge of a turf runway.

Runway Protection Zone (RPZ) (Zone A). The area off the end of the runway end designed to provide a clear area that is free of above ground obstructions and structures to enhance the protection of people and property on the ground. Zone A is intended to provide a clear area that is free of above-ground obstructions and structures.

Runway Approach Surface (Zone B). A critical overlay surface that reflects the approach and departure areas for each runway at an airport. The approach surface is longitudinally centered on the extended runway centerline, extending outward and upward from the end of the runway. The approach slope for visual runways is 20:1 for a distance of 5,000 feet.

Transitional Surface (Zone C). The transitional surface extends outward and upward at right angles to the runway centerline and extends at a slope of seven feet horizontally for each one-foot vertically (7:1) from the sides of the primary and approach surfaces. The transitional surfaces extend to the point at which they intercept the horizontal surface at a height of 150 feet above the established airport elevation.

Visual Approach. An approach to an airport conducted with visual reference to the terrain.

5. Airport Overlay Zones

Airport overlay zones established by this Ordinance include all of the land lying beneath the runway protection zone, the approach surface, transitional surface, horizontal surface and conical surface. These zones are identified as A, B, C, D and E and are defined under the definition section, Table 5.1 and in Exhibit A.

Table 5.1: Dimensions for Airport Overlay Zones - Visual Runway

Zone	Inner Width	Outer Width	Length	Height or Slope
A (Runway Protection Zone – Begins at end of turf runway, 200’ past hard surface runway)	250’	450’	1,000’	Not applicable
B (Approach zone - Begins at end of turf runway, 200’ past hard surface runway)	250’	1,250’	5,000’	20:1
C width (Transitional Surface)		1,050’		7:1
D radius (Horizontal Surface)	Begins at edge of transitional surface	5,000’		150’ above runway (excludes approach zone)
E radius (Conical Surface)	Begins at edge of horizontal surface	4,000’		20:1

6. Airport Zone Height Limitations and Lighting Requirements

Unless otherwise provided for in this Ordinance, no structure, object, natural vegetation, or terrain shall be erected, altered, allowed to grow or be maintained within any airport zone established by this Ordinance to a height in excess of the applicable height limitations established by this Ordinance in Table 5.1 and shown on Exhibit A, the **[NAME]** Airport Zone Overlay Map.

Lighting and marking requirements will be determined through an FAA 7460-1 airspace analysis. The owner of any structure, object, natural vegetation, or terrain is hereby required to install, operate, and maintain such markers, lights,

and other aids to navigation necessary to indicate to the aircraft operators in the vicinity of an airport the presence of an airport hazard.

7. Land Use Limitations within Airport Zones

Land uses defined below as compatible shall be issued a permit if they follow all provisions of this ordinance. Those land uses identified as 'not compatible' will not be permitted within Zones A-E.

Land uses identified as 'additional review' will be evaluated by the land use administrator as to the potential impacts on the airport regarding noise, concentration of people, height, visual restrictions, wildlife attractions, flammable substances and electrical, navigational or radio interference.

Table 7.1: [NAME] Airport Zone Chart

Key: C = Compatible
AR = Additional Review Required
NC = Not Compatible

Land Uses	Zone A	Zone B	Zone C	Zone D	Zone E
Single Family	NC	AR	NC	AR	C
Multi-Family, group living Uses	NC	NC	NC	AR	C
Permitted uses in "C" Commercial District	NC	AR	AR	C	C
Permitted uses in "M" Manufacturing District	NC	AR	AR	AR	C
Basic Utility Uses (i.e., utility substation facilities, electrical substations, water and sewer lift stations, water towers)	NC	NC	NC	AR	C
Sanitary landfills	NC	NC	NC	NC	AR
Solar power, generation equipment, wind generation, wind farms	NC	NC	NC	AR	AR
Communication transmission facilities	NC	NC	NC	AR	AR
Outdoor storage, signs and displays	NC	AR	AR	AR	C
General Community Service	NC	AR	AR	AR	C
Daycare Uses	NC	NC	NC	AR	C
Detention Facilities (i.e., prisons, jails, probation centers, juvenile detention homes, halfway houses)	NC	NC	NC	AR	C
Educational Facilities	NC	NC	NC	AR	C
Hospitals	NC	NC	NC	AR	C
Religious Assembly Uses	NC	NC	NC	AR	C
Communication Transmission Facility Uses (i.e., broadcast, wireless, point to point, emergency towers and antennae)	NC	NC	NC	AR	AR
Parking Uses (i.e., ground lots, parking structures)	AR	C	AR	C	C
Transportation Uses (i.e., highways, interstates, local and county roads)	AR	C	C	C	C
Utility Uses (i.e., solar power generation equipment, wind generators, wind farms)	NC	NC	NC	AR	AR
Farms – plant and animal with no residential	AR	AR	AR	C	C
Resident-related (i.e., single-family home, mobile home if converted to real property and taxed)	NC	AR	NC	AR	C
Grain bins, bulk fuel, grain elevator	NC	NC	NC	AR	AR
Man-made water retention, detention, wetlands	NC	NC	NC	AR	AR
Commercial Recreational Use* - Outdoor recreation	NC	AR	NC	AR	C
Commercial Recreational Use* - Indoor recreational facilities	NC	AR	NC	AR	C
Parks	NC	AR	NC	C	C
Casino	NC	NC	NC	AR	C

* Commercial Recreational Uses (i.e., facilities used for physical exercise, recreation, or culture)

8. Airport Zoning Map

The Airport Land Use & Height Overlay Zones established by this Ordinance are shown on the Exhibit A to this Ordinance. The Official Airport Land Use & Height Overlay Zoning Map, may be amended, and all notations, references, elevations, data, zone boundaries, and other information thereon, is hereby adopted as part of this Ordinance.

9. Ordinance Administration

It shall be the duty of the **[POSITION TITLE]** referred to herein as the "Airport Zoning Administrator" to administer the regulations prescribed herein. Applications for permits and variances shall be made to the Airport Zoning Administrator upon forms furnished by the Airport Zoning Administrator. Applications for action by the Board of Adjustment shall be forthwith transmitted by the Airport Zoning Administrator should an applicant request review. Permit applications shall be either granted or denied by the Airport Zoning Administrator according to the regulations prescribed herein.

10. Airport Zoning Permits

It shall be the duty of the applicant to provide the Airport Zoning Administrator with sufficient information to evaluate the proposed action. This information shall include but not be limited to the following:

- Contact information
- Structure information
- Site information
- Drawing information
- Certification
- Identify current and potential compatibility concerns

The Airport Zoning Administrator shall evaluate the proposal based upon information provided by the applicant. The Airport Zoning Administrator shall approve the permit if after evaluation, the proposed project is found to be adequately compatible. Should the proposed project be found to be incompatible after review, the Airport Zoning Administrator shall deny the permit. Should the permit be denied, the applicant shall have the right to request a variance or an appeal as prescribed in this Ordinance.

11. Variances

Any person desiring to erect, alter, or increase the height of any structure, object, or to permit the growth of any natural vegetation, or otherwise use his property in violation with any section of this Ordinance, may apply to the Board of Adjustment for variance from such regulation. No application for variance to the requirements of this Ordinance may be considered by the Board of Adjustment unless a copy of the application has been submitted to the **[NAME]** Airport Zoning Administrator and the airport manager for an opinion as to the aeronautical effects of the variance.

12. Appeals

Any person, property owner, or taxpayer impacted by any decision of this Ordinance, may appeal to the Board of Adjustment. *(Insert detail regarding procedures for the appeals process already in use by the adopting governing body.)*

13. Penalties

Any violation of this Ordinance or of any regulation, order, or ruling promulgated hereunder shall constitute a simple misdemeanor, and shall be punishable by a fine of not more than $ dollars or imprisonment for not more than (year or month) or both; each day a violation continues to exist shall constitute a separate offense. *(Insert detail regarding penalties already in use by the adopting governing body.)*

14. Conflicting Regulations

Where there exists a conflict between any of the regulations or limitations prescribed in this Ordinance and any other regulations applicable to the same area, whether the conflict be with respect to height or structures, the use of land, or any other matter, the more stringent limitation or requirement shall govern and prevail.

15. Severability

If any provision of this Ordinance or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the Ordinance, which can be given effect without the invalid provision or application, and to this end, the provisions of this Ordinance are declared to be severable.

16. Effective Date

This Ordinance shall be in effect from and after its passage by the governing body and publication and posting as required by law.

Adopted on this _____ day of _____, 20___.

Exhibit A-Airport Land Use & Height Overlay Zoning Map

The exhibit provides the Official Airport Land Use & Height Overlay Zoning Maps to be kept on file with the appropriate governmental entities. The maps must be amended when changes occur within the jurisdictional boundaries of the map.

OTHER EXAMPLE ZONING ORDINANCES

Minnesota Airport Zoning Ordinance:
https://www.dot.state.mn.us/aero/planning/zoning.html

Florida: Airport and Airspace Protection and Zoning- FDOT-
https://www.fdot.gov/aviation/compland.shtm

A.7: Sample Avigation Easement

Suggested Template for Avigation Easements
The Federal Aviation Administration has provided this sample Avigation Easement language to assist Sponsors with the preparation of an agreement for their specific location and situation. We recommend Sponsors furnish this sample language to their attorney tasked with preparing the actual Avigation Easement.

Limitations of Use
The FAA's provision of this sample language serves as a starting point for the Sponsor for preparing their customized avigation easement. Sponsors must not construe provision of this sample document as being complete and legally sufficient. Sponsors are solely responsible for verifying the legal status of all contractual matters, including establishment of avigation easements.

SURFACE AND OVERHEAD AVIGATION EASEMENT

WHEREAS, (Property Owner), hereinafter called the Grantors are the fee owners of the following specifically described parcel of land situated in (City, County & State):

(Metes & bounds description of easement parcel)

hereinafter called "Grantors' property" and outlined on an attached Exhibit A map.

NOW, THEREFORE, in consideration of the sum of $ and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Grantors, for themselves, their heirs, administrators, executors, successors and assigns do hereby grant the following appurtenant rights and benefits to the (Name of Airport) hereinafter called the "Grantee" for the use and benefit of the public.

The appurtenant rights and benefits include the uses, rights and restrictions described as follows:

The unobstructed use and passage of all types of aircraft in and through the airspace at any height or altitude above the surface of the land.

The right of said aircraft to cause noise, vibrations, fumes, deposits of dust, fuel particles (incidental to the normal operation of aircraft); fear, interference with sleep or communication, and any other effects associated with the normal operation of aircraft taking off, landing or operating in the vicinity of (Airport).

As used herein, the term "aircraft" shall mean any and all types of aircraft, whether now in existence or hereafter manufactured and developed, to include jet, propeller-driven, civil, military or commercial aircraft; helicopters, regardless of existing or future noise levels, for the purpose of transporting persons or property through the air, by whoever owned or operated.

In granting this easement, the Grantors agree to make no modifications to the following "accepted" existing structures lying within the bounds of the easement area of the Grantors' property.

(Example: 20' x 25' utility shed, see attached Exhibit A map)

The Grantors agree that during the life of this easement, they will not construct, erect, suffer to permit or allow any structure or trees on the surface of the burdened property. The Grantors may not permit any places of public assembly or gatherings within the easement area. (Examples: churches, schools, day care facilities, hospitals, restaurants, stadiums, office buildings, etc.) The Grantors are permitted to continue to grow and harvest crops or graze livestock in the easement area

The Grantors agree to keep the easement area free of the following: structures (permanent or temporary) that might create glare or contain misleading lights; residences, fuel handling and storage facilities and smoke generating activities and creation of any means of electrical interference that could effect the movement of aircraft over the easement area.

Grantors agree to waive all damages and claims for damages caused or alleged to be caused by the Grantors violation of any aspect of this easement document. The (Airport) has a perpetual right of ingress/egress in the easement area and the right to remove any new structure or vegetation that is not specifically mentioned above as "accepted."

TO HAVE AND TO HOLD said easement and right of way, and all rights appertaining thereto unto the Grantee, its successors, and assigns, until said (Airport) shall be abandoned and shall cease to be used for public airport purposes. It is understood and agreed that all provisions herein shall run with the land and shall be binding upon the Grantors, their heirs, administrators, executors, successors and assigns until such time that the easement is extinguished.

IN WITNESS WHEREOF, the grantors have hereunto set their hands and seals this _____ day of _____ _____ , 20___. (Local recordation and subordination practices must also be met. If subordination is necessary in which case the mortgagee must join in the agreement, a statement must be made to assure that the mortgage is subordinate to the Easement and the Easement recording superior and prior to lien in said mortgage without consideration of the date of the mortgage instrument)

_____

_____ (SEAL)
Grantor(s)

CREDIT: DVIDS, U.S. Army photo by Sgt. Lilliana Magoon

Southeast Alabama Regional Planning and Development Commission