



FORT GORDON / CENTRAL SAVANNAH RIVER AREA
COMPATIBLE USE STUDY



**Prepared By:
CSRA Regional Commission**

**For:
Fort Gordon
Augusta-Richmond County
Columbia County
Jefferson County
McDuffie County
City of Blythe
City of Grovetown
City of Harlem
City of Hephzibah**

This Compatible Use Study was prepared under contract with participating communities of the Central Savannah River Area region with financial support from the Office of Economic Adjustment, Department of Defense, and the Fort Gordon Alliance. The contents reflect the views of the CSRA Regional Commission and do not necessarily reflect the views of the Office of Economic Adjustment.

Maps and data included in this report were compiled from general sources and are to be used only as a guide. The CSRA Regional Commission assumes no liability for their accuracy or any decisions users may make based on these documents.

Two committees guided the study process and final report - a policy committee and a technical committee - established to oversee the overall direction, policies, and recommendations of this study and comprised of local government staff, elected officials, Fort Gordon officials and staff, and other stakeholders.

-Completed in 2019-

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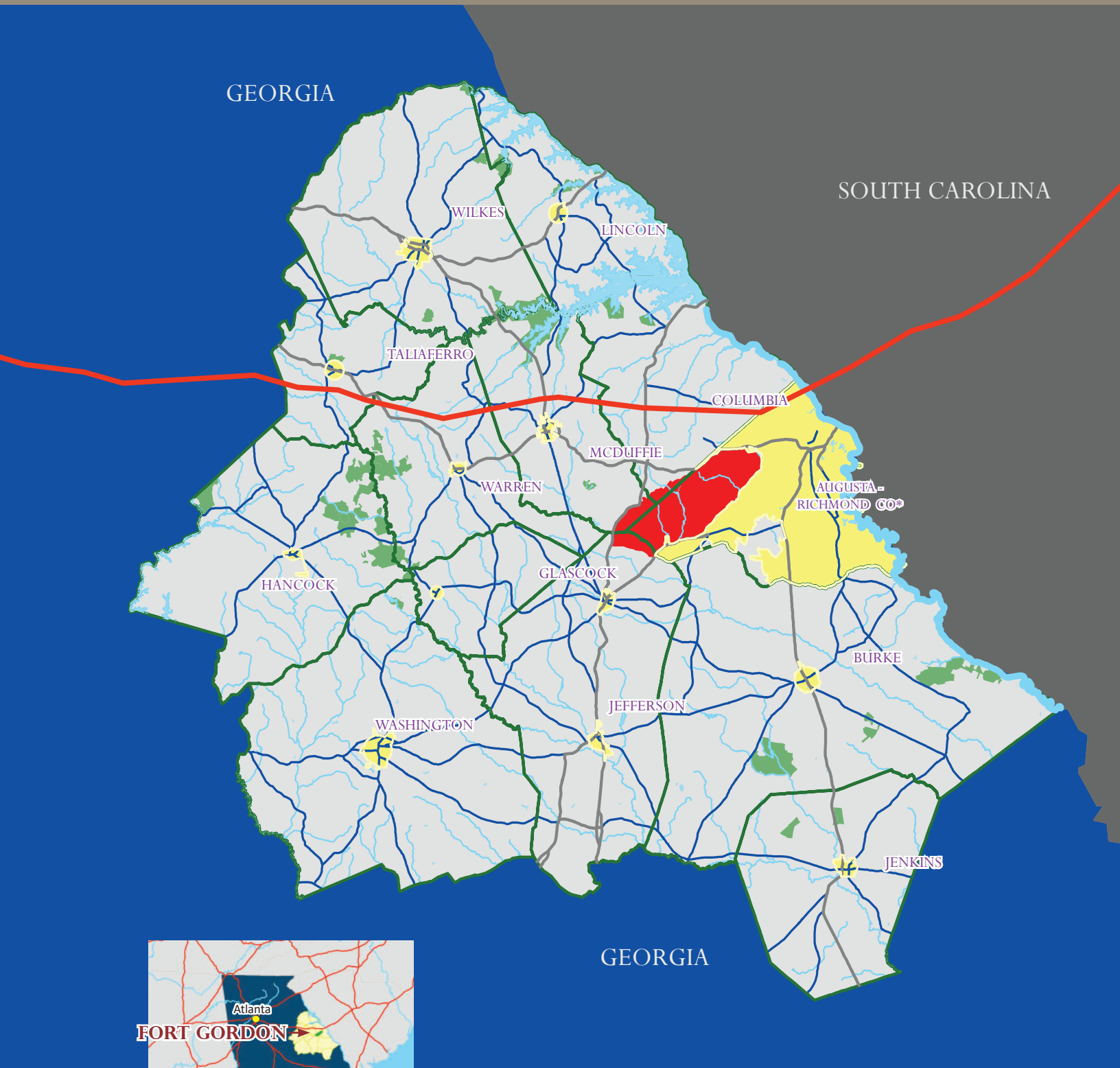
CHAPTER
PURPOSE and
PROCESS

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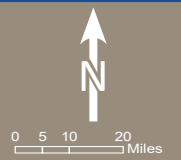


FORT GORDON / CENTRAL SAVANNAH RIVER AREA
COMPATIBLE USE STUDY

MAP 1.1 THE CSRA REGION



- CSRA Counties
- Cities (County Seat)
- Fort Gordon
- Conservation Area
- Water Bodies
- Interstate 20
- U.S. Highways
- Georgia Highways



PURPOSE AND PROCESS

I. WHAT IS A COMPATIBLE USE STUDY (CUS)?

A Compatible Use Study (formerly known as a Joint Land Use Study or JLUS) is a cooperative planning initiative between a local military installation, its surrounding jurisdictions, local residents, state and federal agencies, and other stakeholders. The initiative addresses land use compatibility planning around the installation that supports the installation's mission and operational and training environments, community growth and development in the surrounding area, and resident quality of life.

When originally built, most major military installations were located outside urban centers, making land use compatibility a non-issue. Over the years, however, population and economic growth in previously rural and semi-urban areas resulted in new land use challenges. In many cases, development in existing cities and counties has expanded toward or engulfed installations. According to the General Accountability Office, communities across the U.S. that surround military installations have experienced higher growth rates than the national average. Continued increases in population and economic activity draw more people toward the noise and accident risk areas generated by military training.

Compounding the effects of population and economic growth on land uses are changes to modern weapons systems, which have altered the tempo and depth of the battlefield. To meet the challenges of compressed time and expanded space in future conflicts, the Army develops trained soldiers that can deploy rapidly. Success on the battlefield, however, is achieved through realistic training that produces skilled soldiers. As firing ranges get longer and more training space is required, noise and safety zones are being stretched and extended.

As growth occurs both on and off-post, so too does the tension between civilian and military land uses. Encroachment places pressure on installations to modify their operations and procedures, resulting in limitations on support training and for assigned units to maintain adequate level of readiness, possibly compromising their mission. Limitations on the size and type of weapons to be used in training, as well as the times that certain training can occur, have been imposed on multiple installations. These actions degraded the installations' capability to support essential training.

Beyond impacts on readiness, encroachment unnecessarily costs the Department of Defense (DoD) funding that can be used for other purposes. Numerous installations were recipients of DoD funds to mitigate incompatible development. All branches of the military have spent hundreds of millions of dollars to purchase restrictive easements to prevent residential development from encroaching on installations and bases.

PURPOSE AND PROCESS

These considerations have not escaped defense officials, which considered encroachment criteria as part of previous Base Realignment and Closure processes. When evaluating components of the total military value of a specific military installation, DoD assesses the surrounding local area to determine land use compatibility with regard to mission operations. Assessments are made concerning both present and probable future land use mission compatibility. In order to exhibit military value, installations must demonstrate that present land use in surrounding areas is consistent with operational needs and that effective land use controls are in place to ensure future compatibility.

In an effort to encourage military installations and communities to plan for the future collaboratively, the DoD created the CUS program. Since program inception, over 100 compatible use studies have been completed across the country. Although the CUS process is primarily funded by the DoD, the communities that receive CUS funding are responsible for developing and implementing the CUS. The Central Savannah River Area Regional Commission (CSRA RC), on behalf of its member local governments, served as this region's study sponsor and manager for the Fort Gordon/CSRA CUS. This is the second CUS effort for the region. The initial JLUS was completed in 2005, and this CUS process serves as an update to that effort.

II. FORT GORDON/CSRA CUS HISTORY

Fort Gordon has a long-standing presence in the Central Savannah River Area (CSRA). The cities and counties around Fort Gordon have grown over the years, reinforcing the close relationship between military and civilian communities. The Fort is critical to the CSRA economy, generating 27,500 military, civilian, and contractor jobs, 24,000 other indirect jobs, and \$2.4 billion in annual economic activity and tax revenue. Similarly, Fort Gordon service members and civilian employees enjoy the region's great quality of life, benefiting from access to amenities found in large metropolitan areas but without the congestion and high cost of living. This interdependence, however, poses the challenge that is central to the CUS.

Fort Gordon's operational and training activities are designed to allow military personnel to prepare for missions. These operations and trainings are continually evolving to meet the needs of the Army and other military branches, and require facilities free of impediments. Encroaching growth in proximity to the installation's boundaries threatens these operational and training environments.

Beginning in 2003, CSRA local governments and Fort Gordon undertook a JLUS that culminated into the *Partnership for Growth: The Fort Gordon Joint Land Use Study (2005)*. This landmark planning process was the first-of-its-kind regional approach to joint civilian-military land use planning in the CSRA area.

PURPOSE AND PROCESS

The region had undergone significant population and development growth, and there was concern that growth was encroaching near the installation's boundaries.

Local governments adjacent to Fort Gordon implemented a number of recommendations from the 2005 JLUS, including:

- Promoting and encouraging new population growth and land development in urban areas and areas already served by infrastructure and community facilities.
- Updated comprehensive plan documents
- Coordinating city-county planning, particularly large-scale development, utilities and road projects.
- Notifying Fort Gordon of zoning actions within 3,000 feet of the installation.

However, implementation has been uneven across the region; more can be done to maintain currently compatible use and to prevent incompatible uses from encroaching in the future.

Similarly, Fort Gordon adopted recommendations contained in the 2005 JLUS, including:

- Pursuing appropriate measures to minimize noise and smoke effects.
- Keeping area residents knowledgeable about operational changes that affect the noise and burn environment, including controlled burn alerts
- Updating installation planning documents
- Pursuing conservation easements in areas of concern

As the region continued to grow and potential encroachment remained an issue, an update to the JLUS became necessary. As previously mentioned, in 2015, regional stakeholders began the process of updating the 2005 JLUS with funding and support from the Office of Economic Adjustment (within DoD) and the Fort Gordon Alliance.

PURPOSE AND PROCESS

III. CUS GOALS AND OBJECTIVES

The overarching purpose of this CUS is to identify ways that Fort Gordon and adjacent communities can work together cooperatively to encourage compatible growth and ensure the long-term viability and sustainability of Fort Gordon's mission. While many important goals and objectives were established as part of this process, the primary guiding goals were to identify ways to:

- Protect the health, safety and welfare of both the military and civilian communities located near and on Fort Gordon;
- Protect and promote the present and future operational capabilities of Fort Gordon;
- Encourage cooperative land use planning efforts between Fort Gordon and the surrounding jurisdictions;
- Institutionalize planning relationships between Fort Gordon and surrounding communities; and
- Identify and update appropriate land use policies and regulations of concerned stakeholders.

The CUS process effectively creates a community-based framework for land use planning around military installations with the objectives to:

- Encourage the cooperation of land use planning between military installations and surrounding local governments and communities; and
- Seek ways to reduce operational impacts of military installations on adjacent lands

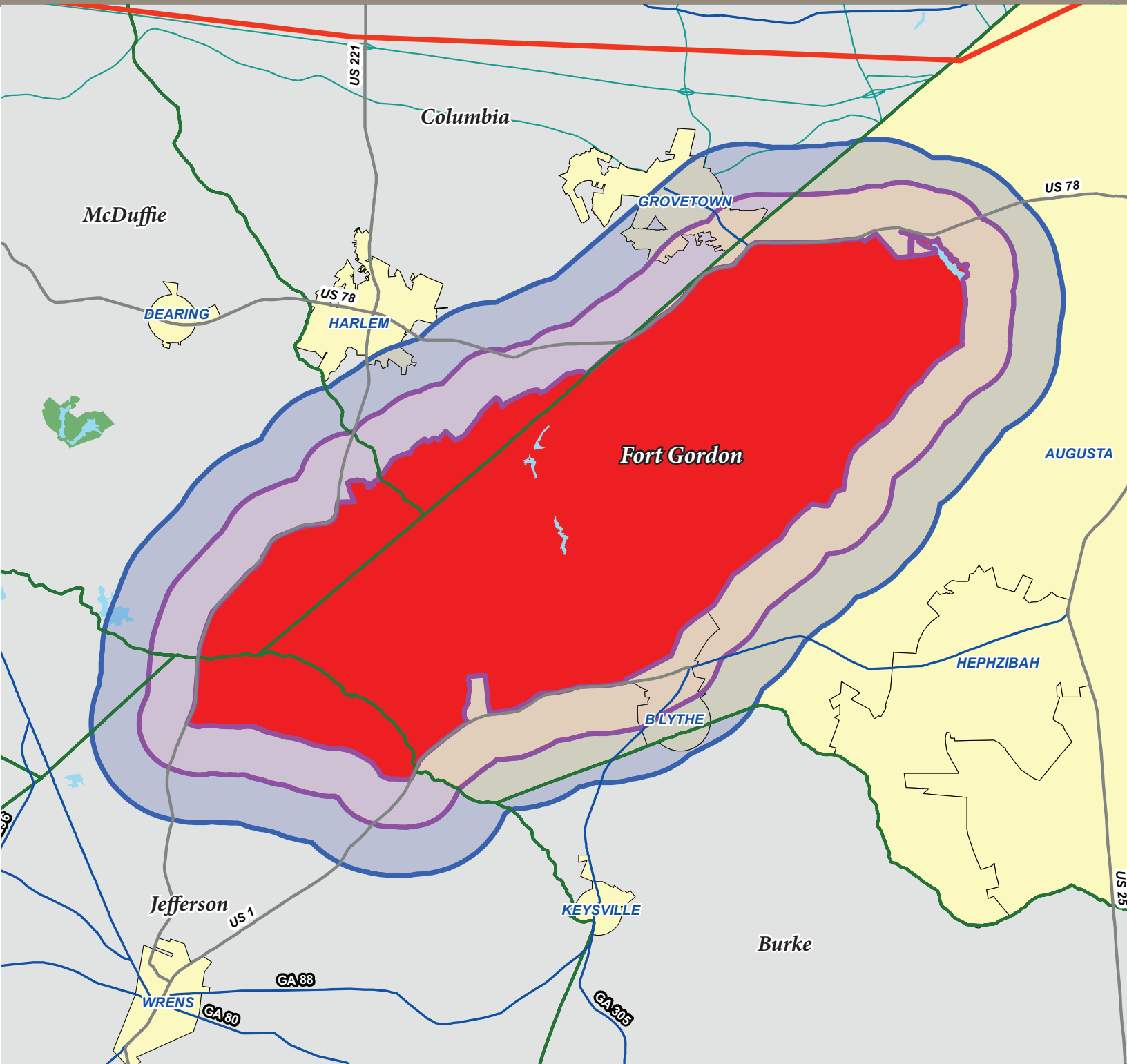
IV. CUS STUDY AREA

The primary study area included Fort Gordon (55,600 acres) and the five counties and four municipalities adjacent to the installation:

- Augusta-Richmond County
- Burke County
- Columbia County
- Jefferson County
- McDuffie County
- City of Blythe
- City of Hephzibah
- City of Grovetown
- City of Harlem

The study area encompasses a 1-mile and 2-mile area surrounding the boundaries of Fort Gordon (Map 1.2). The area's outer 2-mile boundary completely contains noise contours and complaint risk areas. It also continues to experience population growth and residential and commercial development.

MAP 1.2 CUS STUDY AREA



- CSRA Counties
- Cities
- Fort Gordon
- Conservation Area

- 1 mile study area
- 2 mile study area

- Water Bodies
- Interstate 20
- U.S. Highways
- Georgia Highways



PURPOSE AND PROCESS

V. CUS ORGANIZATION

The study is organized into the following five (5) sections:

- Chapter One: Purpose and Process - Introduces the CUS project, identifies the study's purpose, needs, goals, and objectives, and outlines the report's organization
- Chapter Two: Background and Existing Conditions - Describes the region's growth characteristics, community profiles and current planning environment
- Chapter Three: Land Use and Compatibility Assessment – Describes and evaluates Fort Gordon's noise environment and study area current land uses and assesses compatibility issues
- Chapter Four: Compatibility Tools – Identifies and evaluates potential compatibility measures
- Chapter Five: Recommendations - Identifies specific recommendations to minimize and prevent encroachment within the Fort Gordon buffer areas

VI. CUS PROCESS

The study process consisted of a technical and policy evaluation of local and Fort Gordon land use conditions, guided by two committees established to oversee the overall direction, policies, and recommendations of the CUS, and a public involvement process.

The CUS recommendations are the foundation for future action by a variety of public and private entities as they relate to compatible land use. The intent is to guide local governments in the implementation of appropriate land use policies around Fort Gordon. Recommendations are balanced and designed to protect Fort Gordon's operational and training areas from encroachment and the civilian population from noise effects.

Technical and Policy Evaluation

The CUS is both a technical and policy document. It seeks to both understand the land use dynamics at play and proposes specific and achievable implementation strategies based upon sound compatibility criteria. To achieve this, relevant information from both Fort Gordon and local governments was evaluated. This included recent local and regional growth trends, local plans, future conditions, and an assessment of compatibility measures in conjunction with military operations at Fort Gordon. This evaluation established the context in which appropriate land development policies were developed.

A major component of the technical evaluation was the collection of regional GIS data for the entire study area. Staff worked with local governments and Fort Gordon to obtain aerial photography, land use, zoning, noise and other existing data needed for technical analyses of issues. Staff had to merge the various data layers from each of the counties to create a central database. All GIS data is available to local governments and Fort Gordon for use in future coordinated planning efforts.

PURPOSE AND PROCESS

Technical Committee

The Technical Committee consisted of city and county staff, as well as military personnel, and was tasked with providing support in producing the necessary analyses. The committee reviewed technical issues, provided feedback on study findings, and evaluated implementation options for the Policy Committee. Technical committee members met on the following dates:

- May 5, 2016
- March 28, 2017
- June 8, 2017
- July 12, 2018
- February 27, 2019
- March 21, 2019
- August 27, 2019

Policy Committee

The Policy Committee consisted of elected officials from study area jurisdictions, Fort Gordon leadership, and other stakeholders. As the decision-making body in the process, this group provided overall policy direction and approved study recommendations implementation measures. Policy committee members met on the following dates:

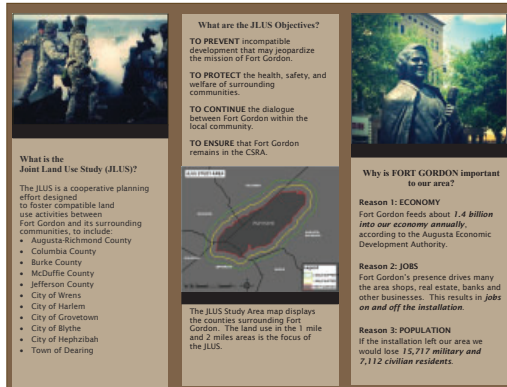
- April 1, 2015
- May 25, 2017

Public Involvement

The CUS intended to be a participatory process with the aim of developing a plan that builds consensus from varied interests, including residents and property owners, local elected officials, business officials, and military representatives. The various individuals that participated in the CUS development ensured that the CUS document incorporated a cross-section of opinions and reflects feasible, practical solutions. Interested parties had access to meaningful and convenient methods of participation and access to draft documents.



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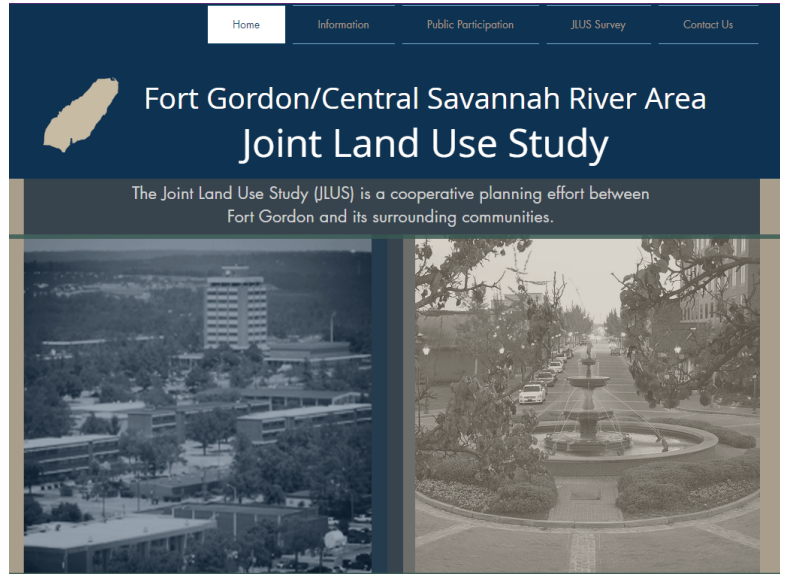
In the early stages of the process, efforts were made to inform the public about the study and to provide a way to respond. Several different methods were used to reach citizens living in the areas surrounding Fort Gordon.

PURPOSE AND PROCESS

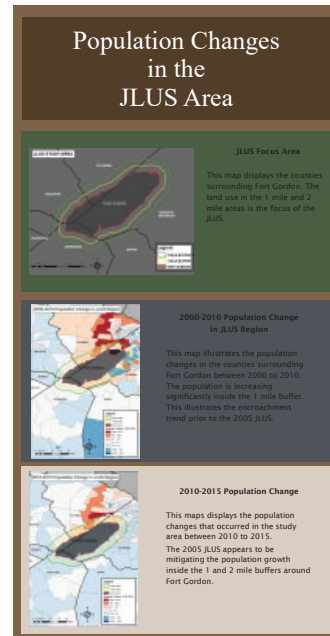
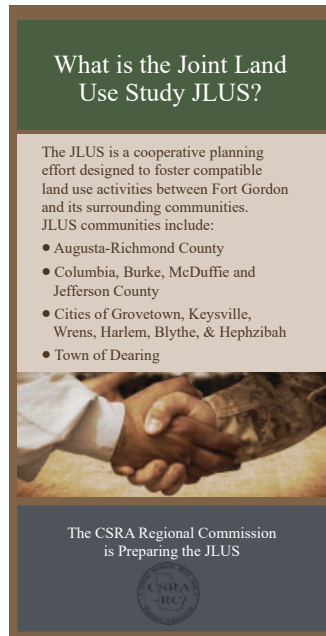
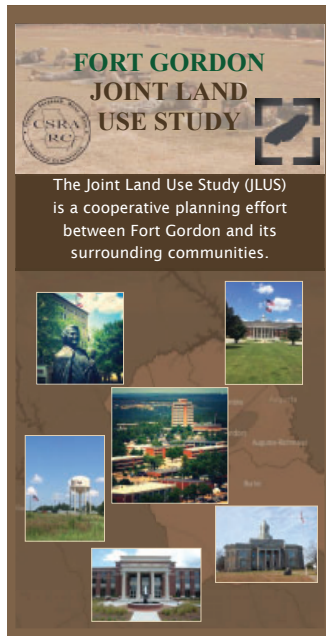
A website was created in the summer of 2016 to announce public participation events and include information on the CUS process.

The following four sections were on the website:

- Information on the CUS process, document and associated maps
- Public participation schedule
- Online survey
- Contact form to email the planners at the CSRA Regional Commission



Informal public events were held during the months of July-November of 2016, in Hephzibah, Downtown Augusta, Grovetown, and Waynesboro. The Regional Commission took a large trifold poster display to each event. Also, a planner was available to speak with citizens, take surveys, and provide brochures. For those that could not go online to complete a survey, paper surveys could be filled out at the public events. The trifold brochures and posters visually displayed the study focal points -- including population maps, study boundaries,, contact information, needs and objectives, and growth patterns.



PURPOSE AND PROCESS

Additionally in 2016, CSRA RC staff held a public information meeting at the Columbia County fairgrounds, which included an enclosed glass display case highlighting a trifold poster, description of the study, and images depicting suggested land uses. The website link and contact information for the CSRA Regional Commission Planning Department were also included.

Other steps to maximize participation included:

- Technical Committee meetings were held at the offices of the CSRA Regional Commission for the purpose of bringing groups together in a consistent and accessible location;
- CSRA RC staff met with local government elected officials and Fort personnel to engage and keep them informed of the process.
- CSRA RC staff conducted interviews with various stakeholders.
- Technical committee members provided information to and solicited feedback from their policy committee counterparts and other government staff for discussion at committee meetings.

VII. HOW TO USE THE CUS

The CUS is not, in itself, an implementation tool, but rather a guide to action. It is intended to serve as a reference point for potential users. A number of companion planning documents should be used in conjunction with the CUS. These include:

- Local Government Comprehensive Plans
- Local Government Community Work Programs
- Local Government Capital Improvement Programs
- CSRA Regional Plan
- CSRA Regionally Important Resources Plan
- CSRA Regional Work Program
- Fort Gordon Installation Compatible Use Zone Plan
- Fort Gordon Integrated Natural Resources Management Plan

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CHAPTER
BACKGROUND and
EXISTING CONDITIONS

2



FORT GORDON / CENTRAL SAVANNAH RIVER AREA
COMPATIBLE USE STUDY

BACKGROUND AND EXISTING CONDITIONS

I. FORT GORDON

The United States Army installation - Fort Gordon, formerly known as Camp Gordon, was established in 1917 and named after John Brown Gordon. J. B. Gordon served as a U.S. Senator (1873 - 1880) and the 53rd Governor of Georgia (1886 - 1888). Camp Gordon opened in July 1917 as a training site for the 82nd Airborne Division. In 1941 the U.S. War Department approved its reconstruction to facilitate a new training facility in Augusta, Georgia. A ceremonial flag raising was held at the site in October of the same year.

The December 1941 attack on Pearl Harbor caused the Camp Gordon Commander to move his offices, which were located off-site at the time, to the Camp in order for the 4th Infantry Brigade to establish operations. Camp Gordon served as an internment camp during World War II and afterward processed more than 80,000 soldiers from the Army. It also served as an Army Disciplinary Barracks and hosted the Military Police School. In October 1948 the Signal Corps Training Center was activated on site.

On March 21, 1956, Camp Gordon was officially re-designated "Fort Gordon" and established as a permanent Army installation. In 1956, medical units previously assigned to the Fort were re-designated as the Headquarters of the U.S. Army Hospital 3441 which became the Dwight D. Eisenhower Army Medical Center. Two years later the Civil Affairs School was relocated to the Fort. Combat operations were activated again at the Fort in the 1960's and deactivated in 1970.

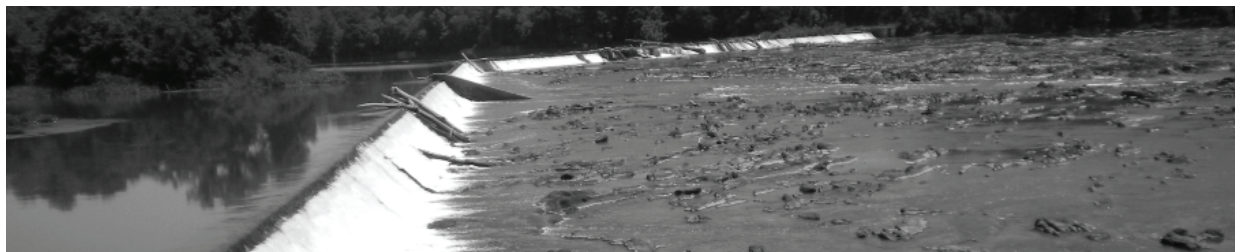
In 1975, the 1st Signal Brigade was activated. Over the course of the decade training for Signal Corps was consolidated at Fort Gordon through the relocation of all Signal Corps training units from Fort Monmouth in Monmouth County, New Jersey. Fort Monmouth eventually closed as part of the Base Realignment and Closure process. In 1978, the U.S. Army Signal Corps and Fort Gordon were reorganized to consolidate all directorates and activities.

Today, Fort Gordon is a multi-service and multi-mission Army installation, home of the U.S. Army Cyber Center of Excellence, U.S. Army Signal Corps, and U.S. Army Cyber Corps, as well as various Army, Navy, Air Force, Marines and multinational forces engaged in joint forces activities, training and operations. There are approximately 15,000 active duty personnel and approximately 12,500 civilian personnel.

BACKGROUND AND EXISTING CONDITIONS

Fort Gordon is also home to a variety of tenants and the following military units:

- 15Th Regimental Signal Brigade
- 551St Signal Battalion
- 369Th Signal Battalion
- 442Nd Signal Battalion
- Ordnance Training Detachment – Gordon
- Cyber Non Commissioned Officer Academy
- 35Th Signal Brigade
- 67Th Expeditionary Signal Battalion
- 518Th Signal Company (Tin)
- 525Th Processing Exploitation Dissemination (Ped) Battalion
- 303Rd Military Intelligence, B Company
- 319Th Military Intelligence, B Company
- 502Nd Military Intelligence, B Company
- 513Th Military Intelligence Brigade
- 202Nd Military Intelligence Battalion
- 315 Cyber Operations Detachment 3
- 139Th Is Guard
- Cyber Protection Brigade
- 706Th Military Intelligence Group
- 707Th Military Intelligence Battalion
- 116Th Military Intelligence Brigade
- 297Th Military Intelligence Battalion
- Garrison Command
- 35Th Mp Detachment
- Directorate Of Emergency Services (Des)
- Center Chaplain's Office
- Office Of The Staff Judge Advocate (Osja)
- Public Health Activity
- Company D, Marine Support Battalion
- Marine Corps Detachment
- Dwight D. Eisenhower Army Medical Center (Ddeamc)
- Dental Command (Dentac)
- Dental Lab
- 31St Intelligence Squadron
- 3Rd Intelligence Squadron
- 480Th Intelligence, Surveillance & Reconnaissance (Isr)
- 5Th Intelligence Squadron
- 199Th Mic Company
- 782Nd Military Intelligence Battalion
- 7Th Signal Command
- Army Cyber/Joint Forces Headquarters – Arcyber/Jfhq-C
- Navy Information Operations Command Georgia (Nioc Ga)



II. FORT GORDON AND THE CENTRAL SAVANNAH RIVER AREA

Fort Gordon is integral to the Central Savannah River Area (CSRA) in several aspects. The economic impact of Fort Gordon is recognized by local governments and residents as having a significant positive impact on the economies of multiple jurisdictions surrounding the Fort, most notably Columbia and Richmond counties. The following counties are served by the CSRA RC:

- Augusta-Richmond County
- Burke County
- Columbia County
- Glascock County
- Hancock County
- Jefferson County
- Jenkins County
- Lincoln County
- McDuffie County
- Taliaferro County
- Warren County
- Washington County
- Wilkes County

Although not a part of the RC's comprehensive service area, Aiken and Edgefield counties in South Carolina are included in the ARTS MPO, and these counties also benefit from the presence of Fort Gordon.

BACKGROUND AND EXISTING CONDITIONS

Fort Gordon occupies approximately 55,600 acres of land - primarily in Augusta-Richmond County with parts in Columbia, Jefferson and McDuffie counties. Incorporated cities and towns located near the Fort include Grovetown, Hephzibah, Blythe, Harlem, Dearing, Keysville, and Wrens.

The Fort is bounded by U.S. Highway 78 to the north, U.S. Highway 1 to the east and south, and U.S. Highway 221 for most of the west. Interstate Highway 20 is located approximately 4 miles north of the Fort and is the primary east-west corridor for the area. Interstate 520 is located 2 miles from the installation and provides access to the majority of north-south corridors in Georgia.

Fort Gordon is the region's largest employer and drives the regional economy. According to the Fort Gordon Alliance, Fort Gordon accounts for tens of thousands of civilian and military jobs and generates over \$2.4 billion dollars in economic activity and tax revenue annually. Fort Gordon was recently designated the Army Cyber Center of Excellence, and several thousand new soldiers and contractors are expected to the CSRA area in the coming years. The region is working to provide a skilled workforce capable of occupying some of the jobs that will be associated with growth in cyber and in Fort missions in general. Initiatives like the Fort Gordon Cyber District (through the Fort Gordon Alliance) and the Cyber security Support Technical Apprenticeship (through Augusta Tech and Unisys Corp) seek to support both the growing tech economy in the region and the Fort.

Military personnel, their families, and civilian employees relocating to work on the Fort are able to enjoy many amenities the region offers. The Savannah River and Clark Hills Lake provide multiple water related activities, including boating, fishing, and kayaking. Numerous greenspaces and trails provide options for walking, biking, and running. Active parks provide additional recreational opportunities for children and the elderly. Excellent school systems, limited traffic congestion, and the location of major shopping centers add to the quality of life offered by the area.

There is a strong desire to provide residential units near Fort Gordon in order for Fort personnel to live within a reasonable distance to their place of work. Figures 2.1-2.4 illustrate residential growth near the Fort.

Figure 2.1: Grovetown north of Ft. Gordon February 1994

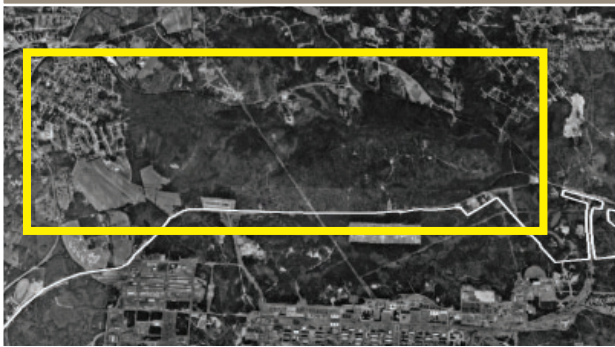


Figure 2.3: Richmond County Near Fort Gordon February 1994

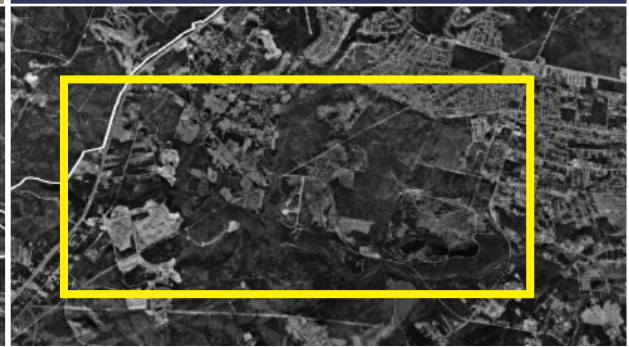


Figure 2.2: Grovetown north of Ft. Gordon November 2015



Figure 2.4: Richmond County Near Fort Gordon November 2015



BACKGROUND AND EXISTING CONDITIONS

III. STUDY AREA POPULATION GROWTH IN CITIES AND COUNTIES

The population of counties within the study area have shown mixed levels of population growth since 1990. Tables 2.1 and 2.2 illustrate the populations for all counties and cities which are a part of the CUS study area. The total population for the CUS study area counties has increased from 314,644 in 1990 to 387,604 in 2010, representing a 23 percent increase in population during this time period. Augusta-Richmond and Columbia counties contain the majority of population for both the study area and the Central Savannah River Area as a whole. These counties combined comprise a total of 325,483 residents or 81 percent of the total population of the study area counties.

The population within the study area has varied by county, showing growth and decline since 1990. Columbia County experienced an 87 percent increase in population between 1990 and 2010, making it one of the fastest growing counties in the United States according to the U.S. Census. Burke County experienced the second highest growth rate among the study area counties, followed by McDuffie and Augusta-Richmond counties. Jefferson County is the only county in the study area that experienced a decline in population over this time period. Population projections for all counties are presented in Table 2.3.

Table 2.1 Population of Counties which are part of the Study Area

County	Population				
	1990	2000	2010	Change	1990 / 2010-Percent Change
<i>Augusta-Richmond</i>	189,719	199,775	200,549	10,830	5.7 %
<i>Burke</i> ¹	20,579	22,243	23,316	2,737	13.3 %
<i>Columbia</i> ²	66,819	90,138	124,934	58,115	87 %
<i>Jefferson</i>	17,408	17,266	16,930	-478	-2.7 %
<i>McDuffie</i>	20,119	21,231	21,875	1,756	8.7 %

Sources: U.S. Census Bureau ¹Burke County Comprehensive Plan 2007 ²Columbia County Comprehensive Plan 2016

Table 2.2 Population of Study Area Cities

City	County	Population				
		1990	2000	2010	Change	Percent Change
<i>Blythe</i>	<i>Augusta-Richmond</i>	300	718	721	421	42 %
<i>Grovetown</i>	<i>Columbia</i>	3,596	6,089	11,216	7,620	211.9 %
<i>Hephzibah</i>	<i>Augusta-Richmond</i>	2,466	3,880	4,011	1,545	62.7 %
<i>Harlem</i>	<i>Columbia</i>	2,199	1,796	2,666	467	21.2 %

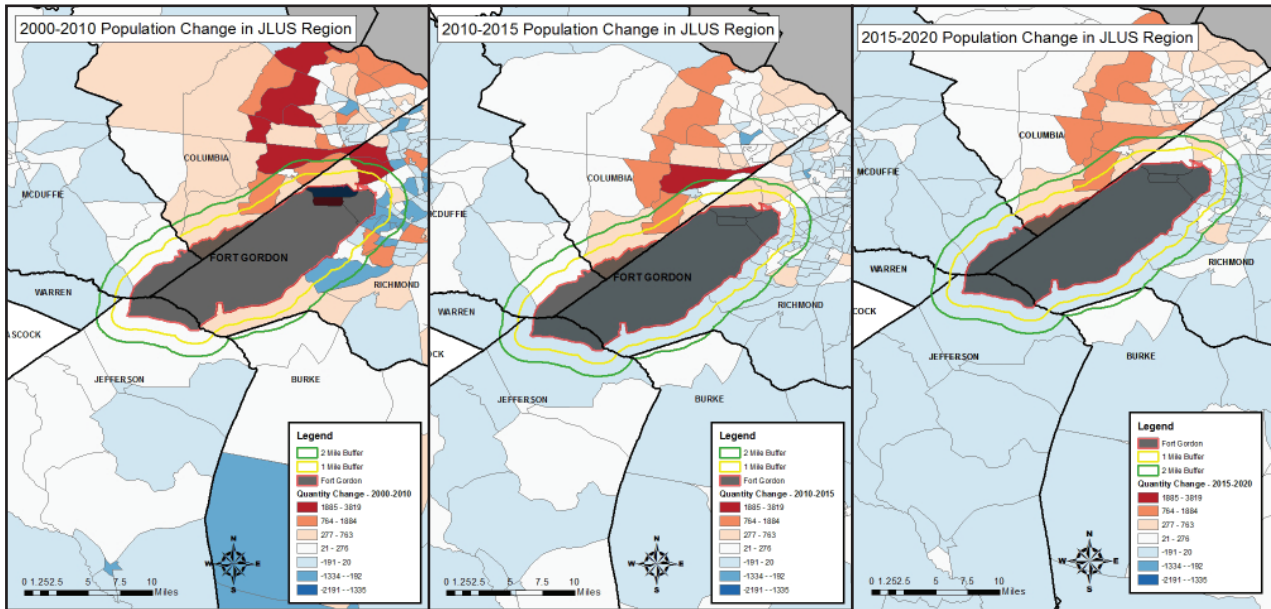
Sources: U.S. Census Bureau ¹Burke County Comprehensive Plan 2007

BACKGROUND AND EXISTING CONDITIONS

Table 2.3 Population Projections of Study Area Counties

County	Population Projections				
	2020	2030	2040	2050	Change
Augusta-Richmond	207,182	210,404	208,482	203,352	-3,830
Burke	23,175	23,059	22,193	21,032	-2,143
Columbia ²	160,541	201,807	249,263	305,680	145,139
McDuffie	22,267	22,716	22,376	21,703	-564
Jefferson	16,190	15,785	14,964	14,139	-2,051

Sources: U.S. Census Bureau ¹Burke County Comprehensive Plan 2007 ²Columbia County Comprehensive Plan 2016



IV. CUS STUDY AREA COMMUNITY PROFILES

On the next several pages will be background on each of the jurisdictions included in the Fort Gordon Compatible Use Study. Although land use is mentioned in this section, it simply lays the groundwork for Chapter 3.

AUGUSTA-RICHMOND COUNTY

Augusta-Richmond County (Map 2.1) is located along the Savannah River in the eastern central part of Georgia and is only one of few jurisdictions in the state of Georgia that have a consolidated city-county government. The area has served as the focal point of economic development in the region for many years. Founded in the early 1700s by a detachment of James Oglethorpe's troops from Savannah, who were dispatched to create a settlement at the head of the navigable river. The troops found the location, where Augusta is located today, to be amiable in terms of geography.

The Savannah River provided an inexhaustible resource in terms of water and eventually a source of mechanical power. The river and branches from the river allowed mills to be built in several communities in the study area - providing textiles, paper products, and gunpowder. Augusta and surrounding areas began to benefit from growth. One area, now known as the City of Harlem, developed as a vacation town for wealthy individuals who wanted to escape the City of Augusta. Mineral mining and brick manufacturing led to the settling of several smaller cities including Hephzibah and Blythe.

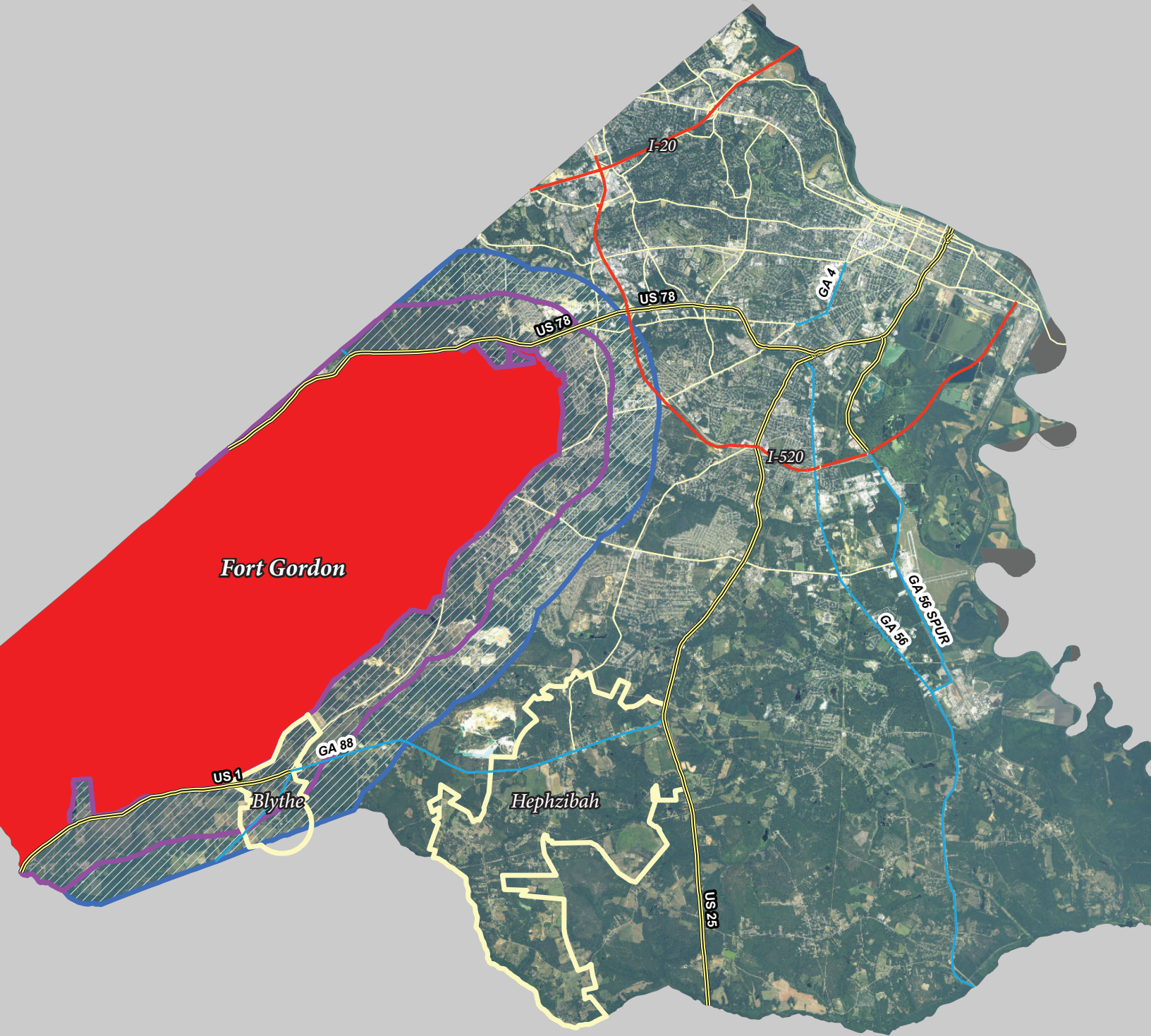
The City of Blythe was incorporated on January 1, 1920 and is currently located partially in both Augusta-Richmond County and Burke County. The city of Hephzibah was incorporated on January 1, 1970. Originally named "Brothersville" to honor the siblings of initial settlers. The name Hephzibah is a biblical reference found in the book of Second Kings.

Commercial areas developed near the river in what eventually would become downtown Augusta and would bolster surrounding rural cities and counties. The Savannah River Plant, Clarks Hill Reservoir Project, and opening of Fort Gordon provided job opportunities. Industrial expansion in paper, chemical, and other types of manufacturing provided a further catalyst for growth in the area. Educational institutions such as Augusta University, the Medical College of Georgia, and technical schools have provided the foundation for multiple medical centers and a variety of professions within the Central Savannah River Area.

While employment was on the rise, so was residential development. Augusta-Richmond County experienced growth in residential development in the southern and western areas. Improvements to transportation infrastructure proved beneficial to residents and surrounding jurisdictions as commute times, to Augusta were greatly reduced.

In 1996, Augusta consolidated to become Augusta-Richmond County. Blythe and Hephzibah were not apart of the consolidation.

MAP 2.1 AUGUSTA - RICHMOND COUNTY



Fort Gordon
City Limits

1 mile study area
2 mile study area

Interstate 20 & 520
U.S. Highways
Georgia Highways



BACKGROUND AND EXISTING CONDITIONS

Augusta-Richmond County Population

The population of Augusta-Richmond County and its contained jurisdictions has shown variations in growth over the past two decades (Table 2.4). Augusta-Richmond County, between 1990 and the year 2000 had an increase in population of approximately 10,800 new residents, representing a growth rate of 5.3 percent during this time period. This population growth rate decreased significantly during the next decade to .39 percent with an addition of approximately 775 new residents during this time period. As of the 2015 American Community Survey, Augusta-Richmond County had 201,291 residents.

Table 2.4 Augusta-Richmond County and Contained Jurisdictions Historic Population

County	Population				
	1990	2000	2010	Change	1990 / 2010-Percent Change
Augusta-Richmond	189,719	199,775	200,549	10,830	5.7 %
Blythe	300	718	721	421	140.3 %
Hephzibah	2,466	3,880	4,011	1,545	62.7 %

Source: Augusta-Richmond County Comprehensive Plan (Sept. 1992) & U.S. Census Bureau

The cities of Blythe and Hephzibah shared a similar growth pattern as the county. Between the years 1990 and 2000, Blythe added 418 new residents, and Hephzibah added 1,414 new residents. Growth slowed in the following decade for both cities.

Population projections for Augusta-Richmond County and its contained jurisdictions show continuous growth over the next three decades. Projections obtained from Augusta-Richmond County indicate a 4.67 percent increase from the year 2020 through 2040 (Table 2.5). Using this growth rate staff has projected that Blythe's population will increase by 92 and Hephzibah's population will increase by 600 new residents by 2040.

Table 2.5 Augusta-Richmond County and Contained Jurisdictions Population Projections

County	Population Projection			
	2020	2030	2040	Change
Augusta-Richmond	210,247	220,069	230,350	20,103
Blythe	964	1,009	1,056	92
Hephzibah	6,272	6,565	6,872	600

Source: Wood & Poole Inc., 2005 - Augusta-Richmond County, Staff Calculations

Population Movement

Augusta-Richmond County has and continues to experience some level of population growth. Census block data for the County from 2000, 2010, 2015, and 2020 projections allowed for a greater examination of where the population shifts occurred. Estimates indicate that population growth will occur near Fort Gordon's northeast boundary. This growth may not be an issue as this part of Fort Gordon does not carry out missions that may cause concern for residents in this area. However, population or commercial growth along the southeastern boundary of the Fort may cause issues in the future.



BACKGROUND AND EXISTING CONDITIONS

CITY OF BLYTHE

The City of Blythe (Map 2.2) is unique in two different ways as part of this study. First, Blythe is the only incorporated area to be completely contained within the CUS 2-mile study area. Second, Blythe is located within two different counties: Augusta-Richmond and Burke.

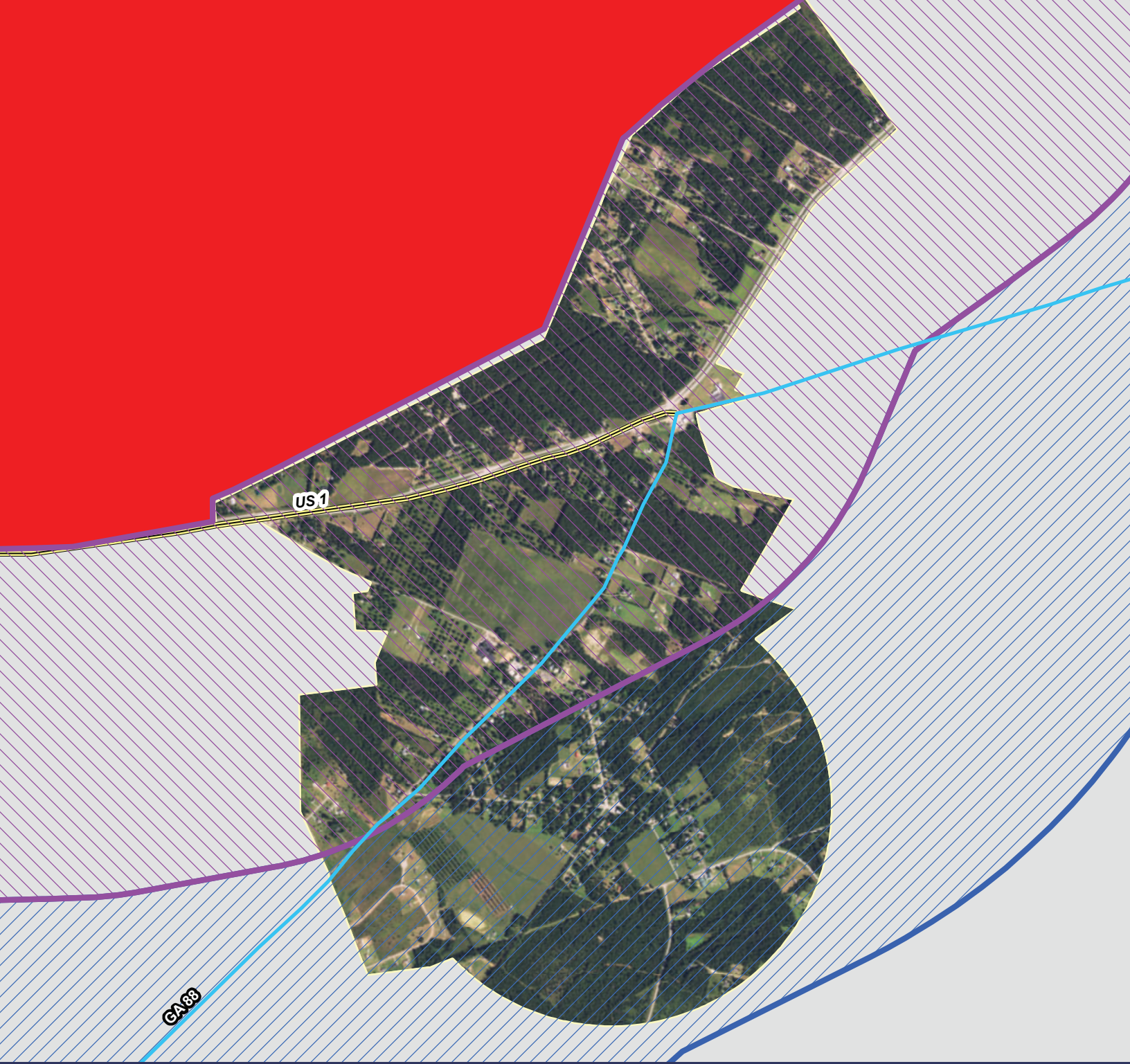
The City of Blythe's journey to becoming an incorporated city stems from the combination of the Tarver House, first residence in Blythe, and the establishment of a U.S. Post Office and Augusta Southern rail line from Augusta to Sandersville through the area. Development increased over the next couple of years as a store and company opened in the area. The name Blythe was given to the community in 1885 based on the suggestion from store owner V.J. Murrow. Homeowners were enticed to the area with offers of free land. Population growth continued to come through the rest of the 1880s and into the 1890s.

Richmond County built the first school in Blythe in 1894 due to the local residents desire for a school and their fundraising efforts. The City of Blythe was incorporated on January 1, 1920.

The city was at one time a busy hub of economic activity for the region. That no longer holds true, as many of the local businesses have closed. In spite of this Blythe seeks to reverse the trends of the past and once more become a regional economic hub. There are a number of retail stores, although the lack of businesses overall in some sectors. For now, Blythe remains a small community with an opportunity to recruit new residents, develop additional amenities revive commercial stores.

Today, the City of Blythe has a high level of home ownership at 81.2% of the population. This is higher than the overall state of Georgia's rate of 62.8%. These vested residents may be key to community revitalization. In 2016 the median household income was \$39,219. Within that, the City's two largest groups earn between \$30,000 and \$35,000 and less than \$10,000 annually.

MAP 2.2 CITY OF BLYTHE



Fort Gordon
City Limits

1 mile study area
2 mile study area

U.S. Highways
Georgia Highways



CITY OF HEPHZIBAH

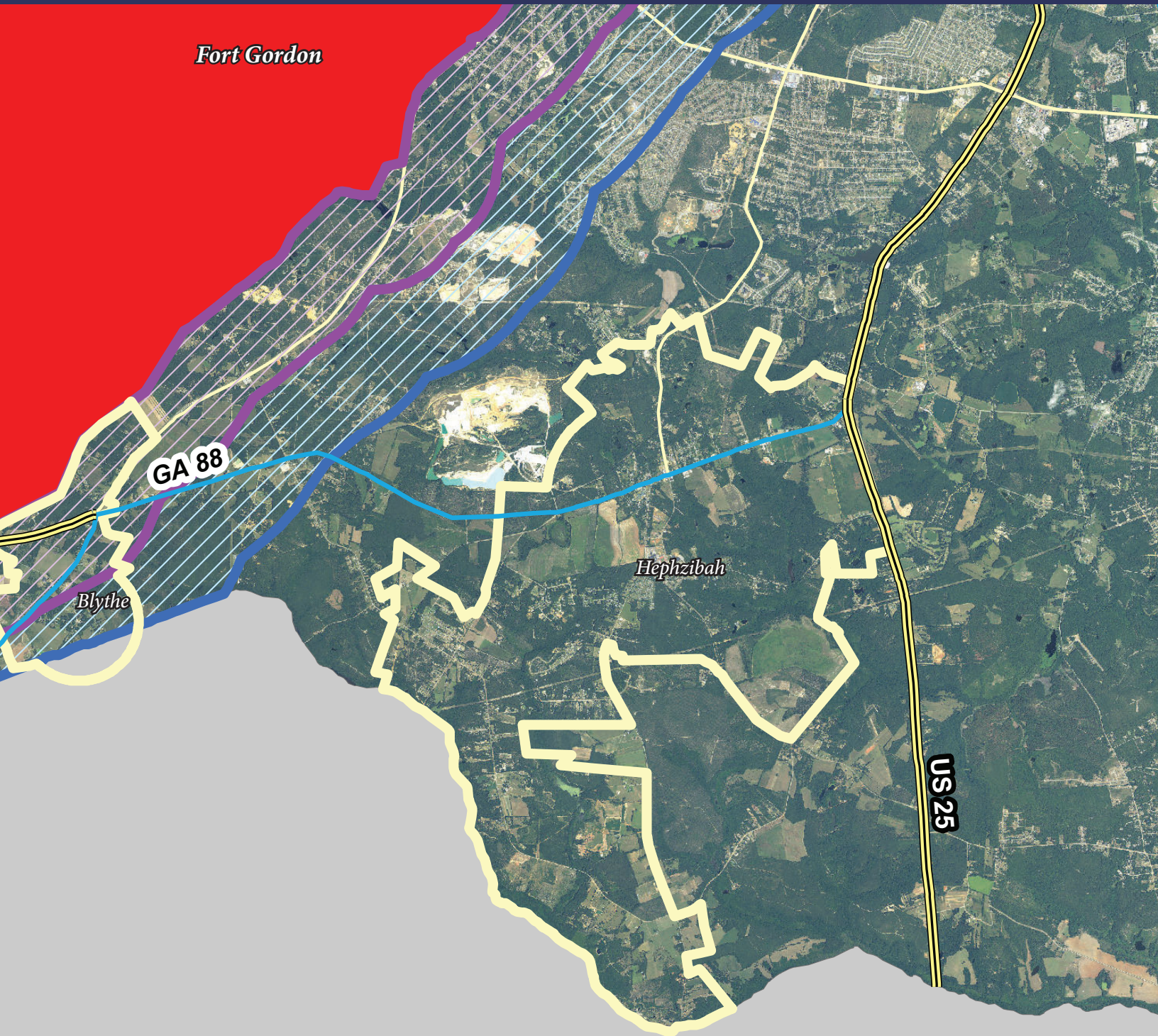
The City of Hephzibah (Map 2.3), incorporated in 1970, is located in southern Augusta-Richmond County. It was originally named Brothersville after the three brothers who originally founded the city. Its name was later be changed to its current name to honor the Hephzibah Baptist Association. Proximity to Augusta and more rural life style provided Hephzibah the opportunity to become a commuter community. The city was encircled by the newly-formed Augusta-Richmond County after the 1990s city-county consolidation.

Although Hephzibah lies completely outside of the 2-mile study area, its location and overall proximity to Fort Gordon support its inclusion in the study. Like many other CSRA communities, agricultural and residential land uses are the major types in the city. These two land use types represent over 90 percent of the city. Commercial, institutional, and industrial uses make up less than 10 percent combined. Consequently, most of the zoning is in residential, agricultural, and commercial designations.

The city has a median income of \$52,188. However, it is worth noting that the largest segment of earners in the city are in the \$100,000 to \$125,000 range. Homeownership is high at 75.8%.

The city has a large commuter population, so transportation is important. U.S. Highway 25 and Georgia State Route 88 are two major roads for the community and provide connection to other parts of the region. Officials and residents in Hephzibah seek to maintain its traditional look and feel as a small town with lots of southern charm.

MAP 2.3 CITY OF HEPHZIBAH



Fort Gordon
City Limits

1 mile study area
2 mile study area

U.S. Highways
Georgia Highways



COLUMBIA COUNTY

Columbia County (Map 2.4) is in the eastern central part of Georgia. Its location along both the Savannah River and Clarks Hill Lake provides multiple recreational and scenic opportunities. The area in which Columbia County is now located is believed to have been inhabited for thousands of years by multiple native peoples including, Creek and Cherokee Native Americans prior to European colonization. Originally laid out as part of Saint Paul Parish, Columbia County was named for Christopher Columbus and created as a means for settlers to have court sessions without having to travel to Augusta. The choice of naming the city after Columbus was a result of the region being first settled by Quakers, who preferred an explorer to a military commander as was the usual tradition.

The first village in the county, Brandon, was founded around 1752 and was subsequently abandoned in the mid-1750s. It still appeared on maps as late as 1779. The Georgia Railroad laid track in the county between 1834 and 1836 which paved way for new communities to grow along the railway. The county seat of Appling was chartered in 1816 in the northern part of the county. It was named after Colonel Daniel Appling who fought in the War of 1812.

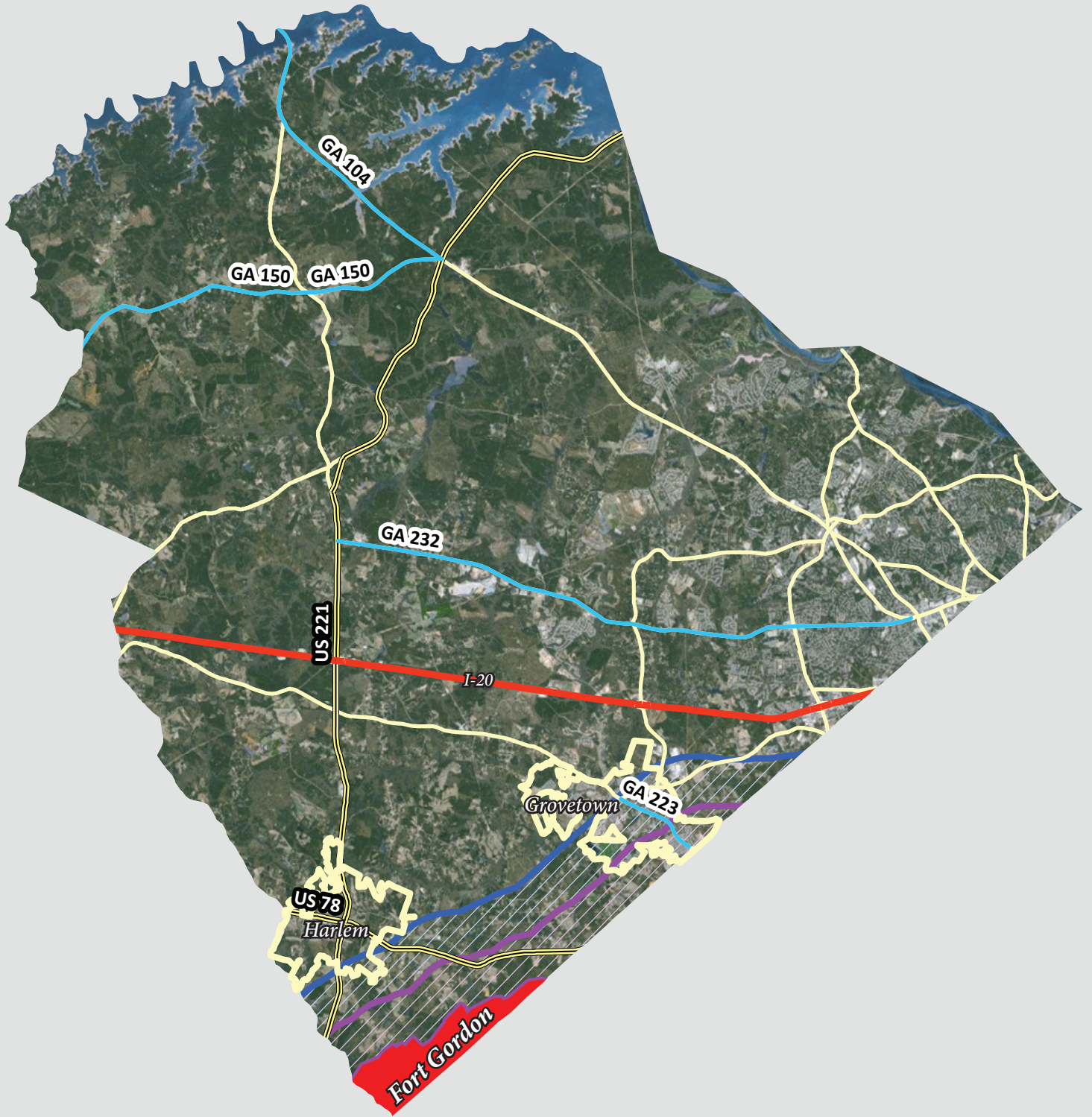
Cotton played a major role in the development of settlements within the county. The ability to move cotton by rail laid the grounds for a number of cotton plantations to be located in the county.

Currently Columbia County is experiencing explosive growth, with the most recent census showing a growth from 89,288 in 2000 to 124,053 in 2010.

Given the growth of the region both economically and demographically, it is important to monitor these trends and plan accordingly. The county would like to invest in additional quality of life projects to improve amenities for the citizens and to maintain the level of service that residents have come to expect in the face of extreme growth. On this note Columbia County seeks to develop a "Technology Corridor" to help capitalize on its regional growth and resources. The county has begun a number of efforts to protect the area's water resources, which are important to both the local economy and the environment. Considerations for protection of open spaces in rural and developing areas is also a top concern.

Although the county seat of Appling is not incorporated, the county does have two incorporated cities: Grovetown and Harlem.

MAP 2.4 COLUMBIA COUNTY



Fort Gordon
City Limits

1 mile study area
2 mile study area

Interstate 20 & 520
U.S. Highways
Georgia Highways



BACKGROUND AND EXISTING CONDITIONS

Columbia County Population

Population for Columbia County and its contained jurisdictions have shown continual growth for the past two decades. (Table 2.6) The decade between the 1990 and 2000 census saw an increase of 23,257 new residents, a growth rate of approximately 35 percent for Columbia County. This growth increased to nearly 39 percent from the year 2000 to 2010 according to census data. In 2013, the United States Census Bureau cited Columbia County as the 45th fastest-growing county of 3,007 counties in the United States.

Table 2.6 Columbia County and Contained Jurisdictions Historic Population

County	Population				
	1990	2000	2010	Change	1990 / 2010-Percent Change
Columbia	66,031	89,288	124,053	58,022	87.9 %
Grovetown	3,596	6,165	11,216	7,620	211.9 %
Harlem	2,199	1,814	2,666	467	21.2 %

Source: U.S. Census Bureau

The cities of Grovetown and Harlem have benefited from county population growth but at different rates since 1990. The City of Grovetown, Georgia has maintained strong population growth with a growth rate of nearly 70 percent between 1990 & 2000 and an increase to 84 percent the following decade. Grovetown's population increase is directly related to its proximity to one of Fort Gordon's entrance gates.

The City of Harlem has had a different experience than both Columbia County and Grovetown. Harlem experienced population decline between 1990 and the year 2000 as the city lost 18 percent of its population. This was reversed between 2000 and 2010 as the city's population grew by 48 percent. This growth was inevitable with the population increase in the county rising at such a high rate.

Table 2.7 Columbia County and Contained Jurisdictions Population Projections until 2040

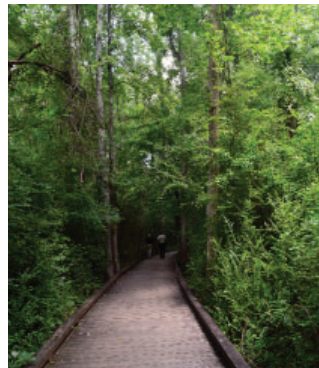
County	Population Projection			
	2020	2030	2040	Change
Columbia	155,809	191,103	234,392	35,294
Grovetown	15,142	20,441	27,596	5,300
Harlem	3,231	3,916	4,746	685

Source: Vision 2035 Columbia County Comprehensive Plan & Staff Calculations

Population growth in Columbia County is expected to continue for the next several decades as each jurisdiction is projected to have double digit growth rates. Columbia County should grow or exceed a rate of 22 percent. The cities of Grovetown and Harlem could experience a growth rate of 35 percent and 21 percent respectively (Table 2.7).

Population Movement

Over the last 20 years, Columbia County has and continues to experience a significant amount of population growth. Census block data for the County from 2000, 2010, 2015, and 2020 projections allowed for a greater examination of where the population shifts occurred. Based on the data, population growth will continue along the eastern edge of the county. There is expected population increases in moving north as well by 2020. Of particular note are those tracts in northeastern Columbia County, those around Grovetown, and those adjacent to Fort Gordon, many of which show an increase between 2015 estimates and the 2020 projections.



CITY OF GROVETOWN

The City of Grovetown (Map 2.5) was chartered in 1881. The development of the city was tied to the growth of the Georgia Railroad; the first railroad depot was established in 1879. Many Augusta residents had summer homes in Grovetown. They commuted on the old "Picayune" train, since it was a reliable means of frequent travel.

With the construction of Camp Gordon in the 1940s, Grovetown's population expanded a great amount. Losing its old persona as a small rural town, its population increased from 267 in 1930 to 1,396 by 1960. Most of this was from military families looking to Grovetown for housing. Over time, many retired military personnel saw the benefits of living in nearby Grovetown. Thus, the population began to grow at a stable rate.

More recently, annexation and multi-family housing construction has continued to increase Grovetown's population, with the city now home to over 13,000 residents. This growth has come fast to Grovetown as the population has grown 211.9% between 1990 and 2010. The median income experienced significant growth in this period as well, with household income rising from \$33,382 in the year 2000 to \$50,248 by 2010. The presence of Fort Gordon greatly adds to the local economy.

The city's housing has also greatly increased given all this change, going from 2,368 units in the year 2000 to 4,470 by 2013. Home values have increased to match this growth in the market. A variety of stores, dining establishments, schools, and churches add to the town's culture.

One major transportation asset for Grovetown is its proximity to Interstate Highway 20, which runs just north of the city and provides access to Augusta and other cities along the highway. Wrightsboro Rd. is another avenue into Augusta, though it has become severely congested in recent years.

Most of the city's resources are in the form of cultural locations. The city's cultural resources are in the form of 33 historic structures scattered throughout the city. Grovetown's current land use breaks down as follows: residential, commercial, industrial, public/institutional, and parks/recreation. Despite not having a traditional downtown like many other communities in the CSRA, Grovetown has created a form-based code for the core part of the city and encourages adaptive reuse of remaining historic structures. It also strives to create a sense of place and community for residents with a variety of activities, some of which take place at the park adjacent to City Hall. Grovetown's proximity to Fort Gordon creates a unique set of challenges, particularly if the city chooses to continue annexing south, which is closer to the noise zones.

MAP 2.5 CITY OF GROVETOWN, GEORGIA



Fort Gordon

1 mile study area

2 mile study area

Georgia Highways



CITY OF HARLEM

The City of Harlem (Map 2.6) was founded in 1870 and gained its name from visitors from New York City, who saw a resemblance to Harlem, a neighborhood in New York City known for its connection to the elite of the city. In the late 1880s early 1900s, Harlem absorbed the nearby communities of Saw Dust and Cerlastae. By 1913 the city was booming with a new oil/fertilizer plant, the Columbia Opera House, Hicks Hotel, electric lighting, two drugstores, three meat markets, two gin mills, three hardware stores, two grocery stores, two clothing stores, a newspaper, and a routine passenger train that passed daily. In 1917 a fire broke out and caused a great deal of damage to both the plant and the opera house. Most of the town's roads would remain unpaved up until the early 1940s. You could tell a lot about a resident's personal wealth if he or she lived in a house in front of a paved road.

As time passed, the city focused its efforts on being known as a railway destination. This proved to be fruitful from the 1930s to the 1960s, until the 1896 Georgia Railroad Depot was torn down in 1965. This marked the beginning of the end for this way of life. The last passenger train would visit Harlem on May 6th, 1983.

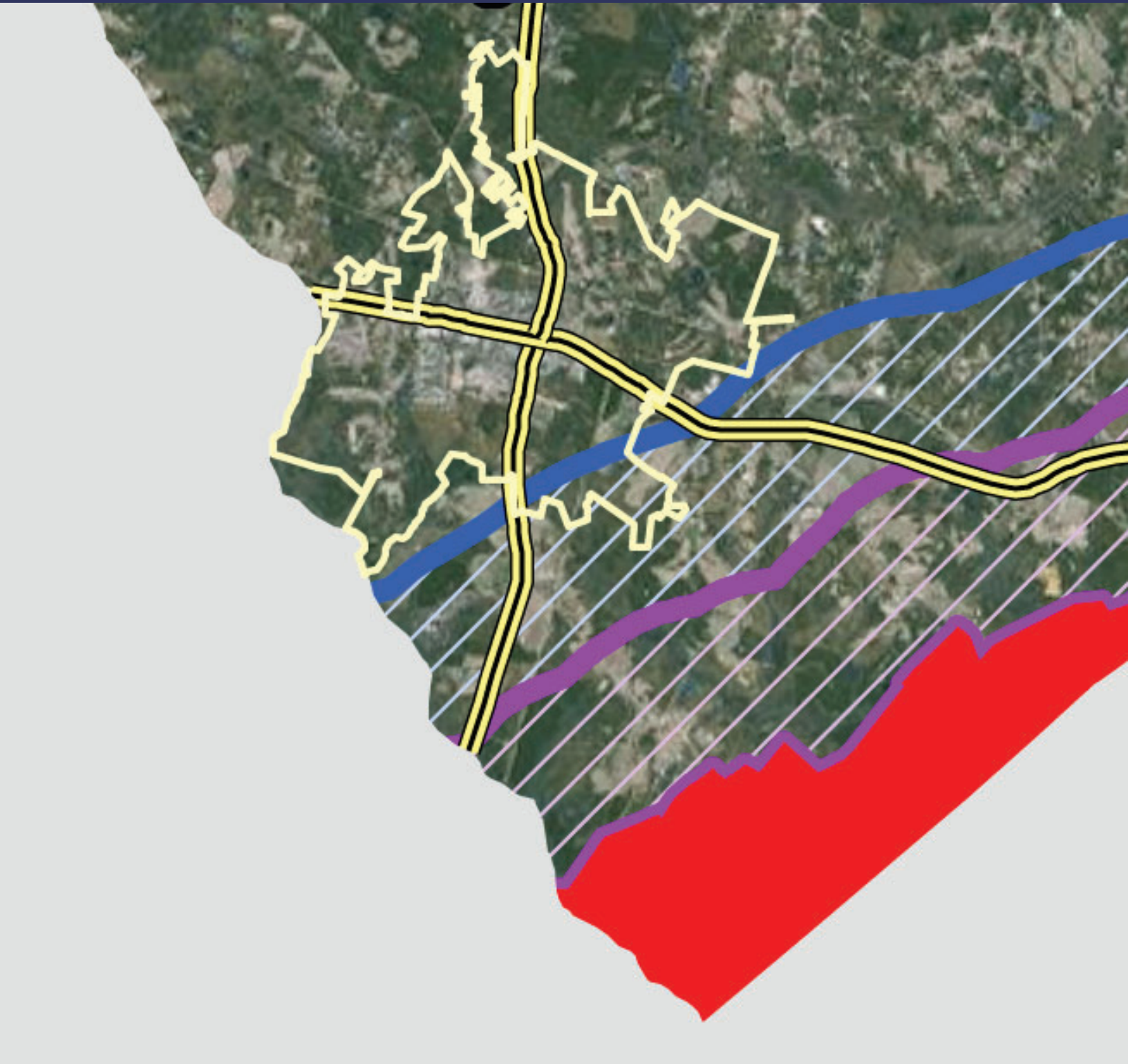
The city of Harlem remains a small sleepy town with only 3,000 residents, though every October the town draws thousands of people to visit the site and museum of comedian and Harlem native Oliver Hardy. The city is also home to a large number of both current and former military personnel, as a result of its proximity to Fort Gordon.

Housing for the city has increased over the past few decades, growing from 658 housing units in 1990 to 1,120 housing units in 2010, providing a significant increase of 70.2% between these decades. Homeownership is dominant here, with 72% owner-occupied units.

Overall economic activity went up with 10 out of the 13 sectors of the local economy seeing an increase in their employees. As of 2015, 22% of households in the City of Harlem make more than \$75,000 annually.

The city is taking steps to conserve its natural resources as well build upon its cultural ones for the betterment of the community. In terms of current land use, the city contains a mix of agriculture, commercial, industrial, residential, public/institutional, parks, utilities, and undeveloped.

MAP 2.6 CITY OF HARLEM, GEORGIA



Fort Gordon
City Limits

1 mile study area
2 mile study area

U.S. Highways
Georgia Highways



MCDUFFIE COUNTY

McDuffie County (Map 2.7) was created by an act of the Georgia General Assembly on October 18, 1870 with land taken primarily from Columbia County and a lesser amount from Warren County. The county was named for George McDuffie, a immigrant from Scotland who became a distinguished lawyer and held several political offices. It was originally settled by Quakers from Pennsylvania and North Carolina with land granted by the Royal Governor of Georgia, James Wright. The Quakers named their new town Wrightsboro in the Royal Governor's honor. Unfortunately, Mr. Wright only brought the Quakers here to serve as a buffer zone between the Native American tribes and the more settled areas closer to Augusta. Between bloody conflicts with the tribes and the expansion of slavery, the economic situation drove most Quakers to leave the area. Though the village of Wrightsboro survived until the 1920s, little remains of the town; what is left is managed by the Historic Wrightsboro Foundation.

Today, McDuffie County contains two incorporated jurisdictions: Thomson and Dearing. Thomson was founded in 1837, named after J. Edgar Thomson, one of the surveyors for the Georgia Railroad. Thomson was incorporated as a village in 1854 and became the county seat when McDuffie County was created. Although in existence as a village since the early 1800s, the town of Dearing received its current name in 1870. It was incorporated with a charter in 1910.

While agrarian culture has changed radically since 1950, historical and natural resources continue to define twenty-first-century McDuffie County. Recreation and tourism are prominent factors in the contemporary economic and cultural life of the county, as are the kaolin and timber industries. With over 20,000 residents, McDuffie County is one of the more populous in the CSRA region.

The interstate is a major contributor to the county and provides many opportunities for growth, development, travelers and revenue. The County has three I-20 exits. There is the CSX Railroad line as well, which transports cargo between Atlanta and Augusta that passes through the county.

McDuffie County has a number natural and cultural resources that it strives to preserve and protect. The county also has 16 historic sites that are on the National Register of Historic Places to add to their resource resume. Current land use within the county include residential, commercial, public/institutional, parks, utilities, and agricultural.

MAP 2.7 MCDUFFIE COUNTY, GEORGIA



Fort Gordon
City Limits

1 mile study area
2 mile study area

U.S. Highways
Georgia Highways



BACKGROUND AND EXISTING CONDITIONS

McDuffie County Population

Population for McDuffie County and its contained jurisdictions have experienced small increases over the last few decades. Between the years 1990 and 2010, McDuffie County gained approximately 1,800 residents, moving from 20,119 to 21,875. As of the 2015 ACS, the county population was 21,582. The City of Thomson and Town of Dearing are the two incorporated areas in the county, but Thomson is much more developed than Dearing. Thomson has over 6,000 residents, compared to around 600 in Dearing.

Looking to the future, the Georgia Governor's Office of Planning and Budget (GOPB) population projections from 2020-2030, McDuffie County is projected to see another small increase in population. This could be reflective of the anticipated growth at Fort Gordon, wherein several thousand soldiers and contractors will be moving to our area. If changes at the Fort were not considered in the GOPB calculations, the projections for our regional growth may be higher.

An aging population in the county and local anecdotal information suggests that some residents are choosing to age in place, and others are moving to the area for a more rural lifestyle and lower cost of living.

Population Movement

Census block data for McDuffie County from 2000, 2010, 2015, and 2020 projections reveals on the whole very little shifts within the county. Census tracts around Thomson maintain the highest population numbers. The northwest area of the county is and has been one of the least populated areas. No significant trend migration within the county by census tract is visible.





BACKGROUND AND EXISTING CONDITIONS

JEFFERSON COUNTY

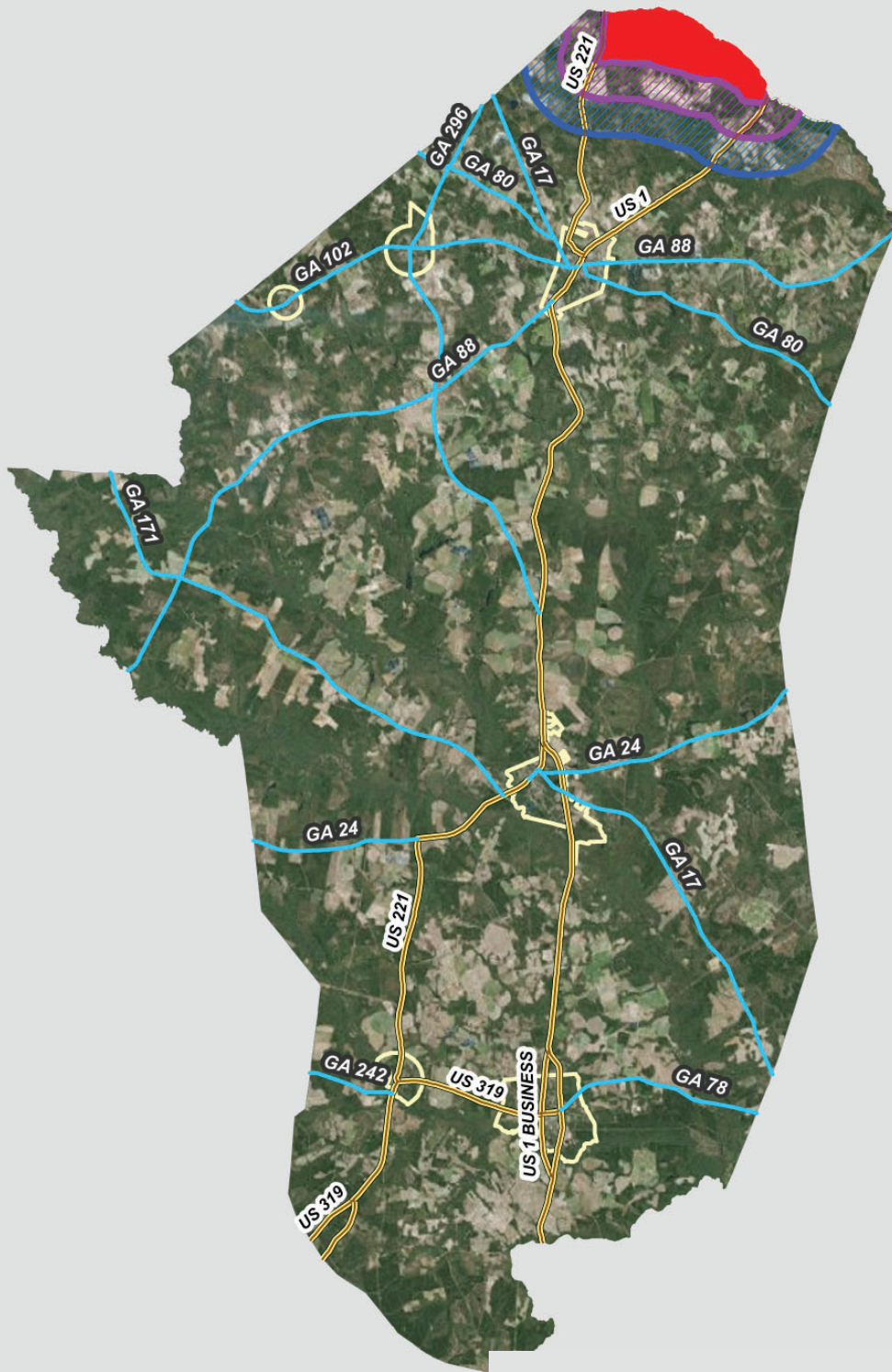
Named in honor of Thomas Jefferson, Jefferson County (Map 2.8) was established in 1796 as the state of Georgia's twenty-third county on land formerly belonging to Warren and Burke Counties. Since its founding, Jefferson County has been primarily agriculturally driven. Historically, cotton and tobacco were the main crops of the county. Today the county's farms have cotton, wheat, timber, cattle and dairy operations. Jefferson County contains six (6) incorporated areas: Avera, Bartow, Louisville, Stapleton, Wadley, and Wrens.

Jefferson County has experienced a relatively small amount of growth over the last 30 years. On the whole, the county remains rural and has not experienced the booming suburban growth seen elsewhere in the region. Despite lags or decline in the unincorporated area, some incorporated areas have grown in population, increased infrastructure service area and annexed land.

Travel behavior and the existence of roads have a direct impact on the location of new development. Jefferson County has an abundance of state routes intersecting the rural areas and linking them with the county's six cities. Historically, development patterns in the unincorporated areas have occurred along, or within close proximity to these major road networks. Widened highways and reduced commute times have increased Jefferson County's location benefit of proximity to the Augusta/Aiken area. Growth and job opportunities in these nearby counties served as a catalyst for residential development along the commuting corridor.

This same proximity has also affected commercial development. For the most part, much of the county's residents traditionally traveled outside the county to take advantage of larger shopping and entertainment opportunities in Augusta-Richmond County. Over time, major commercial and business development has been focused in areas inside and near the incorporated areas. Commercial land use is significantly higher in Louisville, Wadley and Wrens than the other municipalities, reflecting larger population shares and traditional status as trading centers.

MAP 2.8 JEFFERSON COUNTY, GEORGIA



Fort Gordon
City Limits

1 mile study area
2 mile study area

U.S. Highways
Georgia Highways



1 inch = 3.09 miles

BACKGROUND AND EXISTING CONDITIONS

Jefferson County Population

Since 1990, Jefferson County has experienced a small (approximately 6%), but gradual decline in population. Despite population loss, Jefferson remains one of the CSRA region's more populous counties with over 16,000 residents. Population loss in the unincorporated areas has been offset some by growth in the incorporated municipalities. Louisville, Wadley, and Wrens are the most populous cities within Jefferson County, each having approximately 2,000-2,500 residents as of 2015. Each of those jurisdictions experienced a decline in population between 2000 and 2010, but they also experienced a recovery between 2010 and 2015. Data from the GOPB indicates that Jefferson County will be one of several counties in the area to experience population decline over the long term.

Population Movement

Census block data for Jefferson County from 2000, 2010, 2015, and 2020 projections reveals on the whole very little shifts within the county. As the number of residents remained relatively the same, the relative population size of the various census tracts also remained the same. No significant trend migration within the county by census tract is visible.





Photo credit: Greg Newington



BURKE COUNTY

The Creek, Cherokee, and Catawba Native Americans that initially inhabited the area now known as Burke County (Map 2.9) lost their land when they signed treaties with the English in 1733, 1736, and 1758. When the colony of Georgia was founded in 1733, the area of Burke County was known as the Halifax District. In 1758, Georgia was divided into parishes and the Halifax District became the parish of St. George. On February 5, 1777, St. George Parish became Burke County, one of Georgia's eight original counties. It was named for Edmund Burke, a member of the British Parliament, philosopher, and advocate for appeasing the grievances of the American colonists.

Most of the first landowners came from the older American colonies; they were attracted by the Savannah and Ogeechee rivers, Briar Creek and other creeks that offered water and transportation. By the end of the 18th century, larger tracts of land used for farming and production of cotton utilized enslaved labor, forming a plantation system that replaced the small farms. As in much of the southern U.S., Burke County's economy became based on cotton production. The Civil War brought an end to the large farm cotton production and the economy returned to a system of small farms worked by sharecroppers or tenant farm laborers. For decades after the Civil War, agriculture continued as the basis of the economy.

Today, Burke County has six (6) incorporated municipalities: Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro. Burke County continues to experience growth that allows facilities to expand and commercial and residential projects to be completed. Plant Vogtle, located in Waynesboro, is the site of one of the largest construction projects in the United States. Southern Company and the other owners of Plant Vogtle are in the process of building two additional nuclear reactors, Core Units #3 and #4, to generate electricity for residential, business, and industrial consumption. This project has led to a new flow of revenue and temporary residents. Additional housing options are needed for new employees.

MAP 2.9 BURKE COUNTY, GEORGIA



Fort Gordon
City Limits

1 mile study area
2 mile study area

U.S. Highways
Georgia Highways



1 inch = 3.09 miles

Burke County Population

In Burke County the number of residents increased by over 11 percent during the time period of 1990 to 2010. Population during the 1990 Census was 20,579 residents, and 2010 Census counted 23,316 residents. Waynesboro and unincorporated Burke County have experienced the largest population increases in Burke County. As of 2017, Waynesboro had 5,586 residents. Although the county has several cities, most of them remain small, with between 100 and 1,000 residents. The municipalities have worked to improve and promote their small town character, and interest in Burke County as a place to live a quality rural life has increased.

Population in Burke County has grown steadily in part due to the influx of people moving to northern Burke County and the workforce swell of employees at Plant Vogtle.

Population Movement

Census block data for the County from 2000, 2010, 2015, and 2020 projections allowed for a greater examination of where the population shifts occurred. Burke County population centers by Census tract have been and continue to be located around Waynesboro and parts of northern Burke County. Little trend migration within the county was found. The tracts along the border with Augusta-Richmond County are included in the group of more populous tracts and are a targeted area for county growth.





V. EXISTING PLANNING ENVIRONMENT

Regulations from multiple levels of government entities have been examined in order to provide the best available analysis for the 2018 Fort Gordon Compatible Use Study (CUS). These include, but are not limited to, regulatory language from federal, state, and, local government entities and policies from the U.S. Army and the Department of Defense.

The goal of bringing Fort Gordon and surrounding jurisdictions together in order to address issues of encroachment and land use planning has already initiated a certain level of cooperation. Discussions between communities and the Fort regarding development of land within a certain distance of Fort boundaries is a solid example of this cooperation.

It is important to build upon this foundation of communication in order to address major issues which include but are not limited to the encroachment of development upon Fort boundaries (which potentially affects missions), environmental concerns, and the safety and health of residents and Fort personnel.

Planning Overview for Fort Gordon

The basis for land use planning for the Fort primarily lies in Army Regulation (AR) 210-20, Real Property Master Planning for Army Installations, 16 May 2005:

“A. Army installation garrison commanders are the mayors of small cities. As such, they are the directors, influencers, and implementers of present challenges and future change. They must create a vision and a blueprint that enable their installations to respond to future Army missions and community aspirations, while providing and maintaining the capability to train, project, sustain, and support today’s force.”

“B. The garrison commander must develop business practices to build enduring, sustainable, and continually improving quality communities and training lands that support mission readiness. They must establish their installations as valued neighbors and trusted partners with surrounding communities. Installations must be recognized as examples of excellent environmental stewardship enhancing the environment for future generations through sustainable design and development. Such quality installations can be achieved by effective use of resources that are guided by the near-term and long-range real property investment goals and objectives of HQDA, the MACOMs, the IMA, and local mission commanders.”

“C. The Army must have a physical plant (to include its ranges and training lands) that fully supports the mission of the tenants and provides an overall environment of quality and protection for the force necessary for national security. The garrison commander’s instrument for unifying planning and programming for installation real property management, development, and associated services is the master planning process. This process will be recorded in an installation RPMP. Properly developed, an RPMP will chart a long-term investment strategy for achieving the garrison commander’s goals for providing excellent installation physical plants and training lands while supporting the Army’s vision for current and future missions.”

“D. A well-prepared RPMP expresses a long-term commitment to provide high-quality, sustainable, enduring installations. It covers a 20-year planning horizon and provides the map to executing that commitment. It is a major descriptor of the garrison commander’s Installation Sustainability Program and Sustainable Range Program venues to identify and accomplish long-term goals that ensure future mission accomplishment with the least impact on the installation and regional communities. Additionally, the RPMP provides the garrison commander’s strategy for meeting the challenges of operating under changing paradigms. These paradigms include anti-terrorism and force protection; reduced manpower and resources; executing base realignments and closures; and shifting appropriate base operations (BASOPS) functions from the government to the private sector.”

BACKGROUND AND EXISTING CONDITIONS

These mandates state that the Garrison Commander operates an Army Fort similar to a small city. This includes the provisions of services similar to city offerings in conjunction with serving the missions of the Fort. Master planning based on the missions of Fort Gordon requires guidance that is contained in multiple plans and documents. These documents reference trends, strategies, force structures, programs, and resource requirements on which long-range planning decisions are based.

The Garrison Commander implements the military post's policies and procedures coordinating with the Senior Mission Commander and monitors the readiness of units assigned to the installation. The Garrison Commander is also responsible of daily operations and long-range planning which are coordinated with the Senior Mission Commander and Command Group along with unit commanders on the installation.

<i>Branch</i>	<i>Function Related to Land Use Planning</i>
<i>Directorate of Information Management</i>	<i>Examines plans to determine communication / IT feasibility</i>
<i>Director of Morale, Welfare, and Recreation</i>	<i>Participates in the planning of Recreational Facilities</i>
<i>Director of Plans, Training and Mobilization including Range Control</i>	<i>Coordinates with the Director of Public Works & Logistics on Military training requirements and objectives as it relates to the implementation of short-long term range development plans. Coordinates with DPWL on upcoming training activities that affect land use.</i>
<i>Environmental Branch - Fish and Wildlife Environmental Branch - Forestry</i>	<i>Implements fish & wildlife management planning, the natural resources management prescriptions and coordinates with Range Control and affected branches. Coordinates with state and federal fish and wildlife management agencies in fulfillment of management duties and responsibilities. Implements and incorporates Best Management Practices for forestry. Implements prescribed burning guidelines</i>
<i>Office of the Staff Judge Advocate</i>	<i>Reviews legal aspects of plan development.</i>
<i>Plans, Analysis, and Integration Office</i>	<i>Provides strategic management in all planning matters.</i>
<i>Public Affairs Office</i>	<i>Is a conduit to the community outside the Post concerning missions, functions, events.</i>

Land use management on Fort Gordon is under the authority of the Fort Gordon Real Property Planning Board (RPPB) which is chaired by the Garrison Commander and includes members of Fort Gordon's command, operational, engineering, planning, staff and tenants. These member provide assistance in managing and developing Fort Gordon, facilities, and real estate in an orderly manner to satisfy current and future missions. Table 2.8 identifies key Fort Gordon branches involved in land use planning.

BACKGROUND AND EXISTING CONDITIONS

The Fort Gordon Real Property Management Plan (RPMP) provides for the orderly management and development of property assets of Fort Gordon. The RPMP enables Army staff to reach decisions based upon development activities and operational activities and provides the Installation Commander a reference to address the future of the installation and to solve current problems.

The RPMP also allows the Army to make decisions based upon development and facilities management proposals which meets command goals and mission objectives as these proposals are most appropriate for considering opportunities and constraints of the Post.

Federal Planning

Federal planning affects Fort Gordon through federal laws and regulations that applicable across the board and Army and Department of Defense regulations that stipulate direct coordinated planning with federal agencies. Federal environmental laws and regulations are an example of legislation at the federal level that requires compliance at all government levels and by military installations and activities. Examples include:

- *Clean Air Act of 1970, amended 1990*
- *National Environmental Policy Act of 1969, amended 1982*
- *Fish and Wildlife Coordination Act of 1965*
- *Endangered Species Act of 1973, amended 1980*
- *Migratory Bird Treaty Act of 1972*
- *National Historic Preservation Act of 1966, amended 1980*
- *Archaeological and Historic Preservation Act of 1974*
- *Noise Control Act of 1972, amended 1978 Federal Water Pollution Control Act of 1973*
- *Clean Water Act of 1977*
- *Water Quality Act of 1987*
- *Safe Drinking Water Act (SDWA) of 1972, amended 1986*
- *Wild and Scenic Rivers Act (WSRA) of 1968*
- *National Wildlife Refuge System Administration Act Of 1966*
- *Migratory Bird Treaty Act MBTA (Amended 1997)*

Other major federal regulations that are applicable to Army installations include, but are not limited to the U.S. AR 200-2, Environmental Effects of Army Actions, and numerous other ARs. They ensure that land use at Army installations will comply with these and other environmental, cultural, historic protection and restoration laws and regulations.

State Planning

Georgia Planning Act

Land use planning in the state of Georgia was overhauled in 1989 when the Georgia State Assembly adopted Act 634 of the Georgia Laws, which became known as the "Georgia Planning Act of 1989 (the Planning Act)." The Planning

BACKGROUND AND EXISTING CONDITIONS

Act created several new sections in the Georgia Department of Community Affairs (DCA) including - the Office of Coordinated Planning and a Board of Community Affairs. DCA has undergone several iterations of change. The Planning Act is now administered by the Planning and Environmental Management Division through the Office of Planning and Quality Growth with a stated goal of “helping the state’s communities address issues of community development and quality of life by fostering implementation of quality growth best practices throughout the state.”

The Office of Planning and Quality Growth is responsible for the preparation and implementation of minimum standards and procedures for comprehensive land use planning for all jurisdictions in Georgia.

The Planning Act established a coordinated planning process involving Georgia state government, regional commissions, and local governments with the intention of creating an administrative framework for the comprehensive and coordinated management of Georgia’s use of land, natural and cultural resources, and economic development priorities.

Georgia Military Affairs Coordinating Committee

The Governor’s Military Affairs Coordinating Committee consists of representatives from local communities and state government which coordinate statewide efforts to retain and expand Georgia’s military bases. The Committee works to improve the mission value of the state’s installations and the quality of life of the people who live and work there. GMACC conducted an evaluation of each base and developed a comprehensive action plan to address any shortcomings. The plan is reviewed semiannually and continually adjusted as issues are resolved or new issues arise. In 2013, the Governor of Georgia moved the GMACC under state direction as part of the Strategic Defense Initiative.

Regional Planning***Central Savannah River Area Regional Commission***

The Planning Act requires the CSRA RC and all other regional commissions in Georgia to prepare and adopt a regional plan which must include a land use component.

The CSRA RC is a regional governmental organization that represents 13 counties in the Central Savannah River Area. This Regional Commission is required to operate an advisory board charged with developing plans and recommending actions to local governments. Member governments can strengthen themselves through the assistance of CSRA RC staff in the areas of planning, economic development, grant writing, and other technical areas.

BACKGROUND AND EXISTING CONDITIONS

Augusta Metropolitan Planning Organization

The Augusta Metropolitan Planning Organization provides transportation planning for Columbia and Richmond County in the state of Georgia and Aiken and Edgefield County in South Carolina. The Augusta Regional Transportation Study (ARTS), a metropolitan planning process as defined by the 1962 Federal Aid to Highways Act and subsequent legislation, is the document that outlines transportation planning.

The most recent transportation plan is entitled “ARTS Transportation Vision 2040 - Long Range Transportation Plan.” This 20-year plan describes itself as “Recognizing the interconnection of multi-modal transportation, land use and economic growth; collectively, citizens, elected officials, public agencies and interest groups, provided valuable input creating a shared vision for a prosperous, safe and healthy future. Therefore, the LRTP study catch phrase ‘Transportation Vision 2040’ defines: what’s possible, what the ARTS may become, and what needs to be done to realize the vision.”

Central Savannah River Area Unified Development Authority

CSRA Unified Development Authority (UDA) is a joint development authority whose purpose is to promote the economic development of the CSRA and to encourage cooperation among economic development organizations within the member counties. The UDA provides its members with such services as local/regional planning, state and federal grant support, small business loans, information services and strategic planning. The UDA has an important land use function because members can shape infrastructure decisions.

Coordination Mechanisms and Existing Compatibility Tools

The ability of Fort Gordon to conduct operations training is of the utmost importance to post leadership. Communities in the CSRA have demonstrated a historical commitment to engage in cooperative land use planning. However, due to development pressure this relationship has been seen by some to have eroded over time. There is a need to re-engage a close, interactive relationship between Fort Gordon and surrounding communities.

Figure 2.5 Existing Conditions between Local Governments and Fort Gordon



BACKGROUND AND EXISTING CONDITIONS

State Government Compatibility Measures

Georgia state legislation, under O.C.G.A 36-66-6, requires any local government's planning department or similar agency charged with reviewing zoning proposals to request written recommendations regarding the use of land being considered in a proposed zoning decision if the land is adjacent to or within 3,000 feet of a military base or military installation or within the 3,000 foot Clear Zone and Accident Prevention Zones Numbers I and II of a military airport. The planning department or other agency shall request from the commander of such military base, military installation, or military airport a written recommendation and supporting facts relating to the use of the land being considered in the proposed zoning decision at least 30 days prior to the hearing.

Regional Compatibility Measures

Fort Gordon's role in the region, its importance, and potential land use conflicts were presented throughout the regional planning process and are included in the final plan document. The regional land use map from the 2018 regional plan update contains information on "developed", "developing", and "rural" areas. Additionally, the Areas Requiring Special Attention map designates Fort Gordon and the 2-mile buffer around it as a threatened regionally important resource. This section of the plan also includes appropriate land uses, recommended development patterns, and implementation measures.

The minimum standards for local governments that are considered to be essential activities needed for consistency with the CSRA Regional Plan 2040 include the following:

- Has a memorandum of understanding or similar with Fort Gordon that promotes communication and coordination of land use decisions
- Has a local representative at meetings between Fort Gordon and its bordering counties

One priority need designated within the plan is: "Reduce, eliminate, or prevent encroachment on Fort Gordon military installation", for which a strategy to address this need is the 2018 CUS recommendations.

Local Government Compatibility Measures

Individuals charged with the responsibilities of planning and zoning issues for their jurisdictions work with post personnel when issues arise regarding property development near the military installation. Figure 2.5 summarizes the existing mechanisms between government entities and Fort Gordon.

BACKGROUND AND EXISTING CONDITIONS

The planning documents prepared by local governments surrounding Fort Gordon have placed compatibility measures in place to prevent encroachment and there have been efforts to ensure land compatibility and encourage coordinated planning; examples include:

- Columbia County: As a Goal and Implementation Strategy of Vision 2035 Comprehensive Plan - Notify Fort Gordon of zoning proposal within 3,000 feet of the Fort
- Augusta-Richmond County: As a Goal and Supporting Policy of the Augusta-Richmond County 2008 Comprehensive Plan - Coordinate with the Fort regarding the planning and implementation of projects related to land use, transportation, environmental protection.
- Fort Gordon's Garrison Commander is a voting member of the Augusta Regional Transportation Study Policy Committee
- Fort Gordon's Director of Installation Support is a voting member of the Augusta Regional Transportation Study Technical Committee

Developments of Regional Impact

The Georgia Planning Act of 1989 authorized the Department of Community Affairs (DCA) to establish procedures for the intergovernmental review of large-scale projects which are designed to improve communication between affected governments and assess potential impacts of large-scale developments before conflicts arise. Developments of Regional Impact (DRIs) are large-scale developments likely to have effects outside of the local government jurisdiction. Table 2.9 describes the development threshold criteria for projects subject to a DRI review process.

Proposed developments which exceed applicable DRI threshold criteria are subject to additional review by the regional planning agency and Fort Gordon if the installation is identified as an affected stakeholder. If a particular project was found to pose a threat to Base operations, recommendations can be made against approval of the project.

BACKGROUND AND EXISTING CONDITIONS


Table 2.9 Developments of Regional Impact Thresholds for the State of Georgia

Type of Development		Metropolitan Tier	Non-Metropolitan Tier
1.	Office	Greater than 400,000 gross sq. ft	Greater than 125,000 gross sq. ft
2.	Commercial	Greater than 300,000 gross sq. ft	Greater than 175,000 gross sq. ft
3.	Wholesale & Distribution	Greater than 500,000 gross sq. ft	Greater than 175,000 gross sq. ft
4.	Hospitals and Health Care Facilities	Greater than 300 new beds; or generating more than 375 peak hour vehicle trips per day	Greater than 200 new beds; or generating more than 250 peak hour vehicle trips per day
5.	Housing	Greater than 400 new lots or units	Greater than 125 new lots or units
6.	Industrial	Greater than 500,000 gross square feet; or employing more than 1,600 workers; or covering more than 400 acres	Greater than 175,000 gross square feet; or employing more than 500 workers; or covering more than 125 acres
7.	Hotels	Greater than 400 rooms	Greater than 250 rooms
8.	Mixed Use	Gross square feet greater than 400,000 (with residential units calculated at 1800 square feet per unit toward the total gross square footage); or covering more than 120 acres.	Gross square feet greater than 125,000 (with residential units calculated at 1800 square feet per unit toward the total gross square footage); or covering more than 40 acres.
9.	Airports	All new airports, runways and runway extensions	Any new airport with a paved runway; or runway additions of more than 25% of existing runway length
10.	Attractions & Recreational Facilities	Greater than 1,500 parking spaces or a seating capacity of more than 6,000	Greater than 1,500 parking spaces or a seating capacity of more than 6,000
11.	Post-Secondary School	New school with a capacity of more than 2,400 students, or expansion by at least 25 percent of capacity	New school with a capacity of more than 750 students, or expansion by at least 25 percent of capacity
12.	Waste Handling Facilities	New facility or expansion of use of an existing facility by 50 percent or more	New facility or expansion of use of an existing facility by 50 percent or more
13.	Quarries, Asphalt & Cement Plants	New facility or expansion of existing facility by more than 50 percent	New facility or expansion of existing facility by more than 50 percent
14.	Wastewater Treatment Facilities	New facility or expansion of existing facility by more than 50 percent	New facility or expansion of existing facility by more than 50 percent
15.	Petroleum Storage Facilities	Storage greater than 50,000 barrels if within 1,000 feet of any water supply; otherwise, storage capacity greater than 200,000 barrels	Storage greater than 50,000 barrels if within 1,000 feet of any water supply; otherwise, storage capacity greater than 200,000 barrels
16.	Water Supply Intakes/Reservoirs	New Facilities	New Facilities
17.	Inter-modal Terminals	New Facilities	New Facilities
18.	Truck Stops	A new facility with more than three diesel fuel pumps; or containing a half acre of truck parking or 10 truck parking spaces.	A new facility with more than three diesel fuel pumps; or containing a half acre of truck parking or 10 truck parking spaces.
19.	Correctional/Detention Facilities	Greater than 300 new beds; or generating more than 375 peak hour vehicle trips per day	Greater than 200 new beds; or generating more than 250 peak hour vehicle trips per day
20.	All Other Development	1000 parking spaces or, if available, more than 5,000 daily trips generated	1000 parking spaces or, if available, more than 5,000 daily trips generated

Source: Rules of Georgia Department of Community Affairs; Chapter 110-12-3

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CHAPTER
LAND USE and
COMPATIBILITY
ASSESSMENT



FORT GORDON / CENTRAL SAVANNAH RIVER AREA
COMPATIBLE USE STUDY



This chapter assesses the land use patterns in the counties surrounding Fort Gordon, the noise environment created by training at Fort Gordon, and potential impacts of those activities. It also looks briefly at the environment of telecommunications towers and transmission lines in the study area, a changing one that must be examined given changes at the Fort.

In 2015, the Fort Gordon Installation Compatible Use Zone Plan (ICUZ) was completed. The ICUZ documented and analyzed the noise environment, including principal military training noise sources, population centers near the installation, compatible land uses, and complaint risks. Components of this CUS related to the Fort's noise environment are based on or pulled from the ICUZ. In considering effective land use and compatibility measures, the CUS also looks beyond the Noise Zones II and III, and into mitigation and prevention of conflicts within the larger area of peak noise and complaint risk potential areas and the full 2-mile study area.

Through this assessment, changes to regulations and policies along with other tools, can be utilized and implemented to ensure greater land use compatibility with current and future Fort Gordon missions. This assessment also aids the Fort in understanding impacts it creates in the surrounding area as it continues to grow.

**CYBER CENTER OF EXCELLENCE
FORT GORDON
INSTALLATION COMPATIBLE
USE ZONE PLAN**



MAY 2015

Prepared By:
Operational Noise Program
Environmental Health Engineering
Army Institute of Public Health
U.S. Army Public Health Command

LAND USE AND COMPATIBILITY ASSESSMENT

I. OVERVIEW OF THE NOISE ENVIRONMENT

Noise Zones

“Noise Zones” are used to articulate noise exposure on a community and are defined by the decibel level within each zone. Table 3.1 identifies noise measurements and limits adopted by the Army, which guide planning for facilities, operations, and training. These were developed in the 1980s in response for the need to identify appropriate land uses in the vicinity of Army installations to avoid noise complaints and other compatibility issues. For the CUS, the following ICUZ definitions for noise were used:

Noise Zone I - included all areas around a noise source in which the C-weighted day-night sound level (CDNL) is less than 62 dB (demolition and large caliber weapons), the A-weighted day-night level (ADNL) is less than 65 dB (aviation), or the dB Peak is less than 87 (small caliber weapons)

Noise Zone II - the area around a noise source in which the CDNL is 62-70dB (demolition and large caliber weapons), the ADNL is 65-75 dB (aviation), or the dB peak is 87-104 (small caliber weapons)

Noise Zone III - the area around a noise source in which the CDNL is greater than 70dB (demolition and large caliber weapons), the ADNL is greater than 75 dB (aviation), or the dB peak is greater than 104 (small caliber weapons)

Land Use Planning Zone (LUPZ) - a subdivision of Zone I that is 5 dB lower than Zone II

Noise activity from military training exercises at the installation is generally created as a result of weapons firing (small arms and large caliber), demolition, and aviation activity- each with a distinctive noise level and radius for which it is audible.

Figure 3.1: Decibel (dB) Range Chart

0dB	Threshold of human hearing
10dB	Breathing
20dB	Whisper, Light snoring
30dB	Quiet room
40dB	Moderate snoring
50dB	Average office noise, Conversation
60dB	Busy street, Alarm clock
70dB	Hairdryer, Noisy restaurant
80dB	Loud radio
90dB	Bass drum
100dB	Subway train
110dB	Industrial noise
120dB	Jet Plane take off
130dB	Gunshot, Metal concert

Table 3.1: Noise Limits for Noise Zones

Noise Zone	Noise Limits			Noise-Sensitive Land Use
	Aviation ADNL (dB)	Impulsive CDNL (dB)	Small Arms dBP	
LUPZ	60 – 65	57 – 62	n/a	Generally Compatible
I	< 65	< 62	< 87	Generally Compatible
II	65 – 75	62 – 70	87 – 104	Generally Not Compatible
III	> 75	> 70	> 104	Not Compatible

Notes:
dB = decibel
ADNL = A-weighted Day-Night Level
CDNL = C-weighted Day-Night Level
P = Peak
n/a = Not Applicable

Source: 2015 Fort Gordon ICUZ

LAND USE AND COMPATIBILITY ASSESSMENT

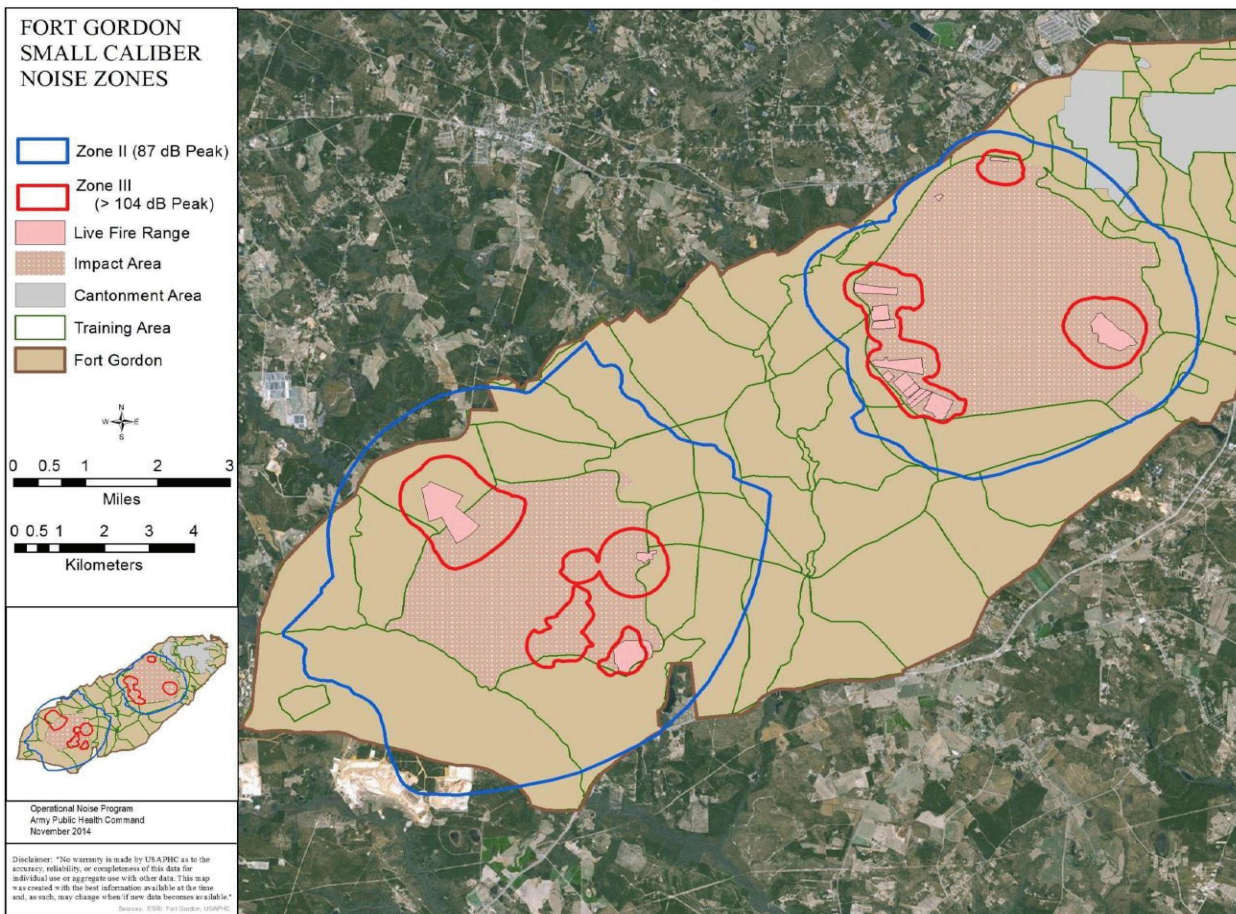
Small Arms Noise

Weapons of .50 caliber or less are considered small arms. The small arms ammunitions utilized on Fort Gordon ranges are fired from rifles, machine guns, and pistols. Small arms noise is divided into two (2) subsections based on the type of range facility:

- Fixed Firing Points - fixed firing points and/or targets within a defined area.
- Non-fixed Firing Points - an area or range with non-fixed firing points and/or targets.

Small caliber live-fire range activity is a common occurrence at Fort Gordon, generally available 365 days a year.

Map 3.1: Fort Gordon Small Caliber Noise Zones



Source: 2015 Fort Gordon ICUZ

Fixed-Firing Point Ranges

The noise zones for small caliber firing activity - representing a maximum training scenario with all ranges actively firing - are illustrated in Map 3.1. Noise Zones are split into two large areas surrounding each impact area. Zone III remains completely contained within Fort Gordon. Zone II is generated when firing in the impact area that extends approximately 0.06 miles beyond the northern

LAND USE AND COMPATIBILITY ASSESSMENT

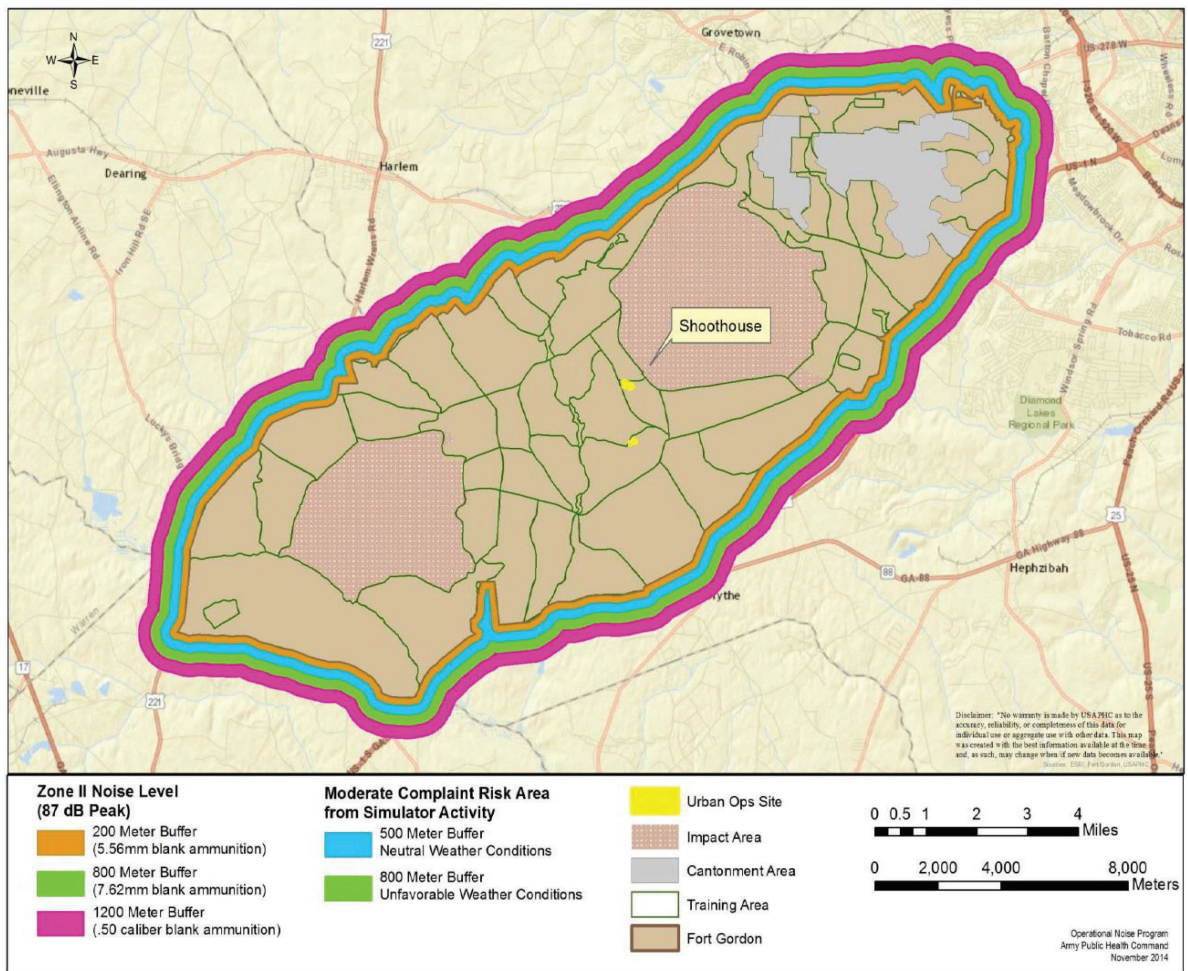
boundary along the Route 78 corridor and the Grovetown area. Within this area, there are single family residential, commercial, and agricultural residential uses. At the time of the ICUZ, this area included less than a dozen single family residential homes. In addition, Zone II extends to the south, approximately 0.5 miles into the KLM mining operations and in the vicinity of Clausen Pond and encompasses approximately 180 acres.

Non-Fixed Firing Point Ranges

Non-fixed firing point ranges consists of troop training at multiple non-fixed firing point facilities as well as within various training areas. The following types of non-fixed firing point ranges are found on Fort Gordon:

- Convoy Live Fire (CLF)
- Military Operations in Urban Terrain (MOUT)
- Live Fire Shoot House (LFSH)
- Urban Operation Training Site (UOTS)
- Training Areas

Map 3.2: Fort Gordon Non-Fixed Firing Range Noise Zones



Source: 2015 Fort Gordon ICUZ

LAND USE AND COMPATIBILITY ASSESSMENT

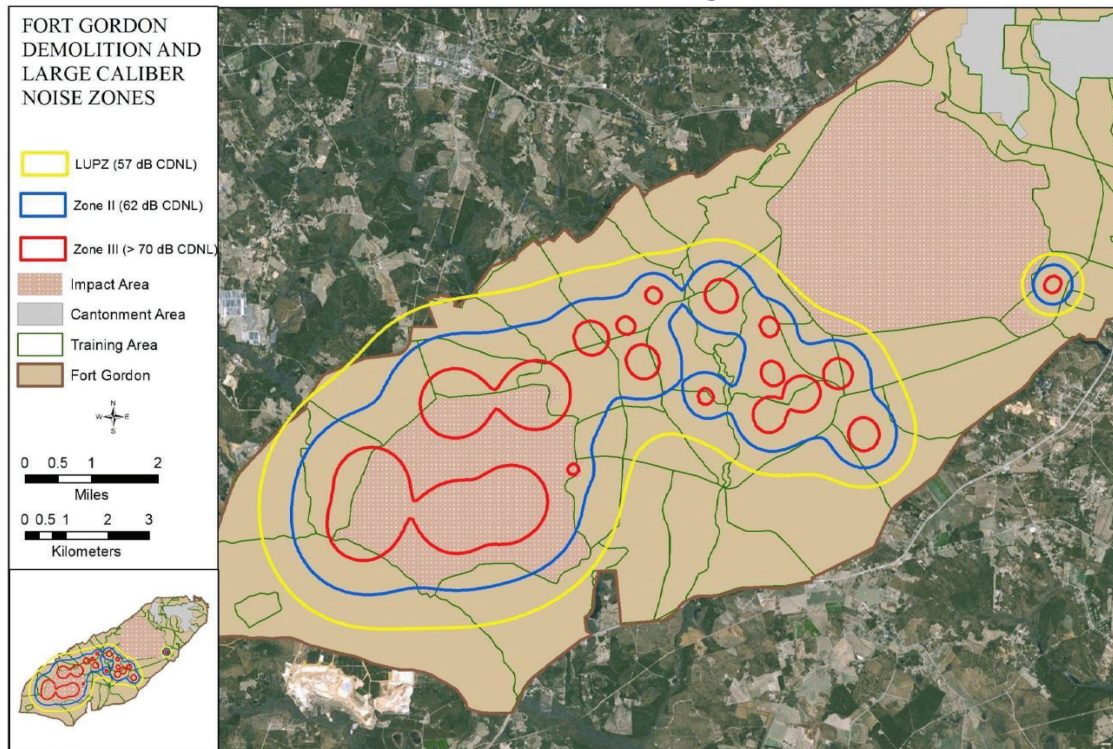
These different ranges represent a variety of scenarios from live fire training in a staging area to building clearing operations and non-live firing in replicated urban environments. Weapons include small caliber, artillery, grenades, and pyrotechnic/simulator detonations.

With the absence of specific firing point and target point locations, noise contours for small arms firing in the training areas and on non-fixed ranges cannot be properly modeled. However, Fort Gordon conducted an assessment of noise exposure by examining the predicted peak levels of these activities. When combining noise levels with weather conditions and the directional angle of fire, a Zone II noise level [87 dBP] extends approximately 650 feet (200 meters) for the 5.56mm blank round at all three given azimuth angles. Thus, under these conditions a 650-foot buffer around the firing location of the 5.56mm blank would indicate areas exposed to Zone II levels (Map 3.2).

Medium and Large Arms, Demolition, and Other Impulsive Noise

Medium and large arms include weapons 20mm or greater and any weapons that include explosive charges. At Fort Gordon, medium and large-arms training are conducted with various weapons including artillery, mortars, aerial gunnery, rockets, grenade launchers, and explosive charges. The demolition and medium/large arms ranges are available year-round on a daily basis. In addition to the firing points and ranges assessed in the noise zones, training also includes utilization of simulators (pyrotechnic and non-pyrotechnic).

Map 3.3: Fort Gordon Demolition and Large Caliber Noise Zones



Source: 2015 Fort Gordon ICUZ

LAND USE AND COMPATIBILITY ASSESSMENT

Simulators are used to provide soldiers with realistic training experience. Simulator noise levels are much lower than noise levels generated by the munitions they replicate.

The Land Use Planning Zone (LUPZ) extends beyond the installation boundary to the northwest 0.5 miles and approximately 0.2 miles to the south (Map 3.3). At the time of the ICUZ, the LUPZ contains less than a dozen homes and the area is low-density residential and agricultural residential in the northwest which all are in McDuffie County. Zone II and Zone III are completely contained within the Fort Gordon boundary. The annual average noise levels represented above are used for long-term planning. However, noise complaints typically are attributable to a specific event rather than annual average noise levels. Peak levels are useful for estimating the risk of receiving a noise complaint as they correlate with the receiver's perception of noise levels. The Army's complaint risk guidelines are listed in Table 3.2.

Table 3.2: Army Complaint Risk Guidelines

Perceptibility	dB Peak	Risk of Receiving Noise Complaints
May be audible	< 115	Low
Noticeable, Distinct	115 - 130	Moderate
Very Loud, May Startle	> 130	High

Source: 2015 Fort Gordon ICUZ

Peak levels can vary significantly for the same activity dependent on weather conditions. Therefore, two sets of contours are plotted for Fort Gordon's noise environment.

- Unfavorable Weather Conditions: PK15(met) is the peak sound level, factoring in the statistical variations caused by weather, that is likely to be exceeded only 15 percent of the time (i.e., 85 percent certainty that sound will be within this range). This provides Fort Gordon and the community a means to consider the areas that at times may be impacted by training noise. PK15(met) levels would occur under unfavorable weather conditions that enhance sound propagation.
- Neutral Weather Conditions: PK50(met) is the Peak level that would be expected 50 percent of the time. These levels would be seen during neutral weather conditions.

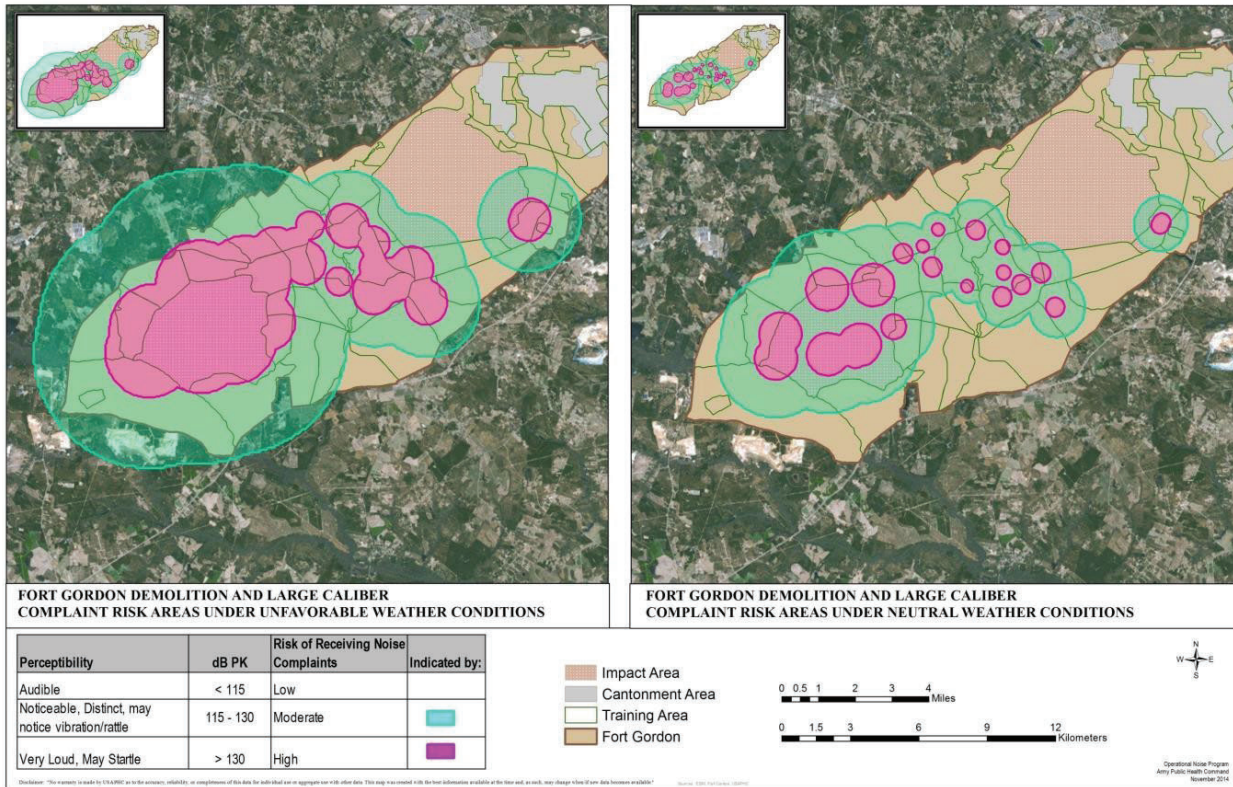
The unfavorable weather conditions [PK15(met)] complaint risk area is an effective tool to indicate areas that may periodically be exposed to high noise levels. Map 3.4 depicts the complaint risk areas from all Fort Gordon demolition and medium/large arms activity under unfavorable and neutral weather conditions. This side-by-side comparison illustrates how weather conditions can greatly influence noise propagation.

LAND USE AND COMPATIBILITY ASSESSMENT

The unfavorable weather moderate complaint risk (115-130 dBP) area extends beyond the boundary to the north 2.1 miles; west 1.2 miles; and south approximately 1.1 miles. The area to the north encompasses single-family homes in both Columbia and McDuffie Counties. The high complaint risk (>130 dBP) area extends beyond the northern boundary 0.1 miles and 0.6 miles to the southeast in the vicinity of a new range. There are a few noise-sensitive land uses just outside the northwest boundary along State Route 221 and the southeast boundary within the high complaint risk areas. Based on the current land uses and the complaint risk guidelines, the risk of complaints from large caliber activity during unfavorable weather conditions is considered moderate.

The neutral weather moderate complaint risk area extends beyond the installation boundary to the northwest approximately 0.5 miles. There are a few noise-sensitive land uses along State Route 221 to the northwest. The high complaint risk area remains completely contained within the Fort Gordon boundary. Based on the complaint risk guidelines, the risk of complaints from large caliber activity during neutral weather conditions is considered low to moderate.

Map 3.4: Demolition and Large Caliber Noise Complaint Risk Areas Under Different Weather Conditions



Source: 2015 Fort Gordon ICUZ

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Military Aircraft Operations

Despite not having an airfield or based aircraft, Fort Gordon conducts and supports a variety of military aircraft operations in regulated and special use airspace. These include fixed-wing operations (personnel and cargo) and rotary-wing operations (air assault and live-fire gunnery exercises). Additionally, the aircraft that utilize the installation for training are staged at Augusta Regional Airport – a municipal-owned public airport seven miles south of downtown Augusta. The majority of aviation training occurs at the Preston Drop Zone (PDZ), a 340-acre area located in the south-central portion of the installation. The PDZ generally operates 5 days per week for personnel and equipment drops with several different aircraft. Fixed-wing and rotary-wing units from the U.S. Army, U.S. Navy, U.S. Marine Corps, U.S. Air Force and Air National Guard conduct training missions in the Fort Gordon airspace and PDZ. Flight altitudes are flown from zero to 13,500 feet above ground level (AGL).

Aside from the PDZ, Fort Gordon is home to the following three (3) areas:
Barton Field - located in the cantonment area and used for airborne operations such as low static line jumps and low intensity rotary-wing air assault training

Helicopter Door Gunnery - located in the central western part of the installation and used by rotary-wing aircraft to conduct the helicopter door gunnery operations at 300 feet or less AGL

Flight Corridors and Aviation Operations Areas -

There are six designated flight corridors or Air Route Structures (ARS) on Fort Gordon: Black Route, Blue Route, Red Route, Green Route, AG 360 Route (Orange Route), and Air Force C-130 Cargo Delivery System (CDS) Route (Purple Route) (Map 3.6).

With no minimum requirements, the flight route heights are determined by direct communication with the training unit and Fort Gordon Range Control. All the routes listed below allows for both clockwise and counterclockwise travel.

- **Blue Route**: used to facilitate administrative movement around the southern portion of the installation
- **Red Route**: used to facilitate administrative and safe movement around the north and eastern part of the installation

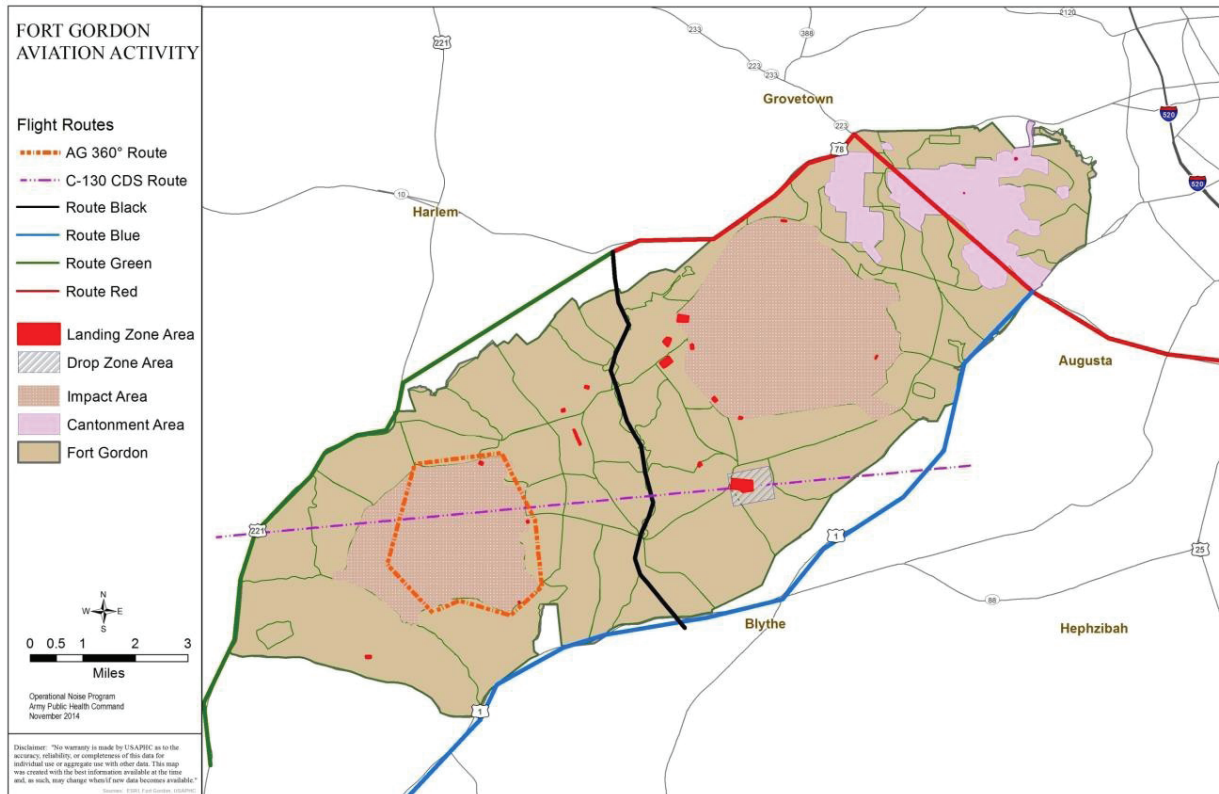
Map 3.5: Military Special Use Airspace



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- Green Route: used to facilitate administrative and safe movement from the western impact area to the central part of the installation, where it intersects with the Black and Red Routes.
- Black Route: begins at the central portion of the installation and intersects with the Red, Green, and Blue routes.

Map 3.6: Fort Gordon Flight Corridors and Aviation Operations Areas

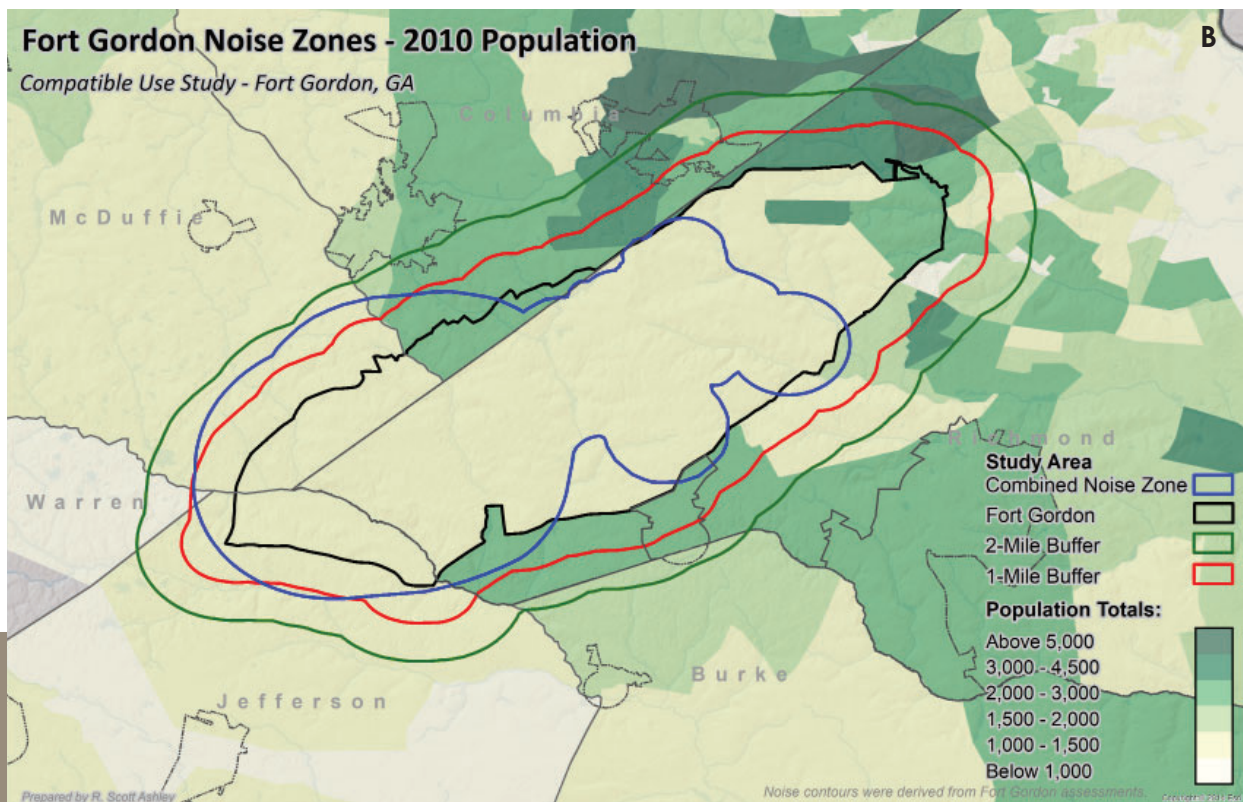
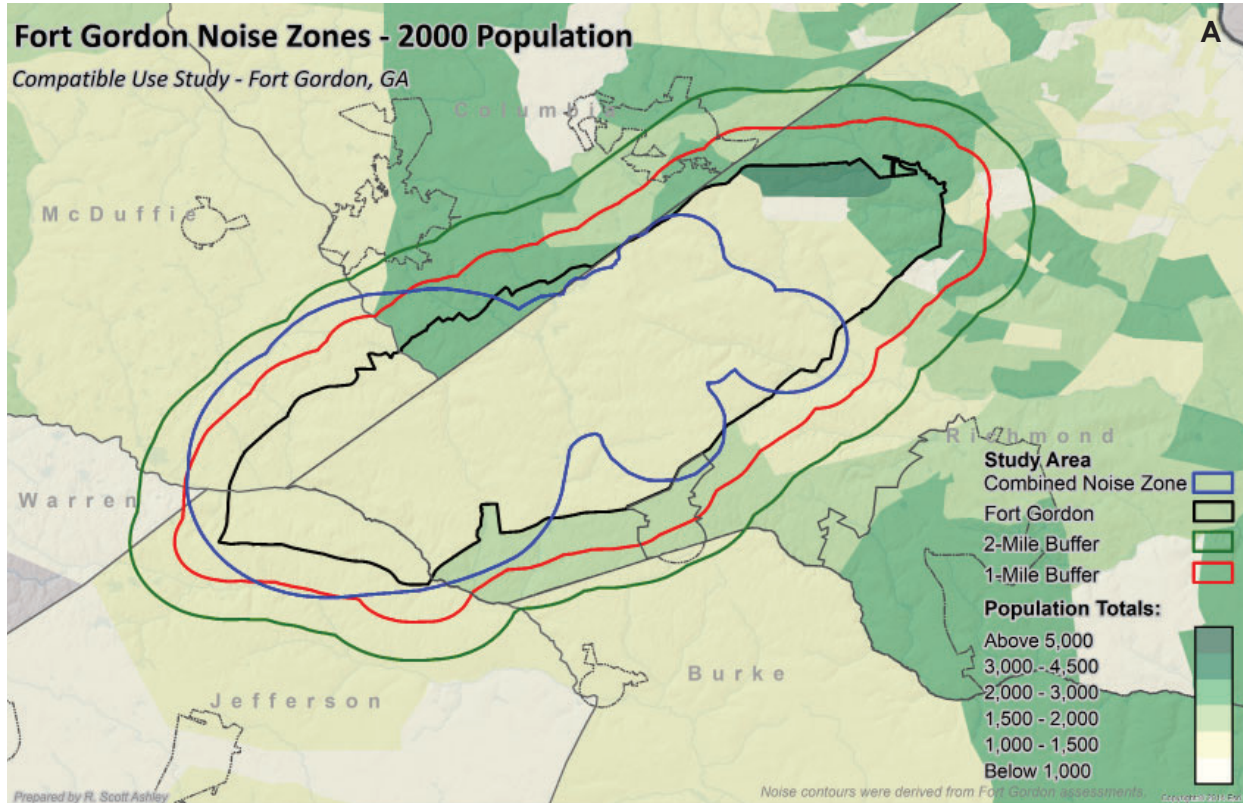


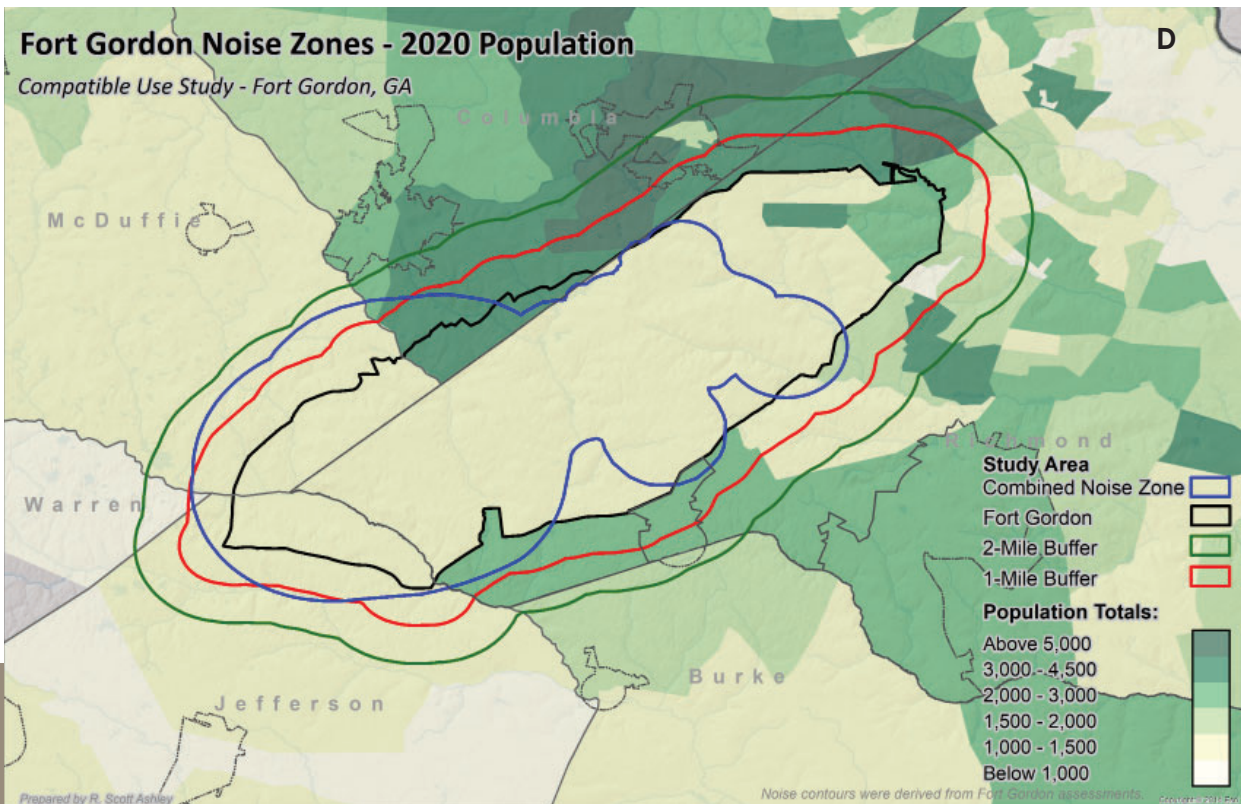
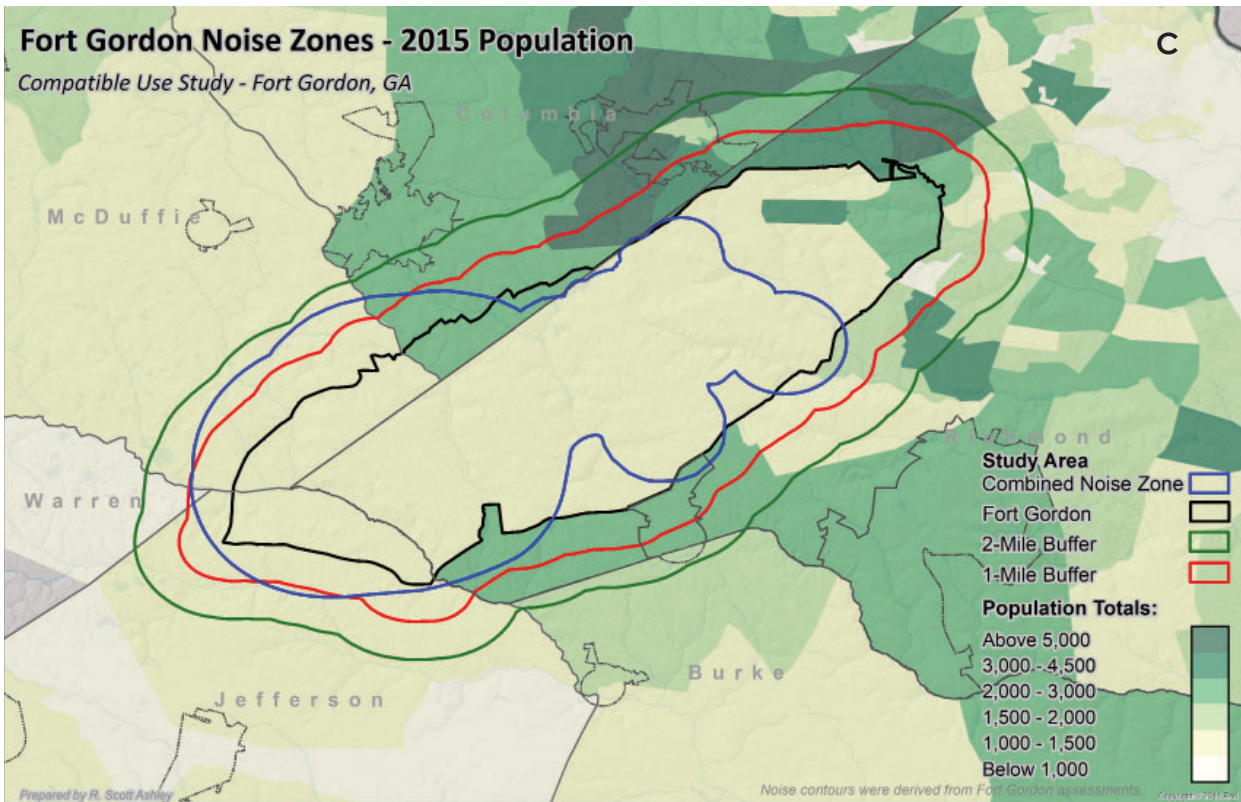
Source: 2015 Fort Gordon ICUZ

POPULATION CHANGES OVER TIME AND THE CUMULATIVE NOISE ZONES

The following maps display the population shifts mentioned in Chapter 2 over the period 2000-2020, which include 2020 projections, broken down by Census blocks. The maps depict the 1-mile and 2-mile buffers and the cumulative noise zones and complaint risk areas. These maps do not display potential effects of spillover growth and development as a result of additional soldiers and contractors associated with Army Cyber Command growth.

Map 3.7A-D: Area Population Change 2000-2020





Source: U.S. Census Bureau

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LAND USE AND COMPATIBILITY ASSESSMENT

II. EXISTING LAND USE PATTERN AND DEVELOPMENT REGULATION

Once the CUS study area was established, efforts began to gather data on the existing land uses on and off-post. The ICUZ provided information on the acreage of each county within the different noise zones.

On-Post Land Use

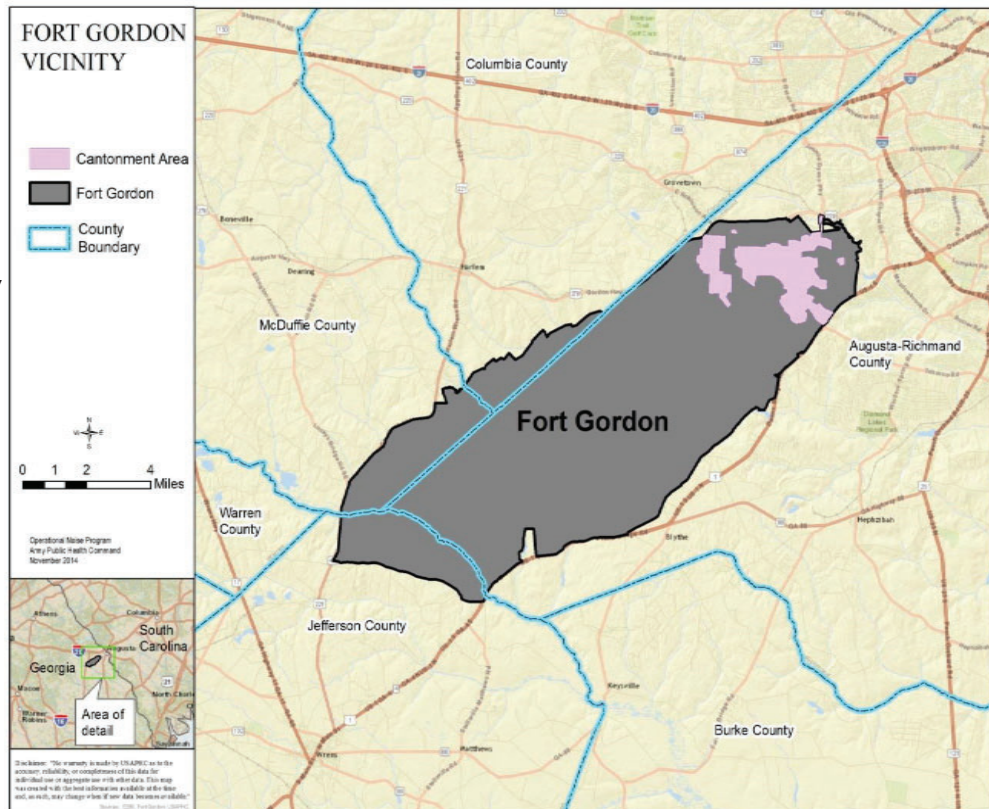
Fort Gordon facilities provide year-round support for live-fire exercises, maneuver training operation of rotary-winged aircraft, small arms firing, mortar, and artillery training. The installation encompasses 55,600 acres, separated into the following categories:

- Training Acreage: 38,900
- Cantonment Area: 4,000
- Other: 12,700

The cantonment area contains primarily military support functions, such as offices, residential areas (barracks, family housing, etc.), commercial uses (restaurants, commissary, etc.), recreation, medical facilities, and school and childcare facilities.

Map 3.8: Fort Gordon Cantonment and Other Areas

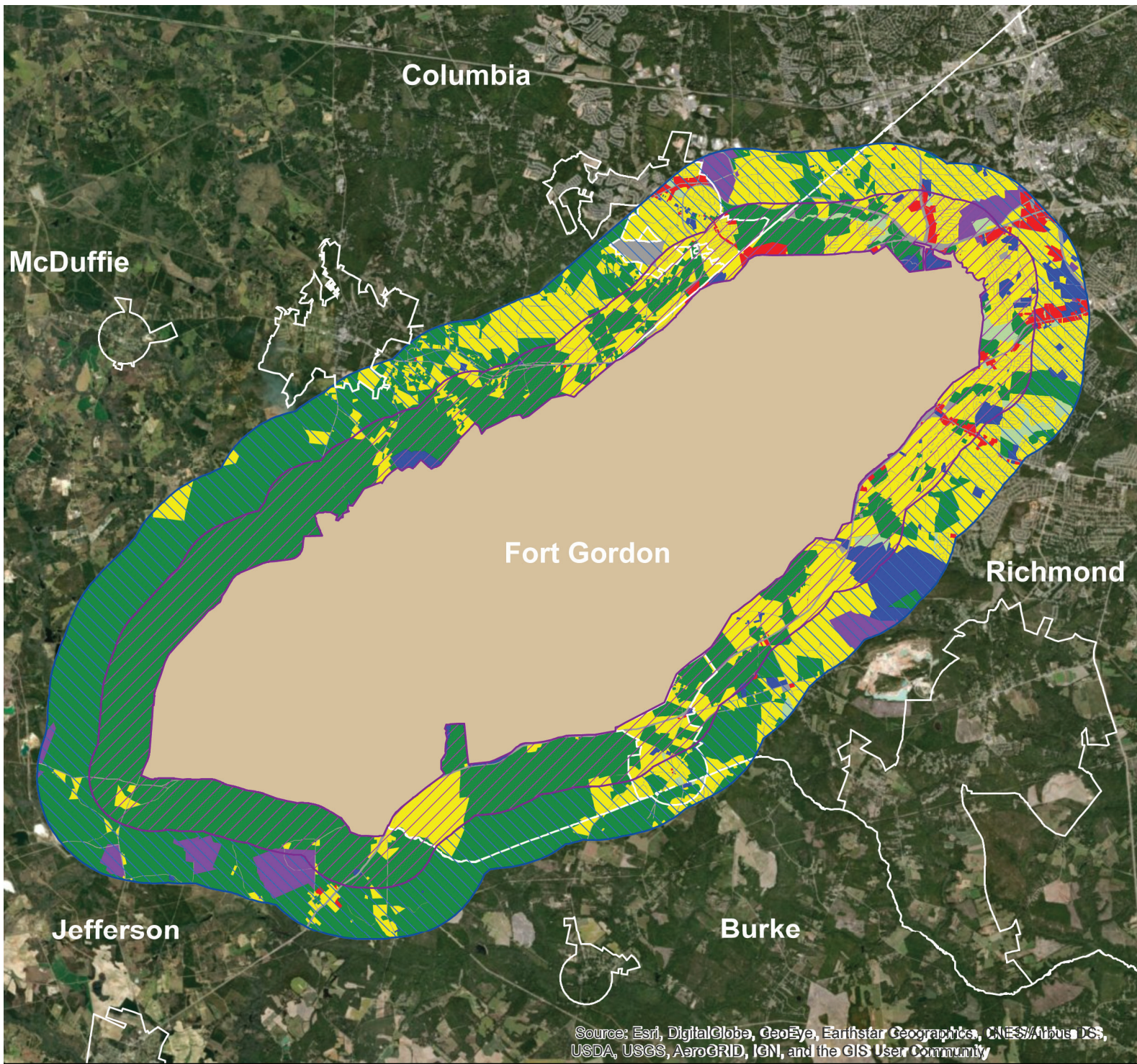
Training areas encompass 49 sites and two designated impact areas. These include live-fire range facilities, artillery firing points, mortar fire points, convoy live fire, and other small urban/village type ranges which consist of direct and indirect live-fire and non-live-fire activities. Other training activities include individual troop qualifications as well as larger scale training exercises (battle simulation exercises, situational training) which are generally scheduled year-round.



Source: 2015 Fort Gordon ICUZ

Off-Post Existing Land Use Pattern and Development Regulation

Map 3.9: Existing Land Use Within the 1-Mile and 2-Mile Buffers



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- 1-Mile Buffer
- 2-Mile Buffer
- Fort Gordon

- Industrial
- Public/Institutional
- Parks/Recreation
- Residential

- Commercial
- Agricultural-Residential
- Transportation/Communication/Utilities

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Off-Post Land Use

The following is a list and description of land uses examined:

- Agricultural-Residential - This category is for land dedicated to farming (fields, lots, pastures, farmsteads, specialty farms, livestock production, etc.), agriculture, commercial timber or pulpwood harvesting, and some low-density single-family housing.
- Residential - The predominant use of land within the residential category is for single-family and multi-family dwelling unit organized into general categories of net densities.
- Commercial - This category is for land dedicated to non-industrial business uses, including retail sales, office, service and entertainment facilities, organized into general categories of intensity. Commercial uses may be located as a single use in one building or grouped together in a shopping center or office building.
- Industrial - This category is for land dedicated to manufacturing facilities, processing plants, factories, warehousing and wholesale trade facilities, mining or mineral extraction activities, or other similar uses, organized into general categories of intensity.
- Public/Institutional - This category includes certain state, federal or local government uses, and institutional land uses. Government uses include city halls and government building complexes, police and fire stations, libraries, prisons, post offices, schools, military installations, etc. Examples of institutional land uses include colleges, churches, cemeteries, hospitals, etc.
- Parks/Recreation - This category is for land dedicated to active or passive recreational uses. These areas may be either publicly or privately owned and may include playgrounds, public parks, nature preserves, wildlife management areas, national forests, golf courses, recreation centers or similar uses.
- Transportation/Communication/Utilities (TCU) - This category can include such uses as major transportation routes, public transit stations, power generation plants, railroad facilities, radio towers, telephone switching stations, airports, port facilities or other similar uses.

AUGUSTA - RICHMOND COUNTY

Augusta - Richmond County Land Uses

Augusta-Richmond County is home to much of the development that surrounds Fort Gordon, and this development is spread over a variety of land uses. Some of the most intense development takes place near the cantonment (north/northeast) portion of the post. Table 3.3 lists the land use categories for Augusta-Richmond County and provides the amount of land in each category within the one mile and two mile study areas. It is important to note that the 2-mile study area is not cumulative for both 1-mile and 2-mile area. The table provides data for the 1-mile study area and 2-mile study area separately. Fort Gordon is not included in the calculations; however, the cities of Blythe and Hephzibah are.

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The predominant land use in the study area is residential (12,465 acres). The residential land use accounts for nearly 40 percent of all land uses within Augusta-Richmond County. Most of this land use is along the northeastern boundary of Fort Gordon.

Agricultural land uses (including forestry) comprise the second largest land use in the Augusta-Richmond County portion of the study area (9,526 acres). This use is primarily concentrated in the southern part of the county that borders the more rural Burke County. Similarly to the area outside of the study area, these areas are concentrated southeast of Fort Gordon.

Land designated as Public/Institutional within the 2-mile study area is significant as it contains approximately 1,275 acres. The majority of this area is a reclaimed mine with a mix of uses located in the area.

Table 3.3: Augusta-Richmond County Land Uses Within the 1-mile and 2-mile Study Areas

LAND USE	Acreage 1 mile Study Area	Acreage 2 mile Study Area	TOTAL
Agriculture	5,959	3,567	9,526
Commercial	480	440	920
Industrial	174	527	701
Park/Recreation	452	324	776
Public/Institutional	908	1,275	2,183
Residential	6,474	5,991	12,465
TCU*	61	30	91
TOTAL	14,508	12,154	26,662

*Doesn't include roads

Augusta - Richmond County Zoning

Augusta-Richmond County has a total of 18 zoning districts which include 11 residential zoning districts and 7 zoning district categories that provide regulations for diverse needs. Please note that unlike land use, Fort Gordon and the cities of Blythe and Hephzibah are not included in the calculations.

There are 11 different zoning districts designated as residential within the city/county encompassing a total of approximately 50,200 acres. The major residential zone is R-1. According to the March 17, 2017 amended Comprehensive Zoning Ordinance of Augusta, Georgia, the permitted uses include one-family detached dwellings with a minimum lot size of 15,000 square feet.

The designated residential districts within the one mile and two mile study area combine for a total of nearly 8,000 acres.

There is over 4,000 acres of land designated in the two mile study area for residential zoning, consisting of several different districts. The R-1A and R-1B

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zoning districts represent a total of 68 percent of residential zoning districts in the two mile study area. The R-1A district allows for a minimum lot size of 10,000 square feet, and the R-1B district allows for a minimum lot size of 7,500 sq. ft. The R-1 and R-1C designated residential zoning districts combined encompass nearly 25 percent of area in the two mile study area. R-1C residential zoning district has a minimum lot size of 6,000 sq. ft.

The 1-mile study area contains a total of 3,779 acres of land zoned for residential use. The R-1C zoning district covers the largest area in this study area at 32 percent. The R-MH zoning district covers nearly 25 percent of land within the one mile study area. This zoning district is the designated Manufactured Home Residential zoning district and allows for 15,000 sq ft. lots as well as manufactured home parks. The R-1 and R-1B represent a combined 28 percent of residential zoning in the one mile study area.

Seven (7) non-residential zoning districts cover the remaining 100,000 acres in Augusta-Richmond County. These zoning districts have a multitude of authorized uses to provide residents of the area the opportunity to experience a range of products and services. They also provide the designated areas for manufacturing and other potential needs.

The largest non-residential zoning district is Agriculture (A). This zoning district allows for uses generally related to agricultural production and residential uses. The Agriculture zoning district is primarily located in the southern and eastern areas of the city-county. Residential uses are allowed in this zoning district with the restrictions allowed for in the R-1 zoning district and Manufactured homes are allowed subject to the criteria of Section 27-7 of the Augusta-Richmond County Zoning Ordinance.

The second-largest non-residential zoning district is Heavy Industrial (HI). The HI zoning district generally allows for the most uses in the city-county and is reserved for uses that may be a nuisance to its surroundings. This use is primarily found intermingled with the Agriculture Zoning district in the eastern part of the city-county. There is an area zoned HI on the edge of the 2 mile study area east of the Fort. This area contains an active mining operation that should not have any affect on Fort operations.

Of note, the B-2 General Business zoning district and the LI, Light Industrial District comprise nearly 700 acres in the 2-mile area. The B-2 zoning district allows for stores and services and the LI zoning district allows for certain types of uses that should not impact surrounding lots.

A major concern for non-residential zoning districts is an increase in the number of uses which these that are allowed for industrial and commercial uses that have impacts beyond the lots on which the allowed use is allowed.

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Commercial zoning is primarily located near the northern part of the Fort which provide for some needed uses and does not have a major effect in the area. An increase in allowed commercial uses within the 1-mile study could have a significant impact on the ability of Fort Gordon to operate. Lighting standards and communications equipment that could create or suffer from electromagnetic interference should be examined carefully.

BLYTHE

Blythe Land uses

Blythe encompasses approximately 1,800 acres (including roads) in Augusta-Richmond County. The two largest land uses within the city are Agricultural-Residential and Residential which total 90 percent of land within the city and the majority of land on the border of Fort Gordon. There is limited commercial land use within the study area.

Blythe Zoning

The City of Blythe has a total of six zoning districts which include three residential districts and three zoning districts which address other needs within the community. Table 3.4 provides a listing of each zoning district and acreage for both the city and study area.

The City of Blythe has three designated residential zoning districts that account for 47.3 percent of land within the city. Blythe has limited the amount of residential zoning near Fort Gordon as only 31.8 percent of land in the one mile study area is zoned residential. However, the density of residential units may become an issue. The largest residential zoning district in the 1 mile study area is the R-2 zoning district. The R-2 zoning district is Blythe's multi-family residential zoning district. This land currently has limited multi-family residential development currently, but if built out could have a large residential population near the Fort. This is currently not expected; however, it should be monitored.

Table 3.4: City of Blythe Zoning, 1-mile Study Area, and 2-mile Study Area

Zoning District		Acreage 2 mile Study Area	Acreage 1 mile Study Area
A	Agriculture	167.19	624.31
BP	Business/Professional	4.59	111.59
R-1	Residential	358.49	92.39
R-2	Residential	59.49	154.58
R-3	Residential	54.67	96.68
TOTAL		644.43	1,079.55

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COLUMBIA COUNTY

Columbia County Land uses

Table 3.5 lists the acreage of each land use category for the county within the 1 and 2-mile study areas. The 2-mile area is not cumulative of 1-mile & 2-mile study areas. Grovetown and Harlem are included in the calculations. Fort Gordon is not.

There is approximately 14,171 acres (7 percent of total county land) within the full study area. As in Augusta-Richmond County, agricultural (6,804 acres) and residential (5,600 acres) land uses predominate. There are no areas designated for industrial land use within the 1-mile study area, and the industrial land in the 2-mile area is north of Grovetown. Much of the residential land use in the unincorporated county is located outside of the noise zones. Environmental constraints make development more difficult in the southernmost area of the county along the Fort Gordon border. The addition of a new gate for Fort Gordon in Columbia County will likely lead to increased development pressure, in part for higher density residential and commercial space. The area is currently served by water but not sewer, and the lack of sewer is a hindrance to the higher density.

Table 3.5: Columbia County Land Uses Within the 1-mile and 2-mile Study Areas

LAND USE	Acreage 1 mile Study Area	Acreage 2 mile Study Area	TOTAL
Agriculture	3,919	2,885	6,804
Commercial	62	111	173
Industrial	-	281	281
Parks/Recreation/Conservation	163	23	186
Public/Institutional	163	49	212
Residential	1,824	3,776	5,600
TCU	271	644	915
Total County Acreage	6,402	7,769	14,171

Columbia County Zoning

Columbia County has a total of 21 zoning districts: 10 residential districts, 3 special districts (which provide for unique development opportunities), and 8 non-residential zoning districts.

The ten designated residential districts located within the county represents 147,108 acres. The majority of this acreage is located in the Residential-Agricultural (R-A) district which comprises nearly 60 percent of all zoning in

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the county as a whole. This residential zoning district represents the largest designated zoning area in the county, the 2-mile study area (79.7 percent), and 1-mile study area (96.4 percent). The R-A district requires a minimum lot size of 2.5 acres and allows for agricultural uses, single-family residential detached dwellings, and other residential uses.

The R-1 Single Family Residential Zoning District contains a total of 14,366 acres within the county as a whole. The R-1 zoning district represents 13.9 percent of land in the 2-mile study area and 3 percent in the 1-mile study area. The R-1 zoning district requires a minimum lot size of 30,000; this increased density likely means that there are a greater number of residents in the R-1 district than R-A. The only other residential zoning district of significance in the study area is the R-2 Single Family Residential District. This zoning district contains a total of 29 acres (.6 percent) in the 2-mile study area.

Columbia County has designated a total of 8 zoning districts for the purpose of addressing non-residential needs within the County. These non-residential zoning districts allow a number of different uses that give residents access to needed services and access to products for activities of daily living. Areas are also designated to provide for potential industrial uses.

The zoning district designated "Special District" (S-1) contains the largest amount of land area of all non-residential zoning districts. The purpose of this zoning district is to provide "the proper placement of private, semi-private, and public uses that require special consideration due to size, character, physical setting, and/or relation to surrounding land uses." Uses represented in this zoning district include a private elementary/secondary school, several churches, and a mining operation.

A total of 135 acres of land within the S-1 zoning district is located in the 2-mile study area and represents 21 percent of land that is designated as non-residential. The 1-mile study area contains a total of 172 acres designated as S-1. This is the largest non-residential zoning district in the 1-mile study area and are primarily individual lots that have been given this designation for the purpose of allowing for a unique use. The Gordon Park Speedway and reclaimed land are two of the major uses located in the 1-mile study area designated as S-1.

The Light Industrial zoning district (M-1) is the second largest non-residential zoning designated area within Columbia County and serves the community by providing an area in which industries that do not have a significant impact on surrounding uses can operate. The M-1 zoning district encompasses nearly 3,000 acres of all land in the county, but only 260 acres in the combined study area. The majority of this land (80 percent) is located in the 2-mile study area. The majority of land designated for this zoning district in the study area is located between Highway 78 and Old Augusta Highway. There are uses there that

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qualify under the uses allowed for this zoning district. However, these uses are contained to the parcels on which they are located, and there should be no impact beyond their parcel.

The General Commercial District provides areas within the county for certain commercial uses including the sale of goods and services. This district contains 26 acres within the 1-mile and 2-mile study areas and contain uses that should not have any impact on surrounding parcels.

The M-2 zoning district is designated as “General Industrial.” Land designated under this zoning district provides areas for activities related to the manufacturing, fabrication, and warehousing of goods that may have some impact on surrounding parcels. The 2-mile study area contains a total of 262 acres of land designated M-2. These areas are located north of Grovetown.

GROVETOWN

City of Grovetown Land Use

The City of Grovetown covers 4.83 square miles and is located northwest of Fort Gordon. Nearly two-thirds of Grovetown is within the CUS study area, with 633 acres in the 1-mile buffer and 1,386 acres in the 2-mile buffer. Grovetown's land uses are overwhelmingly residential, which account for approximately 70% of the City's total acreage. Over 60% (1,223 acres) of Grovetown's residential land uses are contained within the 1-mile and 2-mile study areas.

As for the non-residential uses within the City, commercial uses represent less than 100 acres within the 1 and 2-mile study areas combined, most of it located in the 2-mile area. Parks and recreational uses, although present, also represent less than 100 acres.

Over the last 20+ years, the city has transformed into a population center for Columbia County. As the population grows, the city continues to annex property and expand its limits. Grovetown has annexed property in several directions. The city recently completed a sewerage treatment plant and has indicated plans to annex additional areas. As the southern annexation continues, the former agricultural, undeveloped, and low-density areas become denser and more urbanized, that development has the potential to both affect and be affected by training at Fort Gordon.

City of Grovetown Zoning

Grovetown's zoning reflects its current land use and the City's focus on accommodating future residential growth. Over 80% of zoned acreage within a 1-mile study area is residential. Traditional residential zoning districts (R1, R2, R3, and R4) account for 419 acres within the 1-mile and 173 acres within the

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2-mile study areas. R1-3 allow a similar mix of primary uses, with minimum lot sizes ranging from 7,500 square feet in R3 to 15,000 square feet in R1 for single-family uses; multi-family has a minimum of 20,000 square feet in R2 and R3. Among them, R-2 is the predominate classification. The R4 district has no minimum lot size, however the density here is limited to 10 units per acre.

In 2014, Grovetown adopted a form-based code and established a series of city center districts intended to promote redevelopment in the city center and adjacent areas. This code operates along side the traditional zoning classifications located in other parts of the city. The form-based code is a set of land development regulations based more on the physical forms of buildings in an area than a separation of uses. The Grovetown code also intends to develop a pedestrian-friendly “downtown” with a variety of housing types and “small-town” atmosphere. The CC districts allow for a mix of residential, commercial, and public uses. They comprise 928 acres (52%) of the combined study area.

The only non-residential district with more than 100 zoned acres is the CC8 Civic District, which is reserved for open space and buildings associated with the use of that space, such as a community center.

Table 3.6: City of Grovetown Zoning Within the 1-mile Study Area, and 2-mile Study Area (rounded to the nearest mile)

Zoning District		Acreage in 1-mile Study Area	Acreage in 2-mile Study Area	TOTAL
C2	Commercial	0	5	5
C4	Commercial	5	0	5
CC1	Core District	19	21	40
CC2	Commercial Corridor	0	90	90
CC3	Core General	0	34	34
CC4	Core Residential	0	19	19
CC5	Transitional Residential	0	191	191
CC6	Neighborhood Residential	91	218	309
CC7	Suburban Residential	0	19	19
CC8	Civic District	2	224	226
M2	Heavy Industrial	0	6	6
PUDD	Planned Unit Developments	43	205	248
R1	Residential	86	88	174
R2	Residential	252	76	328
R3	Residential	56	1	57
R4	Townhouse Residential	25	8	33
TOTAL		579	1,205	1,784

HARLEM

City of Harlem Land Use

The City of Harlem covers 4.54 square miles and is located west of Fort Gordon in Columbia County. Only a small portion of Harlem is located within the 2-mile study area (175 acres). None of Harlem is located within the 1-mile study area. The vast majority of land use within the study area is Agricultural-Residential.

Like Grovetown, the City of Harlem has grown in people and in size since the last JLUS. As Harlem continues to annex property, more of this activity is to the north, away from Fort Gordon. Studying the impacts of expansion between Grovetown and Harlem will be important as these two cities begin to converge and urbanize more of Columbia County. Environmental constraints hinder development potential to the south east.

City of Harlem Zoning

Zoning within the City of Harlem is varied, but there are only 3 classifications within the 2-mile study area: Agriculture (A-1), Residential (R-1A), and Planned Unit Development (PUD).

Table 3.7: City of Harlem Zoning Within the 2-mile Study Area (rounded to the nearest mile)		
Zoning District		Acreage in 2-mile Study Area
A-1	Agriculture	89
R-1A	Residential	82
PUD	Planned Unit Development	4
TOTAL		175

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MCDUFFIE COUNTY

McDuffie County Land Use

The majority of land within the 1 and 2-mile study areas in McDuffie County is agricultural (8,358 acres total). McDuffie County's experienced relatively little incompatible development within the buffer area. In its most recent comprehensive plan (2015), the County retained its Fort Gordon character area, which extends just beyond 2 miles, and adjacent to it established a mining character area in southern McDuffie County.

Much of the noise-related military activity occurs on the McDuffie side of Fort Gordon. This activity is not compatible with dense residential development. McDuffie County has made strides in its guiding documents like the comp plan and now needs to move further in regulation.

It can turn its attention to zoning overlays, subdivision regulations and other regulatory tools to further

land use planning that prevents incompatible subdivisions and uses that increase density (particularly residential) and controls night lighting as needed. These steps will aid in ensuring that the current land uses are protected from inappropriate development.

Table 3.8: McDuffie County Land Uses Within the 1-mile and 2-mile Study Areas

<i>Land Use</i>	<i>Acreage 1-mile Study Area</i>	<i>Acreage 2-mile Study Area</i>	<i>TOTAL ACRES BY LAND USE TYPE</i>
<i>Agriculture</i>	4,123	4,235	8,358
<i>Residential</i>	-	231	231
<i>Total County Acreage</i>	4,123	4,466	8,589

McDuffie County Zoning

The major zoning classification for McDuffie County within the study area as a whole is R-1 (low-density residential/agriculture). This classification comes with 1 acre minimum lot sizes, and is intended to preserve primary uses of agriculture and forestry.

JEFFERSON COUNTY

Jefferson County Land Use

There are just over 5,100 acres of land within the 1-mile buffer and just over 6,400 acres in the 2-mile buffer, for a total of 11,255 acres in the Jefferson County portion of the study area. The majority of land uses in the 2-mile buffer are agricultural, industrial and low-density residential. The county's predominant land uses overall continue to be agricultural and residential in nature; although industrial has growth potential. Jefferson County has experienced a relatively small amount of growth since the last JLUS. On the whole, the county remains rural and has not experienced the booming suburban growth seen elsewhere in the region. Having said that, there are currently some residential uses near the

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southern border of the installation. Those areas fall into or are nearby Noise Zone II.

Historically, development patterns in the unincorporated areas have occurred along, or within close proximity to major road networks. Projects such as widening Highway 1 may reduce commute times and increase Jefferson County's location benefit of proximity to the Augusta area. Precaution must be taken to control the potential for incompatible development within the buffer areas, along the Highway 1 corridor and adjacent areas in northern Jefferson County in order to reduce the complaint risk.

Jefferson County has the greatest number of acres dedicated to industrial land use within the study area of all the study counties with 910 acres.

Table 3.9: Jefferson County Land Uses Within the 1-mile and 2-mile Study Areas

<i>Land Use</i>	<i>Acreage 1-mile Study Area</i>	<i>Acreage 2-mile Study Area</i>	<i>TOTAL ACRES BY LAND USE TYPE</i>
Agriculture	4,704	5,072	9,776
Commercial	-	21	21
Industrial	68	842	910
Public/Institutional	8	10	18
Residential	182	361	543
TCU	144	113	257
Total County Acreage	5,106	6,419	11,525

Jefferson County Zoning

Jefferson County's RA (Residential-Agricultural) zoning district is the most prevalent in the 1 and 2-mile areas. Unlike some of the other counties, this zone allows for both one and two-family units, with minimum lot sizes ranging from 15,000 square feet (served by public water and sewer) to 1/2 acre (water or sewer only) and 1 acre (not served by either). It is intended for farm and non-farm residences where intensive development is unlikely to occur. The R1 zoning district represents the remainder of residential zoning in the study area.

Non-residential zoning in the 2-mile study area is limited. The C-2 commercial district is intended for highway commercial and shopping centers. As such, it is only designated along Highway 1. The minimum lot size for C-2 is 20,000 square feet. The M-2 industrial district has a 2 acre minimum lot size.

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BURKE COUNTY

Burke County Land Use

Burke County doesn't have any land in the one mile study area or within noise zones II or III. There are approximately 1,447 acres of land in Burke County that fall within the 2-mile buffer area. Over 90% of the land in the buffer area is in the Agricultural-Residential land use category. The agricultural and low density land uses located in the area are currently compatible with Fort Gordon missions. However, the land area within the two mile area is a part of a larger Burke County area targeted for additional residential development. Should training activities shift, the new residents in this area may be affected by noise, aircraft or other training activity. Additionally, like the other jurisdictions, increased telecommunications interference could affect the installation's activities or residents in this new area. As the region continues to grow, the county should consider large lot sizes, and cluster developments, as well as monitoring the locations and collocations of telecommunications towers.

Table 3.10: Burke County Land Uses Within the 1-mile and 2-mile Study Areas

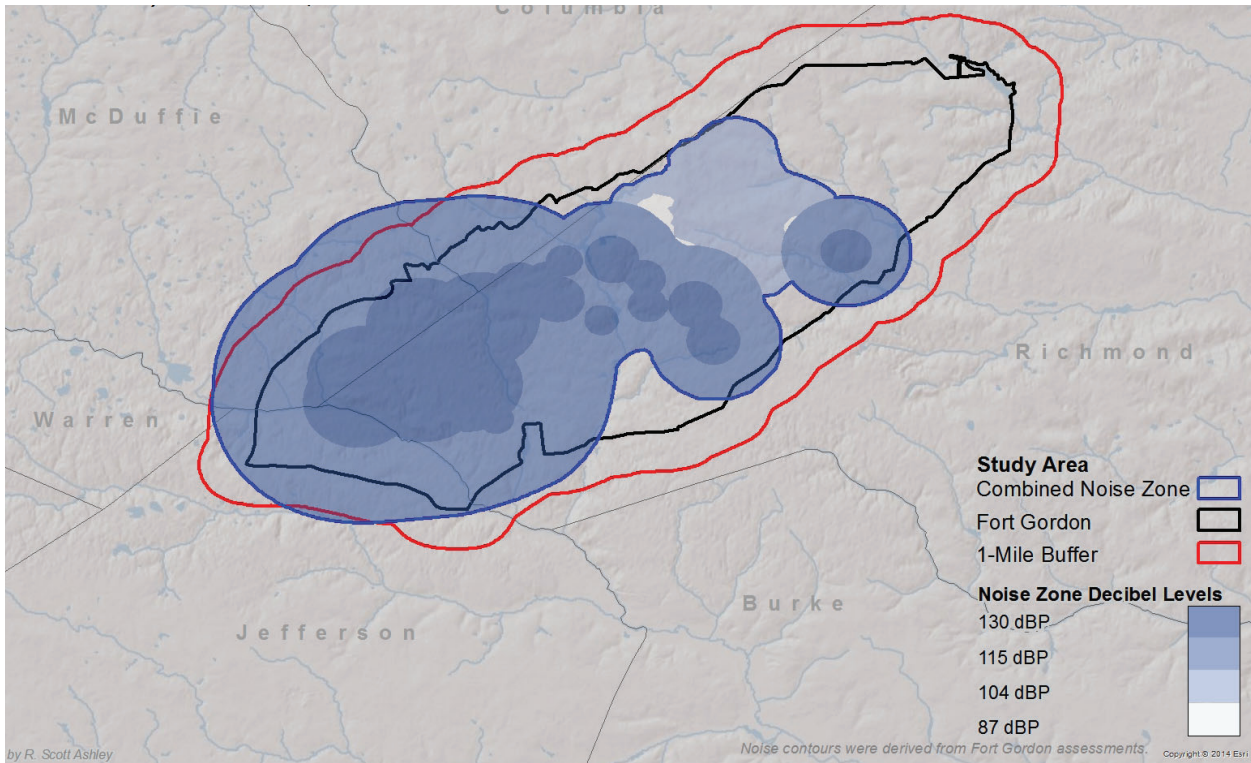
<i>Land Use</i>	<i>Acreage 2-mile Study Area</i>	<i>TOTAL ACRES BY LAND USE TYPE</i>
Agriculture	1,120	1,120
Parks/Recreation	8	8
Public/Institutional	8	8
Residential	276	276
TCU	35	35
Total County Acreage	1,447	1,447

LAND USE AND COMPATIBILITY ASSESSMENT

III. MILITARY IMPACT AND COMPATIBILITY ASSESSMENT

For this CUS, the ICUZ study was utilized and expanded to view the 2-mile buffer area in order to capture some additional observations regarding current and potential future land uses. Development in areas outside of the noise zones may expand into areas closer to the noise zones. Noise sensitive land uses include housing, schools, and medical facilities according to Army Regulation (AR) 200-1. Noise sensitive land uses are generally acceptable within Zone I, strongly discouraged in Zone II, and not recommended in Zone III. Although Zone I allows for the most uses, communities should be aware that military activity may be loud enough to be heard. Noise Zone I, although not mapped, represents the area beyond Zone II. Land use activity in Zone II should be limited to non-sensitive uses such as industry, manufacturing, transportation, and agriculture. Although some cattle may also have noise sensitivity. Certain steps can be taken to ensure that compatible land uses remain in the area and that development, where it occurs, is adequately suited to handle noise issues. Map 3.10 displays the cumulative noise zones and complaint risk areas mentioned previously.

Map 3.10: Cumulative Noise Zone II, Noise Zone III and Complaint Risk Areas



Source: 2015 Fort Gordon ICUZ data

LAND USE AND COMPATIBILITY ASSESSMENT

Small Arms Activity

Small arms operations affect all counties except Burke. Map 3.11 includes an overlay of noise zones on land use for those areas in the vicinity of Fort Gordon. The land uses across the counties include residential (single and multi-family), commercial, agricultural residential, and industrial. Tables 3.11 and 3.12 and lists the total acreage for each noise zone, as well as the acreage of those portions extending off the installation. The previous section details the land uses within the larger 1 and 2-mile areas in tables 3.3 - 3.10. The low density and agricultural residential use accounts for 785 of the 1,270 total acres.

According to Army guidelines, the noise from the small arms ranges is considered compatible with the majority of surrounding land use. Agricultural and mining operations in all jurisdictions is generally compatible. Residences and other noise-sensitive uses in located within 1,200 meters (3,937 feet) of the installation boundary may be subject to noise exposure under unfavorable weather conditions. Denser residential developments in Columbia and Augusta-Richmond counties are more-likely to be affected than the areas of the rural counties to the south.

The allowance of higher density residential zoning districts to expand along the southeastern border of Fort Gordon (Augusta-Richmond County) could present a major issue for future residents and the ability of the installation to carry out its training missions. The allowed uses of manufactured housing parks in conjunction with the high density development in R-1C and R-MH zoning districts may be detrimental to both Augusta-Richmond County and the Fort if development trends continue to head southwest and get closer to the complaint risk areas for large caliber activities.

Although much of unincorporated Columbia County is not currently served by sewer, the City of Grovetown has recently increased its sewer capacity and intends to expand its service area. The City also plans to annex more property further south and east. Additionally, the City of Harlem plans to annex property to the north. As annexation continues from both cities, the former agricultural, undeveloped, and low-density areas are likely to become denser and more urbanized. That development has the potential to both affect and be affected by training at Fort Gordon. Studying the potential impacts of such expansion is important.

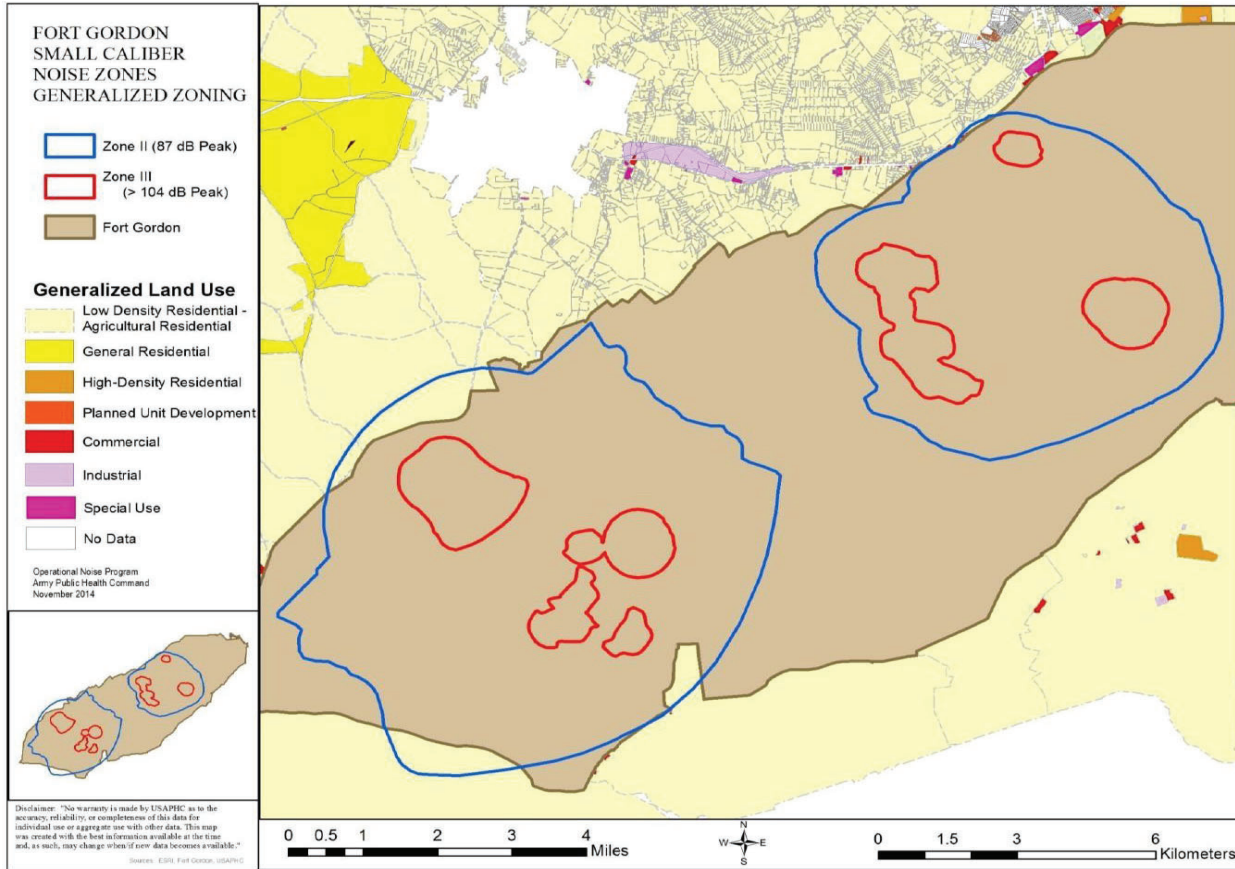
Table 3.11: Small Caliber Noise Zones Acreage

Noise Zone	Total Acreage	Off-Post Acreage	Cantonment Acreage
Zone II	26,622	1,270	120
Zone III	4,134	0	0

Source: 2015 Fort Gordon ICUZ

LAND USE AND COMPATIBILITY ASSESSMENT

Map 3.11: Fort Gordon Training Small Caliber Noise Zones and Land Use



Source: 2015 ICUZ

Table 3.12: Noise Zones Acreage by County

Category	Acreage Within Noise Zones		
	Zone II	Zone III	Total
Columbia County			
Low Density Residential-Agricultural Residential	22	0	22
Commercial	3	0	3
Jefferson County			
Low Density Residential-Agricultural Residential	127	0	127
Industrial	300	0	300
McDuffie County			
Low Density Residential-Agricultural Residential	636	0	636
Richmond County			
Low Density Residential	182	0	182
Total	1,270	0	1,270

Source: 2015 Fort Gordon ICUZ

LAND USE AND COMPATIBILITY ASSESSMENT

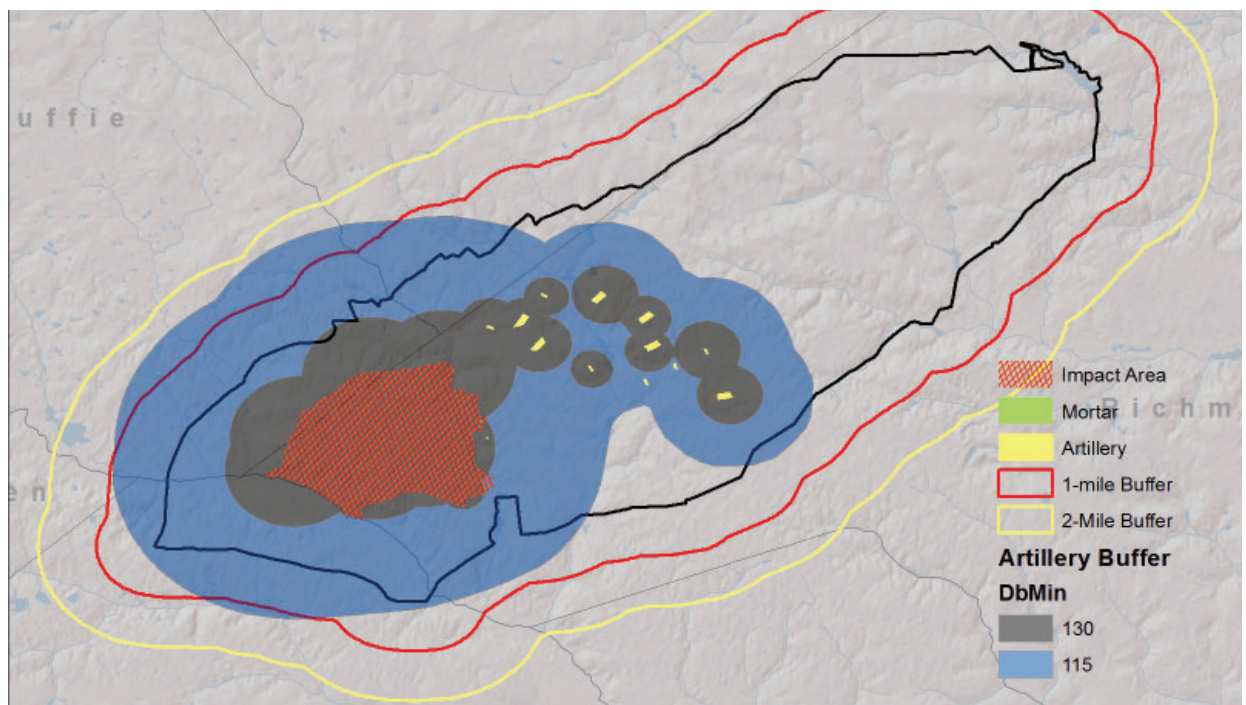
Explosive and Medium/Large Arms Activity

Maps 3.12 and 3.13 display the large caliber noise zones and complaint risk areas within the CUS buffer zones and surrounding general land uses. Table 3.13 lists the total acreage for each noise zone, as well as the acreage of those portions extending off the installation. The previous section details the land uses within the larger 1 and 2-mile areas in tables 3.3 - 3.10.

The northwest portion of the LUPZ contains low-density residential and agricultural residential, and it contained less than a dozen homes at the time of the ICUZ. Zone II and Zone III are fully contained within Fort Gordon south of the cantonment area. The largest concentration of low-density residential and agricultural residential uses (371 acres) occurs in the LUPZ spreading northwest into McDuffie County. Current land use patterns in that area of McDuffie County are generally compatible. Farming operations should consider impacts of high-level noise on livestock. Higher-density residential development is discouraged.

Under unfavorable weather conditions, the moderate complaint risk area extends beyond the boundary to the north, west, and south. The complaint risk areas do not extend into the cantonment area on-post. Based on the current land uses and the complaint risk guidelines, the risk of complaints from large caliber activity during unfavorable weather conditions is considered moderate. Based on the complaint risk guidelines, the risk of complaints from large caliber activity during neutral weather conditions is considered low to moderate. Although neutral weather conditions present a much smaller complaint risk

Map 3.12: Demolition and Large Caliber Noise Zones Under Unfavorable Weather Conditions

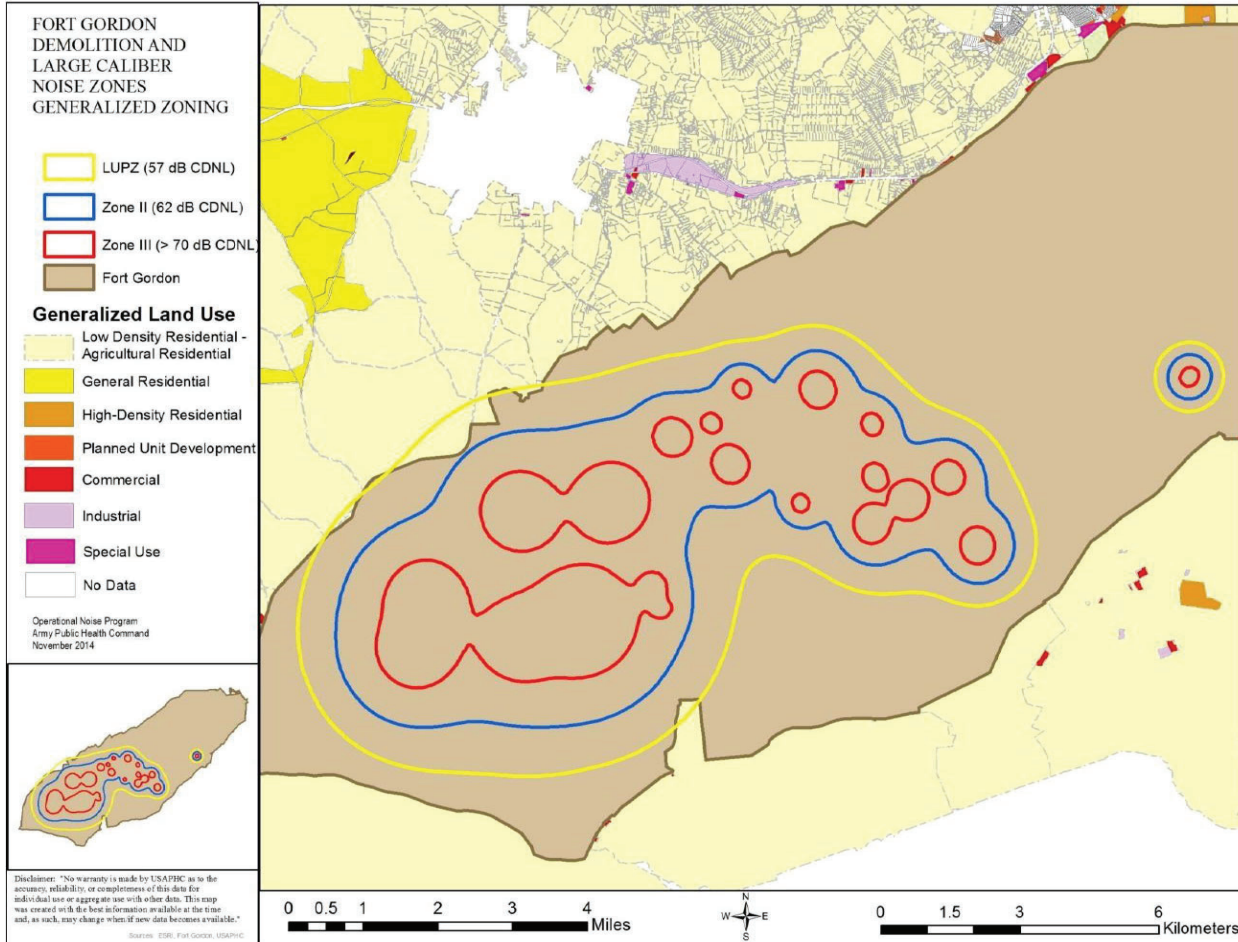


Source: 2015 Fort Gordon

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area, communities should plan for the unfavorable weather conditions, as weather is unpredictable.

Map 3.13: Fort Gordon Demolition and Large Caliber Noise Zones and Land Use



Source: 2015 Fort Gordon ICUZ

Table 3.13: Large Caliber noise Zones Acreage

Noise Zone	Total Acreage	Off-Post Acreage
LUPZ	8,620	405
Zone II	10,261	0
Zone III	5,236	0

Source: 2015 Fort Gordon ICUZ

Population projections show increased population in south east Columbia County in the future. Those future residents will need housing and other services, and the placement of those developments is critical. The potential also exists for spill-over population growth from this and other urban areas, culminating in

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resident migration to the neighboring counties. Therefore, communities should plan so as to steer development in the most appropriate areas. Infrastructure improvements should be targeted away from the Fort where possible to help conserve existing compatibility.

Based on its 2018 comprehensive plan, Burke County plans to promote some residential, commercial and mixed use development in northern Burke County. A portion of that area is included in the 2-mile study area, and this study is intended to help communities maintain compatible land use and development with the installation. Although the mapped noise contours do not reach Burke County at this time, some training noise may be audible. Additionally, the type of development could affect mission training (e.g. night sky visibility). As Burke County plans for the future, considerations should include residential density, lighting plans and noise attenuation standards. This future development presents an additional opportunity to promote greenspace cultivation in that area and surrounding the agricultural areas of Blythe.

Current mining and agricultural uses within Jefferson County are compatible. Residential uses close to the Fort Gordon border should be monitored; increased density or the extension of public water/sewer in the noise zone areas is not recommended. The City of Wrens is the most likely incorporated area to annex closer toward the buffer areas.

Augusta-Richmond County land use indicates some residential development, mostly single-family, in the moderate complaint risk area. Residents in this area have increased potential noise exposure. In Augusta-Richmond County's comprehensive plan, these areas are located in the South Richmond character area. Where conservation zoning is an option, rural conservation easements are promoted, and low density residential is recommended for suburban areas.

Ecosystem Management and Prescribed Fires

Out of the 55,600 acres of Fort Gordon, approximately 46,000 are managed by the Natural Resources Branch (NRB). As mandated by DoD, this land is primarily managed using a holistic ecosystem-based approach rather than single species management, with the exception of endangered species. By managing the ecosystem as a whole, everything that lives within the ecosystem also benefits. This management also supports the military mission by providing an open park-like longleaf pine forest ideal for many types of training and maneuver. Prescribed fire, midstory control, timber thinning, and reforestation are some of the management tools used by the NRB to aid the growth of these longleaf pine forests as well as create suitable areas for military training.

Historically, longleaf pine-wiregrass ecosystems burned every 1-3 years. These low-intensity fires were typically caused by lightning and carried across the landscape with the aid of wiregrass and other grasses. These fires maintained an open forest and prevented the growth of midstory hardwoods.

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These fires were also necessary to:

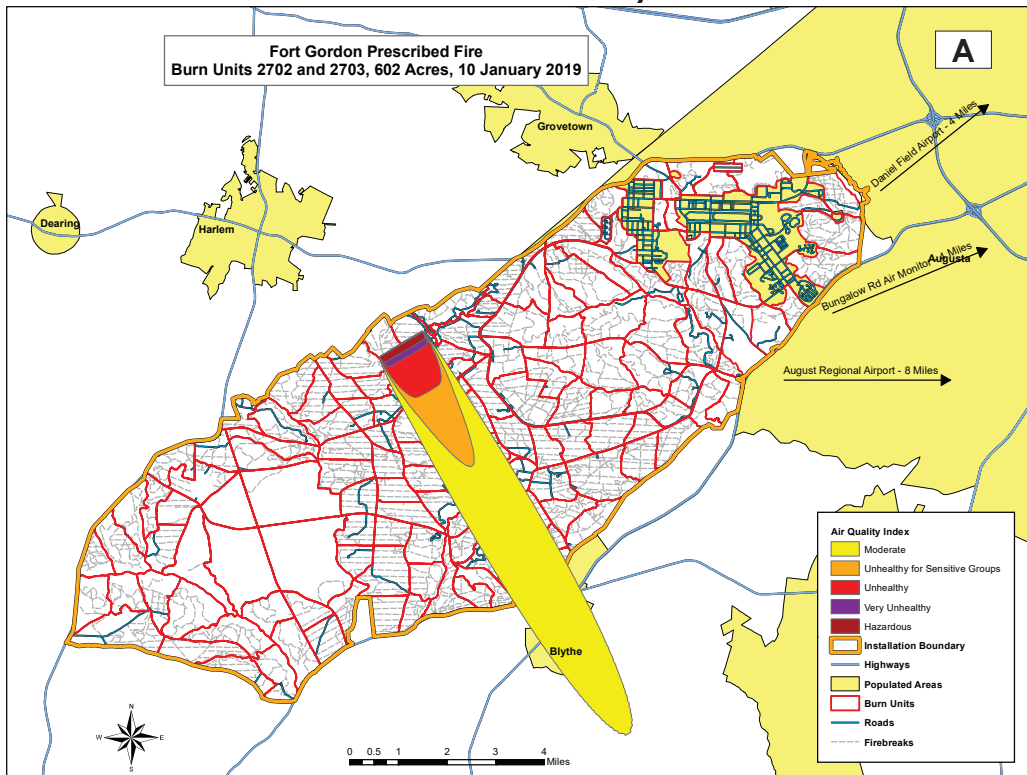
- Stimulate germination of desirable trees
- Open up understory for seedlings to grow
- Control competing vegetation
- Improve forage quality

Today, due to the encroaching urban development, wildfires are being suppressed. Prescribed fires, conducted by a trained fire team, are used to mimic these natural fires and maintain the dwindling longleaf pine-wiregrass ecosystem. By burning on a frequency similar to the historical fires, we can prevent accumulation of vegetation and litter that can cause serious wildfires.

Each year on Fort Gordon, the Natural Resources Branch burns ~16,000 acres of land. Fire prescriptions for each burn unit are planned on a 1-3 year cycle to mimic that of the natural fires. These fires control competing hardwoods and improve quality of understory vegetation. In addition, frequent burns minimize the chance of wildfires and the number of fires caused by training (flares, tracers, explosives, etc.).

The map series on the following pages (Maps 3.14A-E) depicts prescribed fire burn units from 2019 and the areas affected on and off post by air quality changes. As the maps show, the burn activity occurs on the installation property, but air quality may be affected several miles from the burn site.

Maps 3.14A-E: Fort Gordon Prescribed Fire Burn Units and Air Quality Results

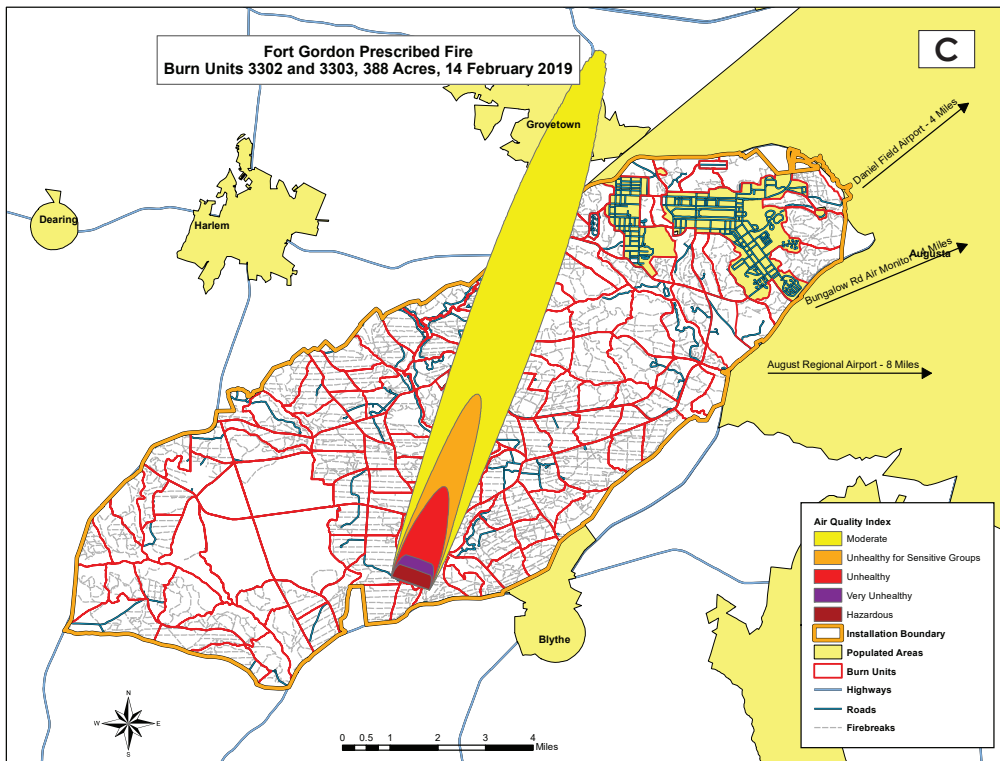
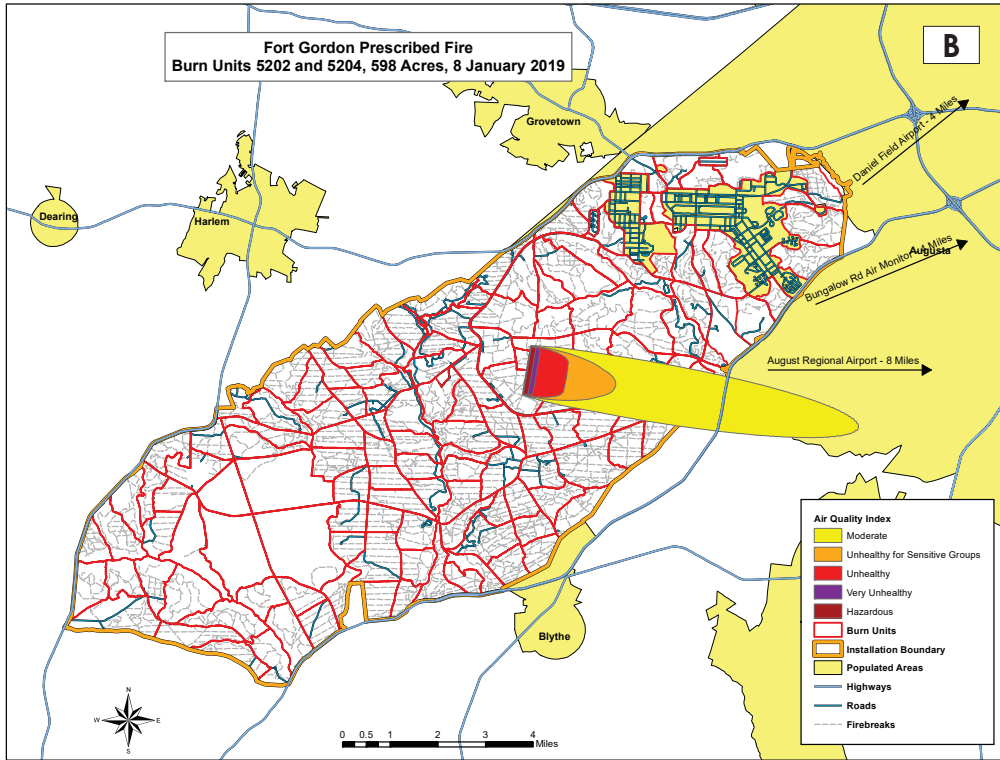


Source: Fort Gordon

The most unhealthy air quality conditions remain on the installation. However, several of the cities in the study area may experience moderate quality. Also, air quality that's unhealthy for sensitive groups occurs off post periodically.

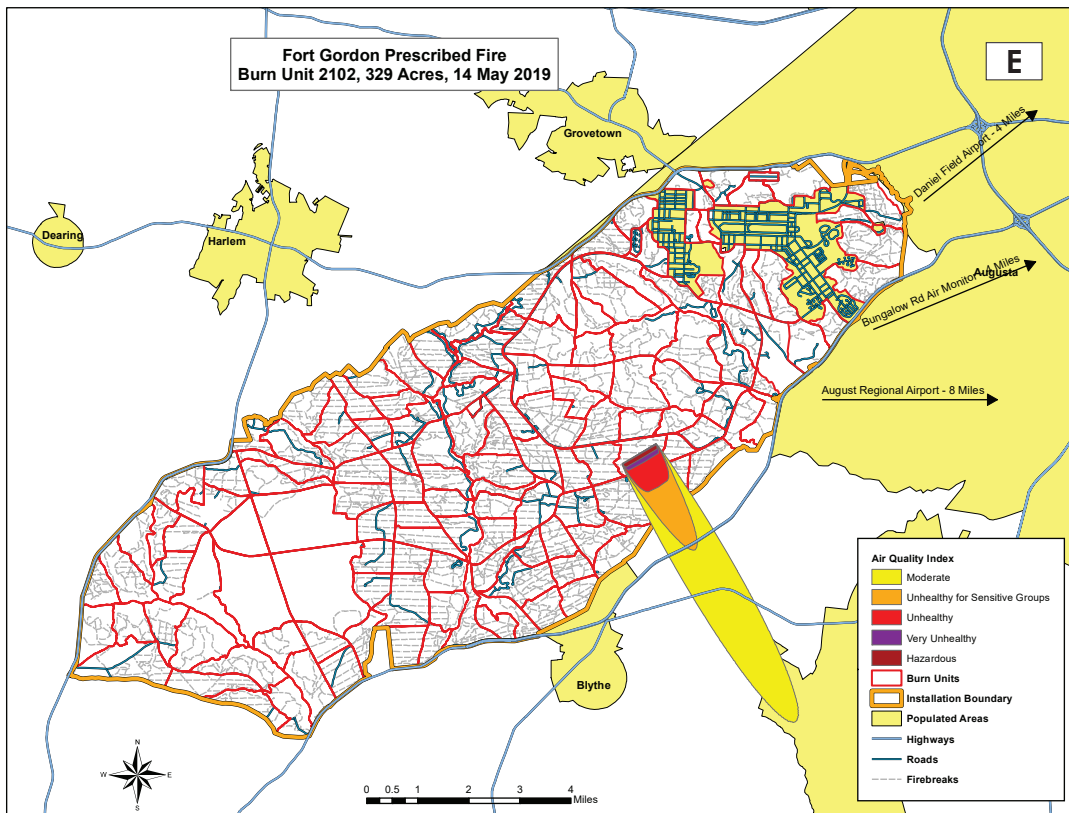
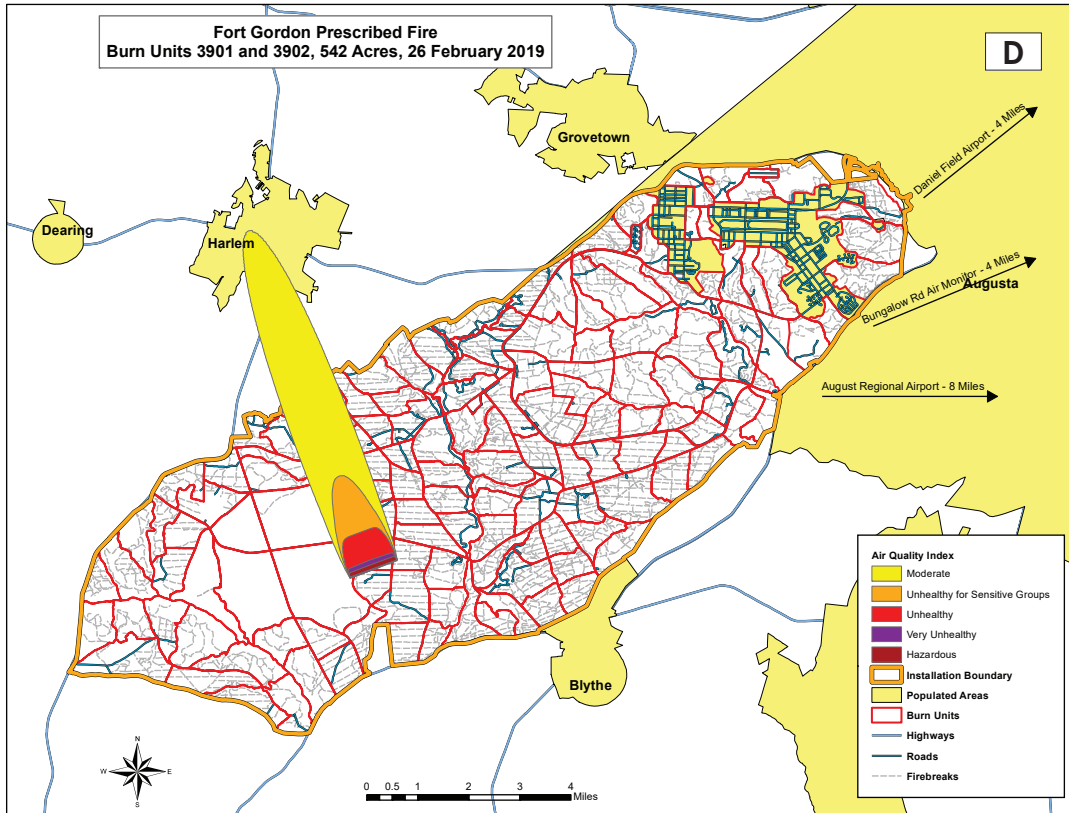
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As development continues to occur, higher density residential development closer to the installation will increase the likelihood of air quality-related complaints and is not recommended. However, citizen and local government notification of burn activity and its affect on air quality is important and should continue. Local governments should also consider partnering with the real estate community to provide proper disclosure to property owners of potential smoke, dust, or other particles generated from the prescribed fires prior to purchases or leases so they can plan accordingly or reconsider.



notification of burn activity and its affect on air quality is important and should continue. Local governments should also consider partnering with the real estate community to provide proper disclosure to property owners of potential smoke, dust, or other particles generated from the prescribed fires prior to purchases or leases so they can plan accordingly or reconsider.

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Aviation Activity

Noise from aircraft operations at Fort Gordon is considered compatible with surrounding land uses. Fort Gordon has numerous landing and drop zones, but the number of aircraft operations at these areas is not high enough to create noise zones.

Aircraft operating outside Fort Gordon, either in or out of designated flight corridors, have the potential to cause annoyance and possibly generate noise complaints. However, measures are in place to mitigate the effects of aircraft noise at Fort Gordon including minimum flight altitudes and slant distances.

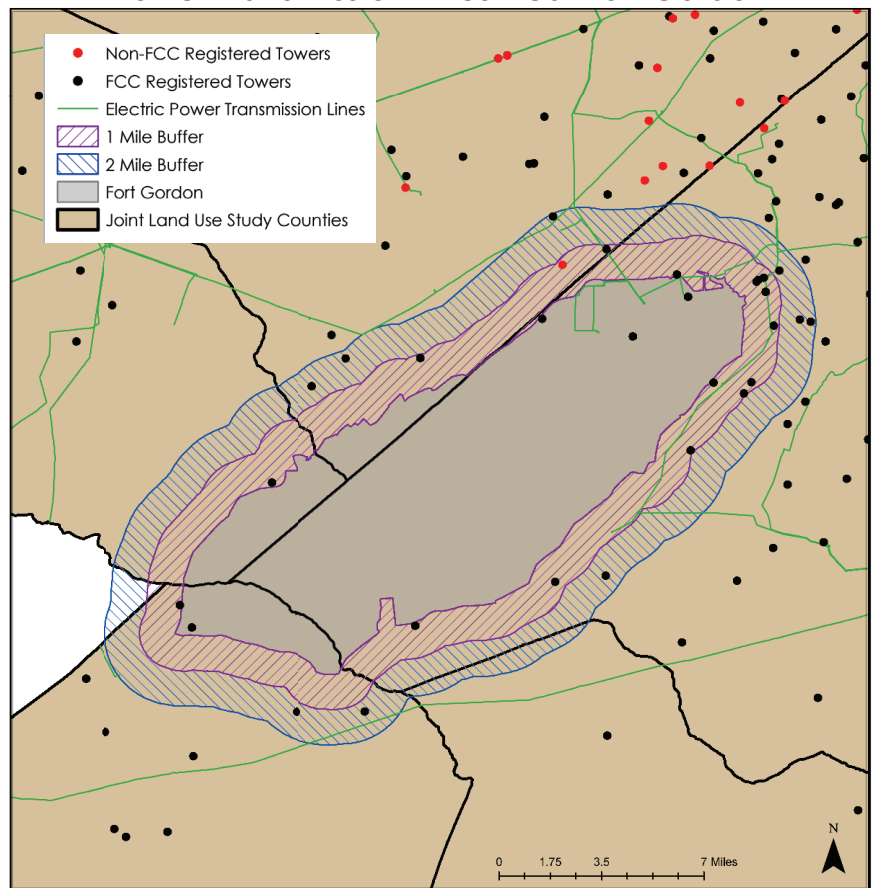
IV. EXTERNAL IMPACTS

Electromagnetic Interference

Given increasing technology and the Fort's designation as the Cyber Center of Excellence, concerns of electromagnetic interference are increasing. As part of this project, preliminary research on the locations of telecommunications towers and power transmission lines within the study area counties was conducted.

Signal activity and intelligence are major missions at Fort Gordon. As such, the installation is susceptible to electromagnetic interference of various types. For instance, electromagnetic 'noise' may affect military avionics and radio frequency (RF) dependent weapons systems. Adequate radio frequency spectrum is essential to almost all aviation operations. Civilian radio frequency devices (e.g. radios, radars, keyless entry devices) can sometimes transmit in military assigned frequencies, affecting those electronic systems

Map 3.15: Telecommunications Towers and Electric Power Transmission Lines Near Fort Gordon



Source: FCC; Homeland Infrastructure Foundation

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and communications equipment. Residences near an installation may also experience interference. For example, in 2010, the NSA reported that an antenna it was using at a San Antonio facility interfered with garage door openers after resident complaints that their garage doors were randomly opening.

Prior to the rise of cellular phones, relatively few such towers existed. In recent years, however, numerous towers have been constructed. Additional telecommunications facilities are likely to come to the area, either as towers or antennae on existing towers. The telecommunications environment has also changed with the recent growth of next-generation “small cell” wireless telecommunications antennae and new legislation allowing for greater collocation on existing towers. Both traditional cellular and other communication towers can create problematic interference. It's most likely that small cell deployment will occur in denser areas and population centers.

Based on data collected from the FCC the following number of towers are present within the 2-mile buffer by county (Map 3.15):

- Augusta-Richmond - 19
- Burke - 0
- Columbia - 5
- Jefferson - 4
- McDuffie - 1

Data collected included FCC registered towers and non-registered towers. Based on the reviewed data, the majority of telecommunications towers in the study area are located in Augusta-Richmond County (19). The remaining counties have five (5) or fewer towers within two miles of the installation based on current information. Additional data on non-registered towers in all jurisdictions may reveal a different conclusion on the number of towers and their locations.

These facilities play a critical role in the region's communications network. However, they also can be hundreds of feet tall and, as such, may present hazards to aircraft in addition to interference. With increasing use of Fort Gordon for training involving aircraft, the potential for accidents rises.

In addition to telecommunications data, information from the Homeland Infrastructure Foundation was used to map electric power transmission lines in the area. These facilities raise their own concerns; transmission lines mapped include those owned by GA Power and SCE&G. The reviewed data reveals that, like the telecommunications towers, more transmission lines are located in the more developed areas. Additional data from the power companies themselves is needed.

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Given the population growth around Fort Gordon, and the associated growth of infrastructure, local governments should, in cooperation with Fort Gordon, assess the risks and complications of interference so they can regulate accordingly.

Night Lighting

Certain land uses in proximity to military installations can produce conditions that interfere with military training, particularly aircraft operations. One of the most common of these hazards is the use of excessive and unshielded outdoor lighting. Outdoor lighting systems, especially lighting associated with billboards, gas stations, major roadways, athletic fields, and large commercial or industrial uses often allow significant light to travel upward into an otherwise darkened sky. The resulting 'light pollution' can obscure pilot vision or interfere with the use of night vision training devices.

Night vision flight training, in which aviators use night vision goggles (NVGs) or other types of night vision systems, is essential to the missions of the modern Army. Night vision systems are designed to operate away from civilization and lighting, as they are dependent on the absence or limited presence of ambient light. Exposure to stray light can cause the vision screen to white-out, temporarily robbing the aviator of vision. In some cases, light pollution can hinder night training activities, resulting in a relocation of training routes on the installation site or to another installation altogether.

The 2015 ACUB proposal process included models that showed current and potential future light spillover in the vicinity of Fort Gordon. These models are shown in Maps 3.16A and 3.16B on the next page. Map 3.16A illustrates conditions as of 2011. Much of the light is concentrated in Augusta, Grovetown and Harlem within the 2-mile study area. The second map, Map 3.16B, illustrates the potential for light spillover given traditional suburban development patterns. In this model, there is substantial light spillover on the northern boundary of the post, as well as on the eastern half of the installation's southern edge. Only the southwestern corner, located mainly in Jefferson County, retains protection from excessive nighttime lighting. Encroaching suburban land use or inadequate light shielding in the previously rural and undeveloped areas of all the counties have potential to negatively affect training activity that utilizes property near those areas. Newer night sky models based on conditions today and future land use plans is needed to fully analyze the potential harm.

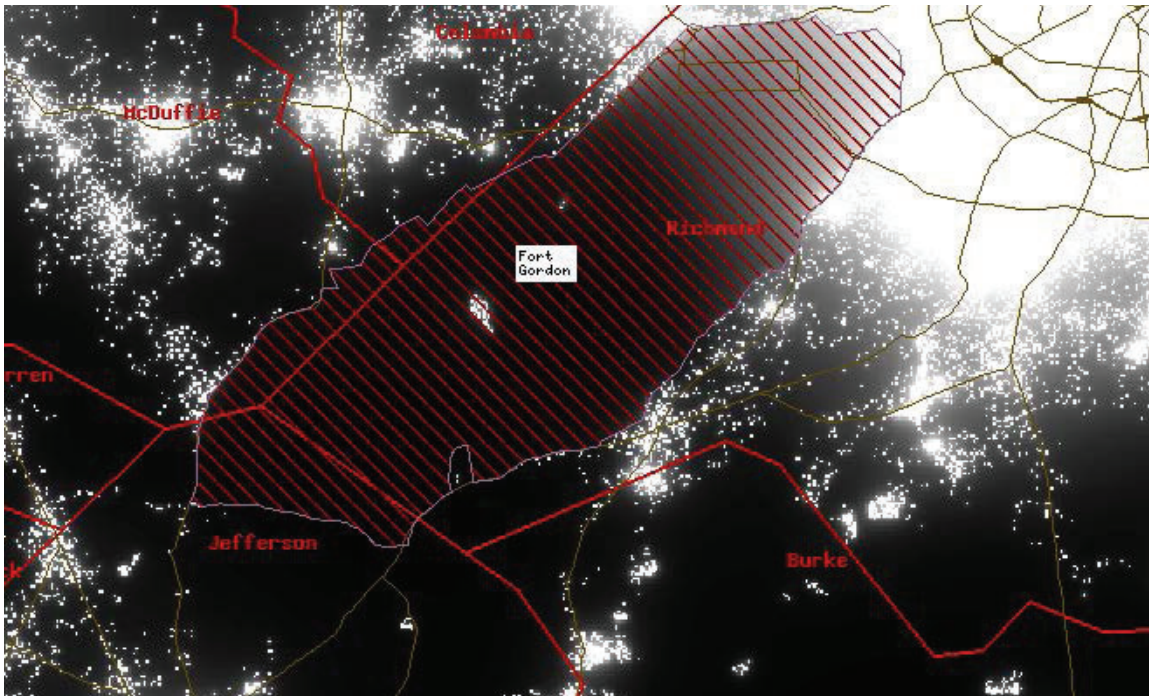
Regardless of the land use, lighting can have a negative effect. As communities plan for future allowed uses within the buffer areas, they must consider the conditions that non-noise sensitive uses such as manufacturing may create. This can be accomplished on a project-by-project basis, guided by overall regulation and best practice. Night lighting can be addressed through commercial lighting plan requirements, dark sky ordinances and other land use regulations.

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Map 3.16A: Night Sky Model Based on 2011 Conditions



Map 3.16B: Predictive Night Sky Model Based Traditional Suburban Development Patterns



Source: 2015 Fort Gordon ACUB Proposal

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CHAPTER 4
COMPATIBILITY TOOLS



FORT GORDON / CENTRAL SAVANNAH RIVER AREA
JOINT LAND USE STUDY

COMPATIBILITY TOOLS

When Fort Gordon was founded in 1941, the installation was located in a mostly rural area, relatively isolated to avoid potential conflicts between military training and the comfort and safety of area residents. The combined population of Augusta-Richmond County and Columbia County was approximately 75,000 in 1940, with the vast majority of residents located away from the installation. However, as population growth has continued, development has crept closer to the installation boundary. Today, the two counties count close to 345,000 residents, with major population centers around areas of the installation.

The relationship between military installations and surrounding communities has become strongly interrelated, and it is no longer possible for either entity to avoid one another when particular challenges arise. Neither local governments nor Fort Gordon can afford the costs associated with poor land use compatibility. Both need to work collaboratively in order to address issues that affect the localities' ability to grow in an orderly and organized manner, enabling it to provide adequate services to residents, and Fort Gordon's ability to adequately operate and train its troops.

At the core of land use compatibility planning that is part of this CUS process is the need to avoid restricting Fort Gordon's use of installation operations and training. ***Military operations tend to be affected by encroachment in four main ways: by causing training and other operational restrictions; increasing operational costs (such as having to relocate a training exercise to another part of the installation); causing community complaints; and degrading military readiness.***

This report is intended as a menu of compatibility tools for minimizing land use and other encroachment conflicts between Fort Gordon and the surrounding communities. The tools identified are the result of efforts to assess the existing and future effects of the installation on adjacent land, recommendations from Technical Advisory Committee (TAC) members, and examples of best practices from compatibility actions taken by communities and installations around the country.

The recommendations section (Chapter 5) of this report includes compatibility tools selected based on their feasibility, applicability and appropriateness to CUS partners, likely effectiveness, and implementation potential. The recommendations are intended to address a variety of possible land use and operational issues. Some of the compatibility measures are ready to be adopted by the various entities, while others may be used as longer-term approaches to minimizing incompatible development and encroachment around Fort Gordon. As development conditions and mission impacts evolve, local, regional, and military planners are encouraged to revisit this list of compatibility measures to further refine and strengthen their set of encroachment reduction tools.

COMPATIBILITY TOOLS

I. LOCAL GOVERNMENT TOOLS**Comprehensive Plans**

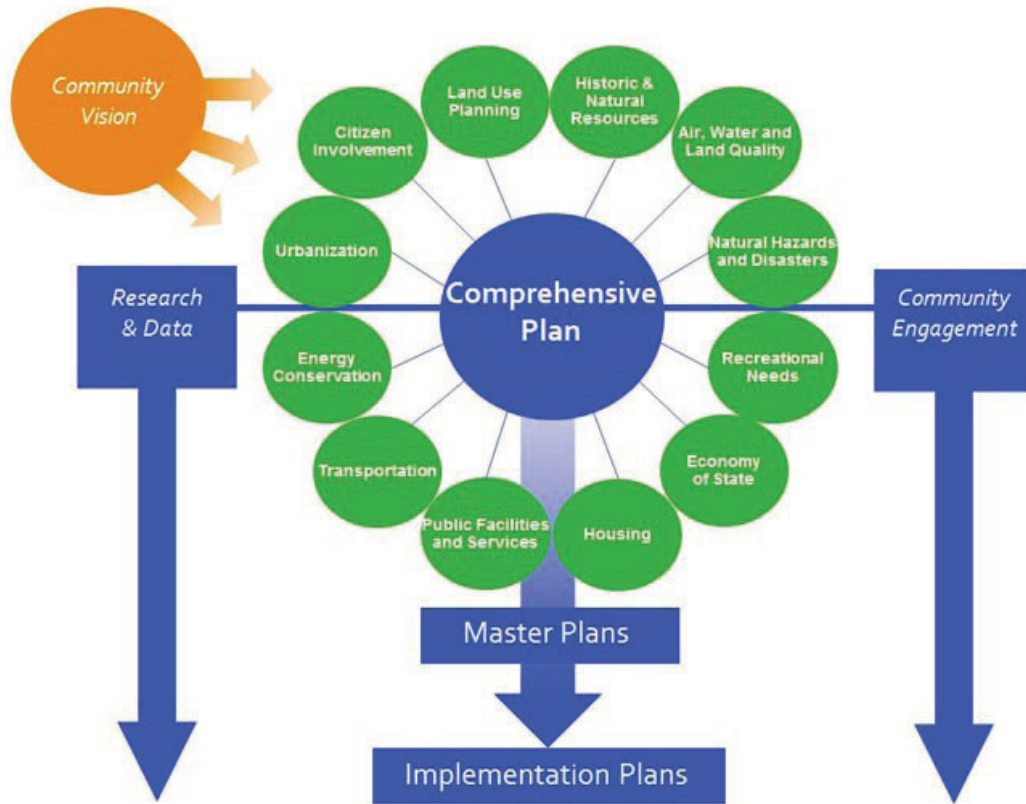
All local governments in Georgia are required by state law to prepare and maintain a Comprehensive Plan - a long-range, comprehensive document which serves as a jurisdiction's blueprint for future decisions concerning land use, housing, infrastructure, public services, and resource conservation. Area plans, subdivisions, public works projects, and zoning decisions made by the local governments should be consistent with the Comprehensive Plan.

Comprehensive Plans are therefore central to local government planning as they lay out the vision, policies, and strategies for a community's development. Comprehensive Plans establish a firm legal basis for the implementation of compatibility actions and set the policy framework to regulate development through local land use regulations. Land use compatibility guidelines encourage activities that maintain compatibility with military operations, such as agricultural, industrial, commercial, and very low density residential. Compatible activities are those that generally avoid the concentration of people; these lessen impacts from noise, smoke and other operations on quality of life off-post.

Local governments can include specific language on CUS coordination and encroachment mitigation as part of Comprehensive Plan updates. Specific language can include emphasizing the relationship between the community and Fort Gordon, the desire to promote cooperative land use planning and complementary land use goals (such as Character Areas that focus on agricultural, open space/recreation, and conservation uses), and guidelines about appropriate future land use in areas vulnerable to encroachment. Other components of compatibility planning can include the following:

- Identify the operational functions associated with Fort Gordon as part of the land use element, along with maps of noise zones and the 2-mile buffer.
- Incorporate Fort Gordon training and operations impacts as part of the transportation element.
- Evaluate the impact of off-post development on natural resources and habitat on Fort Gordon as part of the natural resources element. This development can have significant impacts on the natural resources and habitat on the installation, particularly with regard to threatened and endangered species. Population growth in a nearby area can force species to migrate into less populated areas, where military activities take place.
- Incorporate military housing needs as part of the housing element. The housing element sometimes identifies the amount and location for housing, and it should make adequate provision for the existing and projected needs of all segments of the community. Military personnel (and associated contractors) are segment of the community, and therefore, adequate provisions should be provided for in the housing needs assessment. In addition, this element should be coordinated with the land use element to ensure housing is located away from Fort Gordon's noise zones.

Figure 4.1: The Connectivity of Comprehensive Plans
 Comprehensive Plans Lay the Foundation of Local Land Use & Infrastructure Policies



Source: <https://www.beavertonoregon.gov/1326/About-the-Plan>

A simple way to organize these various elements of compatibility planning into the Comprehensive Plan is through the development of a Military Planning District Element - a standalone chapter that would include special zones which integrates policies aimed at promoting compatible development, including communication procedures, land use, housing, infrastructure, and conservation policies. This approach would not only consolidate the related information, but it would suggest that local governments recognize that the presence of Fort Gordon is significant to the community and the region.

A good example of this approach is the Military Planning District Element in the Kern County, CA General Plan, which incorporates a Military Readiness Element as a chapter. As the home of Naval Air Weapons Station China Lake, Edwards Air Force Base and the Joint Service Restricted R-2508 Airspace Complex, Kern County has been involved in joint planning with the military for well over two decades.

Kern County's General Plan can be found here - <https://kernplanning.com/general-plan-update/general-plan-documents/>

COMPATIBILITY TOOLS

The vision statement for the Kern County General Plan states:

“The Military Element will consider the impact of new growth on military readiness activities carried out on military bases, installations and operating and training areas, on property adjacent to the military facilities and underlying designation military aviation routes and airspace. In consultation and cooperation with NAWS China Lake, Edwards Air Force Base and the DoD, the element will include goals, policies and implementation to address the following military readiness activities:

- (a) Training, support, and operations that prepare the men and women of the military for combat
- (b) Operation, maintenance, and security of any military installation
- (c) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use.”

Currently, all CUS local governments in the CSRA have Comprehensive Plans in place. However, they vary widely in their incorporation of compatibility tools and encroachment mitigation strategies. Each community should review what it has and consider the recommendations and policies in the CUS, Regionally Important Resources Plan and Regional Plan for inclusion and implementation. The CSRA RC will consult with any government on this as requested.

Augusta-Richmond County

The Augusta-Richmond County Comprehensive Plan (which doesn't include the cities of Blythe and Hephzibah) identifies the Fort Gordon Character Area. The Character Area describes the installation and its missions, land uses on-post, and recommends continued cooperation with adjacent communities and Fort Gordon regarding land use and re-zoning action and other initiatives. The cities of Blythe and Hephzibah each have a plan in which Fort Gordon and its importance are acknowledged; the plans also mention pursuing recommendations from the CUS.

Columbia County

Columbia County's Comprehensive Plan includes an Intergovernmental Coordination section that recommends collaborating with other local governments and entities to address land use and development issues around Fort Gordon by: 1) participating in continuous joint land use planning (including the use of best management practices), and 2) notifying Fort Gordon of zoning proposals within 3,000 feet of the base in accordance with the requirements of the Georgia Zoning Procedures Law.

The Plan acknowledges that population trends suggest that all communities adjacent to Fort Gordon will be impacted by growth in the upcoming decades.

In the vicinity of the installation, land development and population can encroach on the installation and impact its missions. Over the next 20 years Columbia County is projected to grow by approximately 50%.

The City of Grovetown's population is projected to increase 74%, which is consistent with the City's proximity to Fort Gordon and the anticipated employment growth that the installation is expected to generate. The City of Harlem's growth is expected from its access to I-20, developing commercial and workplace concentrations, and its relatively higher-priced housing market. From its population of approximately 3,000, Harlem is anticipated to experience the highest growth rate in the county, increasing 125% to over 7,100 people by 2035. Both the Grovetown and Harlem Comprehensive Plans acknowledge the CUS and requirements associated with the State Zoning Procedures Law, but do not include any specific strategies to manage growth in proximity to Fort Gordon. Both comprehensive plans are due for updates in 2021, but can be updated sooner to incorporate recommendations from this CUS as community work program activities.

Jefferson County

The Jefferson County Comprehensive Plan includes a descriptive section on Fort Gordon and its importance to the region, acknowledges the need for coordination of land use activities, and notes that the plan will be updated to include recommendations from the CUS. The future land use map indicates that the area around Fort Gordon will remain largely agricultural with some mining and residential activity, which keeps with the current pattern of development.

Burke County

The Burke County Comprehensive Plan does not include any compatibility or encroachment mitigation strategies for Fort Gordon. Burke County should review the recommendations within this document and update its plan accordingly. Considering the county's approach to its future development map is through character areas, a Fort Gordon character area is one item that can be added.

McDuffie County

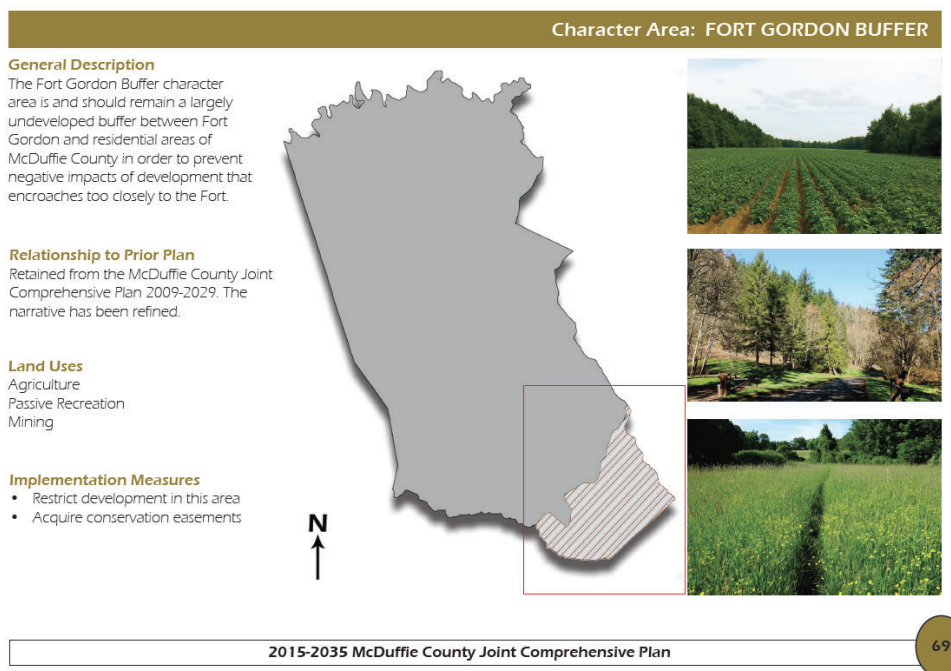
The McDuffie County Comprehensive Plan includes the Fort Gordon Character Area, defined as an area that should remain a largely rural and undeveloped buffer between Fort Gordon and residential areas of McDuffie County. While Fort Gordon has no current plans for expansion into McDuffie County, residents realize that it is an active military facility that could have negative impacts on quality of life if development is allowed to encroach too close to its borders. Recommended development patterns within the Fort Gordon Character Area include agricultural and passive recreation uses, and should include the following strategies:

COMPATIBILITY TOOLS

- Restrict development that would be incompatible with the day to day operation of Fort Gordon.
- Public purchase of development rights, easements, and/or properties, to ensure compatible land use buffers with Fort Gordon.
- No further expansion of municipal infrastructure to discourage high intensity development.
- Observe recommendations put forth in both the Fort Gordon Joint Land Use Study and the U.S. Army's Compatible Use Buffer program.

Figure 4.2: The Fort Gordon Character Area in the 2015 McDuffie County Comprehensive Plan

Establishing character areas and following the recommended development pattern helps protect Fort Gordon from encroachment.



Source: McDuffie County Comprehensive Plan 2015-2035

Targeted Infrastructure Investments

Targeted infrastructure investments allow local governments to meet public needs while guiding growth away from areas in proximity to military installations. As part of this strategy, local governments would consider the impacts of both public and private infrastructure development (e.g. roads, water and sewer facilities) into noise, safety, and other affected areas around Fort Gordon.

Since capital investment decisions influence private market location decisions, local governments can link their Work Programs and Capital Improvement Plans to compatibility goals. Installing infrastructure in planned growth areas and away from areas of military operational impact reduces the potential conflicts associated with denser development near installations. This strategy requires

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ensuring consistency and linkage between all land uses and infrastructure plans, including regional transportation plans such as the Augusta Regional Transportation Study (ARTS) Long Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP).

Given Fort Gordon's unique signal missions, infrastructure would also encompass electromagnetic and frequency facilities and uses (i.e. cellular, public safety agencies, radio and television broadcast stations), which can cause significant interference with training missions.

The most effective way to implement an infrastructure-based compatibility and encroachment mitigation approach is to ensure local planning officials consult with Fort Gordon planners as part of the local and regional planning process and facilities programming decisions. For utilities infrastructure, this is made easier by Fort Gordon's contractual relationship with public and private entities. Through the late 2000s, Augusta-Richmond County and Fort Gordon entered into an agreement for the City to provide water and sewage treatment services. Fort Gordon also outsourced its electrical system to Georgia Power to provide funding to upgrade the system and improve service. These contractual relationships allow Fort Gordon to engage in joint planning with municipal and private service providers, and by extension, target infrastructure away from noise areas and proximity to the installation.

Zoning Regulations

Local zoning ordinances regulate the effects of private land uses on military activities by determining and regulating allowable uses and densities in zones adjacent to Fort Gordon, a key component in maintaining compatibility with military operations. Compatible activities generally avoid the concentration of people and focus on agricultural, conservation, recreational, and other low-density/non noise-sensitive uses, which lower sensitivity to noise, smoke and other possible operational impacts. Zoning can also regulate the effects of light pollution or limit the height of structures that may interfere with navigable airspace.

As part of this strategy, local governments can create a specialized Military Overlay District (MOD) that governs uses within established noise zones or within a certain radius of the installation. A good example of the use of zoning to avoid encroachment is found in Santa Rosa County, FL, which has changed zoning and has been directing growth to help stop encroachment around Naval Air Station (NAS) Whiting Field and its outlying fields. The county established military airport zones (MAZs) near the NAS and outlying fields and does not allow up-zoning within the MAZs. It focuses on clustering away from the NAS if a proposed development project is near the installation noise contours.

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Similarly in Escambia County, FL, home to NAS Pensacola, the county imposed a development moratorium within noise and accident potential zones surrounding NAS Pensacola in response to concerns raised by the Navy regarding urban development encroaching too close to the NAS and impeding its flying mission. The purpose of the moratorium was to allow time to sort out the impact of emergent development patterns near the NAS' mission and operations. The moratorium was lifted when the recommendations from the CUS were adopted, which defined the "Airfield Influence Planning District" (District) and changed zoning to conform to noise and air zones.

All CUS jurisdictions currently have zoning ordinances in place but vary in their compatibility with Fort Gordon's operational and training needs. Zoning abutting Fort Gordon in Jefferson, Burke and McDuffie Counties includes agricultural and other low-density zones, uses generally compatible with installation noise impacts. Lot sizes, the use of accessory dwelling units, and lighting standards should still be examined in these areas for conflicts. All of the incorporated cities in Augusta-Richmond and Columbia Counties (Blythe, Hephzibah, Grovetown, and Harlem) include significant high-density residential zones. Additionally, areas of Columbia County south of Grovetown are primarily zoned low density residential-agricultural; while areas adjacent to and north of Grovetown include high-density residential and commercial uses. Zoning in the southern part of Augusta-Richmond County adjacent to Fort Gordon is agricultural, while the northern part includes a mix of agricultural and high-density residential and commercial uses.

Transfer of Development Rights

Local governments can also pursue a transfer of development rights (TDR) program, which shifts growth from a designated 'sending area' with development constraints (such as noise or smoke areas, areas adjacent to the installation, etc.) to a designated 'receiving area' that does not have site limitations. This type of transaction takes place voluntarily in the free market. The owner of the constrained land sells the development credits established under zoning to a buyer who then can develop additional residential density on another property based on the number of credits purchased.

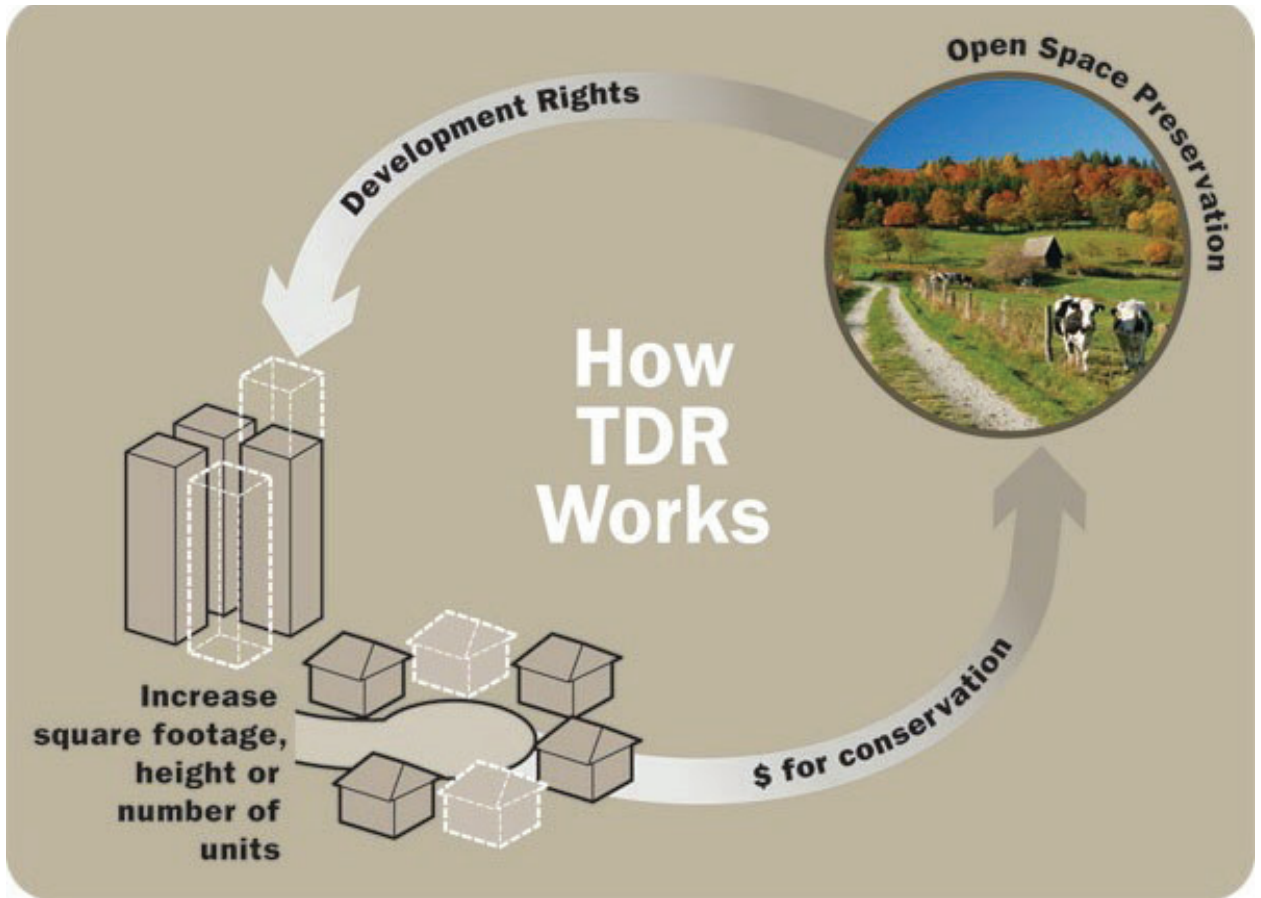
This compatibility measure is usually undertaken in areas with strong market pressures for development combined with a limited supply of available land. Georgia statutes grant local governments the authority to adopt a local TDR program as well as a regional program. Georgia's TDR legislation includes a provision about intergovernmental cooperation. OCGA 36-66A-2 states: "Municipalities and counties which are jointly affected by development are authorized to enter in to intergovernmental agreements for the purpose of enacting interdependent ordinances providing for the transfer of development rights between or among such jurisdictions, provided that such agreements

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otherwise comply with applicable laws. Any ordinances enacted pursuant to this subsection may provide for additional notice and hearing and signage requirements applicable to properties within the sending and receiving areas in each participating political subdivision". Therefore, intergovernmental agreements are permitted and allow for the possibility of enacting an inter-jurisdictional TDR program to guide development in an area and address encroachment issues.

Figure 4.3: How TDR Works

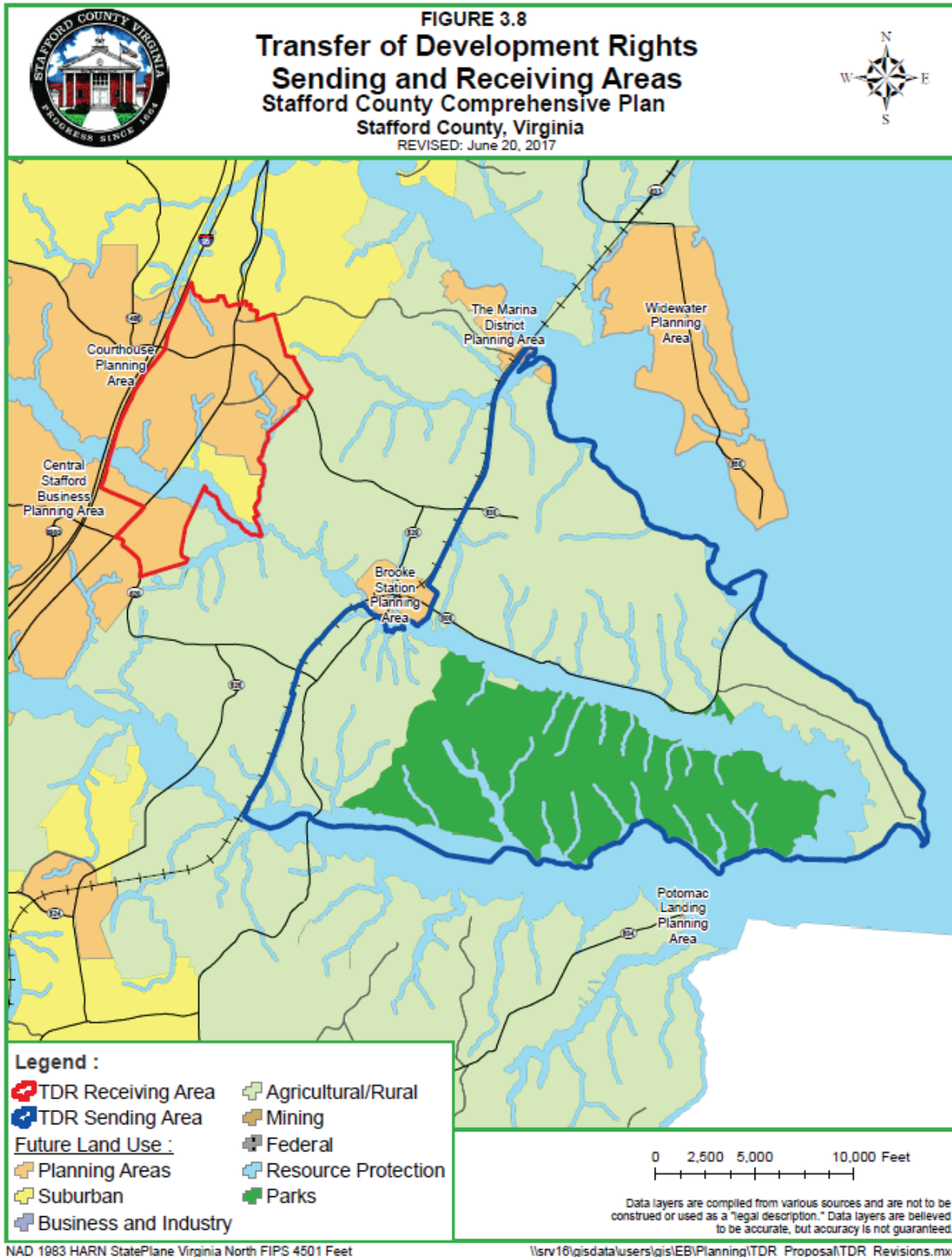
TDRs are often used for land preservation efforts.



Source: <https://www.eopugetsound.org/articles/report-regional-transfer-development-rights-puget-sound>

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Figure 4.4: Example of TDR Sending and Receiving Area Near a Military Installation



Source: <https://www.eopugetsound.org/articles/report-regional-transfer-development-rights-puget-sound>

TDR/PDR Programs in Other States:Beaufort County, SC

Beaufort County organized its TDR program to reduce development near the Marine Corps Air Station (MCAS-Beaufort) and redirect toward areas more consistent with the County's comprehensive plan. The County prefers this development pattern, as it reduces hazards associated with air traffic operations near MCAS-Beaufort. The TDR program takes on a free-market approach to achieve planning objectives through voluntary participation. Sending areas include all properties located in the MCAS Airport Overlay District, those within one-quarter mile of the Air Installation Compatible Use Zone, and those with rural, edge, or neighborhood mixed-use zoning classifications. Receiving areas are located in outside of the MCAS Airport Overlay district, beyond one-quarter mile of the Airport Installation Compatibility Use Zone, and within the boundaries of Port Royal Island. The cities of Beaufort and Port Royal may also participate by designating receiving areas.

Warwick Township, Lancaster County, PA

Warwick Township's TDR program focuses on agricultural preservation. The TDR program assigns one transferable development right for each two gross acres of farmland to every farm within the agricultural zone. Farmers who want to preserve their farmland can sell their TDR based on fair market value of the farmland. The rights are sold with the purpose of increasing lot coverage in the Township's campus industrial zone. Since 1991, the TDR program has preserved over 1,500 acres of farmland.

Montgomery County, MD

Montgomery County's TDR program serves as a preservation tool in implementation of the County's Preservation of Agriculture and Rural Open Space Functional Master Plan (1980). The Master Plan is designed to minimize inappropriate development of farmland, strengthen agriculture, and growth to other areas of the county via TDR and zoning. The Agricultural Reserve zoning district limits residential development. Landowners in the Agricultural Reserve can transfer their development rights to areas where growth is desired within the County.

King County, WA

King County developed a TDR program in 1988. Between 1988 and 1995, only one transfer occurred. In 1996, the County developed a Transfer of Development Rights Receiving Area Plan to improve its TDR program, which led to an updated pilot TDR program and a TDR bank. In 2001, the pilot program was converted into a permanent program. Sending sites in King County must be located in unincorporated areas and provide public benefits, such as agricultural or forestry potential, critical wildlife habitat, open space, regional trail connectors or separators. The number of development rights allocated

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to a property depends on the zoning and size of a parcel. Receiving sites are located where existing services and infrastructure can accommodate additional growth, such as Seattle and Bellevue. Such transactions occur through the TDR Exchange, an online platform that facilitates the sale and purchase of transferable development rights.

Pinelands Development Credit Program, NJ

The Pinelands Development Credit program is one of the most successful TDR programs in the United States. Pinelands Development Credits are allocated to landowners in the Preservation Area District, Special Agricultural Production Area and Agricultural Production Area. Developers or property owners interested in developing land in the Pinelands Regional Growth Areas can purchase such credits. Each PDC transfers the right to build four homes and can be bought or sold in ¼ increments. The program is governed by the Pinelands Comprehensive Management Plan through credit allocation formulas and zoning requirements. The Pinelands Credit Development Bank issues PDC certificates, records deed restrictions on sending properties, and processes PDC transaction. As of 2017, over 52,300 acres of Pinelands Area has been permanently preserved through the PDC program.

Georgia does not have many jurisdictions operating TDR programs.

TDR Programs in Georgia:

Milton

The City of Milton's TDR program began in 2013 and is managed by the City's Community Development Department. Milton has two TDR procedures: Park/Greenway Site and Open Sending Site. Under the Park/Greenway Site procedure, a property owner donates their land to the City for use as a park, greenway, trail, or civic site. While the property is transferred to the City, the original property owner maintains TDRs, which they can sell on the market. Under the Open Sending Site procedure, a property owner retains ownership rights but agrees to a permanent conservation easement on their property that limits future development.

Atlanta

The City of Atlanta's TDR ordinance allows for and regulates the transfer of development rights to promote public health and safety, general welfare while preserving natural, environmental, historical and cultural resources. There are three types of sending areas/properties: residential, historic buildings, and greenspace areas/properties. Rezoning of sending areas does not restore any severed or transferred development rights. Development rights from sending areas may be received by residential receiving properties, which are proposed for multi-family use or mixed use with more than fifty percent of the floor area being dedicated to residential. Receiving properties for development rights from historic designations must apply the rights to any use permitted on the property from which the rights were transferred. The City's planning department monitors the ownership, severance, and transfer of development rights. TDR permits issued by the city expire if the development has not started in 12 months.

Fulton County and Chattahoochee Hills

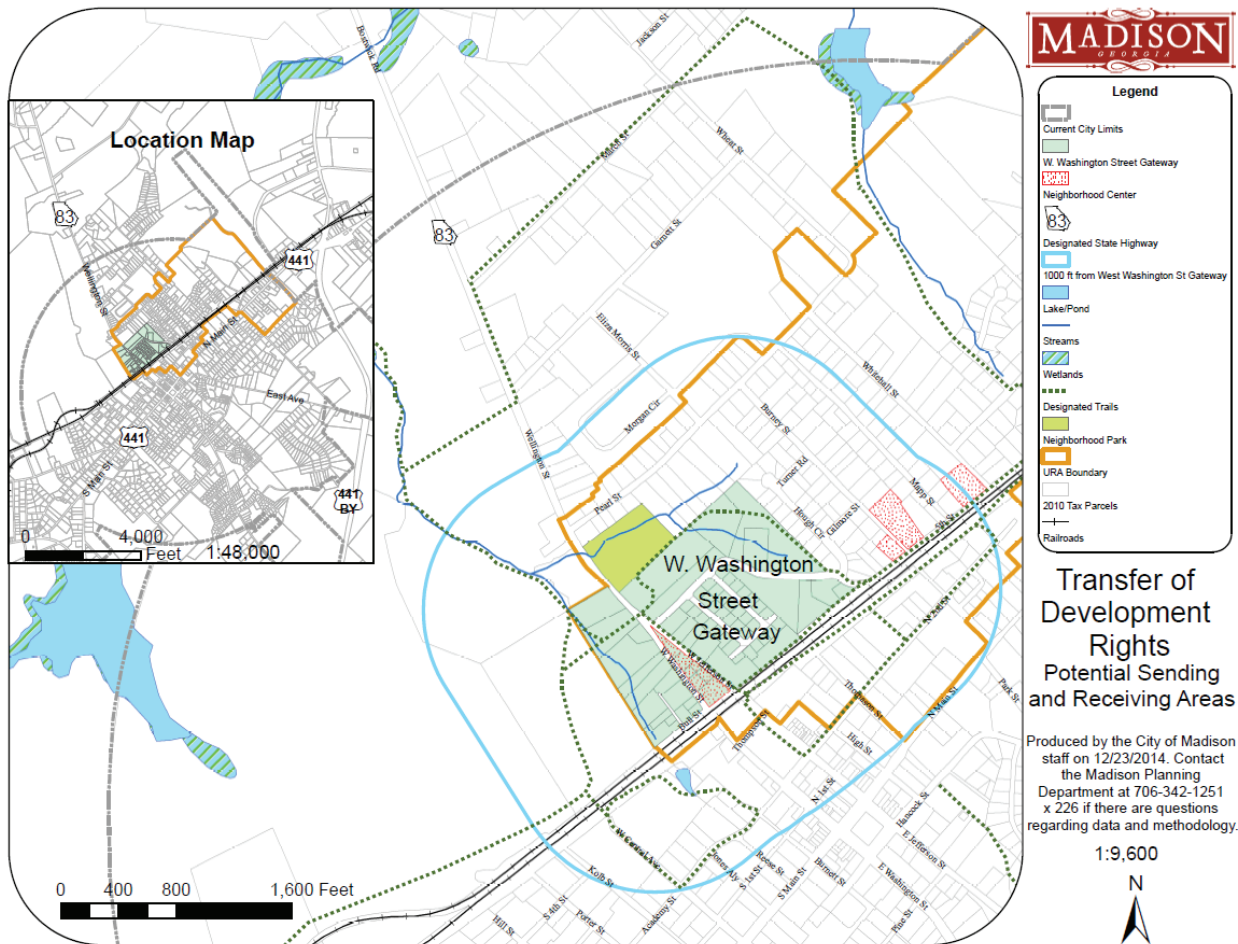
Fulton County was the first local government to create a TDR program in the southeastern United States in the early 2000s. The goal of the TDR program was to promote conservation of natural, agricultural, environmental, historical, and cultural resources and encourage smart growth in appropriate areas of the county. Landowners in South Fulton County desired the preservation of rural heritage and greenspace, and formed the Chattahoochee Hill Country Conservancy, then known as the Chattahoochee Hill Country Alliance. The Alliance developed a master plan for 40,000 acres of South Fulton County through a community planning process and it was adopted by Fulton County in 2002. In addition, the County adopted the Chattahoochee Hill County Overlay District ordinance the same year. The Conservancy facilitated implementation of the TDR program in South Fulton County. One major transaction through the County's TDR program was the establishment of a conservation easement of 16,400 acres of land in South Fulton County.

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Madison

The City of Madison established a TDR pilot program in 2014. The TDR pilot program focuses on protection and connection of natural habitat and greenspace within the City's existing built environment, 400 acres of which abut downtown. Four parcels in Madison are protected by a conservation easement through its TDR pilot program. The four parcels will be open to the public for passive recreation and include walking trails as part of a citywide network connecting downtown, parks, and other areas of the City.

Figure 4.5: Madison, GA Transfer of Development Rights Sending and Receiving Areas



Source: <http://www.madisonga.com/index.aspx?NID=626>

Conservation Design (or Clustering)

Similar in concept to TDR, conservation design can be an effective tool in promoting land use compatibility around a military installation, particularly on larger parcels that straddle noise or safety boundaries. Conventional zoning typically spreads housing units evenly across a parcel regardless of landscape context. Conservation design allows developers to separate the buildable areas of a parcel from areas that have compatibility constraints, such as noise or smoke exposure. The district then allows more compact lots in the developable portion of the site in exchange for the permanent protection of land in the constrained area.

Figure 4.6: Traditional Development vs Conservation Design



Source: https://stormwater.pca.state.mn.us/index.php?title=File:Traditional_and_conservation_design_development.png

The net effect of clustering becomes a density-neutral transfer of development rights onto another portion of the same parcel outside of areas adjacent to an installation, targeted conservation areas or designated noise or safety zones. The portion of the property that is not developed would generally include a noise easement granted in perpetuity.

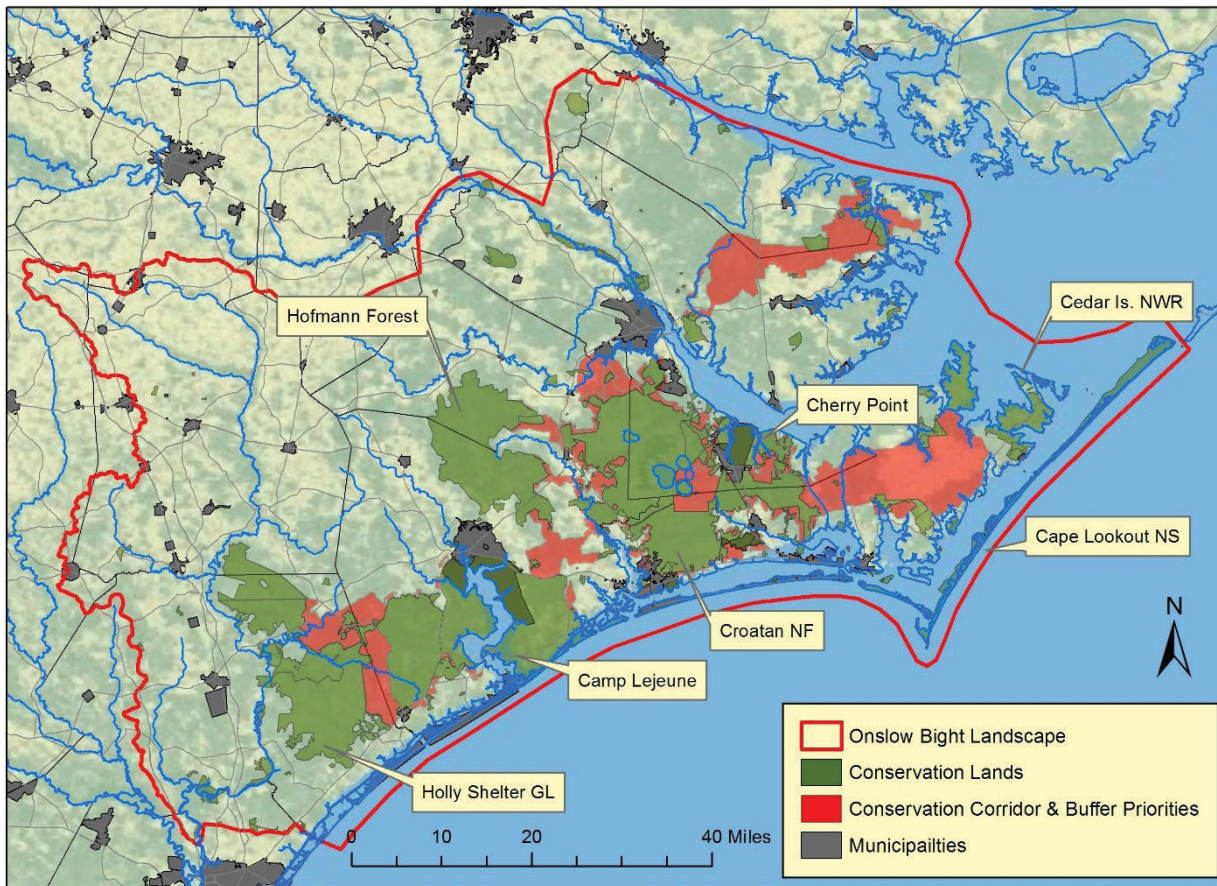
Like TDR, this compatibility measure may benefit areas to the north, northeast and northwest of Fort Gordon where development pressures are strongest. The authority to enact conservation design lies with local governments and would need to be incorporated into zoning and subdivision ordinances.

A successful example of conservation design involving local communities and the military is the Onslow Bight Conservation Forum (OBCF) - a partnership of 16 government agencies and nonprofits in coastal North Carolina that are

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working to ensure wildlife can continue to move between large areas as development and land use change. Both Camp Lejeune and MCAS Cherry Point are participating members. While the organization primarily focuses on conservation, a Conservation Design Plan was adopted which defines landscape designs, including the clustering of uses to maximize wildlife habitat corridors.

Figure 4.7: Example Conservation and Conservation Design Boundary - The Onslow Bight Conservation Forum



Source: <https://longleafalliance.org/ncobcf/about-ncobcf>

This civilian-military partnership has been so successful that it features prominently in Marine Corps Air Station (MCAS) Cherry Point's Integrated Natural Resources Management Plan. It notes that MCAS Cherry Point is dedicated to working with partners such as the OBCF, to promote conservation in this ecologically-rich coastal area. MCAS Cherry Point's objectives for participation in the OBCF are to promote compatible land use in the vicinity of key training areas and ranges, and to promote preservation of habitat to assist MCAS Cherry Point in avoiding future restrictions associated with endangered species protection.

To that end, the INRMP includes the following action strategies:

- Action 12-01 – Continue participation in OBCF meetings.
- Action 12-02 – Participate in the refinement and update of the 2004 Onslow Bight Conservation Design Plan as conservation priorities and actions evolve.
- Action 12-03 – Participate, as appropriate, in sub-committees of the OBCF to ensure military training requirements are factored into regional conservation planning.
- Action 12-04 – Collaborate with OBCF participants and other regional representatives to identify encroachment partnering opportunities.
- Action 12-05 – Participate in local Encroachment Control Planning Team.

Conservation

Conservation refers to a series of tools designed to eliminate land use incompatibilities through voluntary transactions in the real estate market and local development process. These strategies are particularly effective because they advance the complementary goals of shifting future growth away from an installation, while supporting local open space, agricultural, and conservation goals.

Local governments can participate in this process by acting as direct partners in conservation easement purchases or by aligning their infrastructure and land use policy to reinforce the rural and agricultural character of areas near or within the designated compatibility areas. Some communities with nearby military installations have joined the Nature Conservancy, state land trusts and state departments of agriculture to purchase conservation easements from willing property owners within priority compatibility areas. In many cases, these purchases were coordinated within the framework of the Army Compatible Use Buffer (ACUB) program.

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. The core implementation strategy of the ACUB program is to acquire conservation easements that prohibit incompatible development in perpetuity, while allowing the fee interest to remain in private hands. Conservation has been one of the most commonly used compatibility and encroachment prevention strategies used throughout the country to protect military installations. Several examples, including the Onslow Bight Conservation Forum mentioned in the section above, are available to guide the implementation of conservation strategies. Two of the most successful include Fort Carson and Fort Bragg.

Fort Carson

Fort Carson is a 137,000-acre training post in Colorado. It has been involved in a number of different partnerships to prevent encroachment from affecting

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installation training and other operations. The installation is experiencing encroachment pressures from residential and urban growth from Colorado Springs to the north and Pueblo to the southeast. These concerns include complaints and safety issues related to training involving explosives, noise, or dust; potential light pollution impact on night training; and protecting habitat to help avoid potential threatened and endangered species restrictions. As part of its sustainability program, Fort Carson has a Sustainable Training Lands goal with an objective to protect ranges and training lands from development encroachment by creating a contiguous land buffer of approximately 1.5 to 2 miles of open space and compatible land uses around the installation's southern and eastern perimeter. The installation has been working with diverse partners in its buffering projects to help leverage funding, aid in negotiations and third-party acquisitions, and help provide strategic analysis and other support. Partners have included El Paso County, Pueblo County, Colorado Springs Economic Development Corporation (CSEDC), U.S. Fish and Wildlife Service, Colorado Department of Transportation, Colorado Open Lands, Colorado Division of Wildlife, Great Outdoors Colorado, The Nature Conservancy, and private landowners.

Fort Carson has developed local buffering projects around the installation to help meet the Sustainable Training Lands buffer objective, illustrated with two different partnership activities. First, in 2005, Fort Carson partnered with CSEDC and El Paso County to purchase land from Casa Builders in the western end of the Rancho Colorado development, which is just outside the border from an artillery range on the eastern side of the installation. El Paso County owns the land and has a contract that prohibits any incompatible uses on it. In exchange, the county granted a zoning change to allow Casa Builders to build 250 homes at a higher density farther away from the post in the Midway Ranch area near Interstate 25.

Since this first deal, Fort Carson and El Paso County have continued this partnership to purchase more land from voluntary landowners east of the installation in this area, now known as the Rancho Colorado Buffer Zone. El Paso County now owns at least 937 acres of the Rancho Colorado Buffer one, helping protect the training ranges from complaints about noise and other issues, and limiting potential light pollution impact on night training.

The second partnership involves Fort Carson partnering with The Nature Conservancy (TNC) to purchase conservation easements on ranchlands directly south and east of the post. TNC personnel took the lead to negotiate with two local ranchers for these easements, which prohibit development of the land and allows only ranching and conservation practices in the future. One of these easements also protects four rare plant species that occur on the southern end of the installation and the ranchland. With all of Fort Carson's different buffering activities, 24,346 acres have been preserved in the buffer zone around the post.

These areas help preserve training activities, protect critical wildlife and plant species, provide open space in the region, and allow local ranchers to continue their traditional ways of life.

Besides the buffering projects, regional concerns have led Fort Carson to participate in two more strategic regional activities to preserve and conserve land and the environment: the Peak to Prairie Project and the Central Shortgrass Prairie partnership. The Peak to Prairie Project is a large-scale conservation initiative in El Paso and Pueblo Counties covering more than 900 square miles designed to protect working agricultural operations, scenic vistas, threatened wildlife habitat, military assets, and open space. The goal of the project is to preserve these resources by protecting public and private lands, and a key priority includes helping to establish a buffer to the east of Fort Carson. Partners include, among others, Colorado Open Lands, The Nature Conservancy, Colorado State Parks, El Paso and Pueblo Counties, Colorado Springs Utilities, the U.S. Department of Agriculture's Natural Resource Conservation Service, Fort Carson and the U.S. Department of Defense.

Fort Bragg

The U.S. Army, the State of North Carolina, the U.S. Fish and Wildlife Service (USFWS), and The Nature Conservancy (TNC) joined together at Fort Bragg to form the North Carolina Sandhills Preservation Project. The project's purpose was to develop a plan to protect and conserve the habitat of the endangered red-cockaded woodpecker, the longleaf pine, and other ecosystems in the sandhills area, while also protecting the training and readiness missions at Fort Bragg. Under this plan, the USFWS has acquired lands through purchase or conservation easements that could support woodpecker populations and other endangered, indigenous species.

The areas of concern involved more than 220,000 acres of land managed by state and federal agencies. The goal is to create wildlife habitat corridors for the woodpecker populations running between Fort Bragg and Camp Mackall, 40 miles west of Fort Bragg. This goal consisted of the following implementation steps:

1. The partnering agency purchases key parcels from willing sellers identified as priority sites in the joint Fort Bragg-Pope Air Force Base JLUS. Please note that Fort Bragg does not initiate the purchase.
2. The partner purchases conservation easements from willing sellers.
3. The partner enters into cooperative management agreements with private landowners.
4. Participation in the North Carolina Sandhills Safe Harbor program, which is open to non-federal landowners within an area comprising six counties in the south-central portion of the State (Cumberland, Harnett, Hoke, Moore, Richmond, and Scotland).
5. Landowners enroll land in the program by agreeing to carry out any of a number of activities beneficial to the woodpecker. These include wise

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- land management and conservation practices to provide good quality foraging habitat; restore the open, park-like pine forest conditions that the woodpecker requires; enhancing opportunities for nesting and roosting sites.
6. Management of newly acquired areas by the North Carolina Games Lands Commission, the USFWS, or TNC. Fort Bragg will be able to use the land for training (land navigation, orienteering, and escape and evasion) so long as the activity conducted by the military is consistent with the conservation objectives.

An additional, more limited route that property owners of agricultural land, timberland and environmentally sensitive land may seek is a conservation use assessment through under O.C.G.A. Section 48-5-7.4. According to the GA Department of Revenue (<https://dor.georgia.gov/conservation-use-assessment-information>):

“Conservation use property is assessed at 40% of current use value which gives a reduced assessment to the owner of this type property when compared to other property assessed at 40% of fair market value. This favorable tax treatment is designed to protect these property owners from being pressured by the property tax burden to convert their land from agricultural use to residential or commercial use, hence the name “conservation use” assessment. In return for the favorable tax treatment, the property owner must keep the land undeveloped in a qualifying use for a period of ten years or incur stiff penalties. Owners who breach their conservation use covenant must pay back to the taxing authorities twice the savings they have received over the life of the covenant up to the point it was breached. Applications for current use assessment must be filed with the county board of tax assessors on or before the last day for filing ad valorem tax returns in the county.”

Noise Easements

Easements are rights granted to a third party to use private real property in a specified manner. An easement can be acquired from a land owner that grants the right of military training activities in proximity to affected parcels - including the right to cause noise, vibration, and dust; restrict or prohibit certain lights, electromagnetic signals, or land uses that could interfere with communications technology; and ensure unobstructed airspace over the property above a specified height.

The easement runs in perpetuity with the deed to the property and protects against lawsuits for military related impacts. Local governments in fast growing areas have increasingly relied on such easements to protect military operations against encroachment from nearby developing areas. Some have established the granting of a noise easement by the developer as a condition for the approval of proposed new residential subdivisions in areas subject to military training impacts. Noise easements are uncommon for installations similar to

Fort Gordon but prevalent around military installations with significant aircraft operations. For example, the City of Aurora, CO established noise easements as a requirement under its Airport Influence District for Buckley Air Force Base:

“An aviation easement with the city as sole grantee shall be conveyed to the city by any person subdividing lands or initiating construction of any structure on already subdivided lands within the airport influence district. Such aviation easement shall be an easement for right-of-way for unobstructed passage of aircraft above the property. Such easement shall waive any right or cause of action against the city arising from noise, vibrations, fumes, dust, fuel particles and other effects caused by aircraft and airport operations. The aviation easement shall be in a form approved by the city attorney and shall be recorded in the office of the appropriate county clerk and recorder before permit or plat approval is granted.”

Currently, none of the CUS jurisdictions require noise easements. However, it is important to monitor mission growth at Fort Gordon to ensure that potential noise impacts can be addressed as missions change.

Real Estate Disclosures

Real estate disclosures require the release of information on possible impacts (dust, smoke, noise, vibration, air safety zones) to prospective buyers or renters as part of real estate transactions for properties close to an installation. Prospective developers, buyers, and renters, particularly those new to an area, may be unaware of the special conditions that are part of living near active military installations. Having a real estate disclosure ordinance/resolution in place educates individuals about the potential hazards and nuisances of nearby Army operations, and it allows them to make well-informed decisions about property investment around military uses.

Figure 4.8: Virginia Model Military Noise Disclosure

(For Properties Located In a Locality Where a Military Air- Base is Located)

This Disclosure is incorporated into and made part of the Residential Lease Agreement dated April 9, 2014 between Stanley Roper (Landlord) and Jack Tripper (Tenant[s]) for the property located at: 123 Homeward Place Apt. 3B, Anytown, 54320 (Leased Premises).

1. As of the date of this Disclosure, the Landlord represents that the Leased Premises located at in a Noise Zone and/or Accident Potential Zone (APZ), as shown or referenced on the Official Zoning Map designated by the locality in which the property is located.

2. The following are representations made by the Landlord, as required by Section 55-519.1 of the Code of Virginia:

A. As of the date of this Disclosure the Leased Premises is located within the following Noise Zone and/or Accident Potential Zone (APZ), as shown or referenced on the Official Zoning Map of (Name of Locality) _____:

Noise Zone – (Initial One)

____/____ <65 dB DNL ____/____ 65-70 dB DNL ____/____ 70-75 dB DNL ____/____ >75 dB DNL

Accident Potential Zone (APZ) – (Initial One):

____/____ None (outside APZs) ____/____ APZ-2 ____/____ APZ-1 ____/____ Clear Zone

B. The abbreviation “DNL” refers to a day-night average sound level. The frequency of actual single noise events may vary over time depending on the operational needs of the military. Single noise events may result in significantly higher noise levels than the average level(s) in any of the Noise Zones listed above.

C. Noise Zones and Accident Potential Zones are subject to change. For this reason, it should not be assumed that the property will remain in the same Noise Zone and/or Accident Potential Zone.

Additional information may be obtained from the locality. In the event the Landlord fails to provide the disclosure required by § 55-519.1, or the Landlord misrepresents, willfully or otherwise, the information required in such disclosure, except as result of information provided by an officer or employee of the locality in which the Leased Premises is located, the Tenant may maintain an action to recover his actual damages suffered as the result of such violation. Notwithstanding the provisions of this disclosure, no Tenant of residential real property located in a noise zone designated on the official zoning map of the locality as having a day-night average sound level of less than 65 decibels shall have a right to maintain an action for damages pursuant to this section.

The Landlord states that they reasonably believe the information contained herein is true and accurate. Tenants certify and acknowledges the receipt of this Virginia Military Noise Disclosure with their signatures below.

Tenant’s Signature: _____ Date: _____

Tenant’s Signature: _____ Date: _____

Tenant’s Signature: _____ Date: _____

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Some jurisdictions require that building permit applicants sign a noise disclosure stating that premises may be exposed to excessive noise levels from military activities in certain noise zones. The strongest disclosures take place at the earliest possible point of interaction between the realtor/real estate agent and the interested buyer/renter, such as the initial advertisement or listing of the affected property. To ensure the full and effective release of information, jurisdictions requiring disclosure would work with the local real estate community to develop standard language on noise and other possible operational impacts. To assist in these efforts, some States such as Virginia (Figure 4.8) have created real estate disclosure templates tailored to areas with nearby military installations.

Local governments can implement this tool by adopting a local real estate disclosure ordinance and seeking the participation of real estate professionals. Appendix A contains a sample real estate disclosure tailored to Fort Gordon's operations environment.

Outdoor Lighting Standards

Certain land uses in proximity to military installations can produce conditions that interfere with military training, particularly aircraft operations. Among the most common of these hazards stems from the use of excessive or unshielded outdoor lighting. Outdoor lighting systems, especially lighting associated with billboards, gas stations, major roadways, athletic fields, and large commercial or industrial uses, often allow significant light to travel upward into an otherwise darkened sky. The resulting 'light pollution' can obscure pilot vision or interfere with the use of night vision training devices.

Night vision flight training, in which aviators use night vision goggles (NVGs) or other types of night vision systems, is essential to the missions of the modern Army. Night vision systems are designed to operate away from civilization and electric lighting. Exposure to stray light can cause the vision screen to white-out, temporarily robbing the aviator of vision.

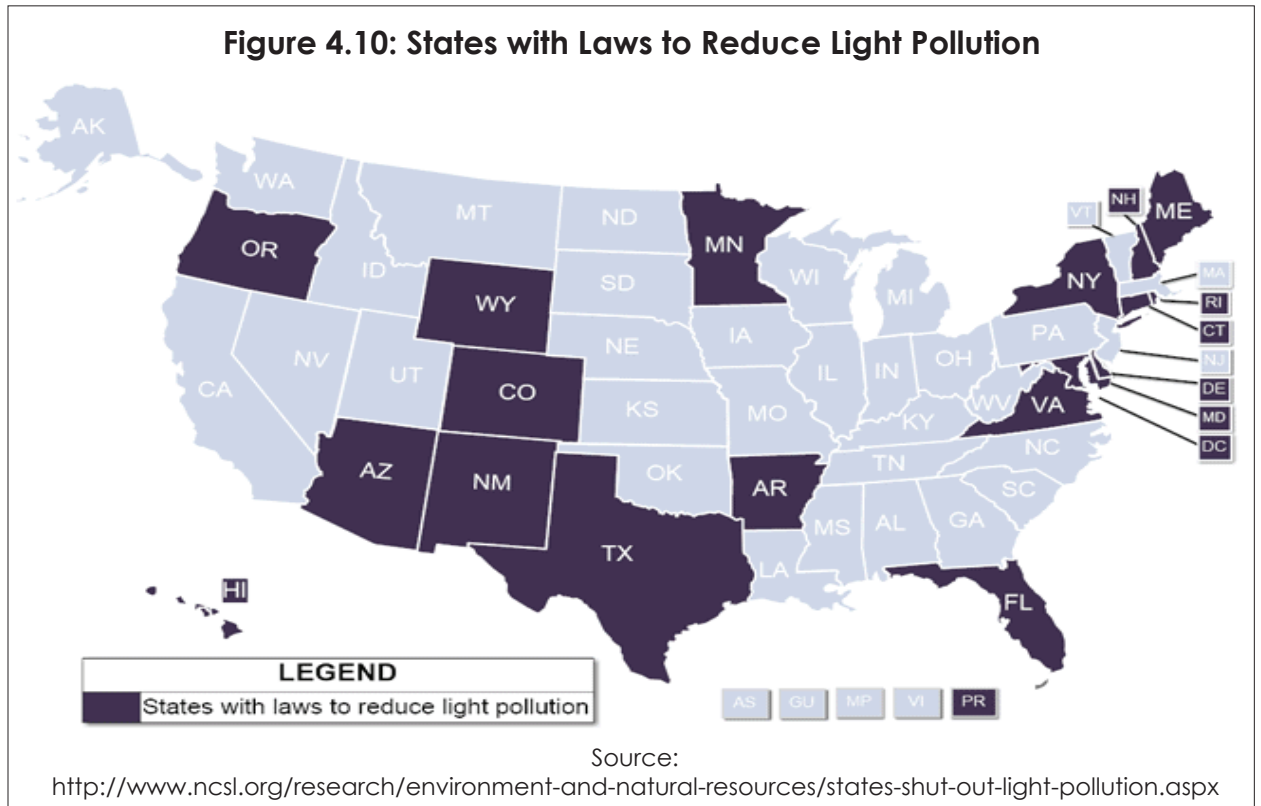
Figure 4.9: Light Pollution

The effects of light pollution can adversely impact military training and operations



Source: <https://creativelyunited.org/light-pollution-the-one-form-of-pollution-that-can-be-fixed-in-a-flash/>

In some cases, light pollution can hinder night training resulting in a relocation of training routes or even making it infeasible.



Currently, 18 states have laws in place to reduce light pollution (Figure 4.10). The majority of states that have enacted “dark skies” legislation have done so to promote energy conservation, public safety, and aesthetic interests. Municipalities in a number of states have also been active on this issue, adopting light pollution regulations as part of their zoning codes.

Arizona’s light pollution law requires all outdoor light fixtures to be fully or partially shielded, with the exception of emergency, construction and navigational airport lighting. Fixtures not in compliance are allowed provided they are extinguished between the hours of midnight and sunrise by automatic device. In Colorado, installation of new outdoor lighting fixtures requires consideration of costs, energy conservation, glare reduction, minimizing light pollution and the preservation of the natural night environment. A “full-cutoff fixture” must be used when output is greater than a certain amount of lumens.

Other states have sought to encourage these types of measures at the local level. New Hampshire, for example, has made it a priority to preserve dark skies as a feature of rural character. The state law encourages municipalities to adopt ordinances and regulations to conserve energy and minimize light pollution.

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Texas is the only state with a law in place specifically aimed at reducing light pollution around military installations. In 2007, the Texas Legislature amended an existing law regarding the regulation of outdoor lighting to authorize state counties, at the request of the military, to adopt measures governing the use of outdoor lighting within five miles of a military installation. The provision only applies to counties with at least five military bases and a population of more than 1,000,000 people or adjacent counties located within five miles of a base. County regulations must be designed to protect against interferences with military training activities. Counties may accomplish this goal in a number of ways: (1) require that a permit be obtained before installing certain types of lighting; (2) prohibit the use of particular lighting fixtures; (3) establish requirements for the shielding of outdoor lighting; or (4) regulate the times during which certain types of lighting may be used.

To determine the extent of light pollution impacts to aircraft operations, a lighting study is generally undertaken to determine the need for any outdoor lighting standards ordinance. None of the CUS local governments have undertaken lighting studies.

If determined to be warranted, the language below from Polk County, FL is typical of provisions contained in military compatibility zone ordinances:

Outdoor lighting will be required to comply with “dark sky” requirements as follows:

- i. Street and Parking Lot Lighting;
- ii. Street Light fixtures shall be limited to 16 feet in height, unless otherwise further restricted in this Code;
- iii. Parking lot lighting fixtures shall be limited to 24 feet in height;
- iv. All lighting shall be fully shielded with cut-off, non-glare fixtures directed only onto the subject site. Non-shielded fixtures without cut-offs are prohibited.

Non-residential Development Lighting will be required to comply with the following:

- i. Electrical reflectors, spotlights, floodlights and other sources of illumination may be used to illuminate buildings, landscaping, signs, parking and loading areas, on any property provided the illumination is cast downward and the fixtures focus the illumination only onto the aforementioned features and prevent illumination upon adjacent properties or any public right-of-way.
- ii. All lighting shall be fully shielded with cut-off, non-glare fixtures directed only onto the subject site.
- iii. Sign Lighting shall be downward projecting or back-lit. Lighting attached to signage shall be projected directly at the sign and downward using light shields, hoods, and cut-off type fixtures.

Lighting Curfew

- i. After closing hours and until sunrise, businesses shall turn off any unnecessary lights (those not associated with safety and security)
- ii. Businesses open 24 hours shall reduce the illumination by 30% between 11 pm and sunrise.

Prohibited light sources

- i. Mercury vapor lamps and fixtures;
- ii. Any illumination patterns common to aviation (similar to runway guidance lighting, flood lights above horizontal plane, etc.) when used on buildings or surrounding.
- iii. Laser source light when projected above the eaves of structures.
- iv. Searchlights or laser source lighting used for advertising or entertainment purposes.

Lighting exempt from these regulations:

- i. Residential lighting in swimming pools and other residential water features governed by Article 680 of the National Electrical Code;
- ii. Exit signs and other illumination required by building codes.
- iii. Lighting for stairs and ramps, as required by the building code.
- iv. Holiday lighting for no more than thirty (30) days per year.
- v. Existing ballpark, field lighting, or other sporting venue lighting approved prior to the adoption of this section.
- vi. Low voltage landscape lighting, but such lighting should be shielded in such a way as to eliminate glare and light upwards onto adjacent properties.

Figure 4.11: Permissible and Prohibited Lighting Types, Polk County Florida

Prohibited: No Cut-Off	Permissible: Full Cut-Off
	
	

Source:
http://www.cfrpc.org/jlus-avonparkafr/download/ordnances/polk_county_ordinance_12-028.pdf?x38274

COMPATIBILITY TOOLS

Formal Local Government–Military Coordination

Under this approach, local governments would promote collaboration by sharing information on specific community development proposals within designated buffers around an installation. Currently, all CUS local governments are required to inform Fort Gordon and take comment on rezoning requests within 3,000 feet of the installation per the State Zoning Procedures Law.

Other jurisdictions have expanded on this scope by broadening the reviewable development beyond rezoning requests, including subdivision request, plats, infrastructure, utilities, and other proposals resulting in development. In addition, some local governments (in consultation with a military installation) have increased the coordination buffer to 1, 2, or even 5 miles.

Such coordination is generally a component of an Memorandum of Understanding (MOU), which serves to establish procedures for communication among affected parties and formalizes collaboration among multiple stakeholders.

The City of Tampa, FL and MacDill AFB have created a model partnership arrangement which encompasses a host of joint planning reviews, infrastructure and service sharing agreements, as well as emergency service agreements. This is accomplished through a series of 8 MOUs which demonstrate the two parties' strong commitment to realizing efficiencies through cooperative efforts and activities. Staffs from both the local government and the installation met regularly throughout the implementation stages of each MOU. Two individuals, called "partnership initiatives liaisons" operate as key points of contact between the installation and local government. A point of contact list for each MOU identifies the individuals at each level responsible for each specific area of expertise. These MOUs established a level of formal and functional communication that was critical in developing a successful partnership between the City of Tampa and MacDill AFB.

Currently, none of the CUS local governments have a formal coordination MOU for planning with Fort Gordon in place.

Small Area Studies / Areas of Concern Review

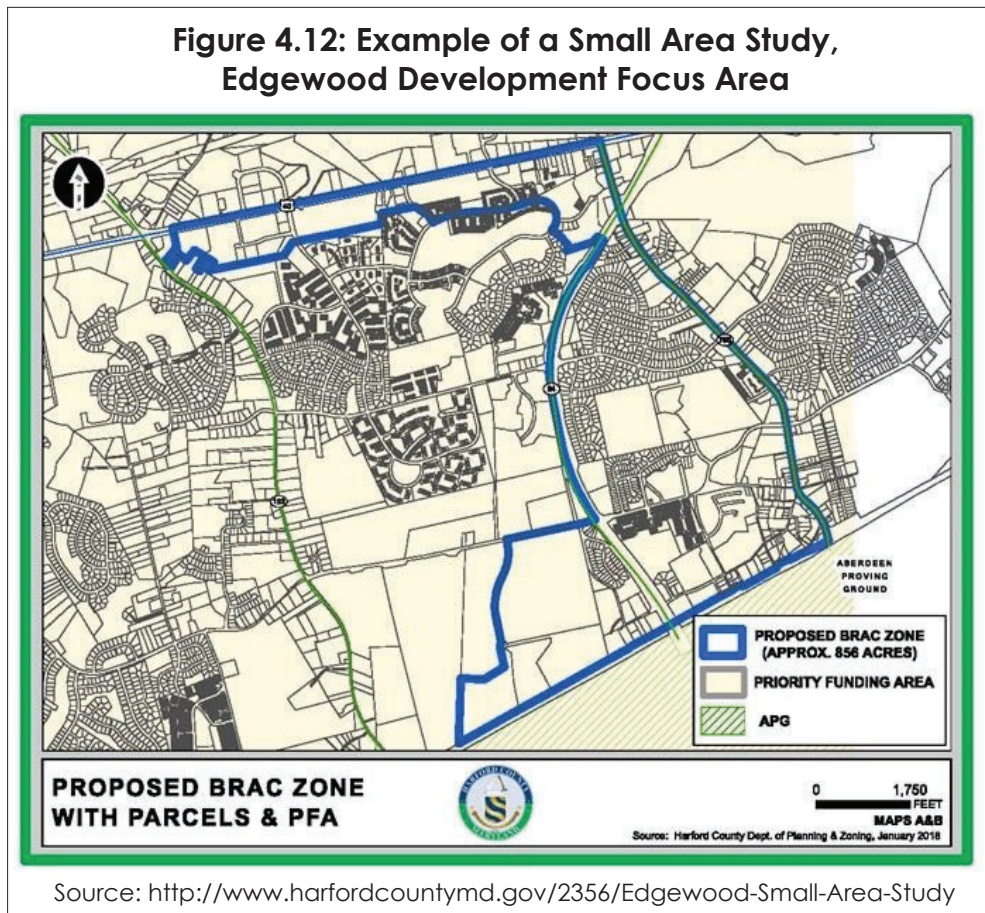
Small area studies are generally undertaken for areas undergoing rapid growth near a military installation, which require more in-depth study than the broader CUS planning process. These studies examine patterns of development, projected growth, and infrastructure development towards the goal of developing focused compatibility assessments, and recommendations to prevent or minimize encroachment.

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Two areas within the CUS Study area have been identified as areas of concern based on a combination of existing land uses, zoning, and current development patterns, and would benefit from a small area study: 1) main gate area to the north of Fort Gordon, and 2) the Grovetown to Harlem corridor. Both of these areas have undergone significant growth over the past two decades and are anticipated to continue leading growth rates according to both the Columbia County and Augusta-Richmond County Comprehensive Plans. The construction of a new gate at Fort Gordon near Grovetown presents potential land use and transportation challenges, as that gate may affect traffic pattern and volume in the area (redirected from other gates) and increase residential and commercial builders' desire for nearby property.

A good model to use for this type of study is the Edgewood Small Area Study. The study was commissioned Hartford County, MD to assess existing resources, analyze market opportunities and help drive revitalization efforts in Edgewood. The study area encompasses approximately 400 acres bordering the Aberdeen Proving Ground (APG) Army installation, which is an implementation of APG's JLUS, and advances the partnership between the community and the installation through resource planning and cooperative land use. The study will result in plans to improve the quality of life in the community that borders APG by redeveloping Edgewood in a way that is compatible with APG's missions.

Figure 4.12: Example of a Small Area Study, Edgewood Development Focus Area



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II. REGIONAL TOOLS**Regional Plans**

The Central Savannah River Area Regional Commission (CSRA RC) is tasked with developing regional plans, including the CSRA Regional Plan, CSRA Regional Important Resources Plan, and participate (with Augusta-Richmond County and Columbia County) in the development of the ARTS TIP. Similar to local government Comprehensive Plans, these Regional Plans play a major role in formulating regional policy and can establish the basis for the implementation of compatibility actions. Land use compatibility guidelines encourage or require activities that maintain compatibility with military operations, such as agricultural, industrial, commercial, and very low density residential. Regional Plans can include specific language on CUS coordination and encroachment mitigation by: emphasizing the relationship between the region and Fort Gordon; expressing the desire to promote cooperative land use planning and complementary land use goals (such as character areas which focus on agricultural and conservation uses); and recommend guidelines about appropriate future land use in areas vulnerable to encroachment.

CSRA Regional Plan

The CSRA Regional Plan comments on the importance of Fort Gordon, identifies growth at and around Fort Gordon as an emerging regional development factor, and notes that area local governments are in the process of addressing impacts of land use and encroachment on Fort missions through the CUS.

The Plan identifies a priority to “Reduce, eliminate, or prevent encroachment on Fort Gordon military installation” under the Land Use and Transportation goal, and suggests a local government policy to “Communicate with Fort Gordon on development projects in areas nearby” under the Intergovernmental Coordination goal.

As part of its minimum performance standards, by which local governments are evaluated on plan implementation, the Plan asks that governments have:

- A memorandum of understanding or similar with Fort Gordon that promotes communication and coordination of land use decisions
- A local representative at meetings between Fort Gordon and its bordering counties

Implementing the CUS recommendations is identified as a strategy in its 5-year Work Program, with the following tasks identified:

- Host the inaugural meeting between Fort personnel and local governments to review development projects and activities and assess challenges.
- Write the RFP for a small area study around the Grovetown/Harlem area wherein significant growth is due to occur.
- Update community comprehensive plans in the CUS study area to reflect recommended comp plan inclusions from the final report.

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- Craft and adopt military overlay planning districts, character areas, or zones in affected counties.
- Pursue funding for a growth study for counties near Fort Gordon in Georgia and South Carolina

CSRA Regionally Important Resources Plan

The CSRA Regionally Important Resources (RIR) Plan identifies Fort Gordon as a critical regional resource, and includes the following recommended best management practices for appropriate development intended for use by local governments, or developers when designing new developments within a one-mile radius of Fort Gordon:

- Local governments abutting all military installations are required to coordinate with installations in considering the impact of zoning decisions on military operations. The law requires local governments solicit a written recommendation from a military base's commanding officer when there is a proposed change in zoning or special exception of property that is within 3,000 feet of the installation.
- Flexible zoning, such planned unit developments, which reduce post impacts through innovative cluster/site design.
- Strategic placement of ranges and other training facilities to minimize noise impacts, resulting in reduced noise effects off-post.
- Restrict certain types of training during certain times to limit noise exposure on nearby communities.
- Site plans, building design, and landscaping should be sensitive to proximity of a military training base.
- Use infrastructure availability to steer development away from areas of natural, cultural, historic, and environmentally sensitive resources.
- Improve existing community relations and education programs to ensure residents are kept informed about operational changes that may alter the noise and burn environment.
- Explore all available options for acquisition of strategic properties (i.e. purchase of development rights, transfer of development rights, fee simple purchase, etc.).
- Update local planning documents to incorporate CUS recommendations.
- Adopt noise and smoke disclosures in Noise Zone I and II and within a 1-mile radius of Fort Gordon as part of the rezoning process.
- Provide noise contour layer in parcel mapping available to residents.

This listing is also used by the CSRA RC for reviewing Developments of Regional Impact located within one mile of these resources.

The RIR Plan also identifies general policies and protection measures, which are best practice recommendations for the appropriate management of Fort Gordon. They are intended to provide guidance, direction, and assistance to local government officials and community leaders in planning and

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decision making that affects the identified regionally important resource. The CSRA RC uses these policies and protection measures when reviewing local comprehensive plans for consistency with regional plans and to encourage local governments in the region to adopt protection measures, policies, and enhancement activities most appropriate for the protection of the resources located within particular communities. These include:

- Support the efforts of the Georgia Military Affairs Coordinating Committee (GMAC) and state legislation to protect Georgia military installations from encroachment.
- Stated policies to guide targeted growth away from areas that interfere with Fort Gordon's training areas.
- Local government planning staffs serve jointly with Fort personnel on installation environmental planning committees.
- Comprehensive plan language explicitly promoting land use coordination with Fort Gordon.
- Provide Fort Gordon a direct role in local transportation planning.
- Provide schedule of range activity to local media consistent with security constraints.
- Maintain and strengthen, where appropriate, regulations and incentives that protect the regions' heritage resources from inappropriate infill development, incompatible alterations or destruction.
- Promote and encourage new population growth and land development (especially planned unit developments) in urban areas and areas already served by infrastructure and community facilities.
- Establish regulations and incentives, where none currently exist, to protect the Fort from inappropriate infill development, incompatible alterations, or destruction.
- Support decisions on new and re-development that contribute to, not detract from, the region's character, identity, and sense of place.
- Encourage development that is sensitive to the historic context, sense of place, and overall setting of the community.

Formal Coordination Facilitation**Coordination**

As discussed in the previous section, formal coordination between local governments and Fort Gordon is critical to ensuring implementation of compatibility measures and encroachment prevention. The CSRA RC can play a major coordination role. The Commission, on behalf of the Georgia Department of Community Affairs, is required to review and comment on local Comprehensive Plan Updates. This review process can be instrumental in ensuring consistency with CUS compatibility measures.

A more formalized role for the CSRA RC could be to model itself after the Regional Land Use Advisory Commission (RLUAC). RLUAC is a non-profit

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501(C)3 membership-based organization located in the Sandhills of North Carolina consisting of twenty-one units of local government: eight counties and thirteen municipalities. The 25-year-old organization was the first regional group established in the country to coordinate communications and land use decisions between the military and the local governments. Today, the primary mission of RLUAC is to balance the following three key objectives through facilitating regional planning and development reviews, communication and coordination:

- Protect the civilian population from negative military impacts;
- Protect the longleaf pine ecosystem from destruction; and
- Protect the military training mission from incompatible development.

In late 2007 Fort Bragg entered into a contractual agreement with RLUAC to review and make recommendations concerning the appropriateness of new subdivisions, telecom towers and zoning changes proposed for property located within five miles of its boundaries.

Fort Bragg's contract with RLUAC stems from a mandate by the North Carolina General Assembly (Session Law 2004-75 -- NCGS Chapter 153A-323 & 160A-364) and (Session Law 2013-59) that requires local governments to notify the commanders of military bases regarding any proposed subdivisions, telecom towers, windmills or zoning changes located within five miles of the military boundaries.

Since initiating the land use review service at the beginning of 2008 through December 31, 2017, RLUAC has reviewed and made recommendations concerning 1,383 cases. In addition, the organization has participated in, or undertaken the development of various studies, including the Air Installation Compatibility Use Zone Study, joint land use studies, a telecommunications tower study, and a light pollution study.

Other coordination functions for the CSRA RC can include hosting or facilitating annual retreats for local government policy leaders and Fort Gordon leadership and conducting regular meetings of the technical advisory/implementation committee. These measures would ensure continued effort at implementing the recommendations included in the CUS.

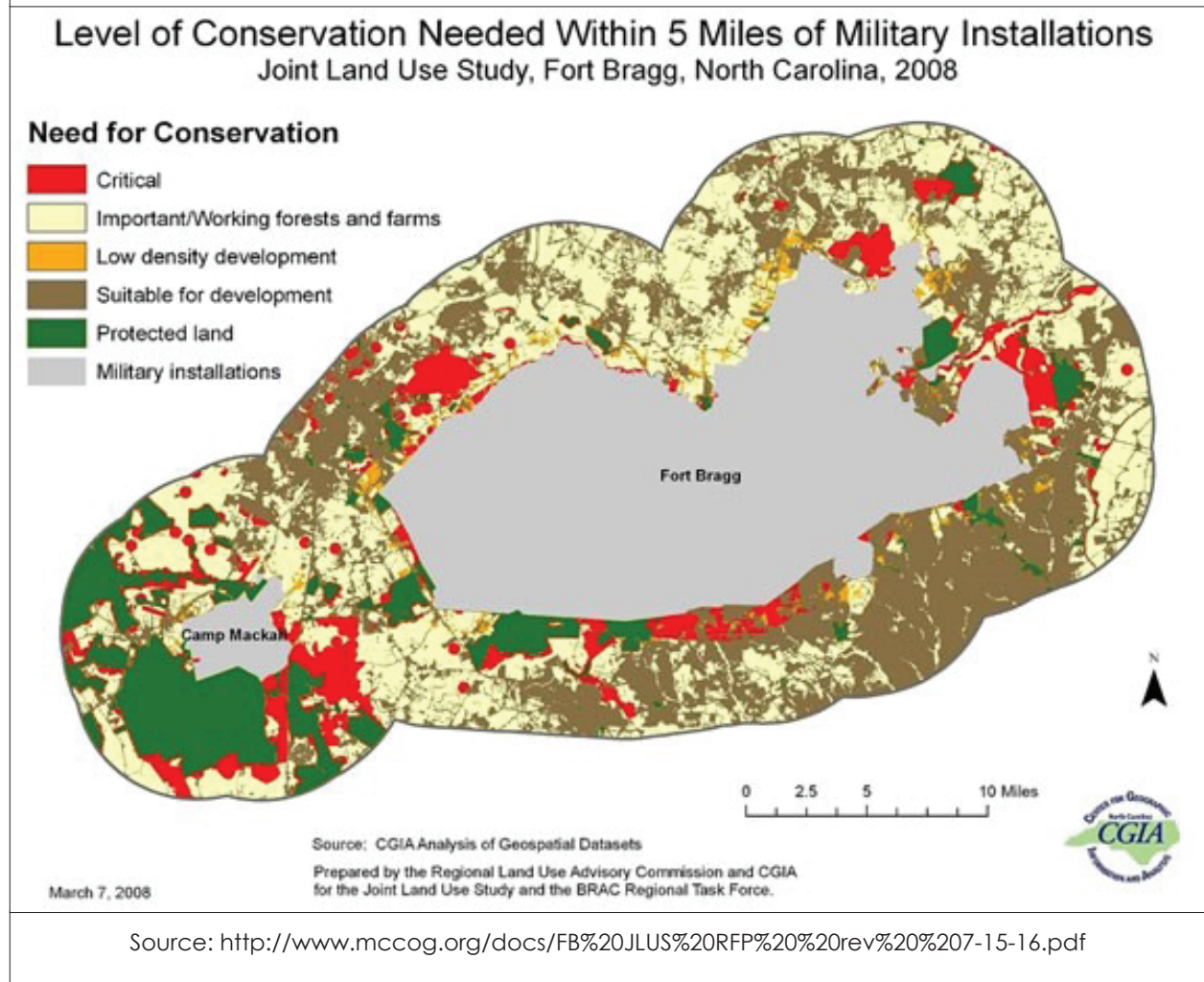
Data Repository to Inform Decision-Making

In addition to this review function, the CSRA RC can facilitate and serve as a central repository of information for the implementation of the CUS. For example, the Commission can create a website which contains the CUS implementation status, meeting summaries of post-CUS implementation committees, parcel data and maps, noise contours and overlay zones, and other information for citizens and stakeholders to access.

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The RLUAAC can provide guidance with this task as it developed detailed property parcel information as part of its extensive Geographic Information System (GIS) database, providing its members the opportunity to properly assess development proposals for negative military impacts or environmental concerns. The GIS database is currently available, at no cost, for anyone interested in learning more about the best uses of property located anywhere within the eleven counties surrounding Fort Bragg - www.sandhillsgis.com

Figure 4.13: Example of RLUAAC Data Repository Contributing to Regional Compatibility Planning



The CSRA RC can also participate in the creation and distribution, with Fort Gordon, of posters / brochures explaining post activities and compatibility issues, and assist in engaging development authorities, developers, and the real estate community in educational efforts aimed at understanding compatibility issues and encroachment mitigation.

III. FEDERAL TOOLS

Army Compatible Use Buffer (ACUB) Program

The Department of Defense (DoD) authorizes military branches (through the Readiness and Environmental Protection Integration Program) to enter into agreements with local governments, non-profit, and private organizations to limit incompatible development or use of land near military installations, and to preserve natural habitat in order to minimize or prevent environmental restrictions that could affect military training and operations. The Army implements this authority through the ACUB Program.

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 can reach out to potential partners to identify mutual objectives of land conservation and encroachment mitigation. 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 installations limits the effects of encroachment and maximizes land inside the installation that can be used to support the military's mission.

More than \$258 million has been contributed to the ACUB program through the Army's partnerships with local and national conservation groups, state and local governments, and other federal agencies. Combined with over \$275 million in executed funds from Army and DoD, the ACUB program has permanently preserved over 207,000 acres of buffer lands around Army installations.

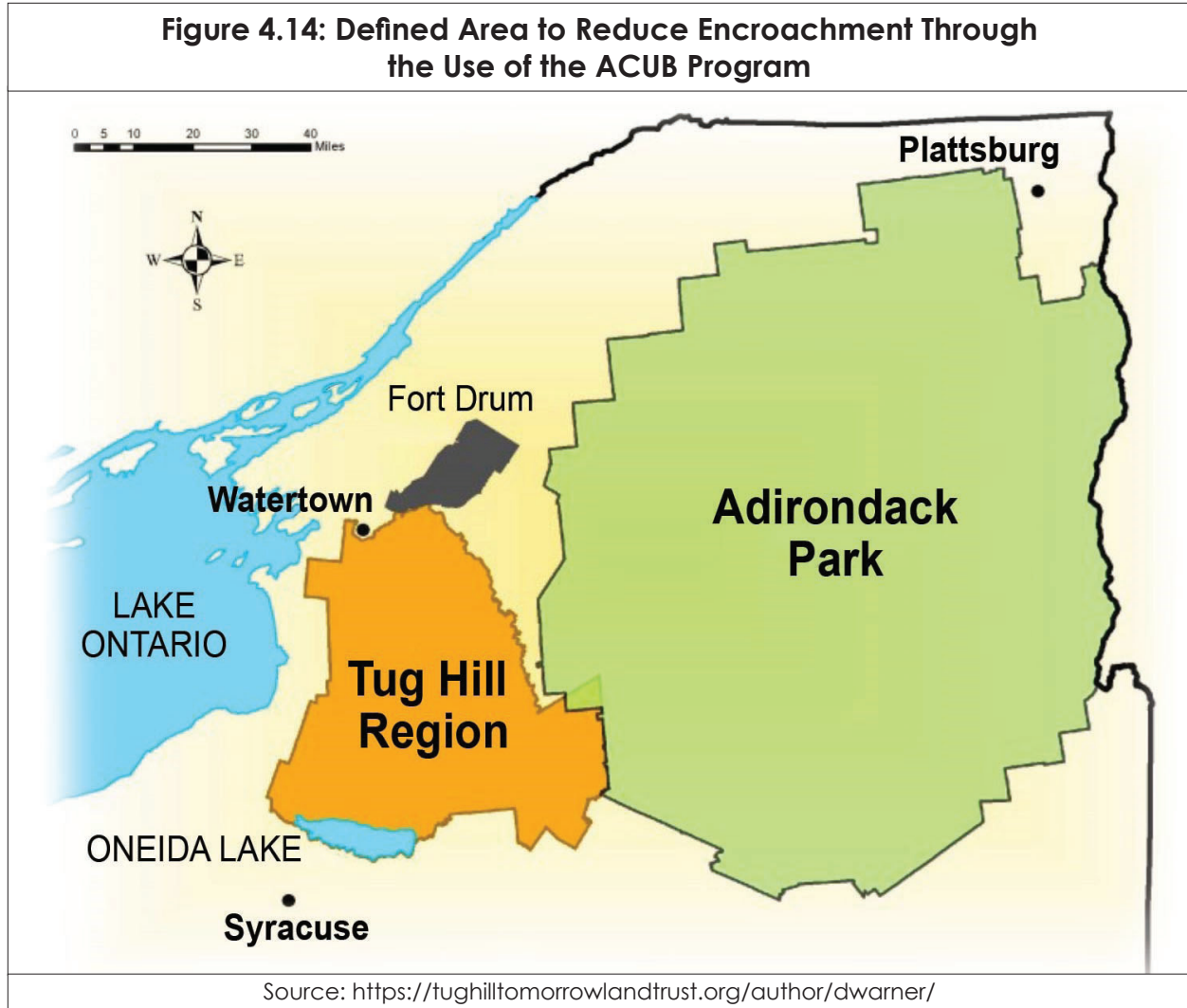
Several installations throughout the nation have teamed up with The Nature Conservancy, state land trusts and state departments of agriculture to participate in ACUB. Below are some examples that would be applicable to Fort Gordon:

Fort Drum

In the mid-2000s, a partnership was formed between the Tug Hill Tomorrow Land Trust, Ducks Unlimited and Fort Drum through the ACUB program to limit use and development of property near the Fort Drum installation to agricultural and forestry uses. This minimized encroachment while protecting conservation values and open space – Fort Drum maintained training capabilities, the land trust protected open space, and the landowners were paid not to develop their land while continuing to farm or work the land. Families were then paid through the ACUB program for the appraised value of their non-farm development rights, as determined by a state-qualified appraiser familiar with this type of conservation project. The properties remain in private ownership and stay on the tax rolls.

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Through the program, landowners have used the funds they received to invest back into farming or to help facilitate passing the farm on to the next generation. Since the program began, 24 farms have been protected through the ACUB program covering 7,390 acres of working farmland at a total cost of \$8.5 million shared between ACUB, state, and private funding.



Aberdeen Proving Ground Churchville Test Area

In 2010, the ACUB program supported the Hartford Land Trust's acquisition of an easement on the Harry Hopkins family farm adjacent to Aberdeen Proving Ground's Churchville Test Area in Maryland, protecting in perpetuity 164 acres on Deer Creek. This was followed soon after with additional ACUB funding to acquire land near several existing projects and complete contiguous forested areas under protection.

A major objective of this project is to protect buffer regions around the installation, which provides habitats for threatened and endangered species that exist on and around the base. Insufficient buffers would have caused training restrictions, costly workarounds, and compromised training for installation operations.

Available funding for this program will allow for the preservation of five to seven projects totaling over 120 acres. The land trust holds all easements, and any land acquired belongs to the trust. The ACUB program provided most of the funding, including appraisals, surveys, environmental studies, and most settlement costs. The land trust provided a 10% match through other sources for all land acquisition costs.

Fort Stewart

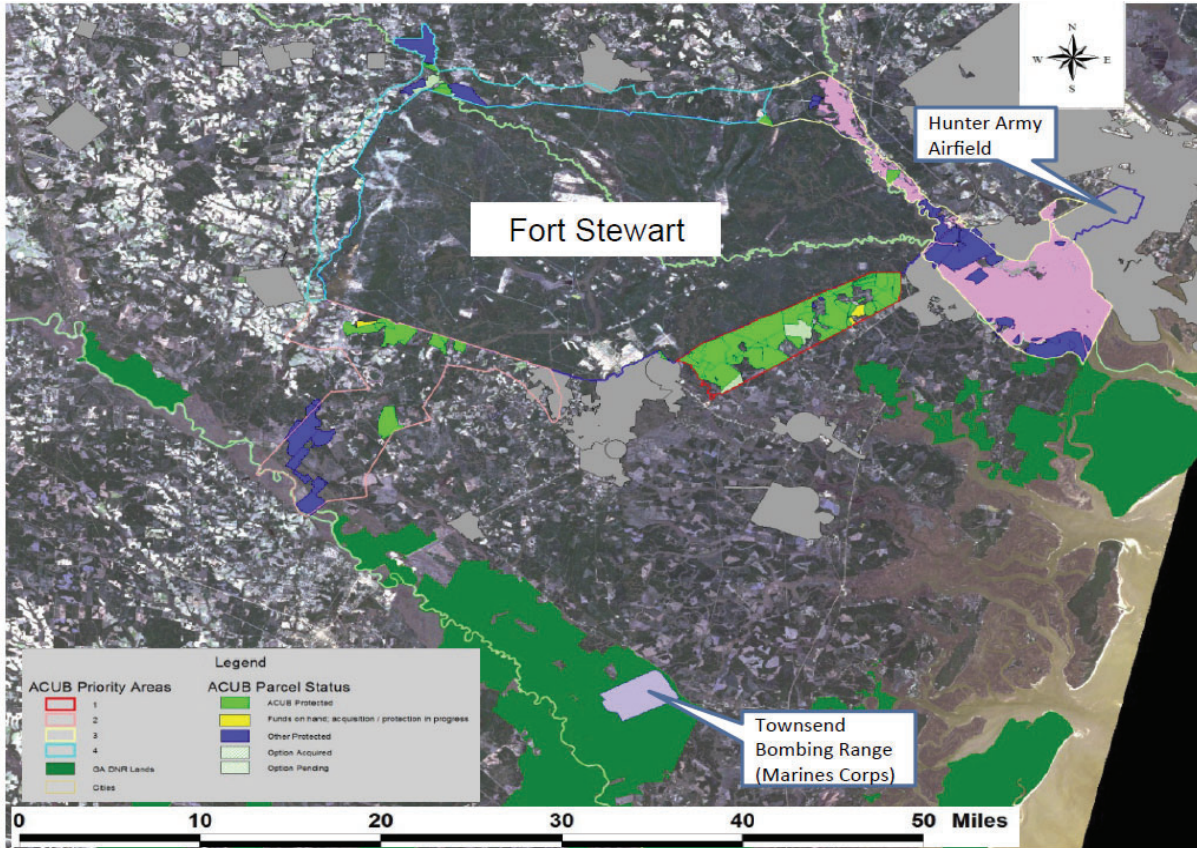
Fort Stewart is located in the heart of the once vast longleaf pine ecosystem. Today, fewer than 3 million acres of longleaf forest remain, and less than 3% of this acreage is considered to be in relatively natural condition. The rest has been converted to agricultural use, developed, or converted to loblolly pine plantations. Fort Stewart's live fire training frequently started forest fires, and military land managers used prescribed fire to reduce wildfire risks. The installation is home to 6 federally listed species and 20 state listed or federal species of concern.

Through the ACUB program, Fort Stewart and the ACUB partners established the Coastal Georgia Private Lands Initiative. The Initiative will protect approximately 120,000 acres surrounding Fort Stewart using conservation easements that limit development and protect sensitive environments. The Initiative also will create a corridor between Hunter AAF and Fort Stewart along the Forest River and the Ogeechee River. Partners in the ACUB program include The Trust for Public Land, the Georgia Chapter of The Nature Conservancy, and the Georgia Land Trust.

The program established covenants with private landowners to ensure compatible land use and received \$3 million for acquisition of ACUB conservation easements.

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Figure 4.15: ACUB Protected Parcels Near Fort Stewart



Source: <http://www.georgiaenr.com/wp-content/uploads/2015/01/33TimBeaty.pdf>

U.S. Department of Agriculture (USDA) Conservation Partnership Programs

USDA administers several conservation programs which overlap with military compatibility and encroachment reduction goals.

The Agricultural Conservation Easement Program (ACEP) provides financial assistance to help conserve agricultural lands and wetlands through grants to landowners, state and local governments, American Indian tribes, and non-governmental organizations.

Over the past 25 years, USDA has worked with landowners to protect more than 4.4 million acres of wetlands and agricultural lands, a value of over a billion dollars in a diversified real estate portfolio that has resulted in improved soil health, water and air quality and wildlife habitat.

The program is administered through the following three tracks:

Agricultural Land Easements: Provides up to 50% of the market value of agricultural land easements that protect working agricultural lands and other lands with conservation value. Where grasslands with special environmental significance are protected, up to 75% of the easement's market value may be provided.

Healthy Forests Reserve Program: Protects private forestlands through easements, 30-year contracts, and 10-year cost-share agreements.

Wetlands Reserve Enhancement Partnership: Assists in the protection, enhancement, and/ or restoration of high priority wetlands. High priority wetlands are those offering critical habitat for migratory birds and other wildlife.

In 2016, Fort Stewart was a recipient of USDA funding, along with the U. S. Endowment for Forestry and Communities, to accelerate and expand forest health conservation practices in longleaf pine forests. Along with other installations in the southeast, USDA will invest \$7.5 million, matched by \$10 million from 20 partners, including the U.S. Army, Air Force, and Marine Corps. This project, which involves the purchase of conservation easements, will protect and restore working forest habitats while helping ensure military preparedness by protecting open space for training and reducing regulatory pressure on the bases by improving habitat for at-risk species on private lands.

Sentinel Landscapes Partnership

The Sentinel Landscapes Partnership, established in 2013, is a collaborative effort between the USDA, DoD, and United States Department of the Interior (DOI). The partnership is intended to leverage resources in locations where the priorities of these three agencies overlap. The Partnership defines Sentinel Landscapes as “working or natural lands important to the Nation’s defense mission – places where preserving the working and rural character of key landscapes strengthens the economies of farms, ranches, and forests; conserves habitat and natural resources; and protects vital test and training missions conducted on those military installations that anchor such landscapes.”

While the Sentinel Landscapes Partnership is not a direct grant program, designation of a Sentinel Landscape may increase the likelihood of success in obtaining funding from a partner agency (i.e., USDA, DoD, DOI) or other federal programs. Of the seven designated Sentinel Landscapes, all include well over a dozen local, state, and federal partners working to advance shared goals of resource conservation and maintenance of military readiness.

Fort Gordon, along with 8 other Georgia military installations, are part of the Georgia Sentinel Landscape – a program involving 4.5 million acres (1.3 million

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critical areas) focused on three critical areas: REPI buffers, gopher tortoise, and Savannah River protection areas.

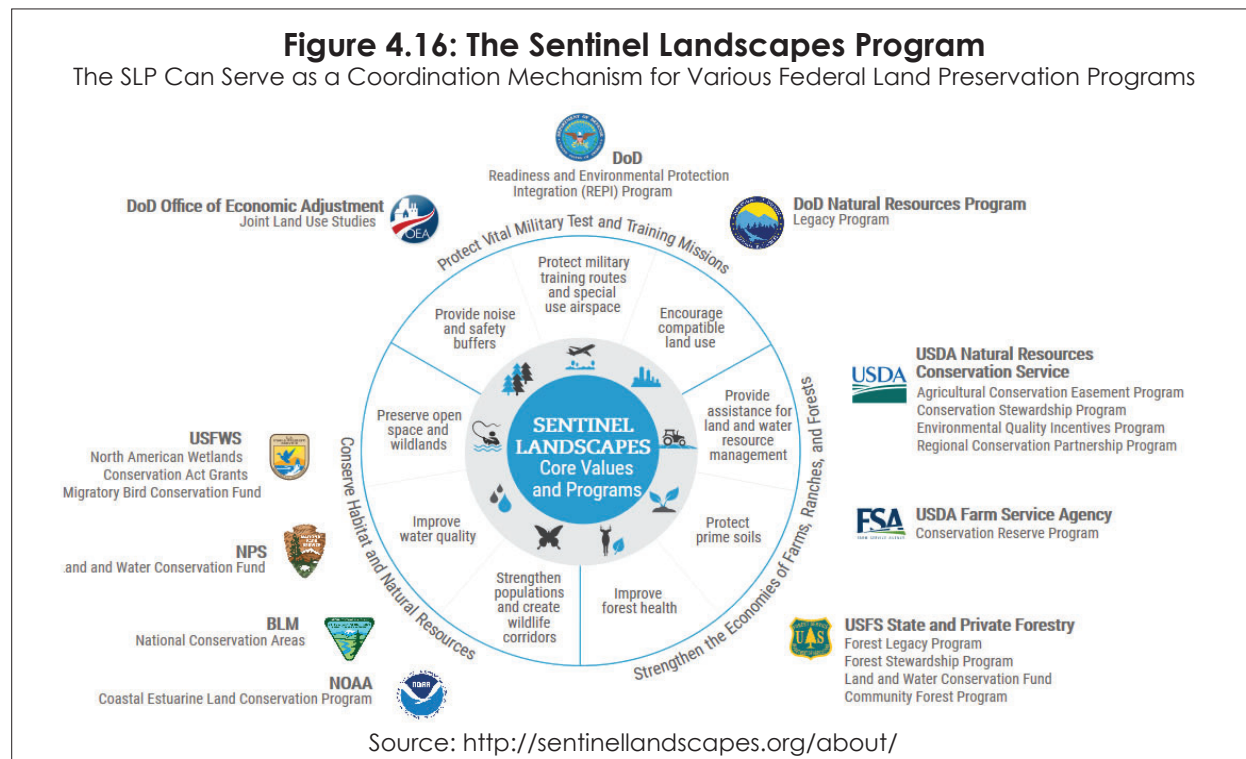
Other Sentinel Landscape Partnerships include the Joint Base Lewis-McChord, Fort Huachuca, Middle Chesapeake, and the Eastern North Carolina Partnership, which have worked to advance their specific military mission, working lands, and resource conservation goals. Over \$85 million has been leveraged in public and private funding to address their respective goals.

The Eastern North Carolina Partnership has been particularly successful in having multiple branches of the military participate in conservation programs across numerous installations in North Carolina. The stated goals of the partnership include:

- Establish the transferable structure and processes necessary to link working lands, natural resource management, and national defense.
- Sustain the military's testing and training mission footprint including installation buffers as well as associated ranges and transit routes.
- Engage private landowners to determine preferences, coupled with appropriate partners--enable delivery of programs and technical assistance to keep farms in farming and forests in forestry.
- Work with federal, state, local, nonprofit and other private entities to promote initiatives that keep the region economically vibrant while protecting the rural character and natural/open spaces.
- Promote off-base habitat conservation in order to ease military land training restrictions and promote species recovery.

Figure 4.16: The Sentinel Landscapes Program

The SLP Can Serve as a Coordination Mechanism for Various Federal Land Preservation Programs



U.S. Forest Service Legacy Program (FLP)

The FLP is a conservation program administered by the U.S. Forest Service in partnership with state agencies to encourage the protection of privately owned forest lands through conservation easements or land purchases. The FLP provides grants to state agencies, and this funding is utilized to acquire conservation easements on or provide for the fee simple purchase of environmentally important forests under threat of development or conversion to non-forest uses.

Landowners may participate in the FLP by either selling their property outright or by retaining ownership and selling only a portion of the property's development rights; both are held by state agencies or another unit of government. The use of conservation easements allows the land to remain in private ownership while ensuring that its environmental values are retained.

Since its creation in 1990, FLP has conserved over 2.6 million acres of forest land and expanded across the country to 53 states and territories.

Army-Community Partnership Program (ACPP)

The ACPP brings together civic and Army leaders to identify potential areas of mutual benefit and value, and develop initiatives to achieve such benefits. The program is intended to foster new partnerships at the local level, tailored to the unique needs of the community and characteristics of the local military installation.

The ACPP promotes coordination at the local level through implementation of initiatives such as cooperative EMS training, shared disaster recovery resources, joint water and wastewater treatment, and workforce training and certification. These are often accomplished through the use of Intergovernmental Support Agreements.

Five Military Installations Were Recent ACPP Award Winners



Source: https://www.army.mil/article/179152/us_army_community_partnership_winners_announced_in_pentagon_ceremony

Integrated Natural

Resource Management Plan (INRMP)

The DoD requires INRMPs to manage natural resources present on installations, based on legal and stewardship requirements. Fort Gordon's INRMP provides

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the mechanism for the installation to both carry out its training mission and to implement ecosystem management principles. The Plan also serves Fort Gordon's guidance for maintaining compliance with the Army's obligations under the Endangered Species Act (16 U.S.C. 1531), the Clean Water Act (33 U.S.C. 1344), and the protection of wetlands (Ex. Order 11990). Fort Gordon completed its most recent INRMP in 2008.

Integrated Cultural Resource Management Plan (ICRMP)

The ICRMP is a plan that implements the DoD's Cultural Resources Management Program. An ICRMP identifies potential conflicts between the military mission and cultural resources and necessary compliance actions to ensure mission-essential properties remain ready for use. Fort Gordon completed its most recent ICRMP in 2011.

Installation Compatible Use Zone (ICUZ) Studies

The ICUZ Program implements Army policy to minimize impacts on adjacent communities while sustaining the military training and operational mission. An ICUZ study is a foundational document for future planning efforts, such as a CUS. The CUS, in turn, feeds important inputs into subsequent ICUZ updates. The ICUZ uses sound modeling to identify noise contours associated with military training. Using this information, the ICUZ study recommends the most appropriate land uses for maintaining compatibility between military operations and the adjacent community. Fort Gordon completed its most recent ICUZ study in 2015.

Formal Military-Local Government Coordination

One of the most critical outcomes of the CUS study is the process itself. Stakeholders from local governments and the military have the opportunity to build collaborative relationships, identify mutual interests, and work toward reasonable solutions that protect both civilian and Army goals. Coordination and organizational tools create the institutional capacity to support ongoing implementation.

Under this approach, Fort Gordon would promote collaboration by sharing information on installation development plans with local governments. Updates to critical installation documents, such as ICUZ and INRMP, could involve local government input. The primary benefit of this involvement is to provide local governments with an understanding of potential impacts from growth plans so they can better prepare for update to their own plans and ordinances.

Such coordination is generally a component of an MOU, which serves to establish procedures for communication among affected parties and formalizes collaboration among multiple stakeholders.

Two-way communication is crucial to successful compatible land use planning. In most cases, local government officials have the authority to pass land use ordinances and strengthen growth planning; and it is vital for installation commanders and military planners to actively participate in the local and regional planning process. Without adequate input from the military, local government officials will not have sufficient information to assess the impacts of their growth management and land use decisions on military operations. On the other hand, it is important that the military provide input to local officials so they can, for instance, assess the economic and infrastructural impacts of any major troop deployment to the installation, or be aware of the scheduling of prescribed burns at the installation in order to minimize un-controlled wildfire.

A best practice is to institutionalize collaboration among stakeholders that goes beyond the limited terms of military leaders and local decision makers. Open communication among the parties can take many forms, but it is important to develop and sustain communication strategies and programs that will continue beyond turn over of both military and civic leaders.

Fort Carson in Colorado Springs, CO is a good example of coordination and collaboration where the commanding officer plays a key role in facilitating the relationship between the installation and its surrounding communities. It is imperative that the installation take a proactive approach in working with local governments. Communication based actions at Fort Carson include among other things:

- A MOU between the installation and surrounding local governments
- Installation representatives attend city and county council meetings to provide feedback to proposed development plans
- Participation in regional planning groups were established to include military and civilian stakeholders
- Participation in a joint planning commission that includes civilian and military representation from Fort Carson and Pinon Canyon Maneuver Site area

Communication & Outreach

One of the most effective means for strengthening the relationship between the installation and its civilian neighbors is to help people understand how the military operates and why it generates certain impacts on surrounding areas.

Communication and outreach are critical compatibility tools. These tools establish clear options raise to overall awareness of installation activities and their associated impacts. Common methods include publishing planned training schedules and operational guidelines for training activities on the installation web site, ensuring a role for a highly visible Fort Gordon liaison to address noise and other issues and brief the communities, and updating brochures and posters on post mission and activities, operational impacts and mapped noise contours, and other compatibility issues.

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A good example of effective communication and outreach is MCAS Miramar in San Diego, CA. In 1999, what was then Naval Air Station (NAS) Miramar, realigned to a Marine Corps Air Station (MCAS). The facility grew to cover 24,000 acres in urbanized San Diego (bordering 2 cities and San Diego County) and increased air operations. Prior to the realignment, traditional coordination with communities normally involved local leadership, but the Navy recognized a need to open a dialogue with local neighborhood groups if the Navy was to be a good neighbor. As a result, the Navy established a Community Leaders Forum to open lines of communication with Miramar's neighbors. The committee was chaired by the commanding officer and staffed by the Community Planning Liaison Officer (CPLLO). Also in attendance from the Navy were the Public Affairs Officer (PAO) and a representative from the installation legal office.

MCAS Miramar Installation Personnel Meeting with Community to Discuss Trespassing Issues



Source: <https://www.nbcsandiego.com/news/local/Riders-Meet-With-MCAS-Miramar-Leader-Over-Confiscated-Bikes-366018711.html>

The community representatives were from San Diego County and the three nearby cities, Chamber of Commerce, neighborhood civic organizations, and other stakeholders. These meetings were conducted quarterly and addressed operations, noise complaints, land use concerns and other relevant topics. Meetings normally kicked off with a mission update from the commanding officer and ended with a round table discussion of issues of interest.

The installation mission benefited from the forum by keeping the community apprised on changes in flight operations and provided a ready forum to discuss other issues directly with the commanding officer. This resulted in community support for land use issues that could affect mission sustainability. The mission was constantly in front of the public and this ensured a public understanding of the mission, promoted good will, and reduced noise complaints. Also, allies gained through the forum often provided support to the Navy in other areas.

The CPLLO Program is hosted by the national headquarters of the U.S. Marine Corps and most Marine Corps installations across the country have a CPLLO in place. The purpose of the CPLLO is to bridge the gap between multi-state/state, regional, and local communities and the installation.

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The actual role varies depending on the specific community involved, but the overall mission is for the CPLO to work with the local planning agencies and other key entities to address the environmental, cultural, historical and even political issues relevant to sustaining necessary mission and training environments for the base. The CPLO represents the commanding general at the multi-state/ state level and installation's commanding officer at the local community level.

The CPLO has different duties than a PAO, but still works closely with the PAO and its office to coordinate external outreach related to installation master planning, installation strategic planning, and local and regional planning efforts. The base commander provides this person with the "license to operate appropriately" in order to leverage the fact that this position would serve as institutional memory amidst the frequent turnover at the commander and county commission levels.

Fort Gordon is already engaged in these activities to various degrees and should look for ways to improve and expand outreach and coordination efforts.

CHAPTER
RECOMMENDATIONS

5



FORT GORDON / CENTRAL SAVANNAH RIVER AREA
COMPATIBLE USE STUDY

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By undertaking this CUS planning process, local governments, Fort Gordon, and other stakeholders have made a concerted effort to develop and support compatibility in support of the mission, operations, and training needs at Fort Gordon. A review of current compatibility measures, however, indicates gaps in encroachment mitigation. Comprehensive Plan language, communication and coordination protocols, and existing policies require stronger provisions.

The following recommendations were developed to address these deficiencies and are categorized by implementation authority among local governments, regional authorities, and Fort Gordon. Some recommendations represent expansions of exiting activity; others will be a new implementation. Each entity involved has the choice of which items to implement. However, to a large extent, these recommendations are complimentary and should be implemented collectively.

I. LOCAL GOVERNMENT RECOMMENDATIONS

LG-1: Update comprehensive plans to incorporate CUS recommendations and compatibility measures.

All local governments in Georgia are required by state law to prepare and maintain a Comprehensive Plan - a long-range, comprehensive document that serves as a jurisdiction's blueprint for future decisions concerning land use, housing, infrastructure, public services, and resource conservation. Area plans, subdivisions, public works projects, and zoning decisions made by the local governments must be consistent with the Comprehensive Plan.

Comprehensive Plans are therefore central to local government planning as they lay out the vision, policies, and strategies for a community's development. Comprehensive Plans establish a firm legal basis for the implementation of compatibility actions and set the policy framework to regulate development through local land use regulations. Land use compatibility guidelines encourage activities that maintain compatibility with military operations, such as agricultural, industrial, commercial, and very low density residential. Compatible activities are those that generally avoid the concentration of people to avoid sensitivity to noise, smoke and other operational impacts.

Local governments can include specific language on CUS coordination and encroachment mitigation as part of Comprehensive Plan updates. Specific language can include emphasizing the relationship between the community and Fort Gordon, the desire to promote cooperative land use planning and complementary land use goals (such as Character Areas which focus on agricultural, open space/recreation, and conservation uses), and guidelines about appropriate future land use in areas vulnerable to encroachment.

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Other important components of compatibility planning can include the following:

- Identify the operational functions associated with Fort Gordon as part of the land use element, and include maps of noise zones and the 2-mile buffer around the installation.
- Incorporate Fort Gordon training and operations impacts as part of the transportation element.
- Evaluate the impact of off-post development on natural resources and habitat on Fort Gordon as part of the natural resources element. Off-base development can have significant impacts on the natural resources and habitat on the installation, particularly with regard to threatened and endangered species. Population growth in a nearby area can force species to migrate into less populated areas, where military activities take place.
- Incorporate military housing needs as part of the housing element. The housing element identifies the amount and location for housing, and should make adequate provision for the existing and projected needs of all segments of the community. Military personnel (and associated contractors) are a segment of the community, and therefore, adequate provisions should be considered in the housing needs assessment. In addition, this element should be coordinated with the land use element to ensure housing is located away from Fort Gordon's noise zones.

Updates to Comprehensive Plans as recommended in this section should also be incorporated in zoning, subdivision, and other land development ordinances, as those documents are updated. In addition, Comprehensive Plans should influence the development of the ARTS TIP and the regional plans developed by the CSRA RC.

LG-2: Steer infrastructure investments away from noise areas and installation boundaries.

Capital Improvement Plans are a major implementation mechanism for Comprehensive Plans, and such, local governments should avoid making public infrastructure investments or permitting private infrastructure investments in noise areas and around installation boundaries.

The mechanism to avoid such investments lies in the Fort Gordon Character Areas identified in Comprehensive Plans. Roads, water and sewer facilities are the most common type of infrastructure. The provision of this type of infrastructure has the well-documented effect of physically shaping a community's growth patterns and supporting more intense development within its service areas. For example, the extension of water and sewer infrastructure could facilitate land subdivision and development. Limitations on access to roads, water, and sewer specifically within noise areas would alter the economics of land development, making it more costly and less appealing to

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developers. This includes items such as larger lot requirements and additional cost to support individual septic systems. This, when combined with other factors can effectively cap potential residential density.

Given Fort Gordon's unique signal missions, infrastructure would also encompass electromagnetic frequency facilities and uses (i.e. cellular towers, radio and television broadcast stations, etc.), which can cause significant interference with operations and training missions. The most effective way to implement an infrastructure-based compatibility and encroachment mitigation approach is to ensure local planning officials consult with military installation planners as part of the local planning process and facilities programming. This includes providing planning documents for formal comment and invitations to participate in public hearings.

LG-3: Amend zoning and subdivision ordinances to incorporate appropriate use and density requirements within noise areas and installation boundaries.

There are several areas of concern, and future preparation related to current zoning and subdivision ordinances is needed.

Zoning in Columbia County around and to the north of Grovetown includes higher-density residential and commercial uses. As Grovetown and Harlem continue to grow and annex, there's growing concern about how development between Grovetown and Harlem will occur, with a focus on proximity to existing noise zones and development intensity. As explained in the Columbia County Comprehensive Plan, this area is anticipated to grow at a much higher rate than the County-wide average. Effort should be made to contain the growth within the incorporated areas, areas to the north which are already developed, and westward away from the installation. Columbia County should maintain its minimum 2.5-acre lot size in its residential-agricultural districts, and avoid rezoning to higher densities, particularly residential, commercial, and institutional uses.

Similar development pressures are occurring in the southwestern part of Augusta-Richmond County, where growth around Blythe and Hephzibah, as well as along the installation boundary are in or near existing noise zones. Augusta-Richmond County should maintain the current agricultural zoning along the installation boundary to the south and focus growth further away to the already developed areas, careful to avoid the noise zone around the hand grenade range as well. Other compatible uses in these areas include conservation, open space/recreation, and some industrial uses.

Although the more rural counties of McDuffie and Jefferson are not currently facing the same development pressures as the urban areas, more of the training area and noise-generating activity occurs within their boundaries. Burke County

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has the least amount of land in the CUS area, but some of that area has been targeted for future development. Current mining activity and agricultural uses are generally considered compatible. Low density development, when appropriate as a use, should also consider preservation of greenspace and clustering design. Agriculture that involves livestock may require additional considerations if said livestock are spooked by loud noise. Solar farming has expanded as an industry in the rural parts of the region, and this could be another use for property in the study area.

In all localities within the study area, a multi-pronged approach that includes land use regulation is required in order to help establish or maintain an environment suitable for military training now and in the future. All local governments should review minimum lot sizes and density of units per acre and adjust base/existing zoning districts accordingly. They should also refrain from allowing noise-sensitive uses to locate within or near the noise zones.

Lastly, local governments should evaluate the following (also discussed in subsequent sections) and determine whether action items will need to be incorporated in zoning and subdivision ordinance:

- Height restrictions to avoid interfering with navigable airspace, including telecommunications towers. Although aircraft noise is currently contained within the installation according to the Fort Gordon ICUZ, airspace corridors can still be threatened by aerial structures. Vertical obstructions should be assessed to determine the extent of the problem, and if needed, incorporated into the zoning ordinance.
- Lighting standards and requirements for lighting plans for certain uses.
- Regulation of telecommunications towers and antennae.

An effective way of organizing these zoning provisions is for local governments to create a Military Overlay District (MOD) that governs the uses within the noise zones or within a certain designated radius of the installation. Subsequent updates to zoning and other land development ordinances should be shaped in part by the Comprehensive Plan character areas identified under recommendation LG-1. Appendix B provides starter language for a MOD and should be further developed to reflect community needs. Use tables and supplemental standards should also be developed. To assist local governments in determining appropriate uses to be included in different noise zones, the CSRA RC can provide individual consultations.

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LG-4: Expand development notification requirements and increase notification area to encompass the 2-mile buffer around Fort Gordon.

The State Zoning Procedures Law (ZPL) requires that Fort Gordon be notified of all rezoning requests and other zoning actions within 3,000 feet of the installation boundary, and local governments shall continue to comply with the statutory requirement. However, this law went into effect two decades ago when military missions at installations such as Fort Gordon were different, including large arms fire, demolition activity, and changing aerial operations. Best practice guidelines for development notification today have increased to 1 to 2-mile radius. Some communities, such as Fort Bragg in North Carolina, have increased notification requirements to a 5 mile radius of the installation's boundary.

Although local governments notify the Fort of rezoning requests within 3,000 feet of the installation boundary, the process by which they do that and the materials provided are not uniform. The process should be standardized to maintain consistency and efficiency. The following steps are an example notification process for rezoning:

1. City/County planning and development director or designated staff submit the following documents in digital copy to Fort Gordon's DPW Master Planning Division:
 - Rezoning Application
 - Other pertinent property information (if not included in application): acreage, existing use, environmental conditions, etc.
 - Project narrative (if not included in application)
 - Deed
 - Plat
 - Site Plan
 - Map indicating property proximity to Fort Gordon, the noise zones and buffers
2. Fort Gordon has 30 days prior to the hearing for the rezoning (per the ZPL) for areas within 3,000 feet and 15 days prior to the hearing for areas beyond 3,000 feet to provide a written response.
3. Fort comments are included in the official record of interested party/ stakeholder comments.
4. Fort Gordon is notified in writing (email and/or traditional mail) of the resulting rezoning approval/denial within one week of the decision.

Ultimately, an online system of plan and document review would be beneficial and is outlined in recommendation LG-9. However, until that system is in place, a more streamlined approach to development review should be pursued. Local governments and Fort Gordon should identify a clear point of contact to assist in coordinating compatibility issues and participate in ongoing initiatives.

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Historically, rezoning requests have been the focus of coordination between local governments and Fort Gordon. However, this approach may not fully capture consistency with compatibility measures. Zoning, subdivision, and permitting notifications are indicators of the final stages of the development process, and while important, do not provide the kind of front-line-notice that would significantly enhance coordination on compatibility measures. To achieve better long-range coordination on these matters, it is recommended that a broader set of development reviews (e.g. annexations, utility extensions, transportation projects, and others) be included in the notification to Fort Gordon. These leading indicators of future development are just as important for Fort Gordon to provide comments and raise any concerns about potential incompatible growth patterns.

Local governments should therefore submit information to Fort Gordon and request comment on plans, programs, actions, and projects that may affect the intensity, density or use of land within the designated 2-mile buffer surrounding the installation (and beyond as deemed appropriate). This includes the following:

- Comprehensive plans
- Development proposals
- Land use plans and ordinances
- Siting of medical facilities, schools and other noise sensitive uses
- Transportation improvement plans
- Subdivision requests with 4 or more lots
- Telecommunications tower requests
- Water and waste facilities
- Open space and recreation proposals
- Other public works projects necessary to support development
- Rezoning requests

Installation officials should be included in the distribution of meeting agendas for the following:

- City Council or County Commission
- Planning Commission
- Zoning Boards of Adjustment/Appeals
- Review Boards
- Transportation and land development studies, including regional studies undertaken by ARTS and the CSRA RC.

LG-5: Participate in a cooperation memorandum of understanding (MOU) with Fort Gordon for compatibility reviews.

The lack of a formal MOU between local governments and Fort Gordon creates variation in cooperation, coordinated planning, and development reviews. Local government officials, school boards, community members, and installation leaders and managers all need to have a greater understanding of each other's issues, future needs, and current planning processes to assess how planning decisions on the part of the military or local government may impact one another.

In order to effectively ensure compatibility, a formal MOU which encompasses a broad range of development reviews and agreement to share information is necessary. The MOU can be simple or complex. General items to be included in the MOU should be coordination mechanisms, information to be shared, and agreed upon review time lines. Appendix C contains example MOU language for local governments and Fort Gordon. The MOU can also be used by other parties, such as ARTS, school boards and the CSRA-RC.

LG-6: Formalize the CUS policy and technical committees as an implementation committee.

The CUS policy and technical committees in the CUS process were guiding forces that led the way in developing the recommendations that support military activities at Fort Gordon. In order to sustain the significant momentum developed through the CUS, these committees should transition to a formalized implementation committee.

The elected officials and administrators on the implementation committee will ensure high level implementation of CUS recommendations. An effective way to achieve this is to participate in an annual retreat or regional forum to maintain an open dialogue with Fort Gordon's leadership and planning practitioners. The committee should also work towards broadening its public outreach efforts and become a more visible and vocal advocate in the region on behalf of Fort Gordon regarding compatible growth issues. In addition, the committee can seek to strengthen its existing partnerships with other governmental and nonprofit agencies that have joined it in its mission, as well as seeking new partnerships that will broaden support for the installation in communities.

The implementation committee should participate in scheduled semi-annual meetings to discuss and monitor the implementation recommendations and act as a forum for continued communication and sharing of information associated with the CUS. The CSRA RC will organize and participate in the implementation committee meetings.

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LG-7: Identify potential properties for conservation easement or transfer of development rights (TDR) program.

Each local government should evaluate the feasibility of encroachment partnering agreements with eligible entities to protect Fort Gordon from incompatible development.

A critical first step in implementing conservation tools is to identify areas of protection interest, which include not only military interest but also conservation and species protection. One way of doing this is utilizing the ACUB program, for which Fort Gordon is already a participant. Other military installations also use the program to serve as an anchor when combining various funding sources towards purchases or easements. Although it has been difficult in this region to find willing landowners, this remains an effort worth pursuing. The Central Savannah River Land Trust can continue to serve as the Fort's ACUB partner. The Trust currently holds thousands of acres across the region under conservation easements acquired by other means. Other partners may include the Georgia Land Trust. The USDA, Georgia Land Conservation Program and other programs allow local governments to partner with an eligible entity to acquire real property or easements (sometimes in the vicinity of military installations) to limit incompatible development, preserve lands and habitat, or protect the mission of the installation from encroachment.

Another conservation tool is the use of a TDR program. CUS communities have the benefit of seeing other Georgia communities that have implemented these programs, and the state law allows for inter-jurisdictional programs to operate. This type of program could exist in just a city, between a city and its county, or between counties. Depending on how interested jurisdictions choose to implement, the scale of this program could serve as a model for other areas surrounding military installations facing development pressure. Interested communities should investigate the feasibility of a TDR program and begin to identify target sending and receiving areas.

LG-8: Develop and regularly update compatibility data on mapping platforms, including areas of concern.

In order to enhance the effectiveness of continuous CUS planning, it is recommended that a plan be developed and implemented that establishes a regular schedule for updating the compatibility data. Some of this can be done in coordination with Fort Gordon's Master Planning Office, county GIS departments, and CSRA RC. This will help to ensure that the recommendations that Fort Gordon provides to local governments are based on the most accurate and up-to-date data available, thereby enhancing the credibility of the recommendations.

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LG-9: Develop and implement an online land use case management system to streamline the workflow of receiving, reviewing, providing recommendations, and tracking land use cases.

Since the state Zoning Procedures Law went into effect, local governments and Fort Gordon have been relying on a system of snail mail and email communication to receive rezoning requests and provide recommendations. While this system is functioning, it is inefficient and risks documents being delayed or lost if and when the Fort's review expands. Implementing an online case management system will help to streamline the workflow by allowing local governments to generate proposed development notifications in a simple and common format. It is envisioned that the case management system will be incorporated into an updated CUS website, and local governments will have the ability to enter a set of common information regarding proposals, as well as upload supporting documents.

The tool should have an automated notification system to provide reminders regarding deadlines, as well as generate follow-up communications regarding final decisions on development proposals. The status tracking component of the case management system will allow Fort Gordon to better understand how its recommendations are being utilized by local governments and provide it with a better base of information about emerging compatibility concerns in the CUS area.

Governments that already utilize online plan review should incorporate this workflow and notification into those systems. Other interested local governments, the CSRA RC and Fort Gordon should explore developing such a system with other installations interested in this strategy, including the RLUAC / Fort Bragg. In addition to implementing important compatibility measures, a system such as this could serve as a model for other installations.

LG-10: Implement real estate disclosure and noise easement requirements.

Disclosure of military related impacts during real estate transactions is an important feature in enhancing public awareness about potential compatibility issues. Prospective developers, buyers, and renters, particularly those new to an area, may be unaware of the special conditions that are part of living near Fort Gordon. This tool will require the release of information on possible noise, smoke, dust, and other operational impacts due to proximity to the installation. Having a real estate disclosure in place educates individuals about the potential hazards and nuisances of nearby installation operations, and it allows them to make well-informed decisions about property investment - whether purchasing or renting. Real estate disclosures or a similar resident outreach letter should be utilized to also notify current property owners of their proximity to the installation, impacts of training, and available options for placing land under conservation.

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Typically, disclosures take place at the earliest possible point of interaction between the real estate agent and the interested buyer/renter, such as the initial advertisement or listing of the affected property. To ensure the full and effective release of information, jurisdictions requiring disclosure would work with the local real estate community to develop standard language on noise and other possible operational impacts. Appendix D includes sample real estate disclosure language, and Appendix E has noise easement language local governments can use.

Noise easements should be used by local governments during the rezoning and subdivision of land for residential or other noise sensitive uses in or near noise zones, contingent on the signing of a noise easement by the developer. The easement ensures that the developer is aware that military training may produce noise, smoke, vibration and other impacts affecting the property. The easements would run with the land, regardless of future ownership.

LG-11: Implement additional lighting standards and other recommendations as deemed appropriate by a light pollution study or other local data.

The changing operational and training missions at Fort Gordon would benefit from a light pollution study, which identifies high levels of ambient night lighting in the region associated with urban growth patterns. Night training is an important component of the military training mission, and the degradation of the dark sky environment may threaten the installation's ability to train and operate. In addition to background lighting in the night sky, direct glare created by high intensity lighting in both rural and urban areas can impede the use of night vision devices by aviators, and potentially can interfere with their ability to safely navigate at night.

Regulations that minimize interference with the nighttime vision environment do not require the strict prohibition of exterior lighting or the complete replacement of existing lighting fixtures. Rather, the focus is on installing less intrusive lighting applications either for new development or as part of the routine maintenance and replacement of public utilities.

Local governments have multiple options for implementing exterior lighting standards. These include:

- A zoning-based method that regulates the performance of new lighting (applications within a geographically targeted area, through a zoning overlay district)
- Use of building permit process as the regulatory vehicle to control poor quality exterior lighting
- Working with Georgia Power on the design of commercial lighting plans to ensure compatibility with training activity in affected areas

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Residential street lighting may be best handled by power companies as the provider of street lights. The CSRA-RC will assist the local governments in pursuing a light pollution study as a joint initiative.

LG-12: Undertake a telecommunications interference study.

Signal activity and intelligence are major sectors at Fort Gordon. The installation is susceptible to telecommunications interference of various types. Electromagnetic 'noise' may affect military avionics and radio frequency (RF) dependent weapons systems. Adequate radio frequency spectrum is essential to almost all aviation operations. Civilian radio frequency devices (e.g. radios, radars, keyless entry devices) can sometimes transmit in military assigned frequencies, affecting electronic systems and communications equipment.

The recent growth of next-generation "small cell" wireless telecommunications antennae; traditional cellular and other communication towers can create interference. Given the population growth around Fort Gordon, and the associated growth of telecommunications infrastructure, local governments should, in cooperation with Fort Gordon, assess the risks of telecommunications interference.

If determined to be an issue, local governments can regulate, through ordinance, the placement of such facilities in municipal right-of-way and provide a public safety standard that can be used to deny the placement / modification of facilities where they might pose a hazard to installation training and operations.

In addition, coordination between the local governments and Fort Gordon can occur by requiring that large scale electromagnetic and frequency users (i.e. cellular companies, public safety agencies, radio and television broadcast stations, etc.) coordinate with the Fort Gordon Frequency Manager prior to approval and issuance of permits.

LG-13: Undertake a small area study for the Grovetown to Harlem corridor.

Growth between the Cities of Grovetown and Harlem, near noise zones, represents the most significant foreseeable land use compatibility threat to Fort Gordon. Not only are the cities themselves going to outpace regional growth rates but the unincorporated areas in between are anticipated to grow substantially. New infrastructure capacity in this area will very likely induce commercial growth and residential subdivisions along this corridor in the years ahead. The construction of a new gate at Fort Gordon near Grovetown presents potential land use and transportation challenges, as that gate may affect traffic pattern and volume in the area (redirected from other gates) and increase residential and commercial builders' desire for nearby property. Columbia County currently designates this area as agricultural-residential.

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The County should seek to preserve the rural character of this area even as market conditions evolve by directing future development back to land that is contiguous with existing development and public infrastructure. Under quality growth planning, mixed use nodes in planned growth areas to the north could absorb future population increases, while relieving pressures to develop along this corridor. This nodal, rather than linear, form of growth could reduce residential and commercial activity near noise zones.

Infrastructure and land use policies should work in concert to reinforce this critical boundary and minimize scattered residential and commercial uses. Future development permitted in this area should not exceed existing density allowed under the current residential-agricultural zone.

Columbia County, Grovetown, and Harlem all have comprehensive plan updates due in 2021. This study can be conducted prior to, concurrent with or as part of the comprehensive planning process and incorporated into the plan documents.

II. REGIONAL RECOMMENDATIONS

Regional recommendations are a major component of this CUS. The CUS is a regional partnership involving Fort Gordon and numerous local governments within a large geographic area. Core Issues such as land use and infrastructure development cannot be sufficiently addressed unilaterally, and as such, will rely on the CSRA RC to assist with implementation.

RG-1: Facilitate the flow of information on compatibility measures.

There is a critical need for current and adequate data in order to enable municipalities to make key land use decisions for areas within noise zones and near the installation boundary. GIS data that is maintained by local governments in the region is of varying quantity and quality. At the county level, parcel data is typically of a high quality and up-to-date. Other data, such as zoning district data files, are sometimes lacking in their currency, and therefore may not be reflective of current conditions. Spatial data related to future land use plans, water and sewer utilities, and similar information is often not available, particularly for the smaller communities in the region.

The CSRA RC could establish a GIS database that includes Fort Gordon and the cities and counties within the CUS area. The database would incorporate all the CUS GIS data layers as well as other regional, state and federal data sets to be utilized by city and county governments during the development approval process, and by Fort Gordon during its review process. Terms of a MOU can set the proper update intervals for this information and who will provide it.

In addition to the actions of the local governments to communicate impacts of Fort Gordon, the CSRA RC should post maps on its website of the areas

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within the designated noise and planning buffers. Potentially, land owners, developers, and prospective renters or buyers could access a searchable database of properties in these areas. This may require significantly more resources, and may be best handled at the jurisdictional level.

RG-2: Facilitate public outreach and communication between local governments and Fort Gordon.

The CSRA RC can facilitate communication between its member cities and counties, Fort Gordon, and the public by, for example, creating a communication coordination manual, to be updated yearly, which would identify implementation committee members and other identified stakeholders within the local governments and at Fort Gordon. The manual would provide information such as City Council and County Board of Commissioners meeting dates, departmental contact information, meeting locations, and other pertinent information.

Brochures, pamphlets, website language, and other materials should be drafted to educate the public on Fort Gordon's mission, operations, training areas, and compatibility issues.

RG-3: Update regional plans to incorporate CUS recommendations and compatibility measures.

Similar to local government Comprehensive Plans, regional plans play a critical role in land use and infrastructure policies. The four critical regional plans, which include the CSRA Regional Plan, CSRA Regionally Important Resources Plan, and the ARTS LRTP / TIP, should be updated to incorporate the CUS recommendations.

RG-4: Build working relationships with other CUS communities

Compatibility planning is an evolving field where new methods and strategies are continually developed. As such, the CSRA RC (and local governments) would benefit from building relationships with other CUS communities, towards the goal of enhancing continuous and comprehensive compatibility planning with Fort Gordon. Some of the strategies included in the CUS, such as the development of a Land Use Case Management Tool, appear in other CUS reports, and can result in collaborative relationships in implementation (i.e. jointly developing the Land Use Case Management Tool with RLUAC).

An effective way to build relationships with other CUS communities is to participate in CUS, compatibility, and civilian-military conferences such as the Sustaining Military Readiness and the Association of Defense Communities conferences. These conferences are well attended by CUS communities and provide learning and networking opportunities.

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III. FORT GORDON RECOMMENDATIONS**FG-1: Maintain an active role in the CUS implementation committee.**

As mentioned in recommendation LG-6, the CUS policy and technical committees in the CUS process were guiding forces that led the way in developing the recommendations that support military activities at Fort Gordon. Fort Gordon representation in these groups was critical to the conversation. In order to sustain the significant momentum developed through the CUS, these committees should transition to a formalized implementation committee.

A formal implementation committee will help ensure implementation of CUS recommendations at multiple levels. An effective way to achieve this is to participate in an annual retreat or regional forum to maintain an open dialogue between parties. Fort Gordon should continue to play a major role on this committee and also seek to strengthen its existing partnerships with other governmental and nonprofit agencies that have joined it in its mission, as well as seeking new partnerships that will broaden its base of support in the community and provide it with new allies in support of its mission.

FG-2 Participate in a cooperation memorandum of understanding with local governments and other agencies.

Similar in concept to local government responsibilities under the MOU, Fort Gordon should participate in coordinated planning with local governments. This should include consulting with local governments on installation development plans, especially those that will result in changes to noise contours, smoke and dust production, or compatibility issues from training and operations. One point of contact should be established at both the local government and the installation for coordination. To the extent possible, local governments should be consulted during updates to the installation master plan.

FG-3: Conduct periodic review and updates to the Fort Gordon ICUZ Study.

The ICUZ program is a critical tool in Fort Gordon's efforts to maintain land use compatibility around the installation. A key component of compatibility is reviewing land use plan submissions from local governments. Therefore it is important for the information regarding areas of compatibility concern to be as up-to-date as possible and correspond directly to the installation's mission. It is therefore recommended that Fort Gordon establish an ICUZ review schedule, in partnership with the Public Health Command. Although criteria that would trigger an official update include new missions or weapons, unofficial updates can be conducted as well.

FG-4: Enhance public outreach and awareness regarding compatibility issues related to military training and operational impacts.

Public awareness about the nature, location, and cause of military training impacts helps to reinforce the need for, and importance of, regional efforts to maintain a compatible land use environment. In general, providing public outreach and awareness regarding these critical issues should be increased throughout the region. Something that might be considered in addition to other ongoing public awareness efforts is developing a static signage program to notify the public of the presence of military training activity or its effects, such as noise, smoke, and dust for areas where it consistently occurs.

It is important for Fort Gordon to educate the community regarding the purpose of operations and training at the installation, so citizens can better understand why it is necessary. Educating the community on changes in noise frequency and intensity, training schedules and military operations can go a long way in building better relationships with area residents. Resources to accomplish this should include the Fort Gordon Public Affairs Office, the Globe newspaper, local media, newsletters, text alerts, brochures, tours of the installation, and annual/bi-annual outreach and open house functions. Continuing efforts to provide alerts for controlled burns and training noise are also encouraged.

Fort Gordon can also provide training to local officials and municipal staff, so they can deliver an educated response to the community in regard to military impacts associated with noise, smoke, dust, and other impacts.

FG-5: Continue the ACUB program.

As previously mentioned in LG-7, local governments are encouraged to seek opportunities for conservation easements. A critical first step in implementing conservation tools is to identify areas of protection interest, which include not only military interest but also conservation and species protection. One way of doing this is utilizing the ACUB program. Although it has been difficult in our region to find willing landowners in the target areas, this remains an effort worth pursuing. The Central Savannah River Land Trust can continue to serve as the Fort's ACUB partner. The Trust currently holds thousands of acres across the region under conservation easements acquired by other means. Other partners may include the Georgia Land Trust and the Georgia Land Conservation Program, which could potentially provide funding to local governments and other partnering agencies.

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IV. IMPLEMENTATION

Implementation strategies with both regional and community specific actions were developed as a means to provide direct guidance on how the recommendations can be implemented by the study partners. The recommendations outlined in Table 5.1 are compiled into an implementation matrix in this section to be used as a quick and easy reference for local government officials, the CSRA RC, Fort Gordon, and other parties involved in the implementation of the CUS. The implementation matrix identifies priorities, resources, time frames and responsible parties for each implementation strategy, to help stakeholders understand the most effective approach to implementing the strategies.

Time Frame – Represents the time frame in which each action step should be addressed. Time frames are indicated in the matrix as short term, mid-term, or long-term. Below is a description of each time frame.

- Short-term - should be completed in the first 24 months
- Mid-term - should be achieved in 2 to 4 years
- Long-term - should be achieved in 5+ years
- Continuous - an ongoing activity

Resources – Resources are primarily related to the monetary cost to complete the implementation strategies. The table includes the “\$” symbol to represent monetary ranges. Actual resources could cost more or less depending on the assistance or consultant selected. The ranges are as follows:

- \$ - Less than \$20,000
- \$\$ - More than 20,000
- Policy – Not outside of normal annual budget expenditures

Entity – This category identifies partners associated in the CUS area that play a key role in implementing each recommendation. The partner abbreviations utilized in the plan matrix are as follows:

- LG = Local Governments
- RG = Regional Organizations
- FG = Fort Gordon

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Table 5.1 - Implementation Matrix				
#	Recommendation	Time Frame	Resources	Entity
LG1	Update Comprehensive Plans to Incorporate CUS Recommendations and Compatibility Measures	Short, Mid	Policy	LG, RG
LG2	Steer Infrastructure Investments Away from Noise Areas and Installation Boundaries	Continuous	Policy	LG
LG3	Amend Zoning and Subdivision Ordinances to Incorporate Appropriate Use and Density Requirements Within Noise Areas and Installation Boundaries	Short	Policy	LG, RG
LG4	Expand Development Notification Requirements and Extend Notification Area to 2-Mile Radius Around Fort Gordon	Short	Policy	LG
LG5	Participate in a Cooperation Memorandum of Understanding with Fort Gordon for Compatibility Reviews	Continuous	Policy	LG, RG, FG
LG6	Formalize the CUS Policy and Technical Committees as Implementation Committees	Short	Policy	LG, RG
LG7	Identify Potential Properties for Conservation Easements or Transfer of Development Rights	Short, Mid	\$\$	LG, RG, FG
LG8	Develop and Regularly Update Compatibility Data on Mapping Platforms	Continuous	\$	LG, RG, FG
LG9	Develop and Implement an Online Land Use Case Management System to Streamline the Workflow of Receiving, Reviewing, Providing Recommendations, and Tracking Land Use Cases	Mid	\$\$	LG, RG, FG
LG10	Implement Real Estate Disclosure and Noise Easement Requirements	Short	Policy	LG

RECOMMENDATIONS

LG11	Implement additional lighting standards and other recommendations as deemed appropriate by a light pollution study or other local data.	Short, Mid	\$\$	LG, RG, FG
LG12	Undertake a Telecommunications Interference Study	Short, Mid	\$\$	LG, RG, FG
LG13	Undertake a Small Area Study for the Grovetown to Harlem Corridor	Short	\$\$	LG, RG, FG
RG1	Facilitate the Flow of Information on Compatibility Measures	Continuous	\$\$	LG, RG, FG
RG2	Facilitate Public Outreach and Communication Between Local Governments and Fort Gordon	Continuous	Policy	LG, RG, FG
RG3	Update Regional Plans to Incorporate CUS Recommendations and Compatibility Measures	Short, Mid	Policy	RG
RG4	Build Working Relationships with Other CUS Communities	Continuous	\$	LG, RG, FG
FG1	Maintain an Active Role in the CUS Policy & Technical Implementation Committees	Continuous	Policy	LG, RG, FG
FG2	Participate in a Cooperation Memorandum of Understanding with Local Governments	Continuous	Policy	LG, RG, FG
FG3	Conduct Regular Updates to the Fort Gordon ICUZ Study	Continuous	\$\$	FG
FG4	Enhance Public Outreach and Awareness Regarding Compatibility Issues Related to Military Training and Operational Impacts	Continuous	Policy	FG

Throughout the CUS process, it has become clear that key aspects of successful implementation will rest on the commitment of the partners, effective communication, and the institutionalization of the partnership. It is critical that the CUS partnership is important to participants and that working together contributes to the long-term goals of each partner. Often, the partnership's success will help each partner accomplish key objectives that would be challenging or impossible to attain alone. As a result of the complementary capabilities and core competencies each partner brings, coordinated action is required to advance toward the goals.

Committed partners will invest the requisite personnel, time, and other resources necessary for success. Such investment creates specific assets that the partners must work together to protect in order for the partnership to persist and benefit all involved. Part of this investment includes partners' leaders investing their time in, and providing support to, the partnership.

Communication is another critical factor in partnership success. Each partner must be willing to provide accurate, relevant, and high-quality information in a timely manner. Joint goal-setting and planning are two specific areas where communicating and sharing information are vital. As these organizational relationships become established over time, each partner gains a better understanding of the strategic choices faced by the other. As a result, the relationship will produce a wider, and perhaps more effective, set of options to meet the strategic goals and objectives.

Finally, a key factor is the institutionalization of the partnership. The CUS partnerships were started by champions in the region and at Fort Gordon, who were enthusiastic and motivated to create and operationalize the partnership. Institutionalization means that the partnership has formal status and will persist after key players are no longer involved. The CUS will thus be required to be a living and evolving document that will sustain partners for the long-run.

APPENDICES



FORT GORDON / CENTRAL SAVANNAH RIVER AREA
COMPATIBLE USE STUDY

Appendix A: Sample Real Estate Disclosure Form- Area of Military Impacts

Property at the following location is situated within a noise zone or within 3,000 feet/in the vicinity of the Fort Gordon Army Installation. The subject property may therefore be exposed to periodic large artillery noise, small arms noise, smoke, dust, and impacts associated with other such military training and operations activities.

Parcel #: _____

County: _____

Address: _____

I, _____, (owner of the subject property) hereby certify that I have informed _____ (prospective purchaser/lessee/renter) that the subject property is located within a noise zone or within 3,000 feet/in the vicinity of Fort Gordon and may therefore be exposed to periodic large artillery noise, small arms noise, smoke, dust, and impacts associated with other such military training and operations activities.

Owner _____ Date _____

I, _____, (prospective purchaser/lessee/renter of the subject property) hereby certify that I have been informed by _____ (owner) that the subject property is located within a noise zone or within 3,000 feet/in the vicinity of Fort Gordon and may therefore be exposed to periodic large artillery noise, small arms noise, smoke, dust, and impacts associated with other such military training operations activities.

Purchaser/Lessee/Renter _____ Date _____

Signed before me on this _____ day of _____, 20____, in the
County of _____, Georgia.

_____, Notary Public, State of Georgia.

My Commission Expires on _____. (SEAL)

Appendix B: Sample Military Overlay District Language

1. Fort Gordon Military Overlay District (MOD). The Fort Gordon MOD is established to ensure that the continually changing mission of Fort Gordon is protected to the maximum extent possible. The MOD shall be the area located on Map [Insert]. The Fort Gordon MOD shall modify the underlying zoning districts and shall control in the event of any conflict with zoning district regulations.

a) Communication Procedures

- i. Provide notice to the commander of Fort Gordon of the adoption of any regulation, including any amendment thereof, or any adoption of or amendment to any comprehensive planning document which affects any portion of the Fort Gordon MOD.
- ii. Provide written notice to the commander of Fort Gordon of each development proposal which affects any portion of the Fort Gordon MOD to provide the commander of Fort Gordon an opportunity to assess any impact and coordinate issues with planning staff.
- iii. Provide a “Notice of Potential Impact” to each individual receiving a construction permit for improvements within the Fort Gordon MOD.

b) Activity Areas. The Fort Gordon MOD is comprised of the following two Activity Areas:

- i. Noise Activity Area. The Noise Activity Area is established to notify residents of the potential for noise impacts due to their proximity to Fort Gordon.
- ii. Frequency Activity Area. The Frequency Activity Area is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas.

c) Activity Area Zone Standards

- i. Noise Activity Area. The Noise Activity Area shall be the area located on Map [insert].

Noise Standards. Noise standards shall conform to uses identified in Table 1: Land Use Compatibility in Noise Zones.

Table 1: Land Use Compatibility in Noise Zones

Land Use	Suggested Land Use Compatibility		
	Noise Zone 1 Impulsive CDNL (dB) < 62 Small Arms dBP < 87	Noise Zone 2 Impulsive CDNL (dB) 62 - 70 Small Arms dBP 87 - 104	Noise Zone 3 Impulsive CDNL (dB) > 70 Small Arms dBP > 104
<i>Residential</i>			
Single units	Y	N	N
Two units	Y	N	N
Apartments	Y	N	N
Group housing	Y	N	N
Residential hotels	Y	N	N
Mobile home parks	Y	N	N
Other residential	Y	N	N
<i>Manufacturing</i>			
Food & kindred products	Y	Y	N
Textile mill products	Y	Y	N
Apparel and other finished products	Y	Y	N
Lumber and wood products	Y	Y	N
Paper and allied products	Y	Y	N
Printing, publishing, and allied industries	Y	Y	N
Chemicals and allied products	Y	Y	N
Petroleum refining and related industries	Y	Y	N
Rubber and misc. plastics	Y	Y	N
Stone, clay and glass products	Y	Y	N
Primary metal products	Y	Y	N
Fabricated metal products	Y	Y	N
Professional scientific	Y	Y	N
Miscellaneous manufacturing	Y	Y	N
<i>Transportation, communication and utilities</i>			
Railroad	Y	N	N

Motor vehicle transportation	Y	N	N
Aircraft transportation	Y	N	N
Marine craft transportation	Y	N	N
Highway and street right-of-way	Y	N	N
Automobile parking	Y	N	N
Communication	Y	N	N
Utilities	Y	N	N
Other transportation and utilities	Y	N	N
Trade			
Wholesale trade	Y	N	N
Retail trade - hardware and farm equipment	Y	N	N
Retail trade - shopping centers	Y	N	N
Retail trade - food	Y	N	N
Retail trade - automotive, marine craft	Y	N	N
Retail trade - apparel and accessories	Y	N	N
Retail trade - furniture, home	Y	N	N
Retail trade - restaurants	Y	N	N
Other retail trade	Y	N	N
Services			
Finance, insurance and real estate services	Y	Y	N
Personal services	Y	Y	N
Cemeteries	Y	Y	Y
Business services	Y	Y	N
Warehousing and storage	Y	Y	N
Repair Services	Y	Y	N
Professional services	Y	Y	N
Hospitals, other medical facilities	Y	Y	N
Nursing Homes	Y	N	N
Contract construction services	Y	Y	N
Government Services	Y	Y	N

Educational services	Y	N	N
Miscellaneous	Y	Y	N
<i>Cultural, entertainment and recreational</i>			
Cultural & religious activities	Y	Y	N
Nature exhibits	Y	Y	N
Public assembly	Y	Y	N
Auditoriums, concert halls	Y	Y	N
Outdoor music shells, amphitheaters	Y	N	N
Outdoor sports arenas	Y	Y	N
Amusements	Y	Y	N
Recreational activities	Y	Y	N
Resorts and group camps	Y	Y	N
Parks	Y	Y	N
Other cultural, entertainment & recreation	Y	Y	N
<i>Resource Production and Extraction</i>			
Agriculture	Y	Y	Y
Livestock farming	Y	Y	N
Animal breeding	Y	Y	N
Agriculture related activities	Y	Y	Y
Forestry Activities	Y	Y	Y
Fishing Activities	Y	Y	Y
Mining Activities	Y	Y	Y
Other resource production or extraction	Y	Y	Y

ii. Frequency Activity Area. The Frequency Activity Area shall be the area located on Map [insert].

Joint Review. All development applications proposing telecommunication facilities that meet the requirements of Section [Insert] of these regulations or require Federal Communications Commission (FCC) Licensing and are located within the Frequency Activity Area as identified on Map [insert], must submit an application to the [Insert City/ County] Planning and Zoning Division/Department as part of the application. As part of the review process, the application will be forwarded to Fort Gordon for review and comment.

Appendix C: Sample Memorandum of Understanding

This Memorandum of Understanding between Fort Gordon, the Counties of:

and the Cities of:

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. The parties have a mutual interest in the cooperative review and coordination of plans, programs, and projects. The Counties and Cities included above agree to:

1. Submit information to Fort Gordon on plans, programs, actions, and projects within 2 miles of the installation's boundary. This may include, but not limited to the following:

- Comprehensive plans
- Development proposals
- Land use plans and ordinances
- Rezoning and variance requests
- Subdivision requests with 4 or more lots
- Transportation improvement plans
- Telecommunications tower requests
- Siting of medical facilities, schools and other noise sensitive uses

- Water and waste facilities
 - Open space and recreation proposals
 - Other public works projects necessary to support development
2. Submit to Fort Gordon for review and comment, project notification, policies, plans, reports, studies and similar information on development, infrastructure and environmental activities within a 2-mile radius of the Fort Gordon boundary.
3. Consider Fort Gordon and other U.S Army comments as part of official responses or comments.
4. Include Fort Gordon in the distribution of meeting agendas for, but not limited to:
- City Council or County Commission Meetings
 - Planning Commission Meetings
 - Zoning Boards of Adjustment
 - Review Boards
 - Transportation and land development studies, including the Augusta Regional Transportation Study (Metropolitan Planning Organization)

Fort Gordon agrees to:

1. Submit information to City and County representatives on plans, programs, actions, and projects which may affect the city or county. These may include, but not 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 City and County representatives for review and comment, project notification, policies, plans, reports, studies and similar information on development, infrastructure and environmental activities at Fort Gordon.

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 agreement is approved by:

Fort Gordon _____

and

_____ County

_____ County

_____ County

_____ County

City of _____

City of _____

City of _____

City of _____

Appendix D: Sample Noise Easement - Area of Military Impact Noise

Parcel _____ County _____

Grantor (s) Name _____

Grantor (s) Address _____

LEGAL DESCRIPTION:

In accordance with section [Insert] of the [Insert] Ordinance for [Insert] County, Georgia, approving a permit for residential development on the above described property, and in consideration of such approval, Grantors grant to the owners of all property adjacent to the above described property, a perpetual nonexclusive easement as follows:

1. The Grantors, their heirs, successors, and assigns acknowledge by the granting of this easement that the residential development is situated in an area that may be subjected to conditions resulting from military training and operations at Fort Gordon. Such conditions include the firing of small and large caliber weapons, demolition activities, the movement of vehicles, and other customary military training and operations activities. These activities ordinarily and necessarily produce noise, dust, smoke and other conditions that may conflict with Grantors' use of Grantors' property for residential purposes. Grantors hereby waive all common law rights to object to normal and necessary military training and operations activities legally conducted on adjacent Fort Gordon which may conflict with Grantors' use of Grantors' property for residential and other purposes, and Grantors hereby grant an easement to Fort Gordon for such activities.
2. Nothing in this easement shall grant a right to Fort Gordon for ingress or egress upon or across the described property. Nothing in this easement shall prohibit or otherwise restrict the Grantors from enforcing or seeking enforcement of statutes or regulations of governmental agencies for activities conducted on adjacent properties.
3. This easement is appurtenant to all property adjacent to the above described property and shall bind to the heirs, successors, and assigns of Grantors and shall endure for the benefit of the adjoining Fort Gordon. Fort Gordon is hereby expressly granted the right of third party enforcement of the easement.

IN WITNESS WHEREOF, the Grantors have executed this easement dated this ___ day of _____, 20__

Grantor

Grantor

Signed before me on this _____ day of _____, 20__, in the County of _____, Georgia.

_____, Notary Public, State of Georgia.

My Commission Expires on _____. (SEAL)