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# Air Installations Compatible Use Zones Study

for NAS Meridian and NOLF Joe Williams



**Prepared by:**  
United States Department of the Navy,  
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**AIR INSTALLATIONS COMPATIBLE USE ZONES STUDY**  
**FOR**  
**NAVAL AIR STATION MERIDIAN AND**  
**NAVY OUTLYING FIELD JOE WILLIAMS**

**FINAL - NOVEMBER 2012**



Prepared by

**UNITED STATES DEPARTMENT OF THE NAVY**  
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# ACRONYMS AND ABBREVIATIONS

## - A -

AETC	Air Education and Training Command
AFB	Air Force Base
AGL	above ground level
AICUZ	Air Installations Compatible Use Zones
ANG	Air National Guard
ANSI	American National Standards Institute
AOD	Air Operations Department
APZ	accident potential zone
ARW	Air Refueling Wing
ATC	Air Traffic Control

## - B -

BASH	bird/animal strike hazard
BRAC	Base Realignment and Closure

## - C -

CEDS	Comprehensive Economic Development Strategy
CNATRA	Chief of Naval Air Training
CNEL	Community Noise Exposure Level
CNO	Chief of Naval Operations
CO	Commanding Officer
CPLO	Community Planning and Liaison Officer
CY	Calendar Year

## - D -

dB	decibel
dBA	A-weighted decibel
DNL	day-night average sound level
DOD	United States Department of Defense

**- E -**

EA	Environmental Assessment
ECPDD	East Central Planning and Development District
EIS	Environmental Impact Statement
EMBDC	East Mississippi Business Development Corporation
EMI	electromagnetic interference
EPA	U.S. Environmental Protection Agency

**- F -**

FAA	Federal Aviation Administration
FCLP	Field Carrier Landing Practice
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise

**- G -**

GCA	Ground Control Approach
GIS	Geographic Information System

**- I -**

IFR	Instrument Flight Rules
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**- J -**

JLUS	Joint Land Use Studies
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**- M -**

MAPDD	Mississippi Association of Planning and Development Departments
MATSS	Marine Aviation Training Support Squadron
MDA	Mississippi Development Authority
MLS	Multiple Listing Service
MMCC	Mississippi Military Communities Council
MOA	Military Operating Area
MSL	mean sea level

**- N -**

NAAS	Naval Auxiliary Air Station
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
NATOPS	Naval Air Training Operations Procedures Standardization
NATRACOM	Naval Air Training Command
NAVFAC	Naval Facilities Engineering Command
Navy	United States Department of the Navy
NEPA	National Environmental Policy Act
NM	nautical mile
NOLF	Navy Outlying Landing Field
NOSC	Naval Operational Support Center
NTTC	Naval Technical Training Command

**- O -**

OLF	Outlying Landing Field
OPNAVINST	Chief of Naval Operations Instruction

**- P -**

PPEL	Practice Precautionary Emergency Landing
------	------------------------------------------

**- R -**

RCTA	Regional Counterdrug Training Academy
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**- S -**

SNA	Student Naval Aviator
STOVL	short-takeoff, vertical landing
SUA	Special Use Airspace

**- T -**

TACAN	Tactical Air Navigation
TDR	transfer of development rights
TRAWING	Training Air Wing
TS	Total System

**- U -**

USAF	United States Air Force
USCB	U.S. Census Bureau
USGS	United States Geological Survey
USMC	United States Marine Corps

**- V -**

VFR	visual flight rules
VA	U.S. Department of Veterans Affairs

**- X -**

XO	Executive Officer
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# EXECUTIVE SUMMARY

- ES.1 Purpose of an AICUZ Study
- ES.2 NAS Meridian
- ES.3 Aircraft Operations
- ES.4 Aircraft Noise
- ES.5 Airfield Safety
- ES.6 Land Use Compatibility Analysis
- ES.7 Land Use Tools and Recommendations
- ES.8 Appendices

This Air Installations Compatible Use Zones (AICUZ) Study has been prepared in accordance with federal regulations and guidelines and United States Department of the Navy (Navy) instructions to protect the public's health, safety, and welfare and to prevent incompatible development from degrading the operational capability of Naval Air Station (NAS) Meridian and Navy Outlying Landing Field (NOLF) Joe Williams, both located in the east-central portion of the state of Mississippi. Analysis and findings presented in this AICUZ Study focus on the noise impact areas generated from air operations and the safety zones surrounding both airfields' runways. The Navy and NAS Meridian encourage compatible development within the noise and safety zones and are committed to working with the surrounding communities to ensure a mutually safe environment to live and work, while continuing to meet the mission of the installation.

This Executive Summary provides a preview of the AICUZ Study's outline and a brief overview of what is discussed and presented in each chapter.

## ES.1 PURPOSE OF AN AICUZ STUDY

The core of the AICUZ Program is the development of a land use plan that promotes compatible uses by communities in the vicinity of a military installation. In the early 1970s, the United States Department of Defense (DOD) established the AICUZ Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The AICUZ Program was developed in response to growing incompatible urban development around military airfields. Today, the AICUZ Program is considered a vital tool that is used by all branches of the military to communicate with neighboring

## Naval Air Station Meridian

The purpose of this AICUZ Study is to achieve land use compatibility between NAS Meridian and NOLF Joe Williams and the neighboring communities.

counties, communities, municipalities, and individuals to educate, inform, and present areas of incompatible land use surrounding military airfields. When implemented, AICUZ studies help protect the health and increase the safety and well-being of the public, while protecting the military's flying mission.

This AICUZ Study provides background information on NAS Meridian and NOLF Joe Williams, presents the 2012 AICUZ noise contours and zones associated with aircraft operations, establishes 2012 AICUZ accident potential zones (APZs) for aircraft, identifies areas of incompatible land uses and proposed development within these zones, and recommends actions to encourage compatible land use.

## ES.2 NAS MERIDIAN

Located in Kemper and Lauderdale Counties in east-central Mississippi, NAS Meridian and NOLF Joe Williams provide an outstanding location for the training of Navy and United States Marine Corps (USMC) student pilots.

Situated north of the city of Meridian, NAS Meridian is the largest employer in the region. NAS Meridian is home to one of the Chief of Naval Air Training's (CNATRA's) jet strike pilot training wings, Training Air Wing (TRAWING) One, and provides advanced pilot training to student naval aviators (SNAs) in T-45C jet aircraft.

NAS Meridian is also home to other training commands for the Navy and for local law enforcement and provides all typical installation services to active duty military, reservists, retired military, and civil service employees.

Located northwest of NAS Meridian, NOLF Joe Williams is utilized by SNAs to conduct practice landings.

- ▲ Home to TRAWING One
- ▲ Advanced Pilot Training for T-45C Aircraft
- ▲ Training Commands for Navy
- ▲ Training for Local Law Enforcement
- ▲ Services for Active Duty, Reservists, Retired Military, and Civil Service Employees

## ES.3 AIRCRAFT OPERATIONS

The T-45C is the only aircraft on station at NAS Meridian and is utilized for all aircraft operations performed at the installation. Typical operations include arrivals, departures, pattern operations (including touch-and-go's and field carrier landing practice [FCLP]), and low approaches. In addition, to practice landings at NOLF Joe Williams, SNAs train in designated Special Use Airspace (SUA) over Mississippi and Alabama, called Military Operating Areas, or MOAs.

Aircraft generally follow designated flight tracks, which are specific routes an aircraft must follow while conducting an operation at the airfield. Flight tracks provide safety, consistency, and control of an airfield and are graphically represented on paper as single lines, but flights vary due to aircraft performance, pilot technique, weather conditions, and Air Traffic Control (ATC) variables, such that the actual flight track is a band, often one-half to several miles wide.

To develop noise contours and areas of accident potential, aircraft operations data have been collected and analyzed as part of this AICUZ Study. AICUZ studies project operations, typically five to ten years in the future, for planning purposes. Therefore, this AICUZ Study has projected operations for Calendar Year (CY) 2020. This projected year is the basis for the modeled noise contours and APZs.

This AICUZ Study has developed noise contours and APZs based on projected operations for CY 2020.

## ES.4 AIRCRAFT NOISE

The chief sources of noise at an air installation are aircraft operations and maintenance engine run-ups. This AICUZ Study has incorporated both sources of noise to develop installation-specific noise contours for both NAS Meridian and NOLF Joe Williams.

Noise exposure is assessed using the day-night average sound level (DNL) noise metric. The DNL is depicted graphically as a noise contour that connects equal points of value. The DOD approved noise model, NOISEMAP, was utilized in this study and incorporated data collected from NAS Meridian and the Navy.

### Air Installation Noise Sources

- ▲ Aircraft Operations
- ▲ Engine Run-Ups

The AICUZ Program divides noise exposure into three categories known as noise zones. Noise zones 1 through 3 are developed based on the DNL and provide associated land use control recommendations for each of the zones. These noise zones provide the basis for identifying incompatible land use around an airfield. This AICUZ Study presents the 2012 AICUZ noise contours, and noise zones have been identified for NAS Meridian and NOLF Joe Williams.

## ES.5 AIRFIELD SAFETY

The Navy recommends that land uses with a high concentration of people (apartments, churches, schools) be located outside APZs.

While the likelihood of an aircraft mishap occurring is remote, the Navy identifies areas of accident potential to assist in land use planning based on historical data from aircraft mishaps. The Navy recommends certain land uses that concentrate large numbers of people—apartments, churches, and schools—to be constructed outside APZs.

The closer an area is located to a runway, the more likely it is that a mishap will occur. APZs are developed, in part, based on the number of operations conducted on a runway per flight track. The three standard APZs, in order of accident potential, are Clear Zone, APZ I, and APZ II. Thus, an accident is more likely to occur in the Clear Zone than in APZ I or II, and is more likely to occur in APZ I than APZ II. The 2012 AICUZ APZs were developed for NAS Meridian and NOLF Joe Williams based on the CY 2020 projected operations.

## ES.6 LAND USE COMPATIBILITY ANALYSIS

The 2012 AICUZ map defines the minimum area needed to protect the health, safety, and welfare of populations near NAS Meridian and NOLF Joe Williams.

A composite noise contour and APZ map has been developed and overlaid on an aerial photograph to show the 2012 AICUZ footprint for both NAS Meridian and NOLF Joe Williams. The footprint shows the minimum recommended acceptable area within which land use controls are needed to protect the health, safety, and welfare of those living or working nearby and to preserve the flying mission.

The Navy has developed land use compatibility recommendations for noise zones and APZs. These recommendations are found in the AICUZ guidance document, Chief of Naval Operations Instruction (OPNAVINST) 11010.36C, and also provide guidelines for the placement of APZs and noise zones. Noise sensitive land uses (e.g., houses, churches, schools) should be placed outside high noise zones, and people intensive uses (e.g., apartments, theaters, churches, shopping centers) should not be placed in APZs. This AICUZ Study incorporates county and state land use and zoning regulations and documents as the basis for identifying existing land use and zoning as well as future land use and zoning. Where land use or zoning data are not readily available or not required under the current regulations, site surveys, interviews, and desktop surveys have been conducted to accurately capture local development.

## ES.7 LAND USE TOOLS AND RECOMMENDATIONS

The federal government, state and regional governments, local governments, businesses, real estate developers, and private citizens, along with the Navy, all play an important role in implementing this AICUZ Study. The Navy recommends that the AICUZ footprint be incorporated into Kemper and Lauderdale Counties' existing AICUZ ordinances to best guide compatible development around the installation.

## ES.8 APPENDICES

### ES.8.1 Appendix A: Discussion of Noise and its Effect on the Environment

Appendix A provides a detailed discussion of the basics of sound, sound measurements, and noise effects on humans and wildlife.

#### Implementation of the AICUZ Study

- ▲ Federal Government
- ▲ State/Regional Governments
- ▲ Local Governments
- ▲ Businesses
- ▲ Real Estate Developers
- ▲ Private Citizens
- ▲ Navy

## **ES.8.2 Appendix B: Land Use Compatibility Recommendations**

Appendix B presents the comprehensive Navy Land Use Recommendations Tables within noise zones and APZs as provided in OPNAVINST 11010.36C, “Air Installations Compatible Use Zones Program.”

# 1

# INTRODUCTION

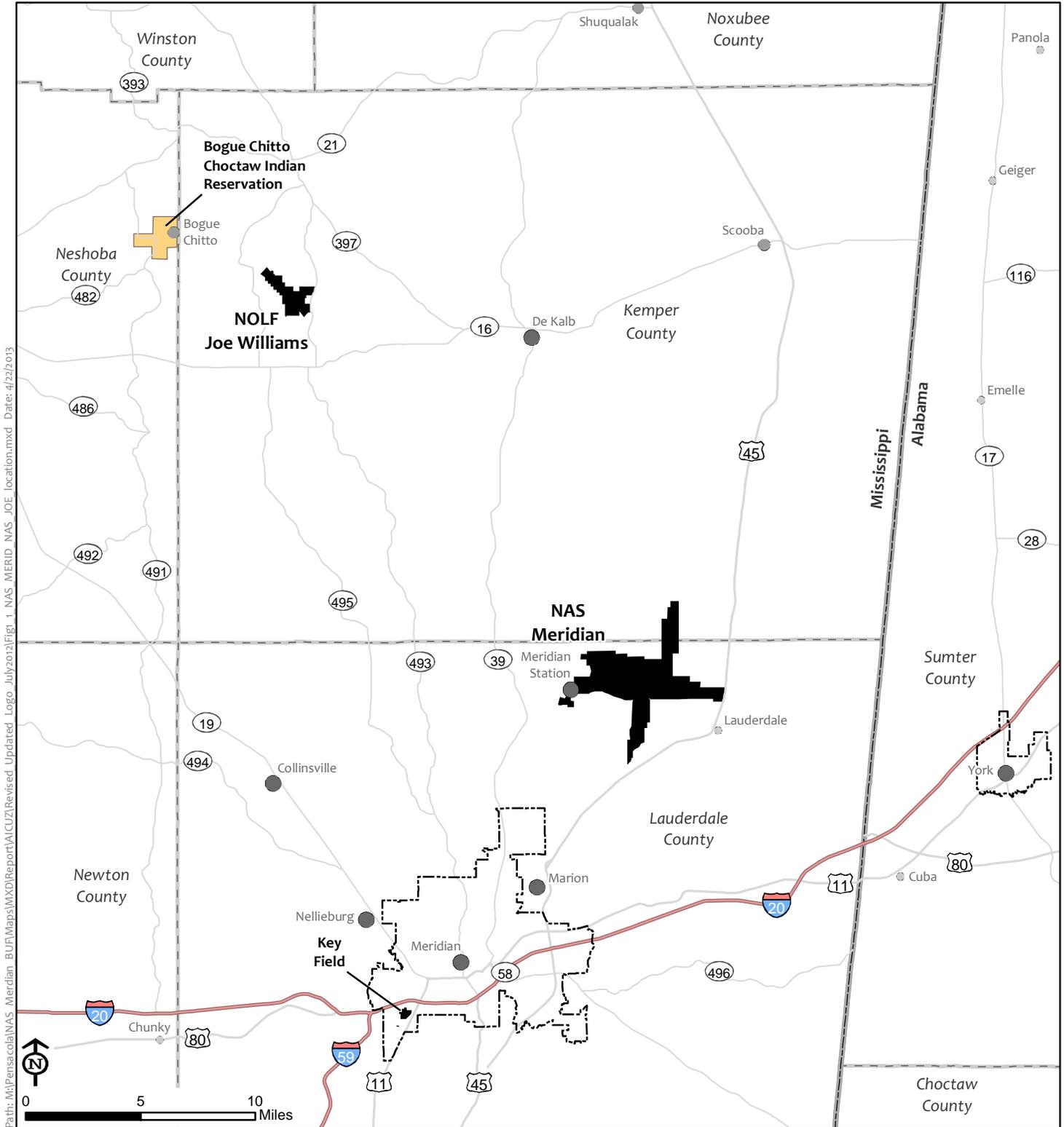
- 1.1 AICUZ Program
- 1.2 Purpose, Scope, and Authority
- 1.3 Responsibility for Compatible Land Use
- 1.4 Previous AICUZ Efforts
- 1.5 Changes that Require an AICUZ Update

Many areas throughout the United States have experienced associated population growth and increased development in close proximity to a military installation. New homes are often constructed in close proximity to military installations, in many instances to allow military and civilian personnel who work at a base to live near their employer. Similarly, businesses are established in the vicinity of these homes and military installations to support the installations and personnel. Because of the proximity to the installations, some of this development may be incompatible with aircraft and other military operations that occur at the base and, over time, can result in nearby residents or businesses being adversely impacted. This incompatible development can also result in the degradation of the installation's mission.

In keeping with this national trend, this type of growth pattern has occurred, on a limited basis, within the region surrounding Naval Air Station (NAS) Meridian, located in Meridian, Mississippi (Figure 1-1). Some areas in the region have experienced population growth and increased development. This Air Installations Compatible Use Zones (AICUZ) Study identifies where this development has occurred and is projected to occur.

The United States Department of Defense (DOD) initiated the AICUZ Program in 1973 to help governments and communities identify and plan for compatible land use and development near military installations. The goal of this program is to protect the health, safety, and welfare of the public, while also protecting the operational capabilities of the military. This goal is accomplished by achieving compatible land use patterns around an air installation.

# NAS Meridian and NOLF Joe Williams



Path: M:\Pensacola\NAS\_Meridian\_BUF\Maps\IMXD\Report\AICUZ\Revised\_Updated\_Logo\_July2012\Fig\_1\_NAS\_MERID\_NAS\_JOE\_location.mxd Date: 4/22/2013



- Interstate
- US Highway
- State Highway
- Military Installation
- State Boundary
- County Boundary
- Corporate Boundary
- 2010 Population Center**
- Below 500
- Below 1,000
- 1,000 or more

Figure 1-1  
 NAS Meridian and NOLF Joe Williams  
 Lauderdale and Kemper Counties, Mississippi

Source: ESRI 2010, U.S. Navy 2011

The goal of the AICUZ Program is to protect military operational capabilities while also protecting the health, safety, and welfare of the public.

This goal is accomplished by achieving compatible land use patterns and activities in the vicinity of a military installation.

The AICUZ Program recommends that noise contours, accident potential zones (APZs), height obstruction criteria, and land use recommendations be incorporated into local community planning to minimize impacts to the mission and the residents in the surrounding community. Mutual cooperation between the installation and neighboring communities is key to the AICUZ Program's success. As the communities that surround an airfield grow and develop, the United States Department of the Navy (Navy) has the responsibility to communicate and collaborate with local governments on land use planning, zoning, and mission impacts.

This 2012 NAS Meridian AICUZ Study has been prepared as an update to the 2004 AICUZ Study. The Study has been prepared in consideration of past and expected changes in mission and aircraft, and projected operational levels through 2020.

Compatible use zones, as described in this AICUZ Study, focus on the land use within the immediate vicinity of the airfield and the aircraft operations at the airfield, itself. Although aircraft stationed at NAS Meridian also utilize Key Field and designated Military Operating Areas (MOAs), this AICUZ Study only takes into account aircraft operations at NAS Meridian and Navy Outlying Field (NOLF) Joe Williams, including arrivals, departures, and pattern work in the vicinity of the airfields.

This chapter of the NAS Meridian AICUZ Study provides background on the AICUZ Program, historical data from the 2004 AICUZ Study, and changes that require an AICUZ update. Chapter 2 describes the location and features of NAS Meridian, including air space and operational areas. Aircraft type, operations, flight tracks, and inter-facility operations are discussed in Chapter 3. Chapter 4 presents the updated 2012 AICUZ noise contours, the development methodology, notable changes, and projections, as well as what the Navy has implemented to mitigate community noise concerns. Aircraft safety and the 2012 AICUZ APZs are discussed in Chapter 5. Chapter 6 evaluates the compatibility of both current and proposed land uses, as provided by local governments. Chapter 7 provides recommendations for promoting land use

compatibility, and Chapter 8 presents a list of references used in this AICUZ Study.

## 1.1 AICUZ PROGRAM

In the early 1970s, DOD established the AICUZ Program to balance the need for aircraft operations with community concerns over aircraft noise and accident potential. The AICUZ Program was developed in response to growing incompatible urban development around military airfields. The objectives of the AICUZ Program, according to the Chief of Naval Operations Instruction (OPNAVINST) 11010.36C, are as follows:

- To protect the health, safety, and welfare of civilians and military personnel by encouraging land use that is compatible with aircraft operations;
- To reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations;
- To inform the public and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development; and
- To protect Navy and United States Marine Corps (USMC) installation investments by safeguarding the installations' operational capabilities.

The Federal Aviation Administration (FAA) and DOD have developed specific instructions and guidance to encourage local communities to restrict development or land uses that could endanger aircraft, including lighting (direct or reflected) that would impair pilot vision; towers, tall structures, and vegetation that penetrate navigable airspace or are constructed near the airfield; uses that generate smoke, steam, or dust; uses that attract birds, especially waterfowl; and electromagnetic interference (EMI) sources that may adversely affect aircraft communication, navigation, or other electrical systems. This is discussed in more detail in Chapter 5.1, Flight Safety.

### Development/Land Uses that could Endanger Aircraft and Pilots

- ▲ Lighting that impairs pilot vision
- ▲ Towers, tall structures, and vegetation that penetrate airspace
- ▲ Development that generates smoke, steam, or dust
- ▲ Uses that attract birds
- ▲ EMI sources

Noise zones and APZs, which are described in detail in Chapters 4 and 5, respectively, are areas of concern for the air installation and local planning departments. Since noise zones and APZs often extend beyond the “fence line” of the installation, presenting the most current noise zones and APZs to local planners is essential in fostering mutually beneficial land uses and development. It is a goal of the AICUZ Program to have noise zones and APZs adopted by the local planning departments in order to incorporate development criteria in areas around the base.

## 1.2 PURPOSE, SCOPE, AND AUTHORITY

The purpose of the AICUZ Program is to achieve compatibility between air installations and neighboring communities. To satisfy this purpose, the Navy works with the local community to discourage incompatible development of lands adjacent to an installation. The scope of the AICUZ Study includes an analysis of:

- Aircraft noise zones for future-year forecasts;
- Aircraft APZs for future-year forecasts;
- Land use compatibility;
- Historic, current, and future aircraft operations;
- Noise reduction strategies; and
- Possible solutions to existing and potential incompatible land use problems.

As development encroaches upon an airfield, more people are potentially exposed to noise and accident potential associated with aircraft operations. The AICUZ Study uses an analysis of community development trends, land use tools, and mission requirements to recommend strategies for communities to prevent incompatible land development. Implementation requires cooperation between the air installation Commanding Officer (CO) and the local government.

The overall goal of the AICUZ Program is to simultaneously protect and promote the public’s health, safety, and welfare, while protecting the installation’s mission. In order to expand NAS Meridian’s community outreach and to educate the surrounding communities, businesses, and the public about the AICUZ Program, a suite of public relation tools such as a brochure, trifold and informational video has been developed in association with this AICUZ Study.

Key documents, some of which are used in this analysis, that outline the authority for the establishment and implementation of the AICUZ Program, as well as guidance on facility requirements, are derived from:

- DOD Instruction 4165.57, “Air Installations Compatible Use Zones,” dated May 2, 2011;
- OPNAVINST 11010.36C, “Air Installations Compatible Use Zones Program,” dated October 9, 2008;
- Unified Facilities Criteria 3-260-01, “Airfield and Heliport Planning and Design,” dated November 17, 2008;
- Naval Facilities Engineering Command P-80.3, “Facility Planning Factor Criteria for Navy and USMC Shore Installations: Airfield Safety Clearances,” dated January 1982; and
- United States Department of Transportation, FAA Regulations, Code of Federal Regulations, Title 14, Part 77, “Objects Affecting Navigable Airspace.”

### 1.3 RESPONSIBILITY FOR COMPATIBLE LAND USE

Ensuring land use compatibility within the area that makes up the AICUZ is a cooperative effort of many organizations including the DOD, Navy, local naval air installation command, local government, planning and zoning agencies, real estate agencies, residents, and developers. Military installations can advise the local government and agencies on land use near an installation, but it is the local government and agencies that have authority to preserve land use

Military installations can make recommendations or advise local governments and agencies on land use near an installation, but it is the local government and agencies that have the planning and zoning authority to preserve land use compatibility near the military installation.

compatibility outside the fence line. Cooperative action by all parties is essential in preventing land use incompatibility and hazards. Table 1-1 identifies key responsibilities for various community stakeholders with respect to AICUZ and land use compatibility.

**Table 1-1. Responsibility for Compatible Land Uses**

<p><b>Navy</b></p>	<ul style="list-style-type: none"> <li>▪ Examine air mission for operational changes that could reduce impacts.</li> <li>▪ Conduct noise and APZ studies.</li> <li>▪ Develop AICUZ maps.</li> <li>▪ Examine local land uses and growth trends.</li> <li>▪ Make land use recommendations.</li> <li>▪ Release an AICUZ Study.</li> <li>▪ Work with local governments and private citizens.</li> <li>▪ Monitor operations and noise complaints.</li> <li>▪ Update AICUZ studies, as required.</li> </ul>
<p><b>Local Government</b></p>	<ul style="list-style-type: none"> <li>▪ Incorporate AICUZ guidelines into a comprehensive development plan and zoning ordinance.</li> <li>▪ Regulate height and obstruction concerns through an airport ordinance.</li> <li>▪ Regulate acoustical treatment in new construction.</li> <li>▪ Require fair disclosure in real estate for all buyers, renters, lessees, and developers.</li> </ul>
<p><b>Builders/Developers</b></p>	<ul style="list-style-type: none"> <li>▪ Develop properties in a manner that appropriately protects the health, safety, and welfare of the civilian population by constructing facilities that are compatible with aircraft operations (e.g., sound attenuation features, densities, and compatible businesses).</li> </ul>
<p><b>Real Estate Professionals</b></p>	<ul style="list-style-type: none"> <li>▪ Ensure potential buyers and lessees receive and understand AICUZ information on affected properties.</li> <li>▪ When working with builders/developers, ensure an understanding and evaluation of the AICUZ Program.</li> </ul>
<p><b>Private Citizens</b></p>	<ul style="list-style-type: none"> <li>▪ Seek information and self-education on the established zones and what impacts they may cause for an individual.</li> <li>▪ Identify AICUZ considerations in all property transactions.</li> <li>▪ Understand AICUZ effects before buying, renting, leasing, or developing property.</li> </ul>

## 1.4 PREVIOUS AICUZ EFFORTS

The original, complete AICUZ for NAS Meridian and affiliated NOLFs was approved by the Chief of Naval Operations (CNO) and published in 1978. Since then, the AICUZ footprint and study has been revised based on additional noise studies and surveys and AICUZ updates. It also has been used as a

**Previous AICUZ Efforts**

- 1978** AICUZ Study for NAS Meridian, OLF Alpha, and OLF Bravo
- 1987** NAS Meridian Master Plan
- 2004** AICUZ Study Update for NAS Meridian and NOLF Joe Williams

reference source in installation planning documents and environmental assessments (EAs). These historical studies reflected changes in aircraft, changes in flight tracks, and changes in the Navy AICUZ instruction. The following list highlights significant documents that present noise contours for NAS Meridian and NOLF Joe Williams (previously named Outlying Field [OLF] Bravo). A timeline with a brief summary and the relevance of each document is provided.

### **1978 – AICUZ Study for NAS Meridian, OLF Alpha, and OLF Bravo**

The original AICUZ Study was approved for implementation by the CNO in February 1978. It established the AICUZ footprint for the main station and OLFs Alpha and Bravo, and provided strategies for compatible land use. This AICUZ Study modeled operations and noise from the T-2 aircraft. [OLF Bravo was renamed Joe Williams Field in 1987; OLF Alpha was transferred to Columbus Air Force Base (AFB) in 1990.]

### **1987 – NAS Meridian Master Plan**

The 1987 Master Plan presented an approved AICUZ update for McCain Field and OLF Bravo (NOLF Joe Williams) and served as the official AICUZ Study until the 2004 update. This AICUZ Update modeled operations and noise from the T-2 aircraft. As a result of this AICUZ update, Kemper and Lauderdale Counties used the 1987 AICUZ Update as the basis for the AICUZ ordinances in 1992 and 1995.

### **2004 – AICUZ Study Update for NAS Meridian and NOLF Joe Williams**

This document was the first complete update to the original 1978 AICUZ Study. Noise contours were based on the 2002 Noise Study and modeled the T-45 aircraft. The 2004 AICUZ Study is used for the baseline conditions comparison in this 2012 AICUZ Study.

## 1.5 CHANGES THAT REQUIRE AN AICUZ UPDATE

AICUZ studies should be updated when an installation has:

- ▲ Changes in the type of aircraft stationed at the installation
- ▲ Significant changes in aircraft operations
- ▲ Changes in flight paths or procedures

AICUZ studies should be updated when an air installation has a change in the type of aircraft at the installation, a significant change in operations (i.e., the number of takeoffs and landings or significant increases in nighttime [10:00 p.m. to 7:00 a.m. hours] flying activities), or changes in flight paths or procedures.

In accordance with OPNAVINST 11010.36C, this AICUZ Study has been prepared to reflect flight tracks, APZs, and operations projected for Calendar Year (CY) 2020. Since publication of the 2004 AICUZ Study, changes have occurred with runway usage and published flight tracks, thus affecting APZs. Navy AICUZ Instruction has been updated since the 2004 AICUZ Study and provides guidance and instruction that was not considered in that study. In addition, land use changes and increased development have occurred around the installation.

### 1.5.1 Changes in Aircraft Mix

No significant changes in aircraft mix have occurred at NAS Meridian since publication of the 2004 AICUZ Study. The 2004 AICUZ Study presents projected CY 2005 operations, with only the T-45C as the primary aircraft. The Navy does not anticipate any changes in aircraft operating at the installation through CY 2020. Therefore, in this AICUZ Study, it is assumed that the T-45C will remain the primary aircraft operating from NAS Meridian. No aircraft are permanently stationed at NOLF Joe Williams, as that location is primarily utilized by aircraft from NAS Meridian. Table 1-2 provides a list of aircraft

types operating at NAS Meridian from CY 2000 through CY 2010, and projected aircraft for CY 2020.



T-45 Aircraft

**Table 1-2. Aircraft Types at NAS Meridian**

2000	2005	2010	2020*
<b>Permanent</b>	<b>Permanent</b>	<b>Permanent</b>	<b>Permanent</b>
T-2	T-45	T-45	T-45
T-45	HH-1	--	--
HH-1	--	--	--
<b>Transient</b>	<b>Transient</b>	<b>Transient</b>	<b>Transient</b>
F-18	F-18	F-18	F-18
T-38	T-38	AV-8B	F-35
F-5	F-5	T-38	T-38
C-12	C-12	F-5	F-5
C-9	C-9	C-26	C-26
--	--	C-12	C-12
--	--	C-9	T-6
--	--	--	EA-18G
--	--	--	E-2
--	--	--	C-2

Source: Navy 2004; NAS Meridian 2011a

Note:

\* = All foreseeable projections out to CY 2020.

### 1.5.2 Changes in Operations Level

Operational levels at NAS Meridian have decreased over the past decade. Likewise, operations at NOLF Joe Williams display a decreasing trend, with the peak year being 2001. Operations in the 2004 AICUZ Study projected 134,919 total operations for NAS Meridian and 68,906 for NOLF Joe Williams. The 2020 projected operations at NAS Meridian are 191,272 annual operations. The change in projections is due, in part, to the F/A-18 training syllabus sorties that will be conducted on station in the T-45C as part of training requirements. Training that is being conducted at other locations in the F/A-18 is projected to be conducted at NAS Meridian in the T-45C to improve efficiency and reduce cost. There is an overall increase in departures, arrivals, and pattern work, and actual operations from 2005 to 2010 were higher than projected in 2004, resulting in a higher five-year average. In addition, intra-facility operations (departing one runway and

arriving at another) have expanded as a component of annual operations on station.

The projected operational level at NOLF Joe Williams has been reduced to 34,188 annual operations in CY 2020, an almost 50 percent decrease since the 2004 AICUZ Study. The decrease in operations is due, in part, to a significant decrease in pattern operations. While the aircraft utilize NOLF Joe Williams more than the 2004 AICUZ, they conduct less operations (pattern work) while there than presented in the previous study.

Tables 1-3 and 1-4 provide the annual military and civilian aircraft operations from CY 2001 through CY 2010, and projected aircraft operations for CY 2020, for NAS Meridian and NOLF Joe Williams, respectively. Chapter 3 presents a more detailed look into the operational level at each airfield.

**Table 1-3. Annual Military and Civilian Operations by Year at NAS Meridian**

Calendar Year	Annual Operations				Total
	Military		Civilian		
	Navy	Other	Air Carrier	General Aviation	
2020*	191,272	300	0	103	191,675
2010	162,248	91	0	26	162,365
2009	187,616	226	0	92	187,934
2008	170,896	81	0	188	171,165
2007	194,282	709	0	144	195,135
2006	205,324	394	0	67	205,785
2005	205,302	302	0	106	205,765
2004	235,191	0	0	91	235,282
2003	260,815	323	0	45	261,183
2002	247,783	169	0	38	247,990
2001	302,700	216	0	19	302,935

Sources: Navy 2004; Wyle Laboratories 2003, 2012

Note:

\* = Projected operations. The 2020 projection is a five-year average of annual operations plus 15% for added sorties projected in the *Draft Environmental Assessment Addressing the Establishment of the Meridian 2 Military Operations Area at Naval Air Station Meridian, Mississippi, August 2011*.

**Table 1-4. Annual Military and Civilian Operations by Year at NOLF Joe Williams**

Calendar Year	Annual Operations				Total
	Military		Civilian		
	Navy	Other	Air Carrier	General Aviation	
2020*	34,188	3	0	44	34,234
2010	20,703	10	0	0	20,713
2009	29,010	0	0	177	29,187
2008	40,468	3	0	20	40,491
2007	46,377	0	0	23	46,400
2006	34,379	0	0	0	34,379
2005	27,447	0	0	0	27,447
2004	33,890	0	0	0	33,890
2003	32,185	0	0	0	32,185
2002	40,222	0	0	0	40,222
2001	54,671	0	0	0	54,671

Sources: Navy 2004; Wyle Laboratories 2003, 2012

Note:

\* = Projected operations. The 2020 projection is a five-year average of annual operations.

### 1.5.3 Changes in Flight Tracks and Procedures

Flight tracks established by NAS Meridian are dependent on aircraft mix, operational level, runway usage, and control measures. As summarized in Tables 1-3 and 1-4, operational levels have changed over time which, in turn, have influenced changes in flight tracks and procedures. Flight tracks at both airfields have slightly shifted since the previous AICUZ Study to reflect current operations. The basic tracks remain, along with the same patterns, but with a slight shift in location, extent, and locations of turns or breaks. In addition, Air Traffic Control (ATC) reported approximately 30 new flight tracks at NAS Meridian, some of which replaced previous tracks. Flight tracks at NOLF Joe Williams have also slightly shifted since the 2004 AICUZ Study; however, no notable changes have occurred. Chapter 3 presents a more detailed look into the flight tracks at each airfield.

# 2

# NAVAL AIR STATION MERIDIAN

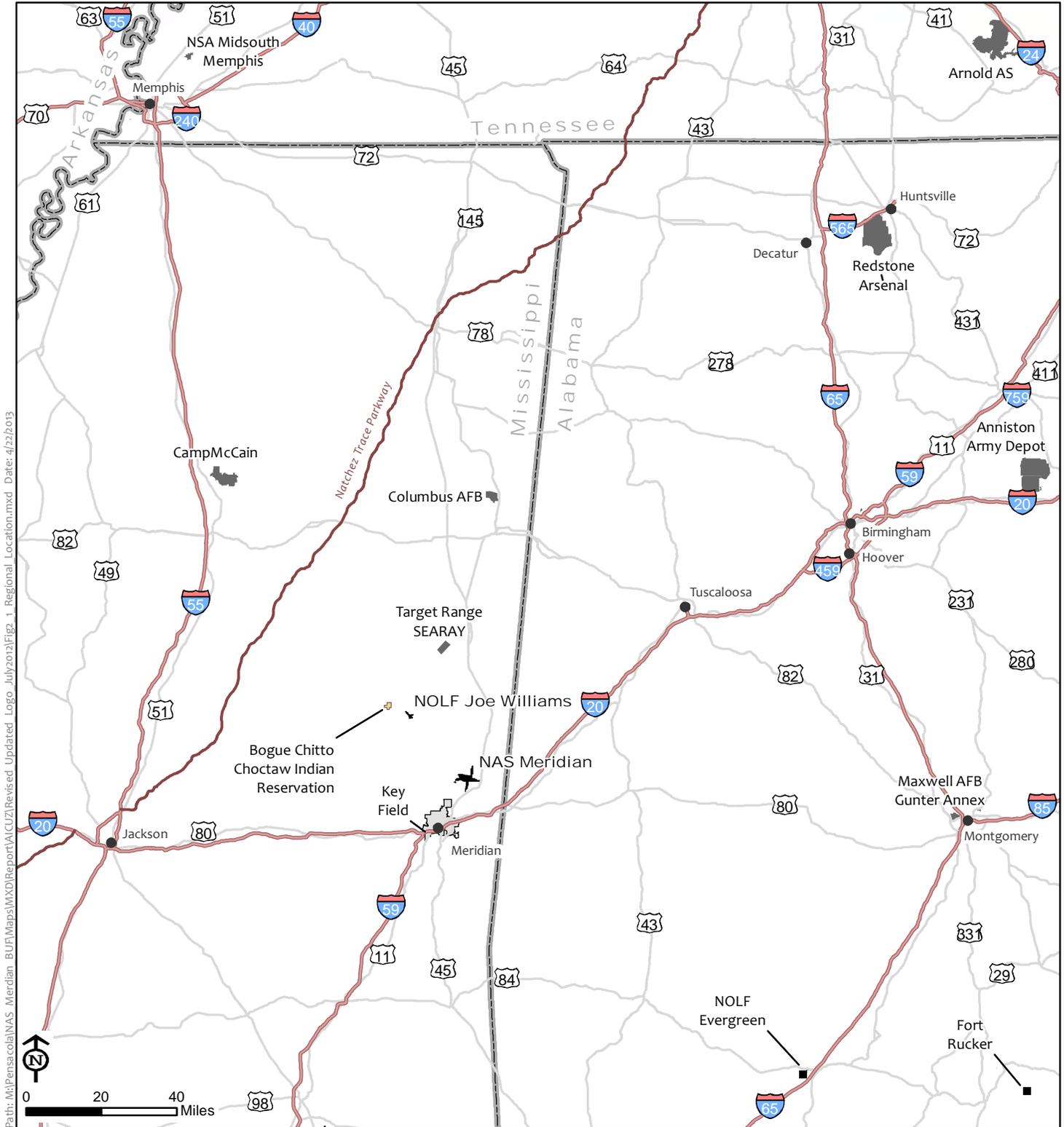
- 2.1 Location and History
- 2.2 Mission
- 2.3 Installation Activities
- 2.4 Operational Areas
- 2.5 Local Economic Impacts and Population Growth

## 2.1 LOCATION AND HISTORY

NAS Meridian is located 15 miles northeast of downtown Meridian, Mississippi, and is just 10 miles west of the Mississippi-Alabama state line. Situated in the North Central Hills region of the state, the main base of NAS Meridian occupies 8,061 acres, with an additional 1,255 acres at NOLF Joe Williams Field and 654 acres at Target Range SEARAY. NAS Meridian is located in the northeastern portion of Lauderdale County and southeastern Kemper County; however, NOLF Joe Williams is 18 miles northwest in northwestern Kemper County, and Target Range SEARAY is located further north in Noxubee County (Figure 2-1). Centrally located in the southeastern United States, Meridian, Mississippi is 155 miles southwest of Birmingham, Alabama; 90 miles east of Jackson, Mississippi; 247 miles northeast of New Orleans, Louisiana; and 180 miles north of Pensacola, Florida.



# NAS Meridian Regional Location Map



Path: M:\Pensacola\NAS\_Meridian\_BUF\Maps\IMXD\Report\AICUZ\Revised\_Updated\_Logo\_July2012\Fig. 1\_Regional\_Location.mxd Date: 4/22/2013



- City with 2010 Population of 50,000 or Greater
- AICUZ Military Installations
- Other Military Installations
- Meridian Corporate Boundary
- Natchez Trace Parkway
- Interstate
- US Highway
- State Boundary

Figure 2-1  
NAS Meridian Regional Location Map  
Mississippi

Source: ESRI 2010

## Naval Air Station Meridian



NAAS Construction, Ponta Creek, Circa 1960

Construction of NAS Meridian began in July 1957 and was first commissioned by the Navy on July 14, 1961 as a Naval Auxiliary Air Station (NAAS). The airfield was named McCain Field in honor of Admiral John S. McCain, Sr. In July of 1961, Training Squadron Seven (VT-7) was relocated to the installation and became the first squadron to arrive at NAAS Meridian. The VT-7 squadron then divided in December 1965 to form its sister squadron, Training Squadron Nine (VT-9). By July 1968, the station had become a full Naval Air Station. Aircraft flown out of NAS Meridian include T-2s (1961-2004), TA-4Js

("Skyhawks") (1971-1999), and T-45s (1997 to present).

The significance and operational importance of NAS Meridian steadily increased due to demand for pilots during the Vietnam War. The commissioning of Training Air Wing (TRAWING) One, the establishment of Training Squadron Nineteen (VT-19), the arrival of new advanced jet trainers (TA-4J), all in 1971, and the opening of the Naval Technical Training Command (NTTC) in 1973 (NAS Meridian 2010) and the Marine Aviation Training Support Group in 1979 also increased NAS Meridian's importance. The additions brought an increase in development and family housing units to the base and the surrounding area. In July 1968, then NAAS Meridian became a Naval Air Station (NAS); in October 1982, the station was upgraded to a Major Shore Command; and in 1984, NAS Meridian was one of 15 installations chosen for the DOD Model Installation Program.

The closure of NAS Chase Field and TRAWING THREE in 1993 resulted in the realignment of jet strike training to NAS Meridian and NAS Kingsville. Thirty-five T-2s shifted to NAS Meridian, and training peaked with over 300,000 annual operations in 2000, as NAS Kingsville converted to T-45As.

The Regional Counterdrug Training Academy (RCTA) was established in 1992 at NAS Meridian with the mission to provide no-cost, "street level," case-making, counterdrug skills to civilian law enforcement officers (RCTA

## Naval Air Station Meridian

2010). Operated by the Mississippi National Guard, the RTCA provides training to law enforcement officers from Louisiana, Mississippi, Alabama, Tennessee, and Georgia.

Naval Reserve Center Meridian was established on station following the closure of Naval Reserve Center Jackson in 2000.

Today, NAS Meridian is one of Chief of Naval Air Training's (CNATRA's) two jet strike pilot training bases, the other being NAS Kingsville, Texas. Headquartered on board NAS Corpus Christi, Texas, CNATRA oversees the Naval Air Training Command (NATRACOM) and is composed of five Wings located on Naval Air Stations in Florida, Mississippi, and Texas. The Wings are home to 17 training squadrons. NAS Meridian is home to TRAWING ONE, composed of squadrons VT-7 and VT-9 instructing Student Naval Aviators (SNAs) in the Boeing T-45C "Goshawk," the Navy's most advanced strike jet trainer (CNATRA 2010). Figure 2-2 provides a general overview of the student pilot pipeline.

#### TRACOM Wings (TRAWING)

ONE – NAS Meridian  
 TWO – NAS Kingsville  
 FOUR – NAS Corpus Christi  
 FIVE – NAS Whiting Field  
 SIX – NAS Pensacola

### Student Naval Aviators Training Pipeline

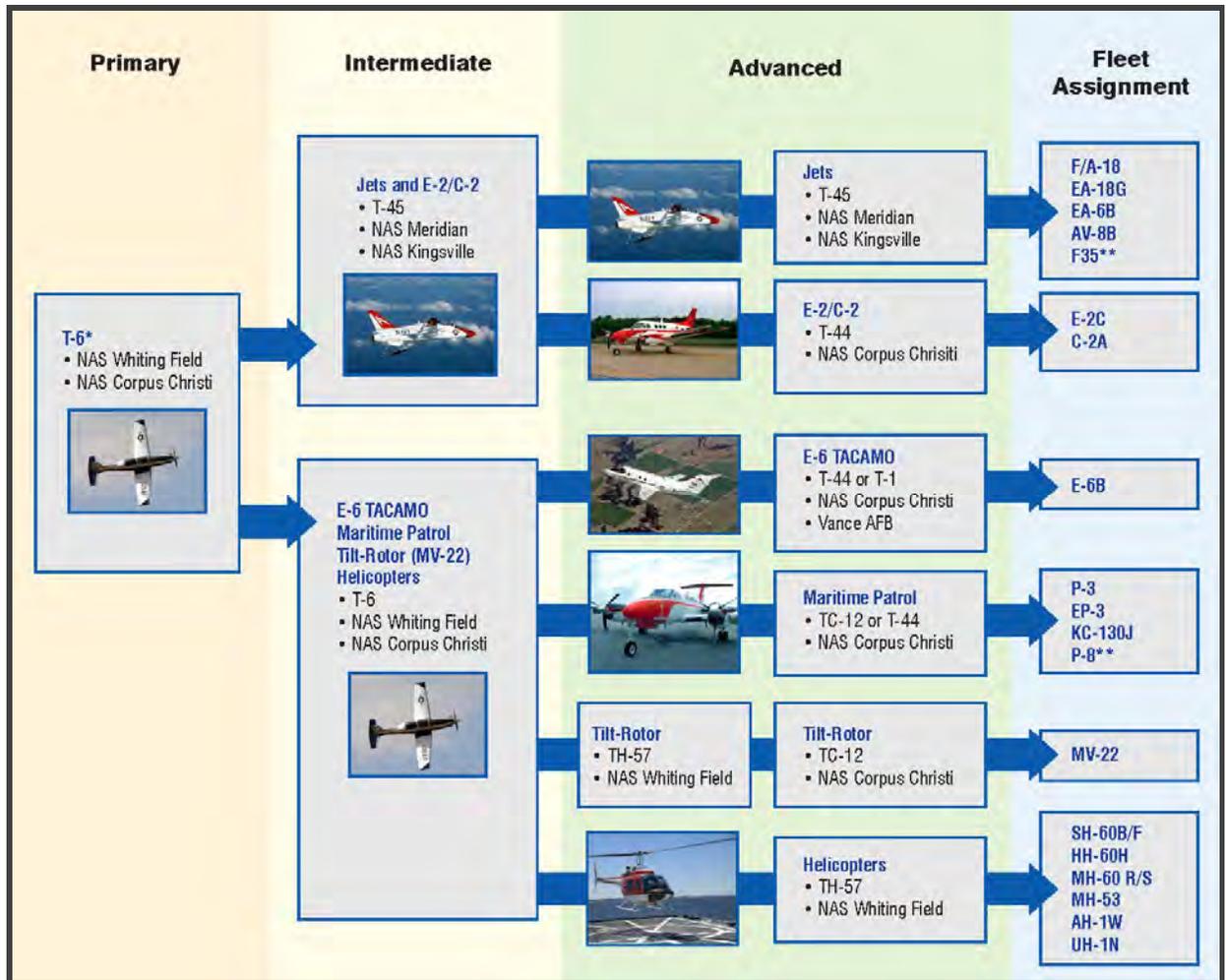
Prior to achieving the coveted *Wings of Gold*, SNAs (also referred to as student pilots or students) must go through primary, intermediate, and advanced training. All SNAs complete primary training in the T-6 aircraft at either NAS Whiting Field or NAS Corpus Christi. Following primary training, SNAs are selected for Maritime (multi-engine prop), E 2/C-2, Rotary (helos), Strike (jets), or the E-6 TACAMO aircraft.



An SNA's intermediate training location is determined by the type of aircraft the student has been selected to fly. Intermediate training locations include NAS Meridian, NAS Kingsville, NAS Corpus Christi, and NAS Whiting Field.



Student pilots who enter the Strike (jet) pipeline complete their training at either NAS Meridian in the T-45C or NAS Kingsville in the T-45A/C. During Strike training, pilots learn strike tactics, weapons delivery, air combat maneuvering, and receive their carrier landing qualification.



\* The T-34 is currently being phased out of the inventory and replaced by the T-6.  
 \*\* New aircraft coming into inventory.

Figure 2-2. Student Naval Aviators Training Pipeline

## 2.2 MISSION



NAS Meridian's mission is to support Navy and USMC war fighters. The station “*supports aviation and technical training and other tenant activities by providing timely, quality services and facilities in an environmentally safe, secure community.*” With the guiding principle of innovation, NAS Meridian strives to improve quality of service and maximize efficiency, and communicate to promote integration, understanding, and teamwork.



The installation is responsible for providing basic facility services, business and support functions, housing and accommodations, and quality of life services, all in support of the installation's mission. NAS Meridian is led by a CO who is responsible for all installation activities. TRAWING ONE (commonly referred to as "the Wing") is known locally, regionally, and Navy-wide for its premier pilot training services. Both installation and TRAWING ONE activities are summarized below.

Like TRAWING ONE, NATRACOM's mission is focused on the student aviators. The Mission of NATRACOM is *"to train the world's finest combat quality aviation professionals, delivering them at the right time, in the right numbers, and at the right cost to the Joint Forces for tasking in the Global War on Terrorism"* (NATRACOM 2010).

## 2.3 INSTALLATION ACTIVITIES

TRAWING ONE is the most notable tenant at NAS Meridian; however, there are other major tenant activities on station, including other training commands. A brief description of tenant activities is provided below.

### 2.3.1 Training Air Wing One

For TRAWING ONE, the Commodore's (or Wing Commander's) specific mission is to supervise, coordinate, and administer the student pilot academic and flight training program. The instructor pilot cadre at TRAWING ONE includes men and women from almost every Navy and USMC aviation community as well as several international military exchange pilots, bringing an enormous array of fleet experience to the training command. TRAWING ONE is comprised of two training squadrons that conduct Total System (TS) Strike Flight Training in the T-45C for Navy and USMC aviators and international military aviators. The two training squadrons include:

- **Training Squadron Seven (VT-7) "Eagles."** VT-7's mission is the training of advanced strike SNAs to provide the fleet with the finest naval aviators in the world.



The primary mission of TRAWING ONE is to provide newly designated aviators to the fleet for further training in operational combat aircraft.



- **Training Squadron Nine (VT-9) “Tigers.”** VT-9’s mission is to safely train SNAs in the air strike mission for the United States and other international naval forces. The squadron has trained international students from Spain, France, Brazil, Italy, and other allied nations.

There is a continuous pool of approximately 90 students in each squadron at any one time. Students are on board VT-7 and VT-9 for approximately nine to twelve months before earning their *Wings of Gold*.

The TS Strike Flight Training program was established to streamline the Navy's strike pilot training program. In the TS program, after completing primary training, SNAs go directly to the T-45, eliminating the intermediate stage. The TS program combines all of the elements of intermediate and advanced programs, without the need to transition to another aircraft. The TS program is currently composed of 123 flights and 70 flights in the simulator. The TS program takes approximately 12 months to complete, as compared to the 14 months it took students to transition from the T-2s to the TA-4s.

Initial flights and simulators are devoted to instrument flight rules (IFR), culminating in an instrument rating. In phase one, the Familiarization stage, students learn basic aircraft maneuvering, aerobatics, and the fundamentals of landing on a carrier during sixteen day and four night flights. Twenty-three formation flights provide students the skills to fly in two- and four-plane formations. The second phase, Weaponry, exposes students to manual air-to-ground bombing, tactical formation, air combat maneuvering, and operational navigation at low altitude. Four night formation flights are followed by ten flights focused on the basics of air combat maneuvering. Finally, students perform field carrier landing practice (FCLP) in preparation for their carrier qualifications, which consist of four touch-and-go landings and ten carrier-arrested landings aboard a carrier at sea. Completing this, the students become "tailhookers" and earn their *Wings of Gold*. Upon graduation, Strike pilots report to an F/A-18 or EA-6B Fleet Replacement Squadron, and eventually report to their first Fleet Squadron.

### 2.3.2 Other Training Commands

Four additional training organizations at NAS Meridian provide training to active duty Navy and USMC personnel, civilian law enforcement officers, and Navy reservists:



- **Naval Technical Training Center (NTTC).** The mission of NTTC is to support fleet operational readiness through training. NTTC is the Navy’s primary training facility for enlisted administrative and supply class “A” schools.



- **Marine Aviation Training Support Squadron One (MATSS-1).** MATSS-1 provides administrative support for permanent personnel and USMC student personnel assigned to attend school at NTTC Meridian and TRAWING ONE.



- **Regional Counterdrug Training Academy (RCTA).** RCTA’s mission is to provide no-cost, “street level,” case-making, counterdrug skills to civilian law enforcement officers. RCTA offers 38 courses to its students, such as basic narcotics investigations, undercover investigations, gang school, and interview and interrogation.



- **Naval Operational Support Center (NOSC).** The NOSC trains and mobilizes nine reserve units (250 reservists) to augment active forces in U.S. campaigns. A Naval Reserve Recruiting Office is also located at the NOSC and is responsible for all naval reserve recruiting in eastern Mississippi.

### 2.3.3 Other Activities

NAS Meridian operates much like a small town and provides a variety of services required to operate and maintain a fully functioning installation.

Installation and Personnel Support Services (Support Services) serves military and civilian personnel and maintains infrastructure on station. The Air Operations Department (AOD or Air Ops) is the hub of all airfield activity at NAS Meridian and is the key to supporting the flying mission. Both functions are briefly described below.

## Installation and Personnel Support Services

Support Services is the overarching name given to activities such as public works, supply, customer service, human resources, and financial management, all of which provide support to TRAWING ONE and the tenant commands. Support Services aboard NAS Meridian also includes legal, public affairs, health clinic, environmental, religious, and retiree services. Other services include the commissary, Navy exchange, gas stations, credit union, sports complex, golf course, auto/hobby shop, restaurants, and library.

## Air Operations Department

Air Operations is the largest department under NAS Meridian and is directly involved in supporting TRAWING ONE. Air Ops is the overarching term to describe aircraft operations, the coordination of flights, the availability of airspace and airfields, the maintenance of facilities and services, and the safety of aviators and the public, and is often the liaison department between the installation and the surrounding community. Air Ops' primary mission is to support TRAWING ONE. The AOD on board NAS Meridian provides air traffic controllers, ground electronics personnel, and field support personnel, and coordinates with weapons personnel and fire department personnel. The AOD is also responsible for the daily coordination and safety of all aircraft and operations for McCain Field and NOLF Joe Williams. Pursuant to the Naval Air Training Operations Procedures Standardization (NATOPS) Program and the Navy Aircraft Firefighting and Rescue Manual (NAVAIR 00-80R-14) (NATOPS 2003), the AOD ensures that a safety and "crash crew" (i.e., specialized fire and rescue personnel) and equipment are deployed when any aircraft touches down on a runway.

Air Ops is an integral component to operations at NAS Meridian and this AICUZ Study because historic knowledge, current operations and statistics, and future projections all fall under the responsibility of this department.

The majority of responsibility for historic knowledge, current operations and statistics, and future projections falls on the AOD and, thus, the department is an indispensable resource to this AICUZ Study.

## 2.4 OPERATIONAL AREAS

NAS Meridian has been a naval aviation training facility since it was commissioned in July 1961 and, as such, is an ideal location for pilot training due to established operational areas. NAS Meridian is comprised of three runways and one outlying landing field (NOLF Joe Williams) which has one runway and airspace designated for military training. Section 2.4.1 presents general airfield operations and area specifics including location, runway configurations, and dimensions for NAS Meridian and NOLF Joe Williams. Section 2.4.2 describes the designated airspace used by TRAWING ONE for pilot training purposes.

### 2.4.1 Airfields

DOD fixed-wing runways are separated into two classes, Class A and Class B, for the purpose of AICUZ analysis and APZs. Class A runways are primarily used by light aircraft and do not have the potential for intensive use by heavy or high performance aircraft. Class B runways are used for all other fixed-wing aircraft. All runways at NAS Meridian and NOLF Joe Williams are categorized as Class B. A discussion of each airfield is provided below.

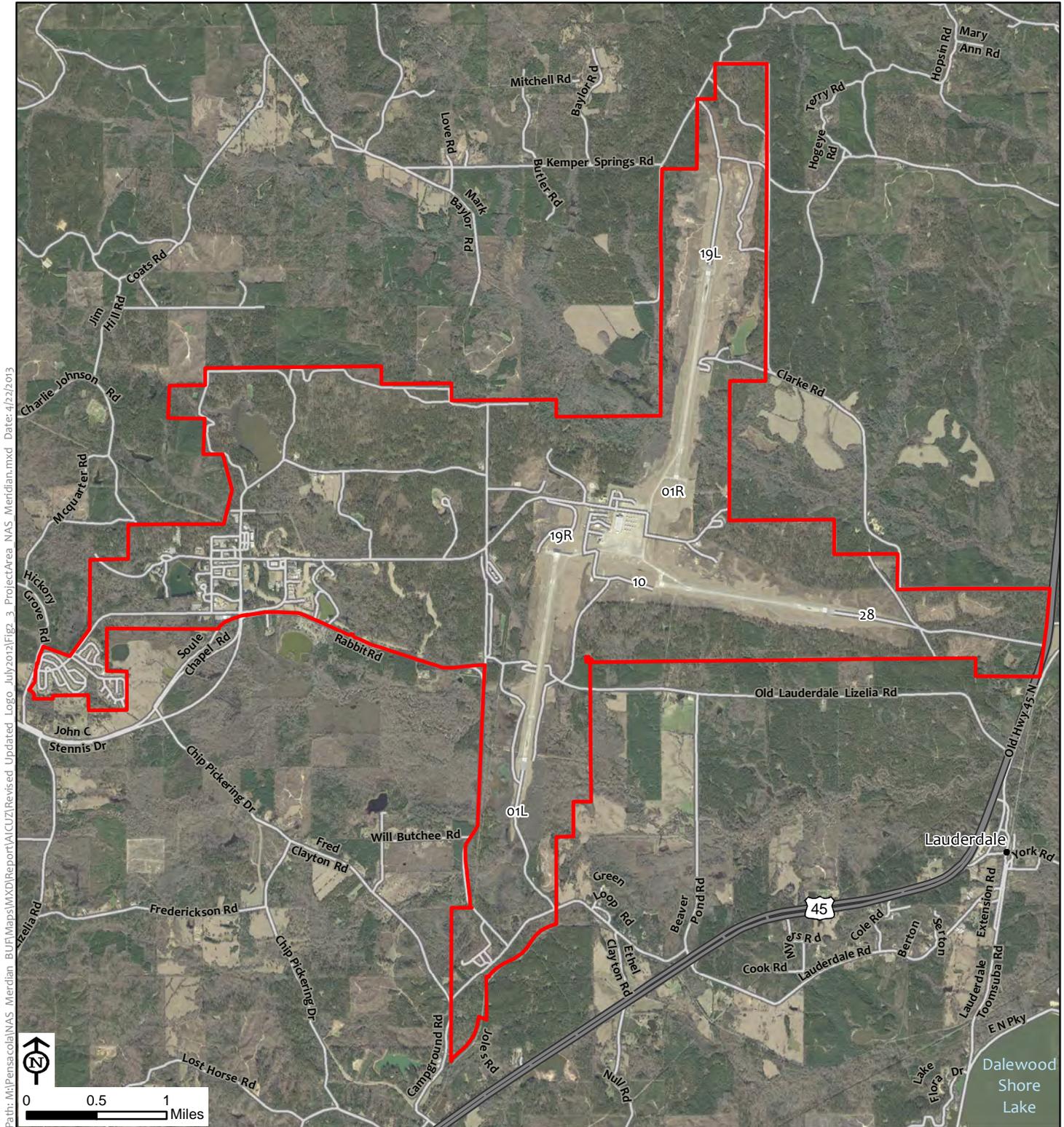
All runways at NAS Meridian and NOLF Joe Williams are Class B runways.

### McCain Field at NAS Meridian

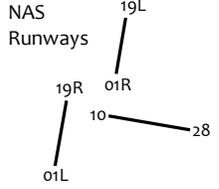
Located at NAS Meridian, McCain Field's elevation is 316 feet mean sea level (MSL). McCain Field is composed of two parallel offset runways, 1L/19R (South runway) and 1R/19L (North runway), and one cross-wind runway, 10/28 (East runway) (Figure 2-3).

Runways are numbered according to their magnetic heading for aircraft on approach or departure. For example, on Runway 10/28, the numbers 10 and 28 signify that this runway is most closely aligned with a compass heading of 100 and 280 degrees, respectively. For parallel runways, each runway is designated "L" for left and "R" for right to distinguish between the runways. Table 2-1 provides detailed information about the length and width of each runway.

# NAS Meridian



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- US Highway
- Secondary/Local Road
- Installation Boundary

Figure 2-3  
 NAS Meridian  
 McCain Field  
 Lauderdale County, Mississippi

Source: U.S. Navy 2011

**Table 2-1. NAS Meridian Runways**

Runway	Length (feet)	Width (feet)
1L/19R	8,003	200
1R/19L	7,999	200
10/28	6,401	200

Source: NAS Meridian 2010

The airfield is open Monday through Thursday, from 7:00 a.m. to 11:00 p.m., Friday from 7:00 a.m. to 5:00 p.m., and is closed on Saturdays and



federal holidays. The field is typically open during a four-hour recovery window for returning cross-country trips based on Wing requirements. Some Sundays are surge days with concentrated FCLPs. During certain periods of daylight savings, the hours change to 8:00 a.m. to 12:00 a.m. to ensure enough hours of night flying. Extenuating circumstances can result in extended operation hours, open days, or temporarily suspend operations.

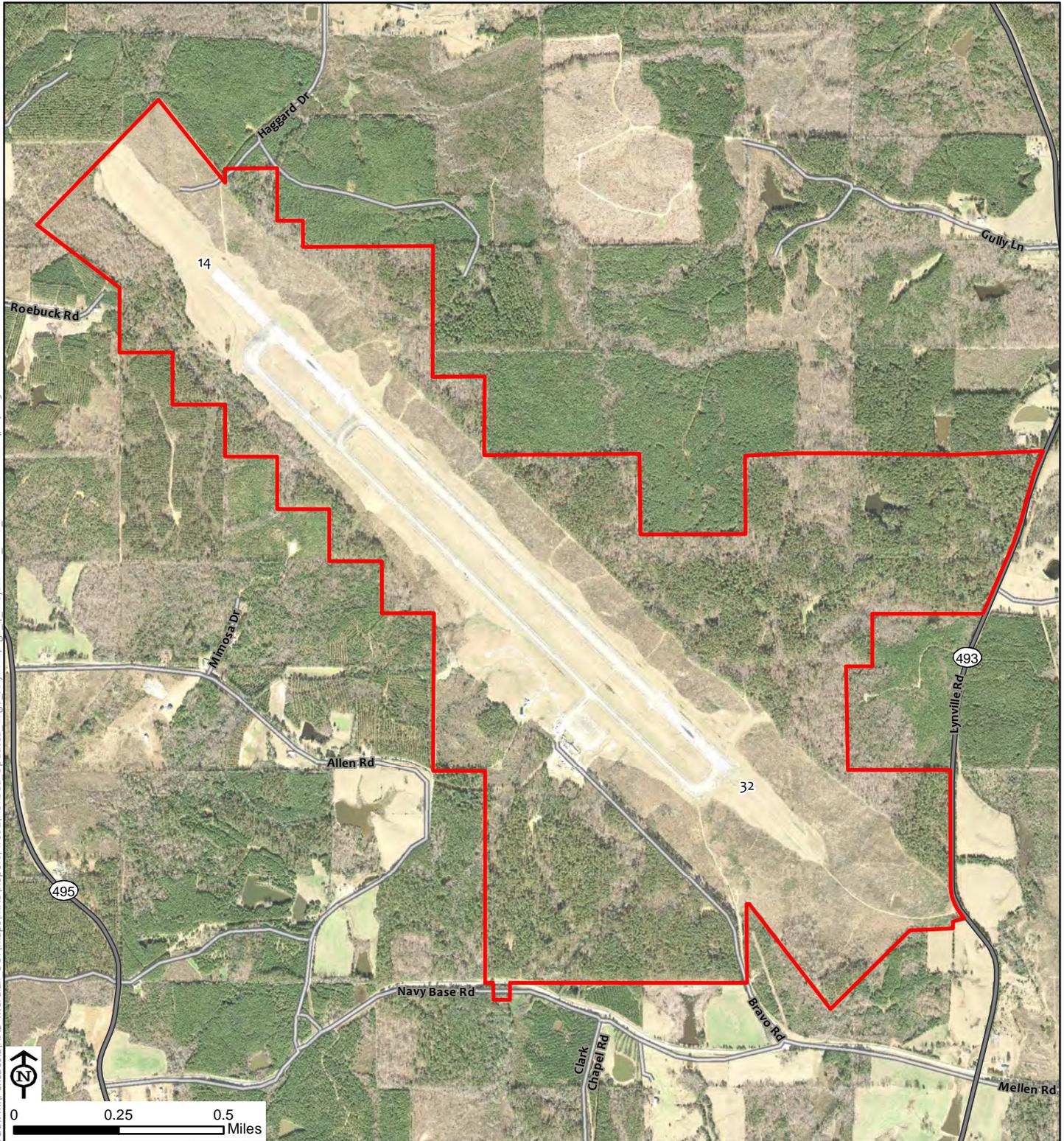
### **NOLF Joe Williams**

NOLFs are airfields, runways, or landing areas that are located within the region of an affiliated active Naval Air Station. NOLFs are used for training, practice, or other routine operations. NOLF Joe Williams is usually used for FCLP patterns, but also hosts touch-and-go's, low approaches, or other operations. It provides a low-traffic location for flight training, without the risks and distractions common to McCain Field. Aircraft are not stationed and are not typically parked overnight at NOLF Joe Williams, and routine maintenance activities are not conducted at this NOLF.

NOLF Joe Williams airfield's elevation is 539 feet MSL and facilities include a control tower, maintenance and safety buildings, and a fuel storage area. NOLF Joe Williams has one runway, 14/32 (Figure 2-4), and a full-length parallel taxiway.

NOLFs are typically used for training, practice, or other routine operations. Aircraft are not stationed, parked overnight, or maintained at NOLFs.

# NOLF Joe Williams



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14  
NOLF Runways  
32

- State Highway
- Secondary/Local Road
- Installation Boundary

Figure 2-4  
NOLF Joe Williams  
Kemper County, Mississippi

Source: U.S. Navy 2011

Table 2-2 provides detailed information about the length and width of the runway.

**Table 2-2. NOLF Joe Williams Runway**

Runway	Length (feet)	Width (feet)
14/32	8,000	150

Source: NAS Meridian 2010

Airfield hours of operation are published weekly by TRAWING ONE, but typically follow those for NAS Meridian.

In addition to NAS Meridian and NOLF Joe Williams, TRAWING ONE also utilizes Key Field Airport in the City of Meridian. The 186<sup>th</sup> Air Refueling Wing (ARW), an Air National Guard (ANG), unit is based at Key Field Airport. Key Field Airport is a public use airport; however, flights are primarily conducted by military aircraft, followed by general aviation and commercial aircraft.

### 2.4.2 Airspace

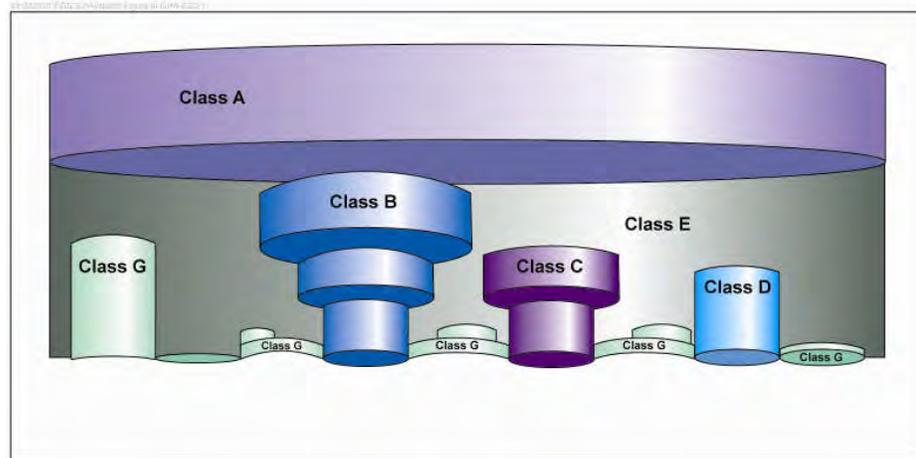
The use and control of U.S. airspace is dictated by the FAA National Airspace System and seeks to ensure the safe, orderly, and efficient flow of commercial, private, and military aircraft. NAS Meridian (McCain Field) is located in Class D airspace and assigned to the Memphis Air Route Traffic Control Center by the FAA. The Atlanta Air Route Traffic Control Center controls operations in Alabama at the Birmingham and Pine Hill MOAs. All visual flight rules (VFR) and IFR departures must have clearance to depart. VFR and IFR arrivals must contact Meridian Approach prior to entering the Class D airspace for radar services.

There are two categories of airspace: regulatory and non-regulatory. Within these two categories there are four types of airspace: controlled, uncontrolled, special use, and other airspace. Controlled airspace, designated Class A through Class E, covers the airspace within which ATC clearance is required. Uncontrolled airspace is the portion of the airspace not designated as

NAS Meridian and NOLF Joe Williams are located within Class D airspace.

Class E airspace encompasses both airfields.

Class A through Class E within which ATC has no authority or responsibility to control air traffic (FAA 2008) (see Figure 2-5).



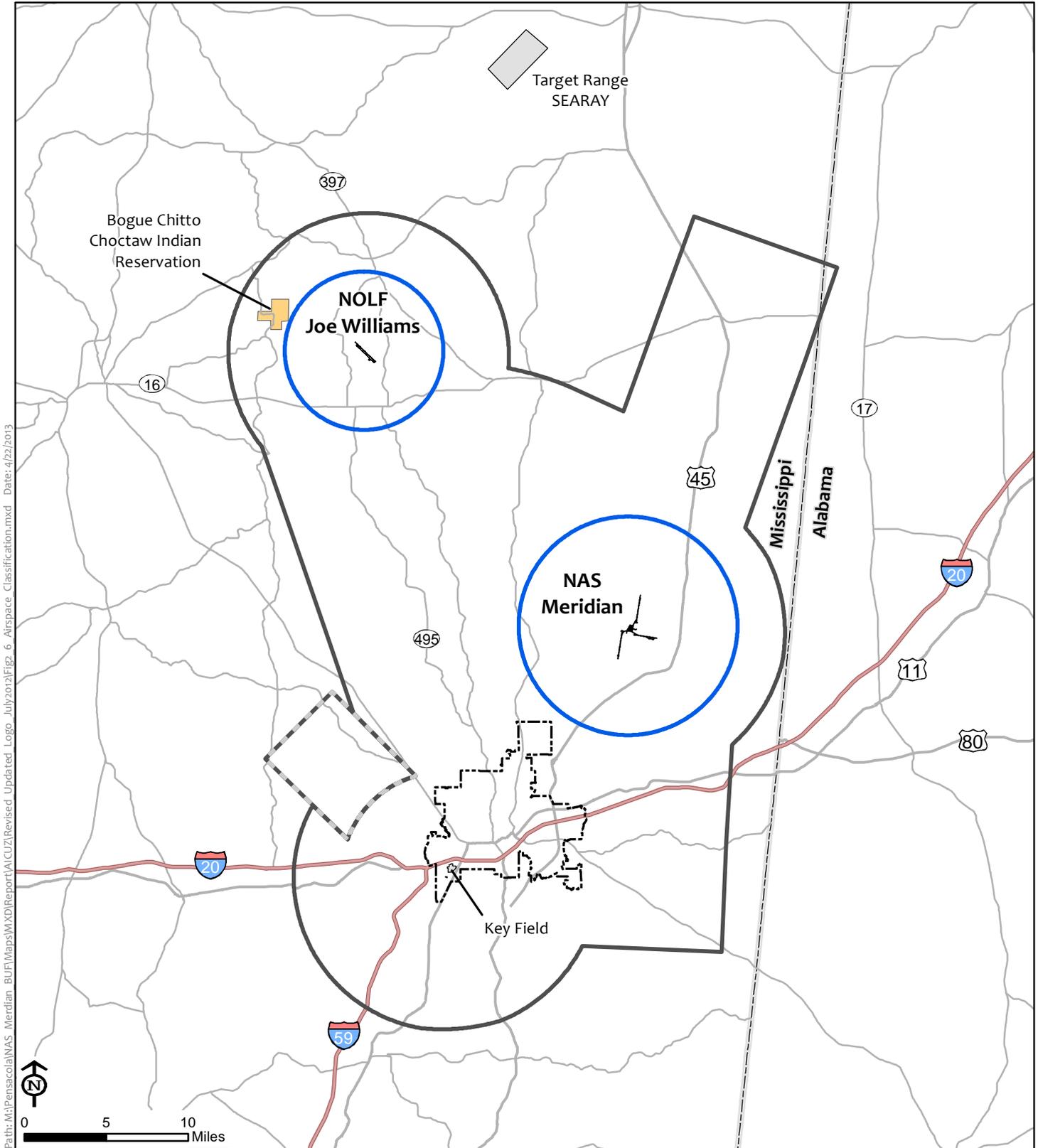
**Figure 2-5. General Airspace Classifications**

McCain Field and NOLF Joe Williams are surrounded by Class D airspace; the airspace encompassing the two airfields is Class E airspace. Applicable airspace classifications are described below and depicted on Figure 2-6.

### **Class D Airspace**

Class D airspace generally extends from the surface to 2,500 feet above the airport elevation (MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and have a certain number of IFR operations or passenger enplanements. Each aircraft must establish two-way radio communications with the ATC prior to entering the airspace and, thereafter, maintain those communications while within the airspace. Since NAS Meridian is a tower controlled field, ATC at NAS Meridian controls the Class D airspace surrounding NAS Meridian.

# Airspace Classification NAS Meridian and NOLF Joe Williams



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- Interstate
- US Highway
- State Highway
- State Boundary
- Airfield
- Meridian Corporate Boundary
- Class E - 700 ft to 18,000 ft MSL
- Class E - Surface to 18,000 ft MSL
- Class D - NAS Meridian: Surface to 2,800 ft MSL  
NOLF Joe Williams: Surface to 3,000 ft MSL

**Figure 2-6**  
**Airspace Classification**  
**NAS Meridian and NOLF Joe Williams**  
**Mississippi**

Source: ESRI 2010, FAA 2011, NAIP 2010

## Class E Airspace

Class E airspace is the FAA controlled airspace that is not classified as A through D, and extends upward from either the surface or a designated altitude to the overlying or adjacent airspace. Unless designated at a lower altitude, Class E airspace begins at 14,500 feet MSL and up to, but not including, 18,000 feet MSL. Class E airspace surrounding NAS Meridian and NOLF Joe Williams has a designated floor of 700 feet above surface and a ceiling up to 18,000 feet MSL. VFR communication is not required within Class E airspace; however, by definition, IFR communication is required.

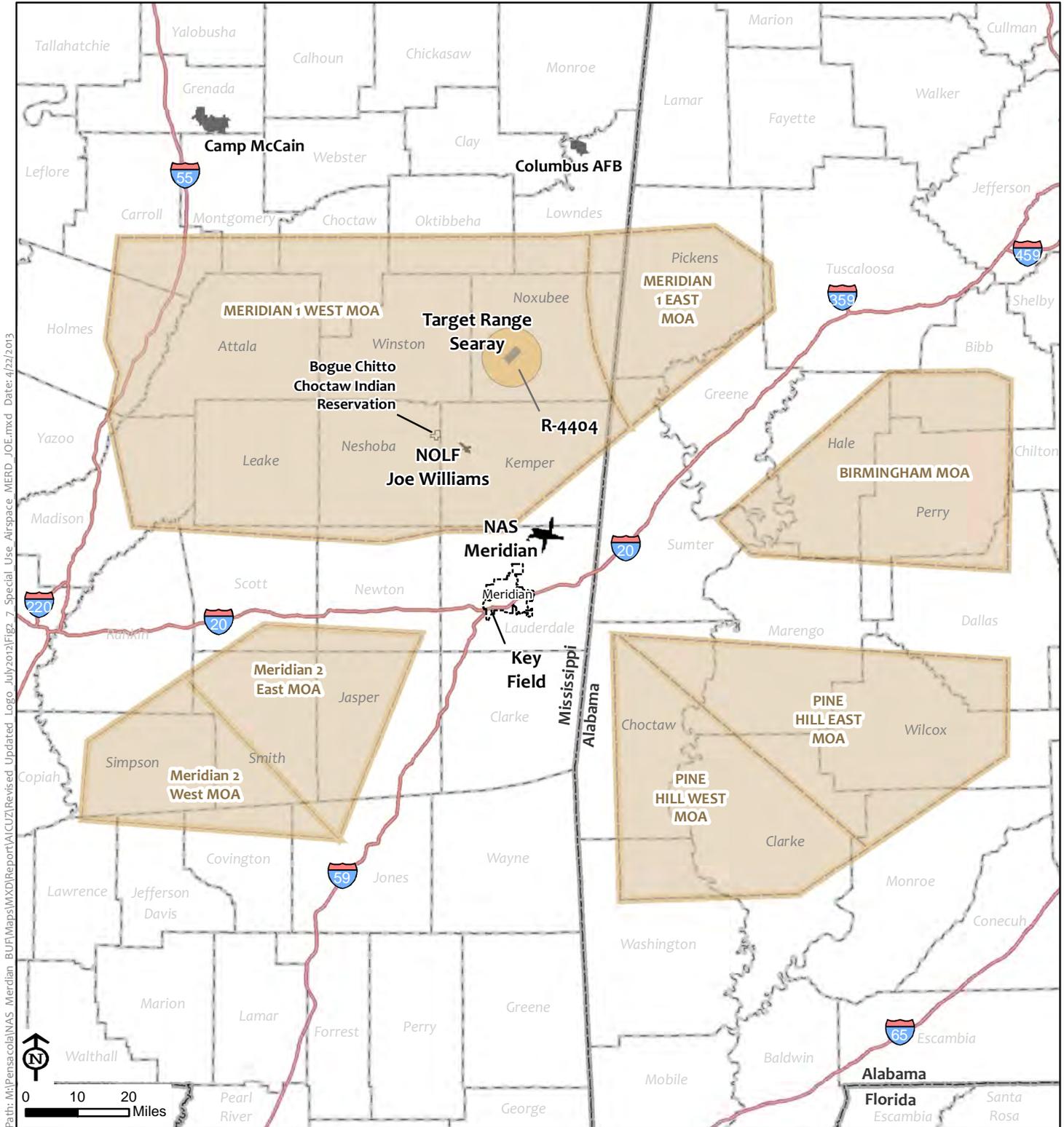
## Special Use Airspace

Special Use Airspace (SUA) is the designation of airspace which confines or provides a boundary where certain operations or activities can take place or where restrictions are imposed on other aircraft that are not part of those operations. SUAs range in restrictiveness, from areas where flight is always prohibited except to authorized aircraft, to areas that are used by the military for potentially hazardous operations.

There are six major types of SUAs: prohibited areas, restricted areas, warning areas, MOAs, alert areas, and controlled firing areas. Aircraft operations within these SUAs were not included in the noise analysis for this AICUZ Study due to their proximity to the airfields and their altitudes.

TRAWING ONE uses both restricted areas and MOAs for training student pilots. NAS Meridian's MOAs are depicted on Figure 2-7, and brief descriptions of the MOAs are provided below.

# Special Use Airspace NAS Meridian and NOLF Joe Williams



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- Interstate
- R-4404
- AICUZ Military Installation
- Other Military Installation
- Military Operation Area (MOA)
- County Boundary
- State Boundary

Figure 2-7  
Special Use Airspace  
NAS Meridian and NOLF Joe Williams  
Mississippi

Source: ESRI 2010; Navy 2010

For training student pilots, TRAWING ONE uses both restricted areas and MOA airspace.

- **Restricted Areas:** Areas where operations are hazardous to nonparticipating aircraft and contain airspace within which the flight of aircraft, while not wholly prohibited, is subject to restrictions.
  - R-4404 A/B/C: Located north of NAS Meridian in Noxubee County, over Target Range SEARAY, this restricted area is used for air-to-ground (practice bombing) missions and out-of-control flight training. Altitudes for R-4404 A, B, and C are up to 11,500 feet MSL, 1,200 feet above ground level (AGL) to 11,500 feet MSL, and 11,500 feet MSL to 14,500 feet MSL, respectively.
- **Military Operating Area (MOA):** Airspace with defined vertical and lateral limits established for the purpose of separating certain military training activities from IFR traffic.
  - Meridian 1 West MOA: Located north of NAS Meridian, this MOA is primarily used by VT-7 and VT-9 for basic instrument flight, familiarizations, formations, and air-to-air gunnery. Altitude for this MOA is 8,000 feet MSL to 17,999 feet MSL.
  - Meridian 1 East MOA: Located northeast of NAS Meridian in Mississippi and Alabama, this MOA is primarily used by Air Force student pilots from nearby Columbus AFB. This MOA is rarely used by TRAWING ONE. Altitude for this MOA is 8,000 feet MSL to 17,999 feet MSL.
  - Birmingham MOA: Located east of NAS Meridian in Alabama, this MOA is used for formation, night familiarization flights, and gunnery flights. Altitude for this MOA is 10,000 feet MSL to 17,999 feet MSL.
  - Pine Hill East/West MOA: Located southeast of NAS Meridian in Alabama, this MOA is used for air combat training when sufficient space is not available at the Meridian 1 West MOA. Altitudes for these two MOAs are 10,000 feet MSL to 17,999 feet MSL.
  - Meridian 2 MOA: The Meridian 2 MOA is located southwest of NAS Meridian in Mississippi. This MOA would be used by VT-

7 and VT-9 for air combat maneuvers (the primary MOA activity), instrument flights, familiarizations, formations, ground controlled intercepts, night vision goggle training, and to practice in-flight refueling (no fuel exchanged). Airspace for this MOA extends from 8,000 to 17,999 feet MSL.

## 2.5 LOCAL ECONOMIC IMPACTS AND POPULATION GROWTH

The military creates a stable and consistent source of revenue for the areas in which its installations are located and is not as heavily influenced by fluctuations in the economy as can be experienced by the private sector. The 2,900 military personnel, civilians, and dependents that work and/or live at NAS Meridian and the associated spending have a \$300 million contribution to the local and regional economies, making it the largest employer in eastern Mississippi (NAS Meridian 2011b).

According to NAS Meridian officials, the total military expenditures in Lauderdale and Kemper Counties in 2010 totaled over \$120 million (NAS Meridian 2012). This includes active and inactive duty military pay, military retirement and disability payments, civilian pay, and procurements. Other key economic sectors around NAS Meridian include healthcare, education, agriculture, and manufacturing.

NAS Meridian is approximately 15 miles northeast of downtown Meridian. The city of Meridian is the sixth largest city in Mississippi, and the principal city of the Meridian Metropolitan Statistical Area, which includes Clarke, Kemper, and Lauderdale Counties. In the 2000 Census, there were 106,569 residents in the Meridian area. In 2010, the population of the Meridian Metropolitan Statistical Area was reported by the U.S. Census Bureau (USCB) at 107,449 residents, showing a slight population increase. Population data and growth projections for the city of Meridian, Lauderdale and Kemper Counties, and the State of Mississippi are summarized in Table 2-3.

**Table 2-3. Population Data for Counties and Municipalities in the Vicinity of NAS Meridian**

Population Area	1990	2000	2010	2020	% Growth 2000-2010	% Growth 2000-2020
City of Meridian	41,036	39,968	41,148	53,925 <sup>a</sup>	+2.95	< +3.0 <sup>c</sup>
Lauderdale County	75,555	78,161	80,261	77,755 <sup>b</sup>	+2.68	-0.52
Kemper County	10,356	10,453	10,456	9,775 <sup>b</sup>	0.00	-6.48
State of Mississippi	2,573,216	2,844,658	2,967,297	3,160,850 <sup>b</sup>	+4.31	+11.11

Sources: NAS Meridian 2012, USCB 2010 (USCB 2020 Projections; and Census 2010, 2000, 1990)

Notes:

<sup>a</sup> City of Meridian 2009. *Comprehensive Plan of the City of Meridian*. Dated 2004, revised 2009.

<sup>b</sup> Center for Policy Research and Planning, Mississippi Institutions of Higher Learning, September 2008.

<sup>c</sup> NAS Meridian 2012.

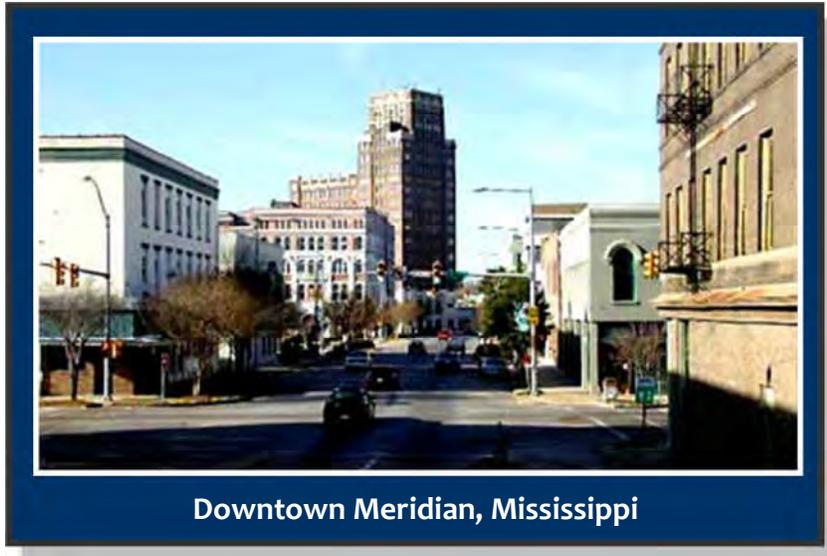
Key:

- Indicates a negative growth rate.

+ Indicates a positive growth rate.

The city of Meridian, as well as Lauderdale County as a whole, grew modestly between 2000 and 2010. In Lauderdale County, growth has been focused more to the west toward the community of Collinsville. The growth outside the city and within Lauderdale County boundaries suggests the outward spread of the population into unincorporated areas. This growth may indicate a shift of population away from the city core and into outlying areas and areas closer to NAS Meridian.

Meridian's recent growth pattern is to the north along Highway 39 and US-45. While the total population of Meridian has fluctuated over the past two decades, the city is projected to grow in the coming decades; however, this may be due to the city's recent annexation of unincorporated county areas south of the base which could accelerate the northward spread of growth. While not probable due to existing voting districts, the annexation of more land outside existing corporate limits is possible, especially with Meridian beginning to surround the town of Marion, thereby creating an opportunity for continued northward annexation.



Overall, Mississippi has experienced steady population growth over the past two decades, which reflects the broader growth trends of the “Sunbelt” that are projected to continue. This local and regional level growth has begun to impact and may continue to impact NAS Meridian in terms of new developments around the installation that are incompatible with aircraft operations. A discussion of local and regional compatibility issues is provided in Chapter 6 of this AICUZ Study.