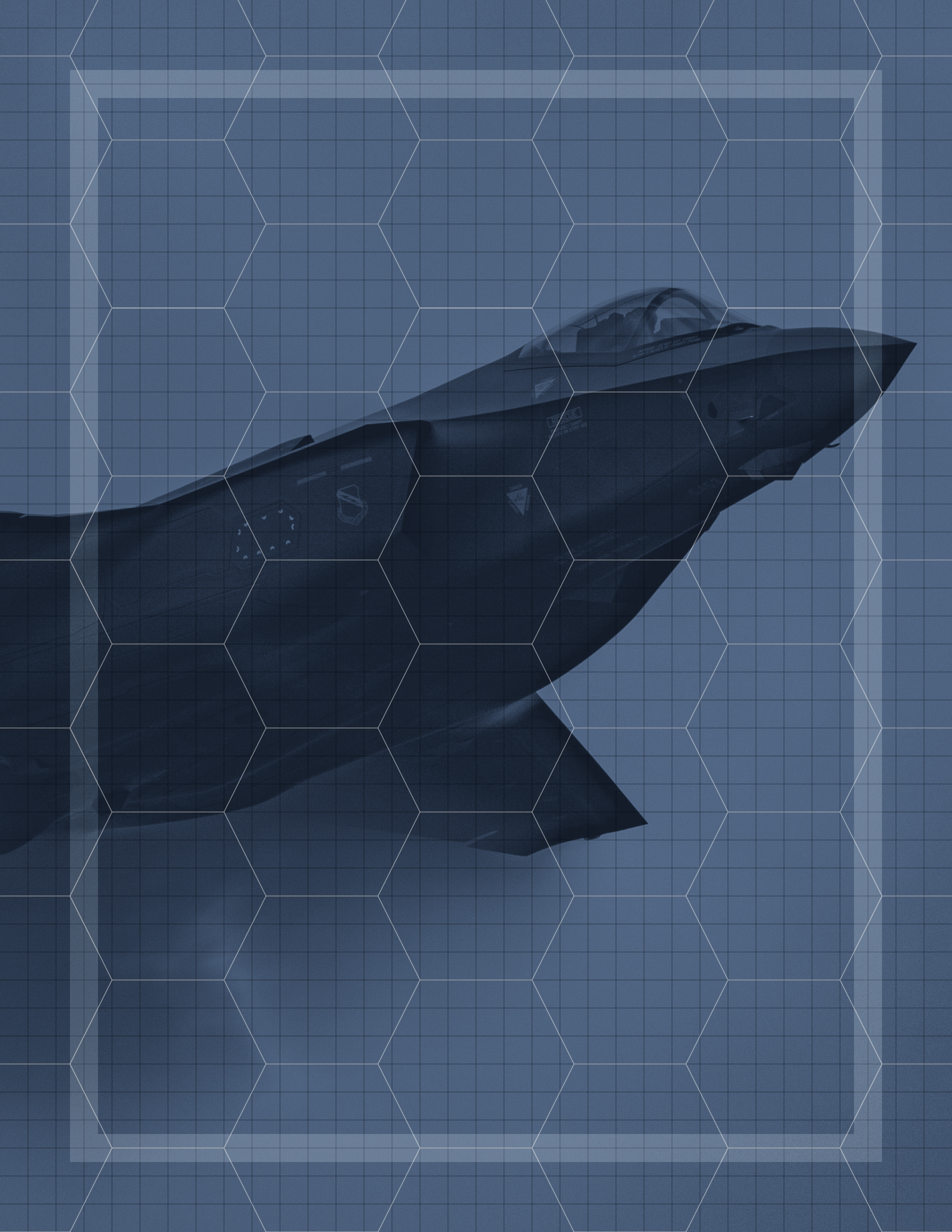
AIR INSTALLATIONS COMPATIBLE USE ZONES STUDY

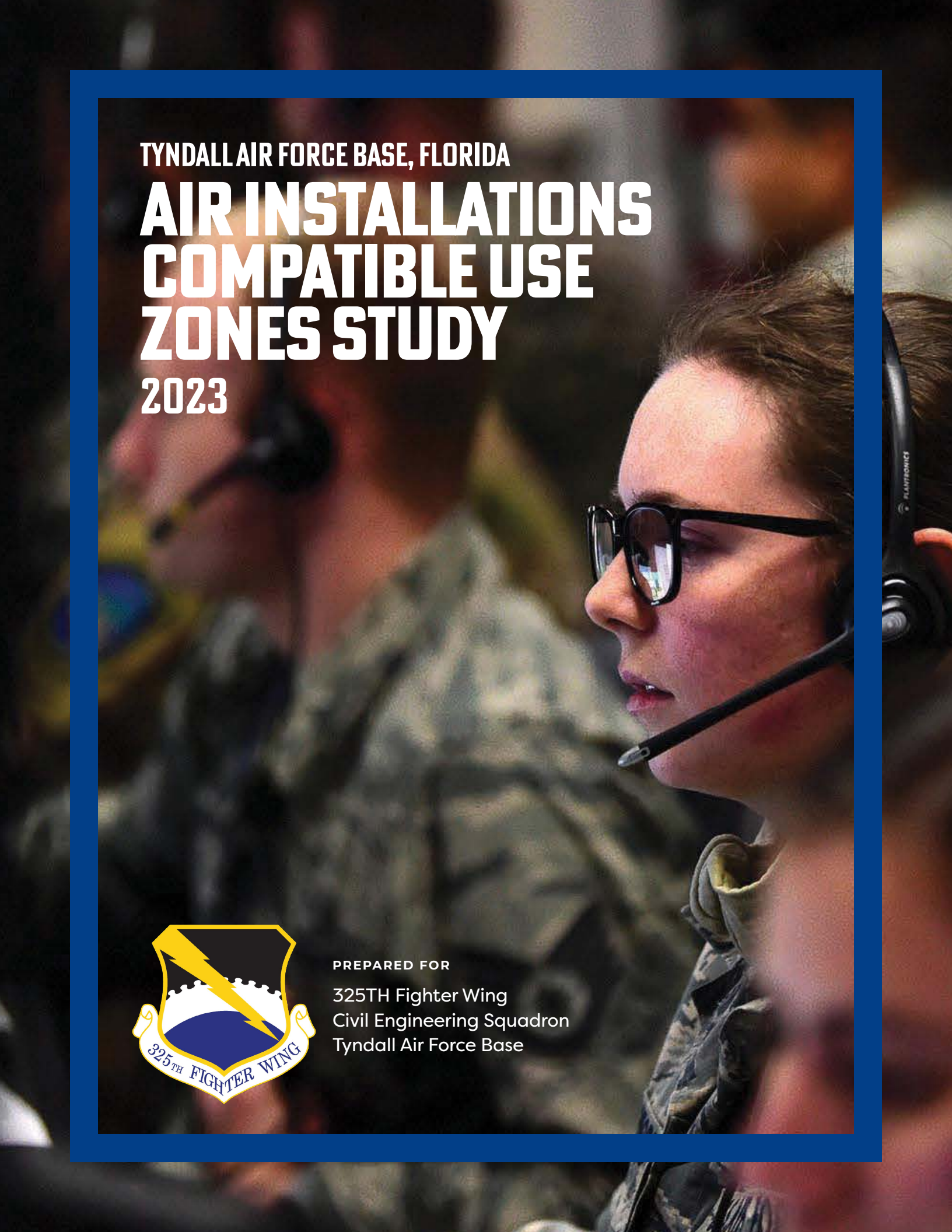
2023

U.S. AIR FORCE

Tyndall

AIR FORCE BASE





TYNDALL AIR FORCE BASE, FLORIDA

AIR INSTALLATIONS COMPATIBLE USE ZONES STUDY

2023

PREPARED FOR

325TH Fighter Wing
Civil Engineering Squadron
Tyndall Air Force Base

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

MEMORANDUM FOR AREA GOVERNMENTS

SUBJECT: Air Installations Compatible Use Zones (AICUZ) Study

1. The 2023 Tyndall Air Force Base (TAFB) AICUZ Study is an update of the 2016 TAFB AICUZ Study. The Air Force initiated the update to incorporate changes from the forthcoming beddown of F-35 aircraft, changes to municipal land use and zoning data, anticipated future development surrounding the installation and the introduction of the Hazards to Aircraft Flight Zone (HAFZ) area of consultation. The AICUZ study is a reevaluation of military operational noise and safety zones. The Air Force provides this AICUZ study to aid in the development of local planning mechanisms that will protect public health, safety and welfare of surrounding communities while preserving the operational capabilities of TAFB.

2. The AICUZ study contains a description of the affected areas around the installation. It outlines the location of runway Clear Zones (CZs), Accident Potential Zones (APZs) and the operational noise footprint. The study also provides recommendations for development that are compatible with military operations. It is our recommendation that local governments incorporate these recommendations into community plans, zoning ordinances, subdivision regulations, building codes and other related documents.

3. This update provides noise contours based upon the Day-Night Average Sound Level (DNL) metric and utilizes planning noise contours that reflect the incoming F-35 mission at TAFB. Long range planning by local land use authorities involves strategies to influence present and future land use. Due to the long-range nature of planning, the Air Force provides planning noise contours based on reasonable projections of future missions and operations. AICUZ studies using planning contours provide a description of the long-term (5- to 10-year) aircraft noise environment for projected aircraft operations that are more consistent with the planning horizon used by state, tribal, regional and local planning bodies.

4. Tyndall AFB greatly values the positive relationship it has experienced with its neighbors. The installation has minimized flights over heavily populated areas, schools, hospitals and other noise-sensitive areas where possible to reduce noise impacts. The Air Force appreciates and values the cooperation of all community stakeholders in the collaborative implementation of the recommendations and guidelines presented in this AICUZ study update.

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GEORGE R. WATKINS, Colonel, USAF
Commander

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ABBREVIATIONS AND ACRONYMS

ACC	Air Combat Command
ACS	Air Control Squadron
ADC	Air Defense Command
AETC	Air Education and Training Command
AFB	Air Force Base
AFH	Air Force Handbook
AFI	Air Force Instruction
AMXS	Air Force Maintenance Squadron
AICUZ	Air Installations Compatible Use Zones
APZ	Accident Potential Zone
ATC	Air Training Command
BASH	Bird/Wildlife Aircraft Strike Hazard
BDA	Bay Defense Alliance
CFR	Code of Federal Regulations
CONR	CONUS/NORAD (Continental United States/ North American Aerospace Defense Command) Region
CZ	Clear Zone
dB	Decibel
DNL	Day-night Average Sound Level
DoD	Department of Defense
DoDI	Department of Defense Instruction
DV	Distinguished Visitor
EIS	Environmental Impact Statement
EMI	Electromagnetic Interference
FAA	Federal Aviation Administration
FDSTF	Florida Defense Support Task Force
FW	Fighter Wing
FY	Fiscal Year
GIS	Geographic Information System
HAFZ	Hazards to Aircraft Flight Zone
HQ	Headquarters
Hz	Hertz
LED	Light-Emitting Diode
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NLR	Noise Level Reduction
NVG	Night Vision Goggles
OSS	Operational Support Squadron
PA	Public Affairs
REPI	Readiness and Environmental Protection Integration
SEADS	Southeast Air Defense Sector
SLUCM	Standard Land Use Coding Manual
TAC	Tactical Air Command
TAFB	Tyndall Air Force Base
USAF	United States Air Force
USAFADWC	United States Air Force Air Defense Weapons Center
USNORTHCOM	United States Northern Command
WEG	Weapons Evaluation Group
WHA	Wildlife Hazard Assessment

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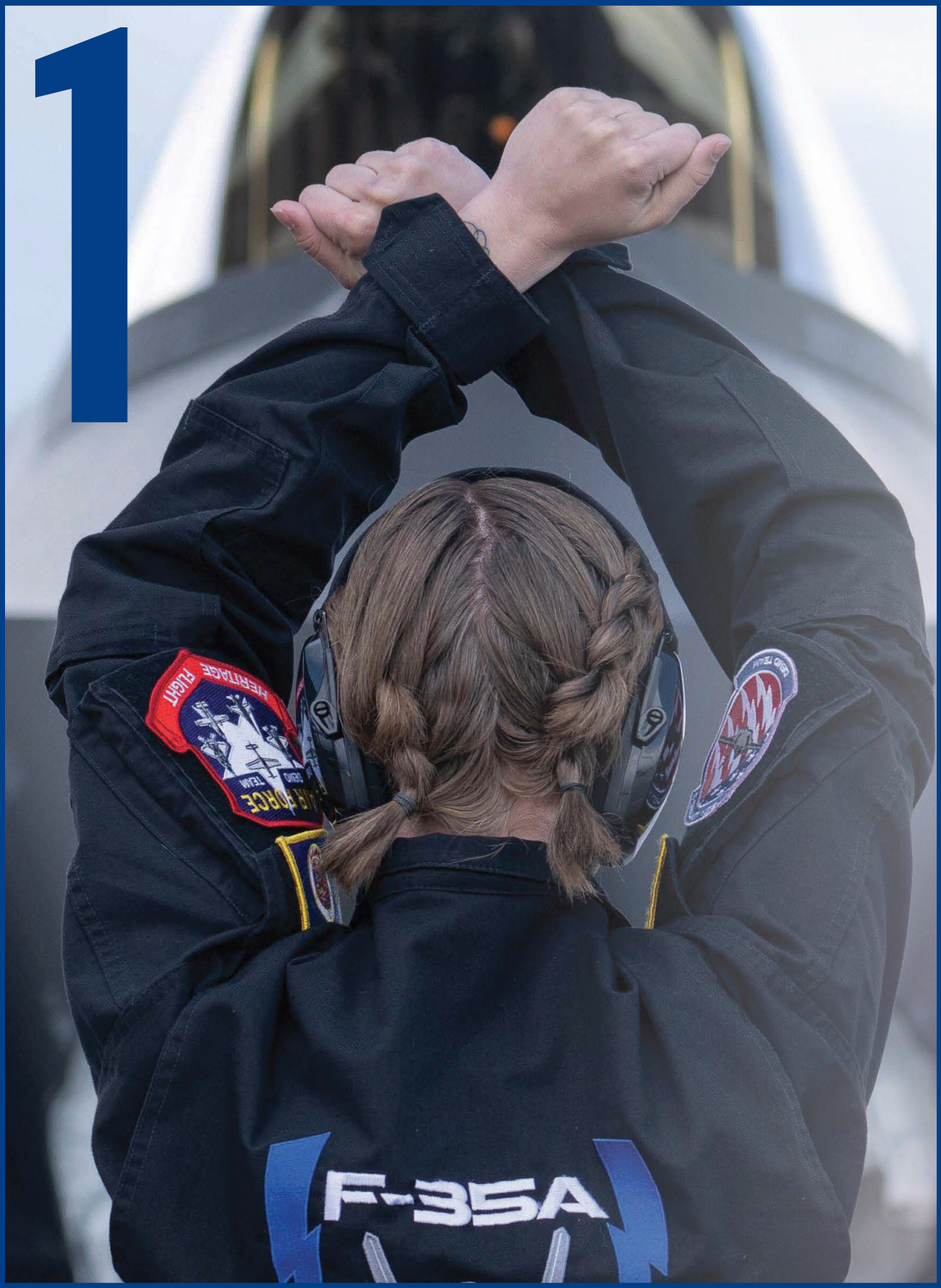


1 INTRODUCTION

The 2023 Tyndall Air Force Base (TAFB) Air Installations Compatible Use Zones (AICUZ) Study focuses on the flying missions at TAFB. This update presents and documents changes since the previous AICUZ study was released in 2016. It reaffirms the United States Air Force's (the Air Force's) policy of promoting public health, safety, and general welfare in areas surrounding an air installation while seeking development that is compatible with the defense mission. This study presents changes in flight operations since the previous study and provides 2023 noise contours and recommendations for compatible land use.

1.1 AICUZ Program

Military installations attract development; people who work on the installation want to live nearby, while others want to provide services to installation employees and residents. When incompatible development occurs near an installation or training area, affected parties within the community may seek relief through political channels that could restrict, degrade, or eliminate capabilities necessary to perform the defense mission. In the early 1970s, the Department of Defense (DoD) established the AICUZ Program. The goal of the program is to protect the health, safety, and welfare of those living and working near air installations while sustaining the Air Force's operational mission. The Air Force accomplishes this goal by promoting proactive, collaborative planning for compatible development to sustain its mission and meet community objectives.

The AICUZ Program recommends that local land use agencies incorporate noise zones, Clear Zones (CZs), Accident Potential Zones (APZs), and Hazards to Aircraft Flight Zones (HAFZs) associated with military operations into local community planning programs to maintain the airfield's operational requirements while minimizing the impact to residents in the surrounding community. Cooperation between military airfield planners and their community-based counterparts serves to increase public awareness of the importance of air installations and the need to address mission requirements and associated noise and risk factors in the public planning process. As the communities that surround airfields grow and develop, the Air Force has the responsibility to communicate and collaborate with local governments on land use planning, zoning, and similar matters that could affect the installation's operations or missions. Likewise, the Air Force has a responsibility to understand and communicate potential impacts that new and changing missions may have on the local community.

"The goal of the program is to protect the health, safety, and welfare of those living and working near air installations while sustaining the Air Force's operational mission."

1.2 Scope and Authority

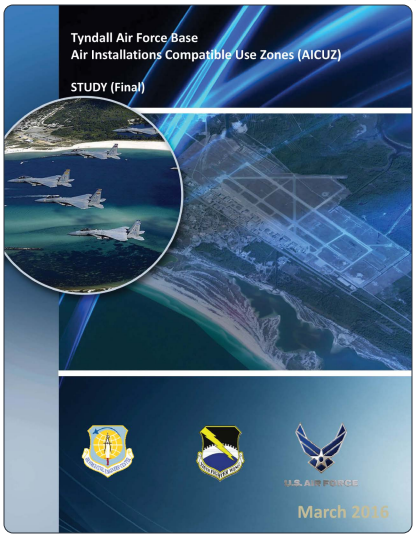
1.2.1 Scope

The Air Force provides TAFB's CZs, APZs, and noise zones associated with the airfield's runways to the local communities, along with recommendations for compatible land use near the installation, for incorporation into comprehensive plans, zoning ordinances, subdivision regulations, building codes, and other related documents.

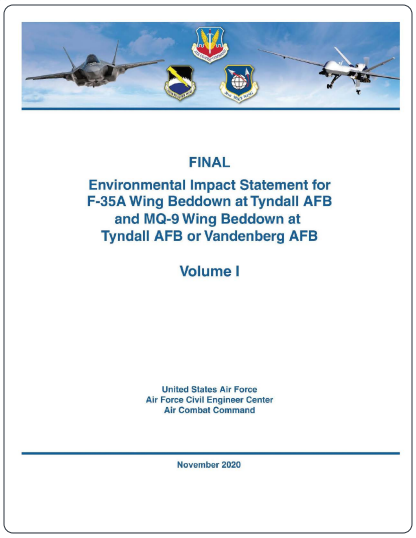
1.2.2 Authority

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

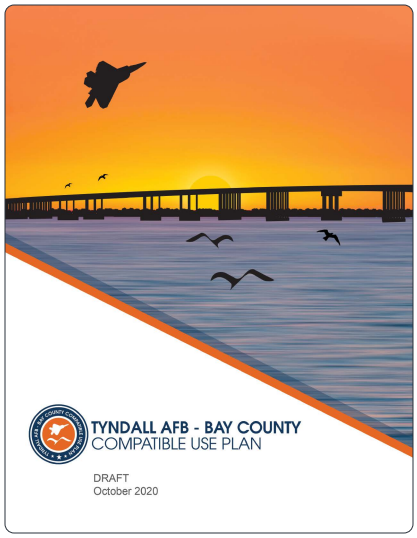
- **Air Force Instruction (AFI) 32-1015,** *Integrated Installation Planning,* implements Department of Defense Instruction (DoDI) 4165.57, Air Installations Compatible Use Zones, and applies to all Air Force installations with active runways located in the United States and its territories. This AFI established the program objectives and responsibilities.
- **Air Force Handbook (AFH) 32-7084,** *AICUZ Program Manager's Guide,* provides installation AICUZ Program managers with specific guidance concerning the organizational tasks and procedures necessary to implement the AICUZ Program. The handbook is written in a "how-to" format and includes the land use compatibility tables used in AICUZ studies.



Tyndall AFB Air Installations Compatible Use Zones Study, 2016



Final Environmental Impact Statement (EIS) for F-35A Wing Beddown at Tyndall AFB and MQ-9 Wing Beddown at Tyndall AFB or Vandenberg AFB, 2020



Tyndall AFB–Bay County Compatible Use Plan, 2021

1.3 Previous AICUZ Efforts and Related Studies

Previous studies relevant to this AICUZ study include:

- *Tyndall AFB Air Installations Compatible Use Zones Study, 2016*
- *Final Environmental Impact Statement (EIS) for F-35A Wing Beddown at Tyndall AFB and MQ-9 Wing Beddown at Tyndall AFB or Vandenberg AFB, 2020*
- *Tyndall AFB–Bay County Compatible Use Plan, 2021*

1.4 Changes that Require an AICUZ Study Update

This 2023 TAFB AICUZ Study replaces the 2016 TAFB AICUZ Study. It provides the installation's flight tracks, CZs, APZs, and noise contour information, and presents future military activities. The AICUZ Program allows surrounding communities to consider both current and potential activities when making land use decisions.

As the DoD aircraft fleet mix and training requirements change over time, the resulting flight operations change as well. These changes can affect noise contours and necessitate an AICUZ study update. Additionally, non-operational changes, such as changes to noise modeling methods and a local community's land use, may also require the need for an update. The primary changes occurring since the previous 2016 TAFB AICUZ Study that, in part, necessitate this update include:

- **Final EIS for F-35 Wing Beddown at Tyndall AFB.** Pursuant to the National Environmental Policy Act (NEPA), the Air Force signed a Record of Decision for the Final EIS for the F-35A Wing Beddown at TAFB and the MQ-9 Wing Beddown at either TAFB or Vandenberg AFB. Specifically, the Air Force decision was to implement the beddown of 72 F-35 aircraft at TAFB. As part of that action, the Air Force also deferred a decision on the proposed MQ-9 Wing beddown at TAFB or Vandenberg AFB. This decision to beddown the aircraft at TAFB was based on information, analyses, and public and agency comments contained in the Final EIS, as well as other relevant factors.

- **Changes related to Hurricane Michael/ TAFB "Installation of the Future."** In October 2018, TAFB was hit by a Category 5 hurricane, which resulted in damage to nearly 100 percent of the base's assets. Before the hurricane, the airfield supported multiple missions for both U.S. armed forces and foreign military forces, in addition to supporting the 325TH Fighter Wing (FW) mission. Following the hurricane and during the ongoing reconstruction of the base, there has been no fighter flying mission at TAFB. However, as it rebuilds, TAFB is now in a position to implement several long-range planning objectives from its Installation Development Plan and its 21st Century Installation Concepts. The rebuilding of TAFB as the "Installation of the Future" is underway, with initial planning to fund major investments moving forward. Several existing missions will continue, while others will move to different locations. In conjunction with the TAFB rebuild and the beddown of the F-35 aircraft mission discussed previously, TAFB is progressing toward becoming fully operational and welcoming F-35 aircraft beginning in September 2023. Therefore, now is an ideal time to conduct an AICUZ study update to evaluate the evolving mission at the base and its relationship to the communities surrounding TAFB.
- **Changes to AICUZ AFI and AFH.** AFI 32-1015, Integrated Installation Planning, and AFH 32-7084, AICUZ Program Manager's Guide, were published after the previous 2016 TAFB AICUZ Study had been released.

2

Ghost Crab on Crooked Island in Tyndall Air Force Base, Florida.

2 TYNDALL AIR FORCE BASE, FLORIDA

2.1 Location

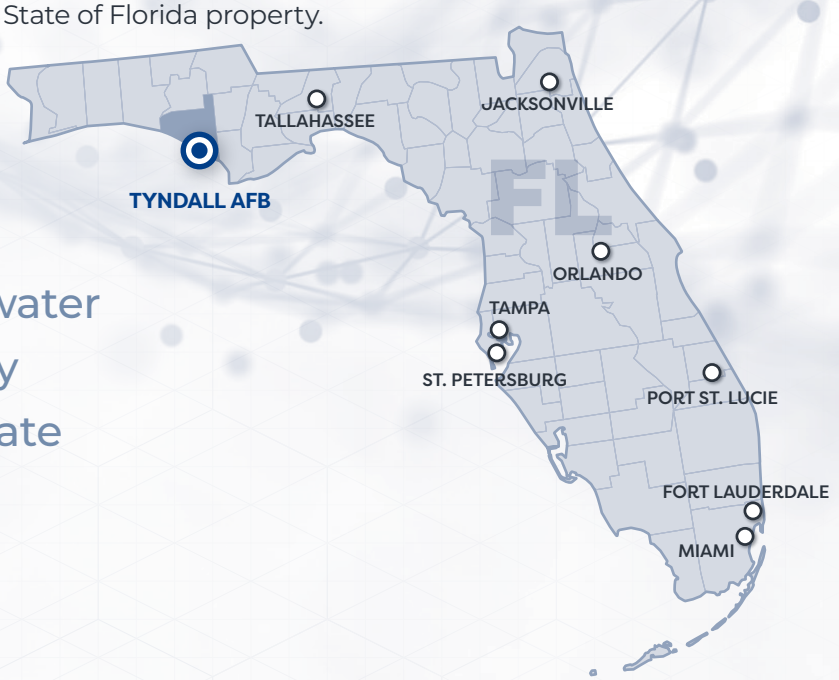
TAFB is located in the Florida Panhandle in Bay County, Florida, across Saint Andrew Bay from the City of Panama City, Florida. From a regional perspective, TAFB is separated from several other municipalities located to its north and east by Saint Andrew Bay and East Bay. The cities of Parker, Callaway, and Springfield are located approximately 10, 12, and 15 miles, respectively, to the northeast of TAFB. The City of Panama City Beach is approximately 30 miles northwest of the base. The City of Mexico Beach and portions of unincorporated Bay County are located to the south of the installation. Barrier Islands, St. Andrew Sound and the Gulf of Mexico comprise TAFB's entire western boundary.

TAFB contains approximately 29,069 acres of land (see Figure 2-1). Access to the base from the north is gained via DuPont Bridge across South Tyndall Parkway (U.S. 98) which runs northwest to southeast.

In preparing the TAFB AICUZ Study several variances were noted (between the base's property line based on the data supplied by Bay County and the property line based on the) data within the TAFB Common Installation Picture (CIP) dataset. Areas highlighted in the inset map on the next page show a more constricted base boundary in certain locations in the CIP data than what is contained in the County dataset.

Feedback from the TAFB Real Property Officer on these variances indicated that while the Air Force technically still owns (through deeds) these lands that are shown in the County data but not In the CIP data, over the years these areas have eroded and become submerged or tidal areas, which by State law (see inset), become State of Florida property.

In 1977, Florida enacted the "Florida Coastal Mapping Act of 1974," stipulating the high mean water line is the dividing boundary between land owner and state sovereign lands.



While there is a decrease in total acreage for TAFB as a result of this, there is no impact to the Air Force mission as the land between high/low mean water lines are tidal and unbuildable. In the future, if these lands accrete back above the high mean water line and become usable, then the Air Force can use as necessary.

The U.S. Census indicates Bay County's population has grown over the past 10 years from 168,852 in 2010 to 175,216 in April 2020. The cities surrounding TAFB are small in size, with the largest being the City of Panama, with a population of 32,939.

2.2 History

In December 1940, a U.S. War Department site board decided to establish Flexible Gunnery School No. 9 just 12 miles southeast of Panama City, Florida, on the East Peninsula. On May 6, 1941, Army leadership and local dignitaries held an official ground-breaking ceremony for the school.

The school still required a name even though construction was well underway. Congressman Bob Sikes suggested naming the school Tyndall Field, in memory of Lieutenant Francis B. Tyndall, a native of Sewall Point, Florida, and a fighter pilot during World War I credited with shooting down four German planes well behind enemy lines in 1918. Following the war, Tyndall served as a test pilot. On July 15, 1930, flying near Mooresville, North Carolina, Tyndall's plane crashed, killing him instantly.

When World War II ended, Tyndall Field entered a period of demobilization, as did most Army air units. In 1948, the newly organized DoD placed TAFB under the control of Tactical Air Command (TAC). This designation only lasted three months before the base became part of Air University as well as the home for the Air Tactical School.

On September 1, 1950, in response to the invasion of South Korea, the Air Force ceased Air Tactical School operations at TAFB and transferred control of the base to Air Training Command (ATC). ATC established several schools, including Weapons Controller, United States Air Force (USAF) Air Police, and USAF Instrument Instructor Pilot schools. On January 4, 1951, ATC began aircrew (interceptor) training at TAFB using F-86, F-89, and F-94 aircraft. This relationship with ATC lasted until July 1, 1957, when TAFB became part of the Air Defense Command (ADC), an association that continued for more than 22 years. In 1967, ADC established the USAF Air Defense Weapons Center (USAFADWC) to test, train, and evaluate weapons and tactics in defending the U.S. against long-range Soviet bombers.

During its tenure with ADC, TAFB became a weapons center, evaluating the effectiveness of ADC fighter interceptor squadrons and conducting drone target, guidance, navigation aid, and high-altitude operations and training. The base extended its runway in 1957 and 1958 and began providing aircrew transition training for F-101, F-102, and F-106 aircraft in 1962. In 1958, the base hosted its first USAF air-to-air weapons meet, known as William Tell. Operations tempo forced a hiatus in these meets from 1996 until 2004, when the last William Tell competition was held.

In June 1941, the War Department officially named Tyndall Army Air Field after Lieutenant Francis B. Tyndall.

Tyndall AFB Groundbreaking.

TAFB's second association with TAC began on October 1, 1979, when Headquarters (HQ) USAF established the USAF Interceptor Weapons School at TAFB. Students honed their interceptor skills with the help of the newly installed Air Combat Maneuvering Instrumentation system. Over the next few years, modernization, upgrades, and reorganization were key components of TAFB's mission.

A major reorganization occurred on July 1, 1981, when TAC activated the 325TH Fighter Weapons Wing to provide the USAFADWC with operational and technical advice on air defense tactics. The wing was re-designated the 325TH Tactical Training Wing in 1983. The wing began its mission at TAFB with F-101, F-106, and T-33 aircraft. The wing phased out the F-101 and F-106 between 1981 and 1983 in preparation for the arrival of TAFB's first F-15 aircraft in 1983. The last T-33 finally departed in 1988.

Air Defense Weapons Center
F-106 Delta Dart on Takeoff.

Over the years, TAFB gained additional missions as other units came to the base. For example, the Air Force Engineering and Services Center came into being at TAFB in 1978. In 1991, HQ USAF renamed it the Air Force Civil Engineer Support Agency (AFCESA). Also in 1978, TAFB's air combat maneuvering instrumentation system became operational. In 1982, the 23rd Air Division (later renamed the Southeast Air Defense Sector (SEADS), which had responsibility for the air defense of the southeastern United States, established its headquarters at TAFB. In 1986, SEADS' parent organization, the CONUS/NORAD Region (CONR), was established at TAFB.

The base underwent another reorganization in 1991 under the DoD effort to streamline defense management when the USAFADWC inactivated and Headquarters, First Air Force moved from Langley Air Force Base, Virginia, to TAFB. The 325TH Tactical Training Wing was redesignated a fighter wing and became the installation host unit on September 1, 1991.

Change continued in 1992, when HQ USAF inactivated TAC and TAFB became an Air Combat Command (ACC) base for a short period. On July 1, 1993, HQ USAF transferred TAFB to the Air Education and Training Command (AETC) under Nineteenth Air Force as training remained TAFB's primary mission.

In response to the terrorist attacks on September 11, 2001, First Air Force began protecting U.S. airspace through Operation Noble Eagle. U.S. Northern Command (USNORTHCOM) was established in Colorado Springs, Colorado, for homeland defense with Air Forces Northern, based at TAFB, assuming control of the air component.

On September 26, 2003, the 325TH FW became the "Home of Air Dominance Training" with arrival of its first F-22 Raptor. TAFB was the first AFB to receive and employ the F-22 in an operational training capacity. As USAF needs continue to evolve, "Team Tyndall" stands committed to defending the interest of the United States through training, detection, and deterrence.

In November 2008, a Missouri Air National Guard F-15 broke up in mid-air, resulting in the extended grounding of the 325 FW's F-15 aircraft. Resulting F-15 inspections hastened the departure of the F-15s from TAFB, and by October 1, 2010, all F-15s had departed and both F-15 squadrons were inactivated. In July 2010, USAF notified the 325TH FW that it would receive an operational F-22 squadron from Holloman AFB, New Mexico, and convert from AETC to ACC. The transfer of the wing to ACC occurred on October 1, 2012. The 325TH Air Control Squadron (ACS) was redesignated as the 337TH ACS and aligned under the 33RD Fighter Wing at Eglin AFB, Florida (AETC).

› Future "Home of Air Dominance Training."

In October 2018, soldiers from the 46th Engineer Battalion move tree debris at TAFB after Hurricane Michael swept through the area.


2-5

TAFB TODAY

Perhaps the event that caused the most profound change to TAFB since its inception was the 2018 storm known as Hurricane Michael. This Category 5 storm, with winds over 160 mph, produced more than $4.8 billion in damage to facilities, housing, equipment, and personal possessions at the base.

Through immediate responses of Task Forces Harp and Phoenix (Task Force Harp is focused on the base's most important asset, its people, and Task Force Phoenix is responsible for infrastructure), the base slowly reemerged from its ruins. Upon return, 325TH Operations Group flight operations and most of the 325TH Maintenance Group activities resumed at Eglin AFB. The F-22 aircraft were fair-shared across several bases.

Today, TAFB is being rebuilt to not only support standard base functions but is under planning, reconstruction, and upgrade to become the “Installation of the Future” for support of the 325TH FW mission and F-35 aircraft and operations.

Tyndall Air Field, Circa WWII

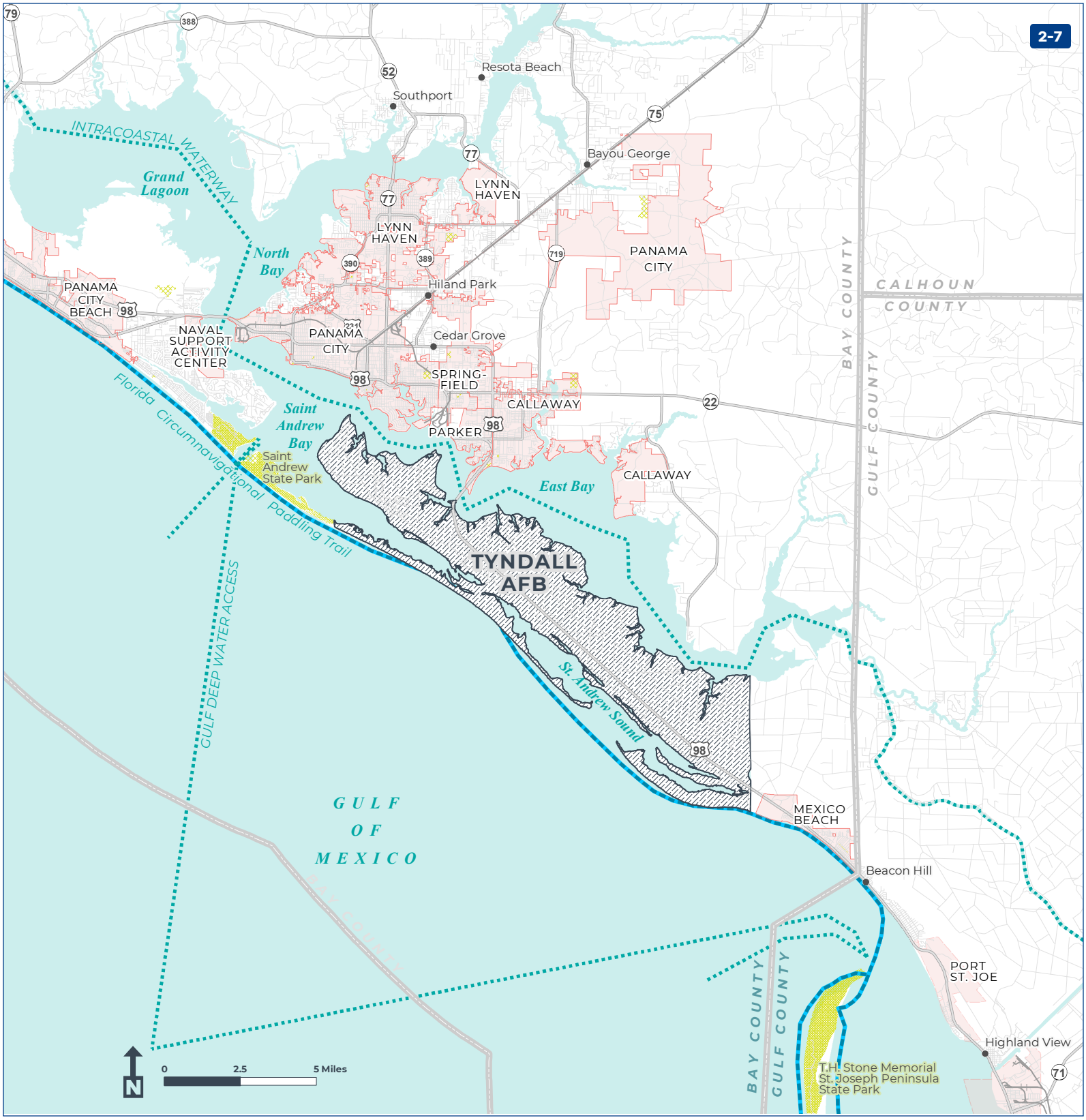


Figure 2-1 Regional Setting

2.3 Mission

TAFB's primary mission is to develop resourceful and resilient Airmen trained to project unrivaled combat Airpower for America!

2.4 Host and Tenant Organizations

TAFB is home to the 325TH FW, a subordinate unit of 15th Air Force (previously 9th AF) and the ACC. The 325TH is host to 19 tenant organizations from multiple major commands and across several military mission sets. The 325TH FW is composed of the 325TH Operations Group, 325TH Maintenance Group, 325TH Mission Support Group, and 325TH Medical Group. Following are descriptions of some of these groups and some of the major tenant organizations operating at TAFB:

325TH FW. The 325TH FW is host to 19 tenant organizations from multiple Major Commands and across several military mission sets located at Tyndall Air Force Base, FL. The wing is comprised of the 325TH Operations Group, 325TH Maintenance Group, 325TH Mission Support Group and 325TH Medical Group.

The F-35 is the 325TH FW's new mission; its personnel will manage the southeastern air combat maneuvering instrumentation range and provide mission-ready F-35 air dominance forces in support of the Commander, North American Aerospace Defense Command/First Air Force contingency plans.

325TH Operations Support Squadron (OSS). The 325TH OSS is one of four squadrons assigned to the 325TH Operations Group, 325TH FW at TAFB. The squadron provides support at TAFB to USAF, Air National Guard, and Air Force Reserve F-22 Raptor pilots. The 325TH OSS also controls air traffic, manages the airfield complex, and provides weather support. Additionally, the 325TH OSS schedules sorties in more than 3,400 square miles of Air Combat Maneuvering Instrumentation training ranges for more than 4,000 sorties annually involving local and temporary duty units. The squadron also trains air traffic controllers. Members of the squadron provide operations scheduling, weapons and tactics training, life support training, water survival training, weather observation and forecasting, and air traffic control service to over 160,000 civilian, commercial, and military

operations annually in the Tyndall-Panama City, Florida, terminal area. Additionally, the squadron manages the airfield, airspace, programmed flying training, wing flying hour program, flight records, and manpower for the 325TH Operations Group commander.

325TH Training Support Squadron. The 325TH Training Support Squadron manages training resources and conducts unrivaled academic and realistic simulator training to produce America's Air Dominance Team of pilots, air battle managers, and intelligence officers for worldwide assignment. This highly specialized unit is assigned to the 325TH Operations Group, 325TH FW.

337TH Air Control Squadron. The 337TH Air Control Squadron is assigned to the 33D Operations Group, 33D Fighter Wing, Eglin Air Force Base, FL. The Air Control Squadron is located at TAFB, FL. The squadron's mission is to build professional battle management warriors for the U.S. Air Force, Air National Guard and Air Force Reserve. The squadron trains officers to become Air Battle Managers who will synchronize weapons, sensors, and fuel to meet the Commander's intent. Additionally, the squadron trains international military officers on the USAF's techniques for command and control of combat air operations while fostering relationships with allied nations through open dialog regarding professional differences, doctrine, and culture.

53D Test Support Squadron. The 53D Test Support Squadron is responsible for technical and staff functions for the 53 Weapons Evaluation Group (WEG). The squadron's primary mission is to support the Air Force's air-to-air and air-to-ground operational weapons test programs to include the Weapons System Evaluation Program and other DoD operational and developmental tests. The squadron enables over 20 aerial target configurations by providing various electronic attack pods and expendable countermeasures. These target configurations are designed to test current and emerging weapons systems for all DoD agencies. They also provide technical, engineering, acquisition, logistics, and strategic planning support for all units in the 53 WEG, including program management of all Gulf Range air-to-air systems, range control systems, aerial target (both full-scale and subscale) systems, data analysis telemetry, and communications systems. Lastly, the squadron supports 53 WEG flight operations by providing scheduling coordination with all users of the Gulf Range complex.

801ST RED HORSE Training Squadron. Detachment 1 823 Red Horse Squadron was activated on Aug 3, 1993, the same date the Silver Flag Exercise Site was officially opened. This move transferred responsibility of the contingency training mission from AFESC and Eglin AFB. The unit will become 801 RHTS, which establishes a new official unit lineage-but Detachment 1 823 Red Horse Squadron executed the mission on TAFB for over 28 years.

44TH Fighter Group. The 44TH Fighter Group is a classic association partnered with the 325TH FW, as well as a subordinate unit under the 301ST FW, Naval Air Station Fort Worth Joint Reserve Base, Texas. The unit's mission involves fifth-generation aircraft and adversary aircraft. The squadrons within the 44TH Fighter Group are the 44TH Maintenance Squadron, 301ST Fighter Squadron, and the 44TH Aerospace Medical Flight.

First Air Force. With its headquarters at TAFB, First Air Force (Air Forces Northern) is one of three numbered air forces assigned to Headquarters Air Combat Command. It has sole responsibility for ensuring the aerospace control and air defense of the continental United States, U.S. Virgin Islands, and Puerto Rico. As the Continental U.S. Region for NORAD, the bi-national North American Aerospace Defense Command, CONR provides air defense in the form of airspace surveillance and airspace control. First Air Force is also the designated air component for USNORTHCOM, whose area of responsibility includes the continental United States, Alaska, Canada, and Mexico, and their air, land, and maritime approaches.

2.5 Airfield Environment

Located in the center of the installation and east of U.S. Highway 98, the TAFB airfield (Figure 2-2) includes, but is not limited to, aircraft hangars for maintenance and storage, aircraft taxiways, two hard-surface runways, assorted office buildings, and ramp space for engine run ups and other support facilities. A drone runway is also located to the south of the main portion of the airfield.

A runway is typically used in both directions and counted as two separate runways, depending on the direction of the departure. Each direction is labeled as a separate runway and numbered based on its magnetic heading, divided by 10 and rounded to a whole number. Parallel runways have the same heading and are distinguished by the suffix "L" for "left," "C" for "center," and "R" for "right," as applicable.

As shown in Figure 2-2 and 2-3, TAFB has two main runways and a drone runway to the south of the base, primarily used for drone operations. The main runways are parallel and are both oriented to a magnetic heading of 14/32 (138°-318°). Runway 14L/32R is 10,000 feet long and 200 feet wide, and Runway 14R/32L is 9,170 feet long and 150 feet wide. Although there are only two paved rectangular areas for aircraft landing and takeoff, they represent four named runways (see inset). Additionally, Runway 01/19 is located on the southeastern portion of the base and is primarily used for Remotely Piloted Aircraft operations. This runway is 7,000 feet long and 150 feet wide. The airfield elevation is 17 feet above mean sea level (MSL).

Prior to Hurricane Michael, TAFB had a total of 282 buildings, with a total area of approximately 3.1M square feet. Most, if not all, of these buildings were destroyed or damaged in some manner by the hurricane. Uses of these buildings varied and included buildings for vehicle fueling; general operational support; training; administrative tasks; supply storage; aircraft maintenance; and research, development, test and evaluation, among others. The aircraft hangars and parking areas are located to the west of the runways. TAFB also possesses a hush house, which is an enclosed structure for jet-engine testing that includes the ability to suppress the noise generated by engine runs, also located to the west of the runways.

Damage from the hurricane occurred throughout the base (i.e., the flightline area, Silver Flag Area, and the overall support area), requiring demolition of 268 existing facilities. However, the damage created by the storm also presented an opportunity to rebuild TAFB and take on new missions. TAFB is presently being rebuilt to house three squadrons of F-35 aircraft. Projects are planned to completely recover mission capabilities. Planned actions include construction of new facilities and infrastructure, renovations, consolidation, and demolition as well as management of natural resources to restore mission capabilities. These projects are divided into 28 individual projects spanning six planning areas across the installation (see www.TyndallIFS.com).

Figure 2-2 TAFB Airfield Diagram—Main Runways

Figure 2-3 TAFB Airfield Diagram—Drone Runway

2.6 Local Economic Impacts

The military provides direct, indirect, and induced economic benefits to local communities through jobs and wages. Benefits include employment opportunities and increases in local business revenue, property sales, and tax revenue.

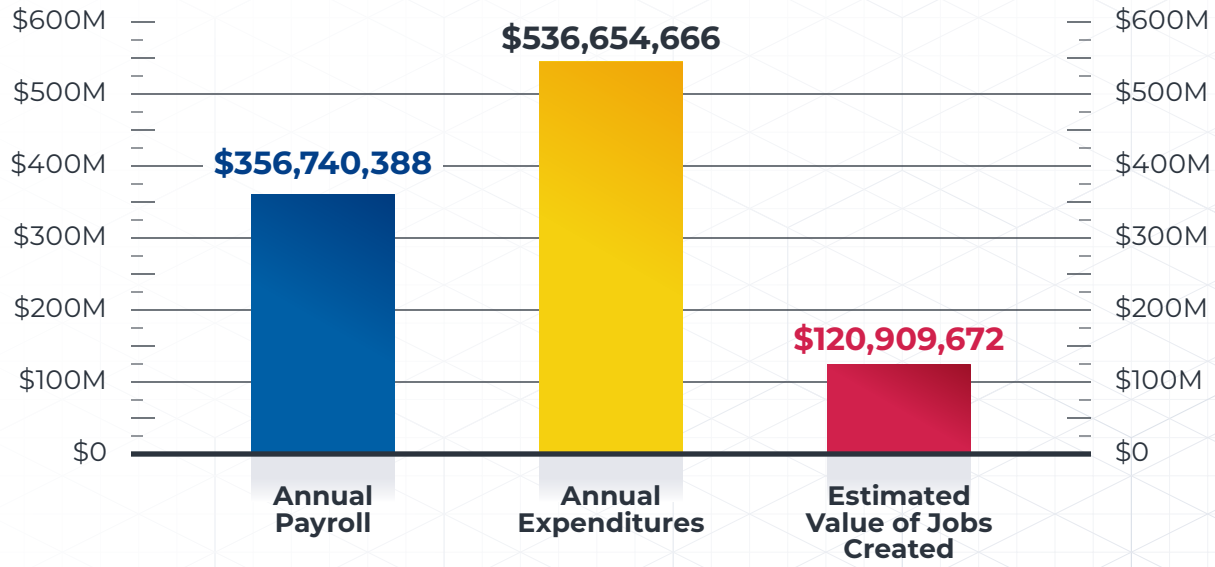
TAFB's economic impact makes it enormously important for this region of Florida and to the local municipalities within the vicinity of TAFB.

The economic impact of a military installation is based on annual payroll (jobs and salaries), annual expenditures, and the estimated annual dollar value of the jobs created. The military further contributes to the economic development of communities through increased demand for local goods and services and increased household spending by military and civilian employees.

Lori Wallace Gleason, left, and John Pierce Scott, right, pose for a photo at Tyndall Air Force Base, Florida, Oct. 1, 2020. Scott, a veteran of World War II, toured the base with his granddaughter.

TAFB is a hugely impactful economic engine in Bay County and the local community and region, contributing more than $1.014 billion in total economic benefit to local communities in fiscal year (FY) 2021. This total includes payroll of over $350 million and total expenditures of over $535 million (See Figure 2-4). This level of economic impact makes the base's economic footprint enormously important for this region of Florida and to the local municipalities within the vicinity of TAFB.

Figure 2-4 TAFB Total Economic Impact, FY 21



ECONOMIC IMPACT FOR FISCAL YEAR 2021

$1,014,000,000

Total Economic Benefit to Bay County and Local Communities

In 2021, TAFB supported a total of 9,774 individuals, the largest group consisting primarily of active-duty military dependent personnel (5,328 individuals). Other personnel comprising the base include reserve personnel, military dependents, civil service personnel, and other civilians (see Table 2-1).

Table 2-1 TAFB Personnel Totals, FY 21

Personnel	Total
Appropriated Fund Military (Active Duty, Air National Guard/Reserve Permanent Party, Traditional Guard/Reserve (Drill Status Guard), International Active Duty	2,902
Active-Duty Military Dependents	5,328
Appropriated Fund Civilians (General Schedule, Federal Wage Grade, Defense Commissary Agency, Postal)	809
Non-Appropriated Fund (NAF), Contract Civilians, Private Businesses, Civilian Base Exchange, Civilian NAF, Contract Civilians, and Branch Banks/Credit Union	735
Sub Total	**9,774**
Military Retirees	10,380
Military Retiree Dependents	2,277
Sub Total	**12,657**
Total Personnel Including Dependents, Retirees, and Retiree Dependents	**22,431**

Source: TAFB Department of Comptroller, Fiscal Year 2021, Economic Impact Analysis, Tyndall AFB.

Wages, salaries, and employee benefit costs are the leading indicators of economic health of a region. Higher wages mean more buying power and economic stability. A categorization of total payroll for TAFB, which exceeds $356 million, is shown in Table 2-2. The greatest contributor to the payroll total is the Appropriated Military Fund, with a contribution of over $229 million. The remaining amounts that comprise the gross annual payroll include the Appropriated Civilian Fund, Non-Appropriated Fund, Contract Civilian, and Private Businesses.

Table 2-2 TAFB Annual Payrolls by Classification, FY 21

Appropriated Fund Military	Total ($)
Active-Duty	196,468,140
Air Force Guard Reserve (AFR)/Air National Guard (ANG)	29,873,290
International Active-Duty	3,311,812
Sub Total	**229,653,241**
Appropriated Fund Civilians	
General Schedule	90,778,045
Federal Wage Board	28,084,256
Defense Commissary Agency (Commissary)	2,420,411
Sub Total	**121,282,712**
Non-Appropriated Fund, Contract Civilian, and Private Business	
Civilian Non-Appropriated Fund	4,455,435
Civilian Base Exchange	1,229,000
Tyndall Credit Union	120,000
Sub Total	**3,804,435**
Total Annual Payroll	**356,740,388**

Source: TAFB Department of Comptroller, Fiscal Year 2021, Economic Impact Analysis, Tyndall AFB.

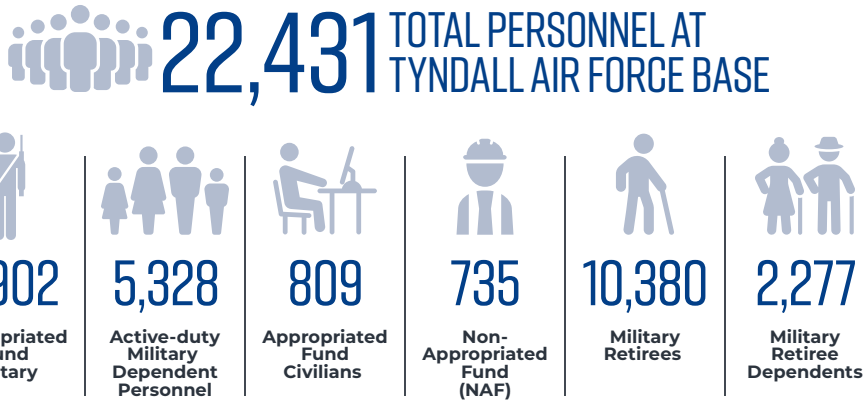
In terms of total expenditures by TAFB, construction contracts; materials; and equipment, supplies, and services make up the bulk of expenditures, which totaled over $536 million in 2021. These expenditures are shown in Table 2-3.

Another very important indicator of the economic impact that TAFB has on the local and regional community is the number of indirect jobs it generates as a result of its location in the region. TAFB estimates that a total 2,511 indirect jobs are created by the base across a number of personnel types and with an estimated value of wages created of over $120 million (See Table 2-4).

Table 2-3 TAFB Expenditures for Construction, Services, and Procurement of Materials, Equipment, and Supplies, FY 21

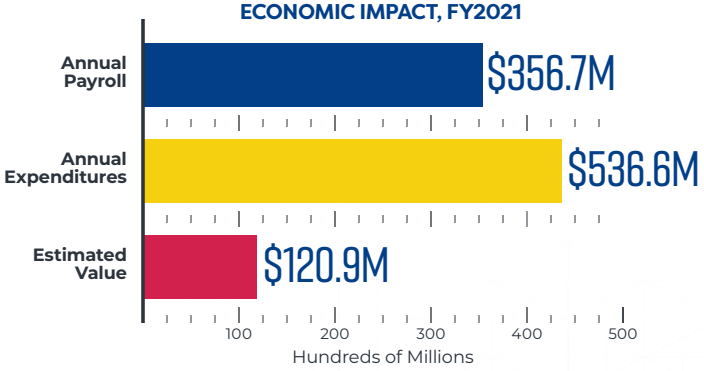
Construction	**Total ($)**
Military Construction Program	351,935,000
Facilities, Sustainment, Restoration, and Maintenance (FSRM)	81,001,187
Sub Total	**432,936,187**
Services	**Total ($)**
O&M Service Contracts	48,918,410
Non-Appropriated Fund (NAF) Service Contracts	196,696
Medical	6,200,000
Utilities	6,181,871
Sub Total	**61,496,978**
Materials, Equipment, and Supply Procurement	**Total ($)**
Commissary	11,981,902
Base Exchange	18,334,000
Tyndall Federal Credit Union	8,459
Education (Impacted aid and tuition assistance)	47,066
Ground Fuel	639,565
Health	1,189,071
NAF	314,713
Temporary Duty	201,300
Other Procurement (Includes Government Purchase card)	9,505,425
Sub Total	**42,221,501**
Total Annual Expenditures	**536,654,666**

Source: TAFB Department of Comptroller, Fiscal Year 2021, Economic Impact Analysis, Tyndall AFB .



TOTAL MILITARY PERSONNEL AND DEPENDENTS BY CLASSIFICATION AND HOUSING, FY2021

TOTAL TYNDALL AIR FORCE BASE ECONOMIC IMPACT, FY2021



INDIRECT JOB IMPACT CREATED BY BASE ACROSS PERSONNEL TYPES, FY2021

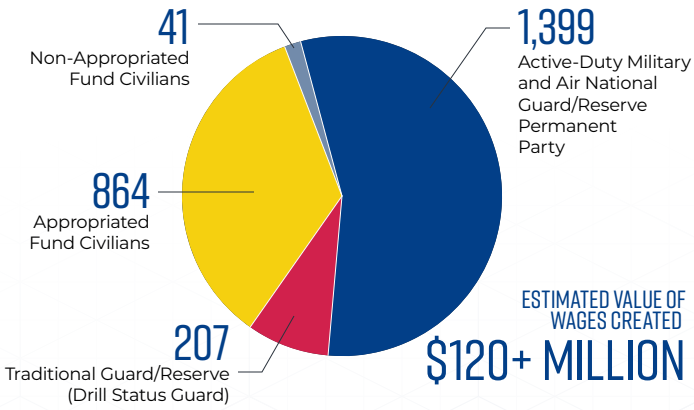


Table 2-4 Estimate of Number and Dollar Value of Indirect Jobs Created from TAFB

Personnel Type	TAFB Jobs	Indirect Job Impact
Active-Duty Military and Air National Guard/ Reserve Permanent Party	2,527	1,399
Traditional Guard/Reserve (Drill Status Guard)	99	207
Appropriated Fund Civilians	809	864
Non-Appropriated Fund Civilians	735	41
Total	**4,170**	**2,511**
Average Annual Pay for the Local Community	—	**$48,152**
Estimated Annual Dollar Value of Jobs Created	—	**$120,909,672**

Source: TAFB Department of Comptroller, Fiscal Year 2021, Economic Impact Analysis, Tyndall AFB


3
SP-15
REPACK DUE

3 AIRCRAFT OPERATIONS

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

3.1 Aircraft Types

Fixed-wing aircraft are the primary type of aircraft operating at TAFB, although there are a limited number of rotary-wing (helicopter) and drone aircraft as well. Aircraft permanently assigned at TAFB are the most common aircraft conducting flight operations at the installation. Aircraft that are not permanently assigned to the installation but conduct operations from the installation on an occasional basis are referred to as "transient" aircraft. Below are brief descriptions of both the assigned aircraft and the most common transient aircraft at TAFB.

3.1.1 Permanently Assigned Aircraft at TAFB

F-35

The F-35 (the Air Force flies the F-35 "A" variant), which will be beddown at TAFB beginning in 2023, is the USAF's latest, fifth-generation fighter. It will replace the USAF's aging fleet of F-16 Fighting Falcons and A-10 Thunderbolt IIs, which have been the USAF's primary fighter aircraft for more than 20 years, and bring with it an enhanced capability to survive in the advanced threat environment in which it was designed to operate. The F-35A will provide next-generation stealth, enhanced situational awareness and reduced vulnerability thanks to its aerodynamic performance and advanced integrated avionics,.

F-22

The **F-22 Raptor,** which was beddown at TAFB will be replaced with F-35 aircraft beginning in 2023, is a USAF fighter aircraft. The F-22 is currently part of the 325TH FW but is flying out of Eglin AFB. Its combination of stealth, super cruise capability, maneuverability, and integrated avionics, coupled with improved supportability, represents an exponential leap in warfighting capabilities. The Raptor performs both air-to-air and air-to-ground missions, allowing full realization of operational concepts vital to the 21st century Air Force.

T-38

The **T-38 Talon** is a twin-engine, high-altitude, supersonic jet trainer used in a variety of roles because of its design, economy of operation, ease of maintenance, high performance, and exceptional safety record. The T-38 is currently part of the 325TH FW but is flying out of Eglin AFB. Air Education and Training Command is the primary user of the T-38 for joint specialized undergraduate pilot training. ACC, Air Force Materiel Command, and the National Aeronautics and Space Administration also use the T-38 in various roles.

QF-16

The **QF-16 Full Scale Aerial Target** will provide the next generation of combat training and testing for U.S. warfighters. Retired F-16 aircraft are converted into QF-16 aerial targets for the purpose of testing newly developed weapons and tactics. The QF-16 will provide a higher capability, fourth generation aerial target that is more representative of today's targets and threats.

E-9

The **E-9** is a twin turboprop aircraft used as a surveillance platform to ensure Gulf of Mexico waters are clear of civilian boaters and aircraft during live missile launches and other hazardous military activities. The E-9A provides support for air-to-air weapons system evaluation, development, and operational testing at TAFB.

3.1.2 Common Transient Aircraft at TAFB

Common transient aircraft at TAFB include fighter, attack, cargo, and helicopter aircraft. Some of the most prevalent transient aircraft present at TAFB are described below.

F-15

The **F-15 Eagle** is an all-weather, extremely maneuverable, tactical fighter designed to permit the Air Force to gain and maintain air supremacy over the battlefield.

F-16

The **F-16 Fighting Falcon** is a compact, multi-role fighter aircraft. It is highly maneuverable and has proven itself in air-to-air combat and air-to-surface attack roles. It provides a relatively low-cost, high-performance weapon system for the United States and allied nations.

KC-135

For more than 60 years, the **KC-135 Stratotanker** has provided the core aerial refueling capability for the Air Force to enhance its capability to accomplish its primary mission of global reach. The KC-135 also provides aerial refueling support to Air Force, Navy, Marine Corps, and allied nation aircraft and is capable of transporting litter and ambulatory patients using patient-support pallets during aeromedical evacuations.

CHECKERED FLAG EXERCISES

An event that brings transient aircraft to TAFB is the Checkered Flag exercises. The exercises, held annually at TAFB, are a two-week-long, large-force aerial exercises that foster readiness and interoperability through the incorporation of fourth- and fifth-generation aircraft during air-to-air combat training. USAF units from across four major commands travel to the Florida panhandle to participate in the exercise along with the U.S. Navy and other mission-support partners. The 325TH FW owns and hosts the exercise, with units across TAFB working together to plan and execute it. The location of TAFB provides a premier site for the exercise. With unhindered access to more than 180,000 square miles of airspace over the Gulf of Mexico, participants can take off and get into the exercise quickly. Several aircraft participate in Checkered Flag exercises, including the F-35, F-22, F-16, F-15, and Navy F/A-18, among others.

3.2 Maintenance Operations

Maintenance is an integral part of any flying operation and requires a dedicated team of professionals to ensure that units can meet their flying requirements. Two key tasks in maintaining aircraft are low- and high-powered engine maintenance runs. TAFB may conduct low-power engine maintenance runs on aprons or ramps, to functionally check the operation of engines or other aircraft systems.

Aircraft maintainers may conduct engine maintenance runs at power settings ranging from idle to maximum power. Per TAFBI11-250 31 January 21, the following provisions are in place at TAFB with respect to engine tests and run ups:

- **Fighter Generation Squadron (FGS)** notifies Maintenance Operations Center (MOC) of all engine runs along with specific locations, tail numbers and specific reason for the run prior to starting operations. Upon approval, MOC will inform Tower during airfield hours. Prior to starting engines and following termination, run-up crew members will contact Tower via ground control frequency and provide tail number and parking location.
- **Quiet hours are observed between 2200 and 0600 local times** unless otherwise coordinated for engine tests/run ups.
- To the maximum extent possible, **FGS should avoid engine runs on parking spots C-1 thru C-3** during wing flying in order to lessen noise interference in the Control Tower.

3.3 Flight Operations

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

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

This AICUZ study considers operations from TAFB and includes operations from both assigned and transient military aircraft.

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

Takeoff. When a pilot positions an aircraft on the runway and the engine power is set to facilitate movement and eventual flight.

Departure. For the purpose of air traffic sequencing, separation, noise abatement, compliance with avoidance areas, and overall safety of flight, aircraft follow specific flight tracks and altitude restrictions as they depart the airfield's immediate airspace.

Straight-In Arrival. An aircraft performing a straight-in arrival aligns with the runway's extended centerline and begins a gradual descent for landing. This type of approach enables an aircraft to maintain a smooth, stable, and steady approach and requires no additional maneuvering.

Patterns. Pattern work refers to traffic pattern training during which the pilot performs takeoffs and landings in quick succession by taking off, flying the pattern, and then landing. A pattern consists of two portions, a takeoff/departure and an approach/landing; a complete closed pattern is counted as two operations because the aircraft crosses over a runway threshold twice, once on departure and once on arrival. Traffic pattern training is demanding and utilizes all of the basic flying maneuvers a pilot learns—takeoffs, climbs, turns, climbing turns, descents, descending turns, and straight and level landings.

Low Approach. A low approach is an approach to a runway that does not result in a landing but rather a descent toward the runway (usually below 3,500 feet above ground level [AGL]) followed by a climb-out away from the airfield. Pilots perform low approaches for a number of reasons, including practicing to avoid potential ground obstructions (e.g., vehicles, debris, stray animals).

Radar Approach. Radar approaches are instrument approaches performed with active assistance from Air traffic Control during poor weather conditions. Air Traffic Control personnel direct the aircraft toward the runway centerline. Once established on the centerline, pilots use aircraft instruments to maintain runway alignment and adherence to altitude restrictions until the pilot is able to acquire visual sight with the runway environment. Pilots often practice this type of approach to maintain proficiency.

3.4 Annual Aircraft Operations

Total annual aircraft operations account for each departure and arrival, including those conducted as part of a pattern operation. Figure 3-1 provides the number of aircraft operations that have occurred at TAFB over a 10-year period, including those conducted by permanently assigned and transient aircraft.

Data for the most recent 10-year period show aircraft operations at TAFB remained relatively consistent from the years of 2011 through 2018, with an average of 43,785 operations occurring annually and no major spikes or dips. A peak in operations occurred in 2015, with almost 49,000 operations recorded that year (about 9 percent more operations than the eight-year average). In 2019, following 2018's Hurricane Michael, the fewest operations were recorded, with just over 14,000 (about 32 percent fewer operations than the eight-year annual average). According to the 2016 TAFB AICUZ Study, 66,360 operations had been projected for 2018.

Categorizing flight operations by the time of day they are conducted at TAFB indicates that almost all (99 percent) occur during daytime (defined as taking place from 7:00 a.m. to 7:00 p.m.). Only one percent of flight operations occur during nighttime (defined as taking place from 10:00 p.m. to 7:00 a.m.). Similarly, almost all arrivals, departures, and patterns occur during the daytime—99 percent, 99 percent, and 100 percent, respectively.

Figure 3-1 Summary of Flight Operations at TAFB for Calendar Years 2011–2021

Source: TAFB Advanced Tactical Airborne Reconnaissance System.

3.5 Runway Utilization and Flight Tracks

3.5.1 Runway Utilization

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

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

ATC personnel establish the runway in use. Aviation planners adjust the pattern procedures accordingly to maximize air traffic flow efficiency. Table 3-1 lists how frequently each runway at TAFB is used.

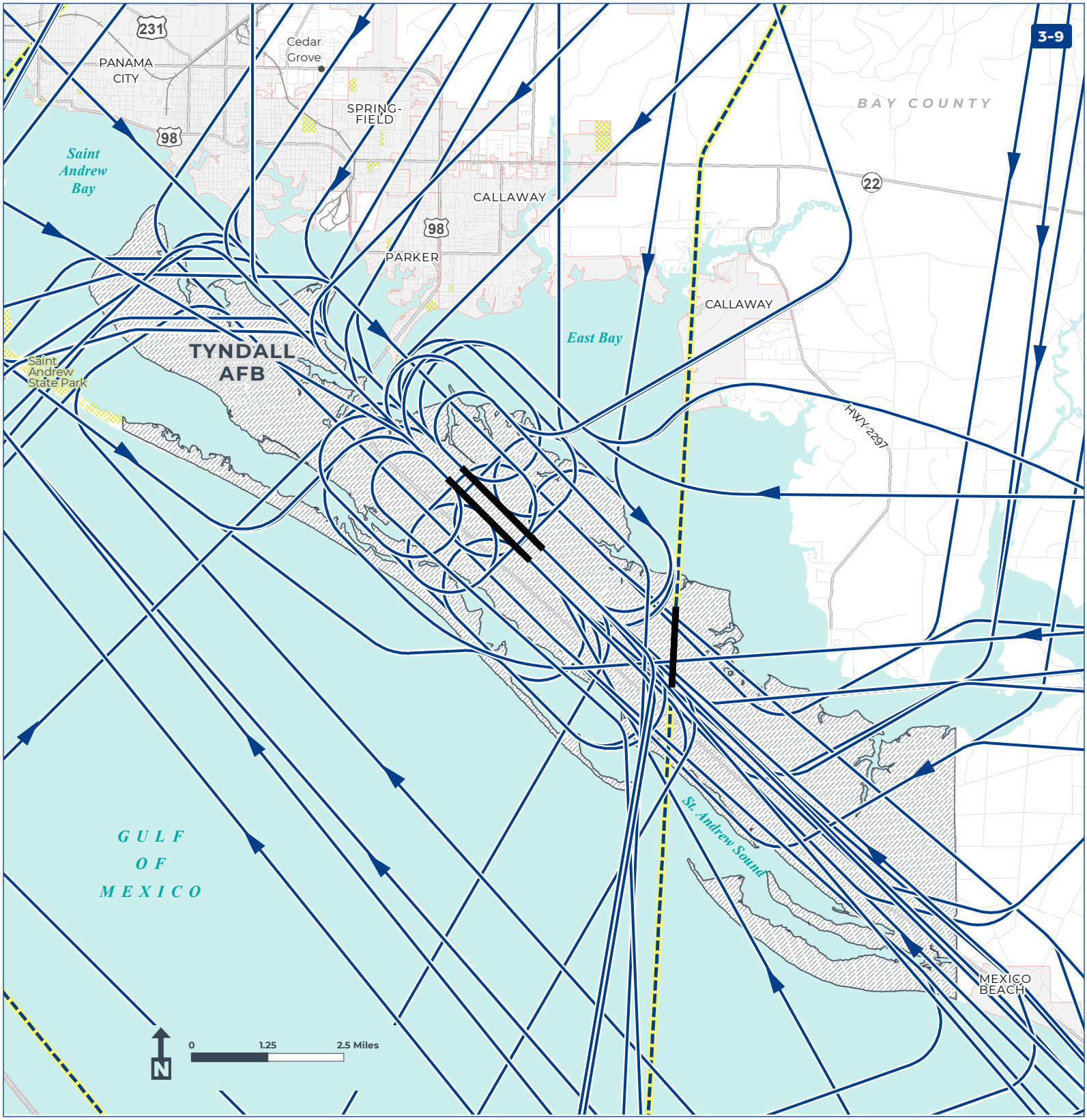
3.5.2 Flight Tracks

Each runway has designated flight tracks that provide for the safety, consistency, and control of flights associated with an airfield. Flight tracks depict where aircraft fly in relation to an airfield. They are used for departures, arrivals, and closed pattern procedures and are designated for each runway to facilitate operational safety, noise abatement, aircrew consistency, and the efficient flow of air traffic within the tower's-controlled airspace. Aircraft flight tracks are not set "highways in the sky." While flight tracks are depicted as thin lines on a map, they are actually wider bands. Aircraft de-confliction, configuration, pilot technique, takeoff weight, and wind all affect the actual path taken on any given flight.

Figures 3-2 through 3-4 present the arrival, departure, and pattern flight tracks for TAFB main runways and the installations drone runway.

Table 3-1 TAFB Current Runway Usage

Percent USAGE	16%	25%	35%	22%	1%	1%
Runway Direction	RUNWAY 14L	RUNWAY 14R	RUNWAY 32L	RUNWAY 32R	DRONE 18	DRONE 36



TYNDALL AFB

ARRIVAL FLIGHT TRACKS

CITY
RUNWAY
MAIN RUNWAY ARRIVAL FLIGHT TRACK
PARK
TYNDALL AFB
DRONE ARRIVAL FLIGHT TRACK

Figure 3-2 TAFB Arrival Flight Tracks

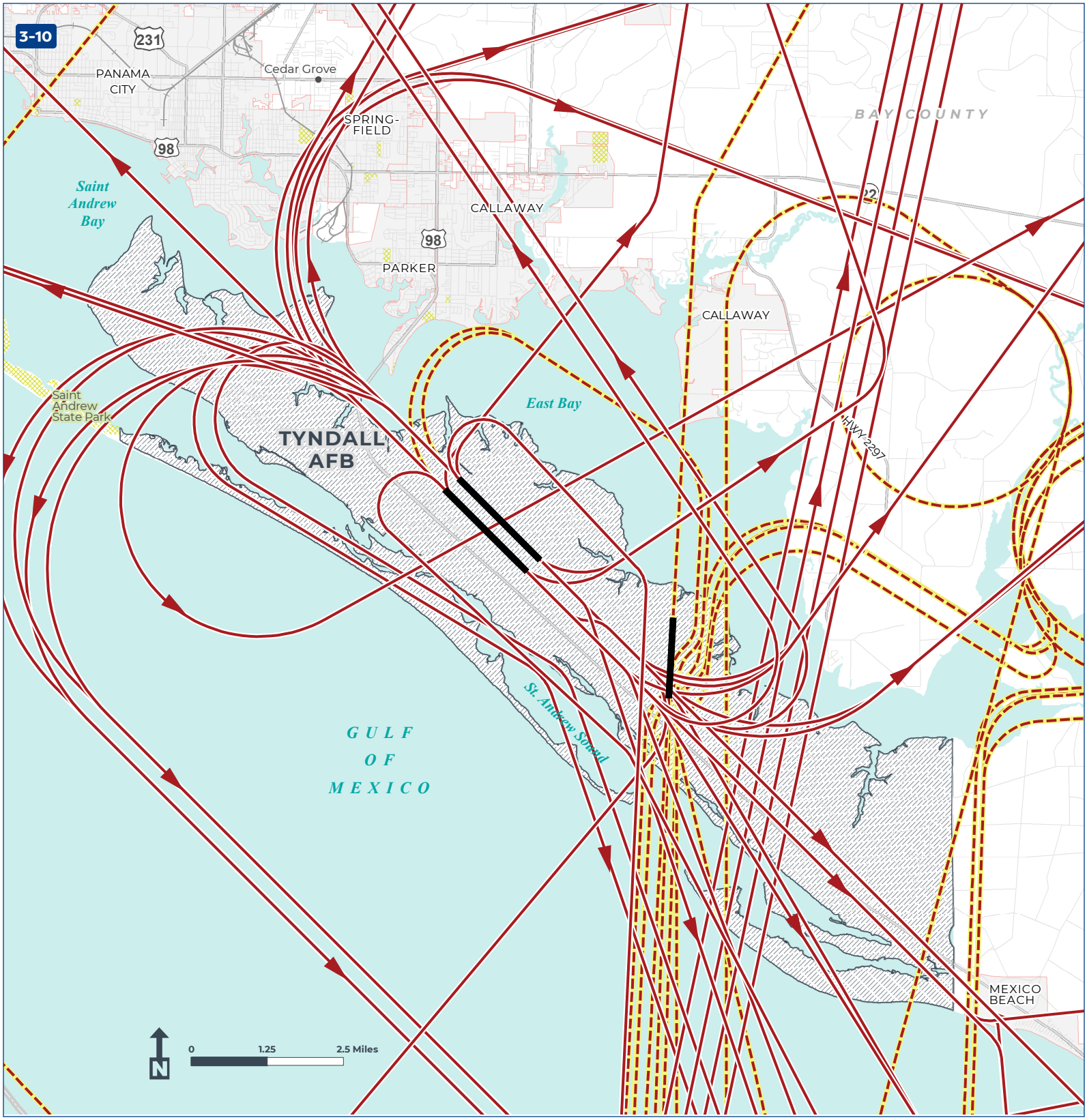
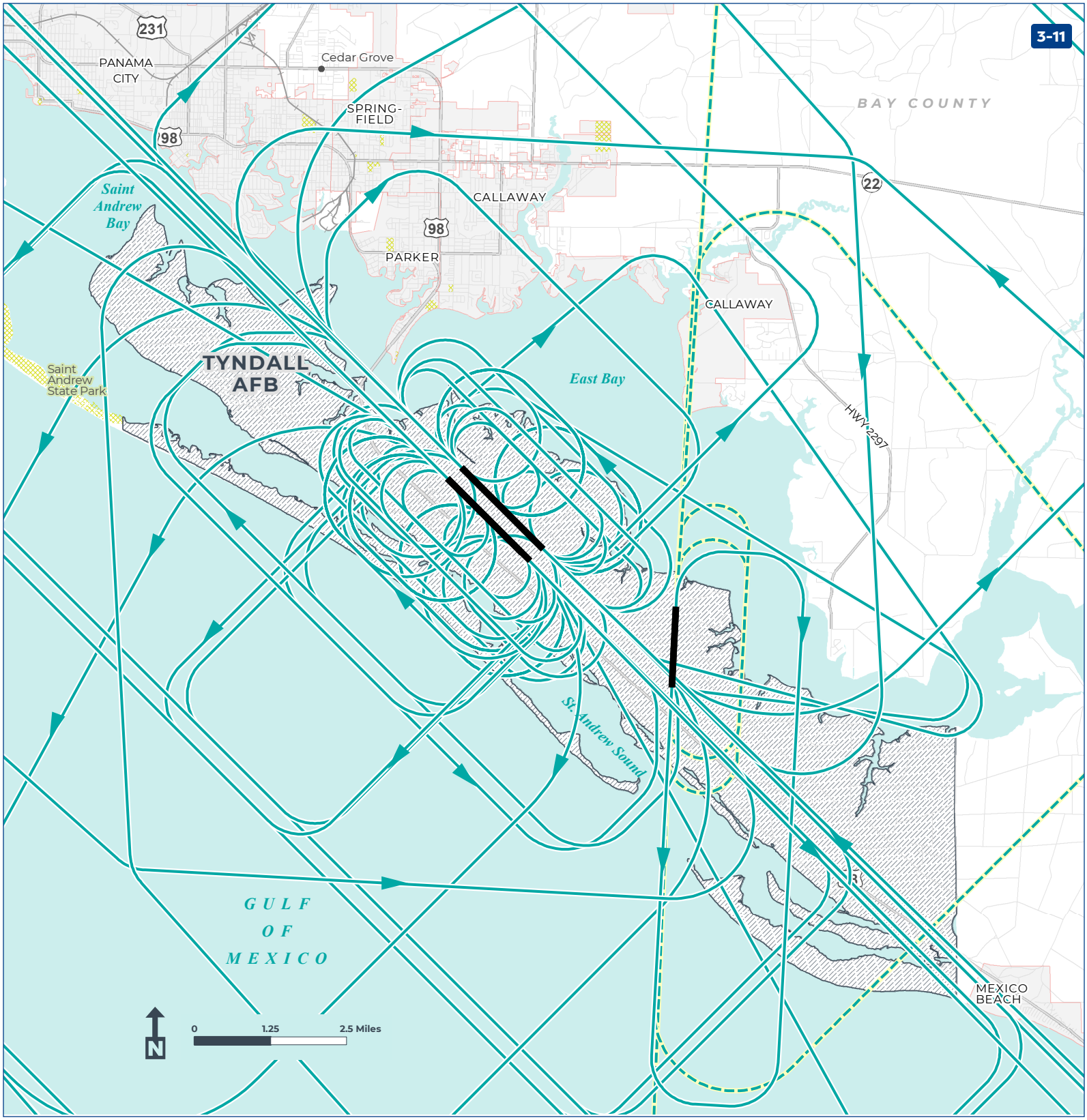


Figure 3-3 TAFB Departure Flight Tracks



TYNDALL AFB

PATTERN FLIGHT TRACKS

CITY
PARK
RUNWAY
TYNDALL AFB
MAIN RUNWAY PATTERN FLIGHT TRACK
DRONE PATTERN FLIGHT TRACK

Figure 3-4 TAFB Pattern Flight Tracks

4

4 MILITARY OPERATIONAL NOISE

How an installation manages aircraft noise can play a key role in shaping its relationship with neighboring communities. Ideally, aircraft noise and its management should be key factors in local land use planning. Because noise from aircraft may affect areas around the installation, the Air Force has defined noise zones using the guidance provided in the Air Force handbook (AFH 32-7084) The AICUZ Program Manager's Guide.

Terrain features, weather phenomena, man-made structures, and daily life activity contribute to noise exposure.

4.1 What is Sound/Noise?

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

Sound becomes noise when it interferes with normal activities.

- **Intensity,** or loudness, relates to sound pressure change. As the vibrations oscillate back and forth, they create a change in pressure on the eardrum. The greater the sound pressure change, the louder it seems.
- **Frequency** determines how we perceive the pitch of the sound. Low-frequency sounds are characterized as rumbles or roars, while sirens or screeches typify high-frequency sounds. We measure sound frequency in cycles per second, or hertz (Hz). While human hearing ranges from 20 to 20,000 Hz, we hear best in the range of 1,000 to 4,000 Hz. For environmental noise, we use A-weighting, which focuses on this range, to best represent human hearing. While we may abbreviate A-weighted decibels as "dBA," if it is the only weighting being discussed, the "A" is generally dropped from the abbreviation.
- **Duration** is the length of time one can detect the sound.

4.2 How Is Sound Perceived?

The loudest sounds the human ear can comfortably hear are a billion times higher in intensity than those sounds we can barely hear. Because such large numbers become awkward to use, we measure noise in decibels (dB), which uses a logarithmic scale.

Figure 4-1 is a chart of A-weighted sound levels from common sources. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB can cause discomfort inside the ear, while sound levels between 130 and 140 dB are felt as pain.

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

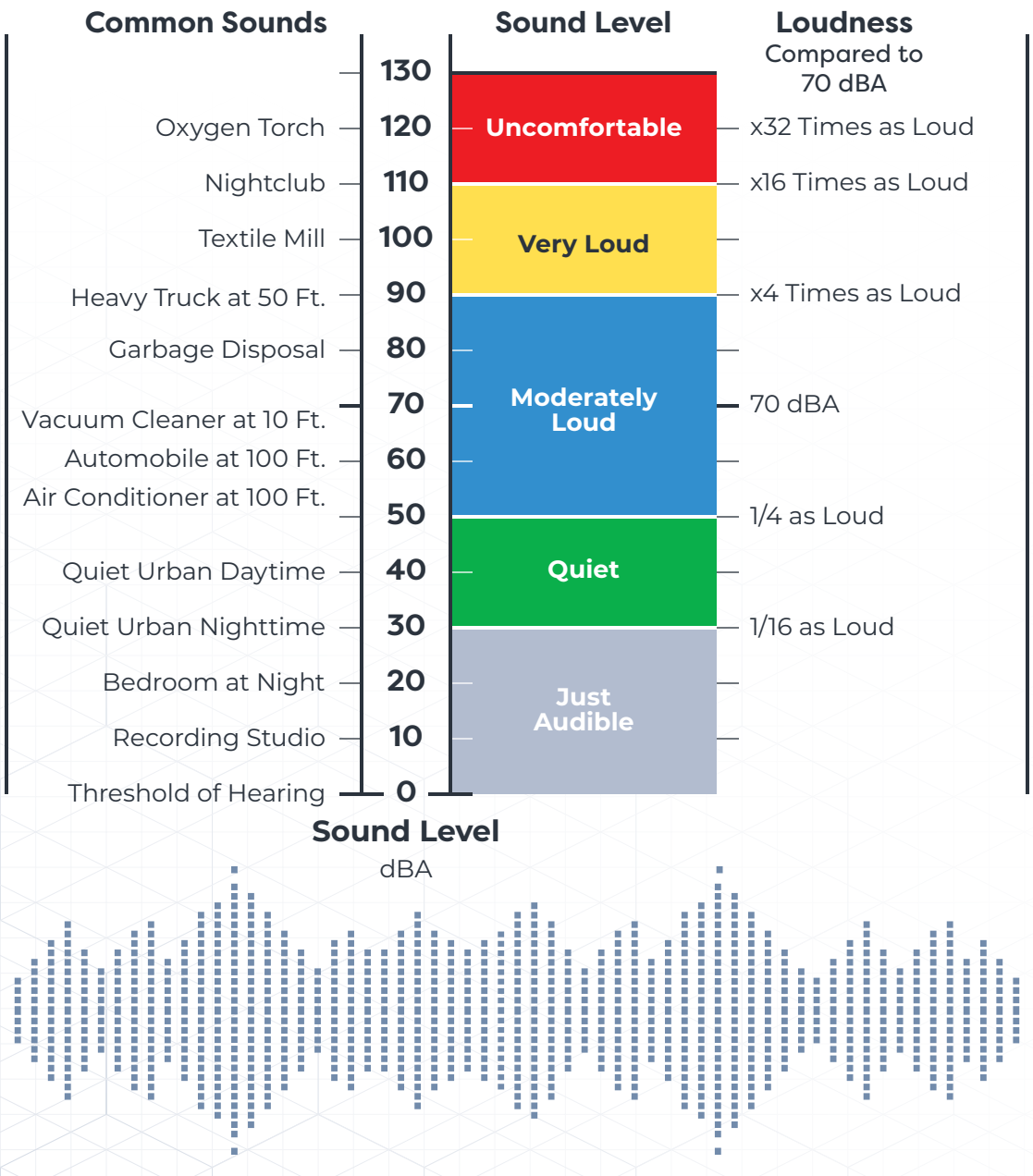


Table 4-1 shows the subjective responses with change in (single-event) sound level. While noise energy doubles or halves with every 3-dB change, we do not perceive all this noise energy. It takes a 10-dB increase or decrease for our ears to perceive a doubling or halving of loudness. Please note that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

Table 4-1 Subjective Response to Changes in Sound Level

Change in Sound Level	Change in Loudness
10 dB	**Twice or half as Loud**
5 dB	**Quite Noticeable**
3 dB	**Barely Perceptible**
1 dB	**No Noticeable Change**

4.3 The Day-Night Average Sound Level

When people hear an aircraft fly overhead, the question they may ask is, "How loud was that?" While we may often find ourselves concerned over the loudness of a sound, there are other dimensions to the sound event that draw our interest. For instance, does one overflight draw the same interest as two separate overflights—or 20? Does the 30-second run-up of engines prior to takeoff draw the same interest as a 30-minute maintenance run? Additionally, is an overflight more noticeable at 2:00 p.m. or at 2:00 a.m., when the ambient noise is low and most people are sleeping? The length and number of events—the total noise energy—combined with the time of day that a noise event takes place play key roles in our perception of noise. To reflect these concerns, the Air Force uses a metric called the "Day-Night Average Sound Level" (DNL). The United States Environmental Protection Agency created DNL for use throughout the United States.

DNL, when used as a metric for aircraft noise, is A-weighted (abbreviated as ADNL); this A-weighting represents the accumulation of noise energy from all aircraft noise events in a 24-hour period. This weighting factor removes lower frequencies to focus on the sound level humans hear best. Oftentimes, when abbreviating ADNL, the "A" is dropped. Additionally, for all operations conducted between 10:00 p.m. and 7:00 a.m., DNL adds a 10-dB adjustment to each event to account for the intrusiveness of sound generated during nighttime operations. As is implied in its name, DNL represents the noise energy present in a daily period. However, because aircraft operations at military airfields fluctuate from day to day, the Air Force typically bases DNL on a year's worth of operations and represents the annual average daily aircraft events.

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

The noise environment at TAFB includes noise sources that can be classified as continuous. Continuous noise refers to noise events that have a gradual onset, such as an aircraft taking off, and not necessarily noise that is occurring at a constant level at all times.

4.3.1 Planning Noise Contours

The DoD develops noise contours to assess the compatibility of aircraft operations with surrounding land uses. Noise contours connect points of equal sound value, just as contours on topographic maps connect points of equal elevation. The Air Force utilizes NOISEMAP, the DoD standard model for assessing the operational noise footprint from military aircraft operations at air installations. Noise contours, when overlaid on local land use maps, can help to identify areas of incompatible land use and assist communities in planning for future development around an air installation.

An AICUZ study typically provides future year planning noise contours. Long-range planning by local land use authorities involves strategies that influence present and future uses of land. Due to the long-range nature of this planning, the Air Force provides planning contours—noise contours based on reasonable projections of future missions and operations. AICUZ studies use planning contours to provide a description of the long-term operational noise footprint for projected aircraft operations that is more consistent with the planning horizon used by state, tribal, regional, and local planning bodies.

For this AICUZ Study, planning contours were primarily adopted from the 2020 F-35A Beddown EIS as these noise contours accurately reflect current and foreseeable operations. There is a slight difference between the operations presented in the F-35 EIS and resulting 2023 TAFB AICUZ noise contours as the Cessna 441 aircraft mission no longer operates at TAFB and therefore, those operations were removed from the analysis.

Utilizing a planning noise contour to provide long-range operational flexibility to the installation does not constitute a commitment to future operational changes.

Table 4-2 TAFB Modeled Annual Aircraft Flight Operations

Aircraft	Arrivals	Departures	Pattern Operations[1]	Total
Assigned Aircraft				
F-35A	12,300	12,300	8,840	**33,440**
Other Aircraft	970	970	702	**2,642**
Transient Aircraft				
Attack/Fighter	952	1,152	7,201	**9,306**
Bomber/Transport	350	350	—	**700**
Helicopters	51	51	—	**101**
Miscellaneous Aircraft	—	—	—	**0**
Grand Total	**14,624**	**14,312**	**16,675**	**45,464**

Source: Record of Decision for the Air Force F–35A Wing Beddown and MQ–9 Wing Beddown EIS, April 2021; AFCEC, 2022.
Note: [1] Each "pattern operation" consists of two total operations: one arrival and one departure.

4.3.2 TAFB Noise Contours

The 2023 TAFB AICUZ Study noise contours are presented in Figure 4-2. As previously noted, this AICUZ study is presenting as its planning contours those noise contours modeled as part of the EIS for the beddown of the three F-35 aircraft squadrons at TAFB.

To the northeast along Tyndall Parkway (in the vicinity of DuPont Bridge), a very small portion of the 65 dB DNL noise contour extends beyond the base boundary. This small area of the contour extends over Tyndall Parkway and into a limited number of commercial and residential uses along the parkway. To the north and south, the 65 dB DNL contour does not extend off base. To the east and west, the contours primarily stay on base but do cross into East Bay to the east and the barrier islands St. Andrew Sound to the west.

Table 4-2 summarizes the existing projected annual aircraft flight operations at TAFB when the F-35 beddown is fully operational. The total operations modeled in this EIS analysis is 49,990, with the majority of flights conducted by the F-35A aircraft.

Table 4-3 Off-installation Land Area and Estimated Population within Noise Zones for the 2023 TAFB AICUZ Study Noise Contours

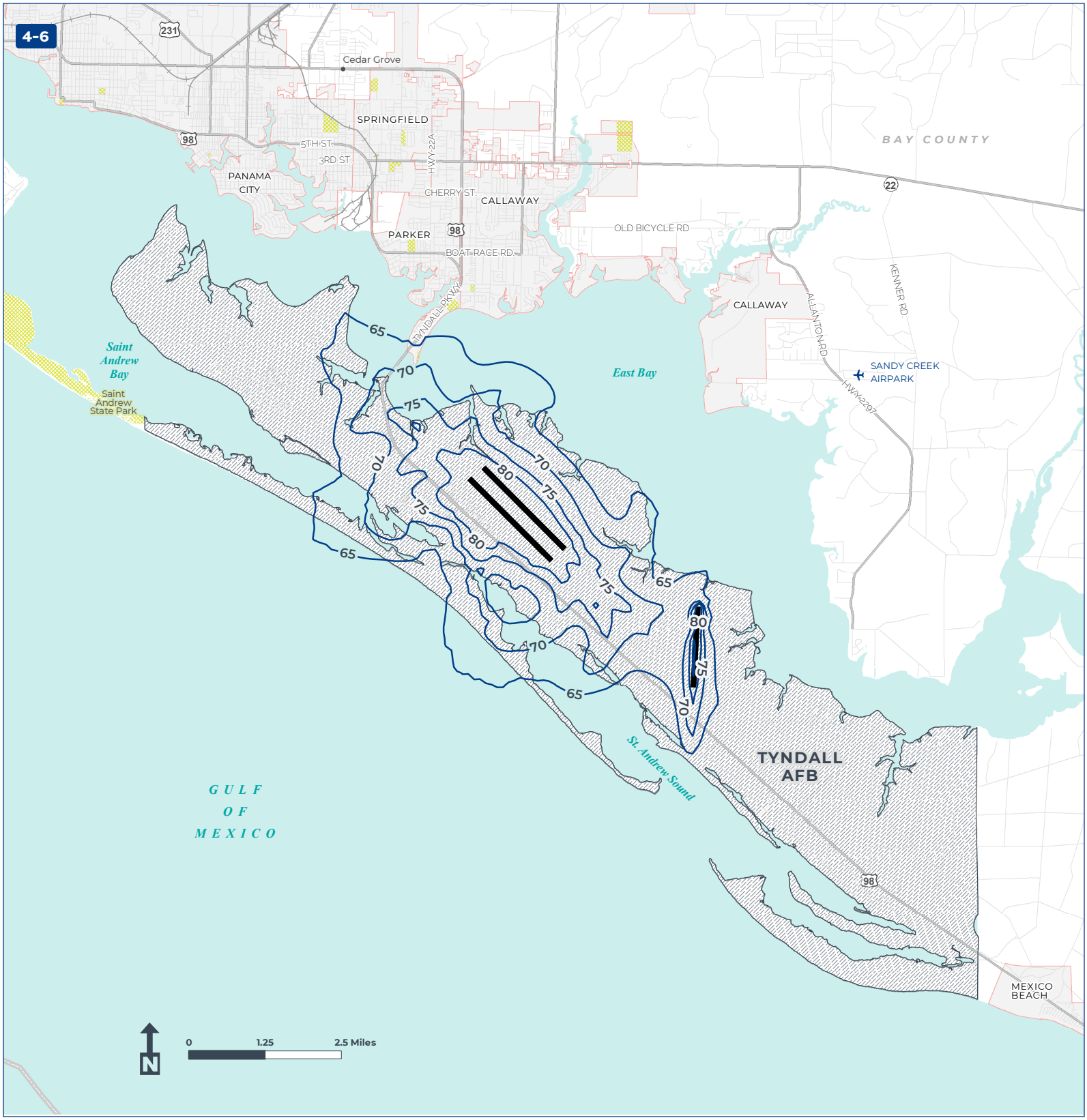
Noise Zone (dB DNL)	Acres	Estimated Population
65-69	2,868.8	64
70-74	754.5	0
75-79	122.5	0
80+	0.6	0
Total (60+)	**3,746.4**	**64**

Source: ESRI, 2022, U.S. Census ACS, Five Year Estimates, 2020.

Figure 4-3 also shows the TAFB planning noise contours with color gradient shading. The shading depicts how TAFB noise propagates and shows that, although the modeled noise contour lines do not extend substantially off base, the noise that is heard does in fact extend well beyond both the 65 and 60 dB DNL contours.

Figure 4-4 shows a comparison of the 2023 TAFB AICUZ Study noise contours and the 2016 TAFB AICUZ Study noise contours. As this comparison shows, the 2023 noise contours cover less off-base land area than those presented in the 2016 TAFB AICUZ Study. There are several reasons that explain this.

The 2023 TAFB AICUZ Study contours utilized the operational tempo from the F-35 Beddown EIS. This included a decrease in nearly 17,000 modeled aircraft operations as compared to the 2016 TAFB AICUZ Study (i.e., 66,000 operations in the 2016 TAFB AICUZ Study as compared to 49,000 operations modeled in the F-35 Beddown EIS). More specifically, of the total difference between the two noise-modeling scenarios, 11,810 operations were the result of the T-38A operations not being modeled in the F-35 Beddown EIS. As identified in the F-35 Beddown EIS, T-38 and F-22 aircraft were to be relocated away from TAFB as part of the F-35 beddown, and, therefore, the associated T-38 and the majority of F-22 operations were removed from the EIS noise modeling.

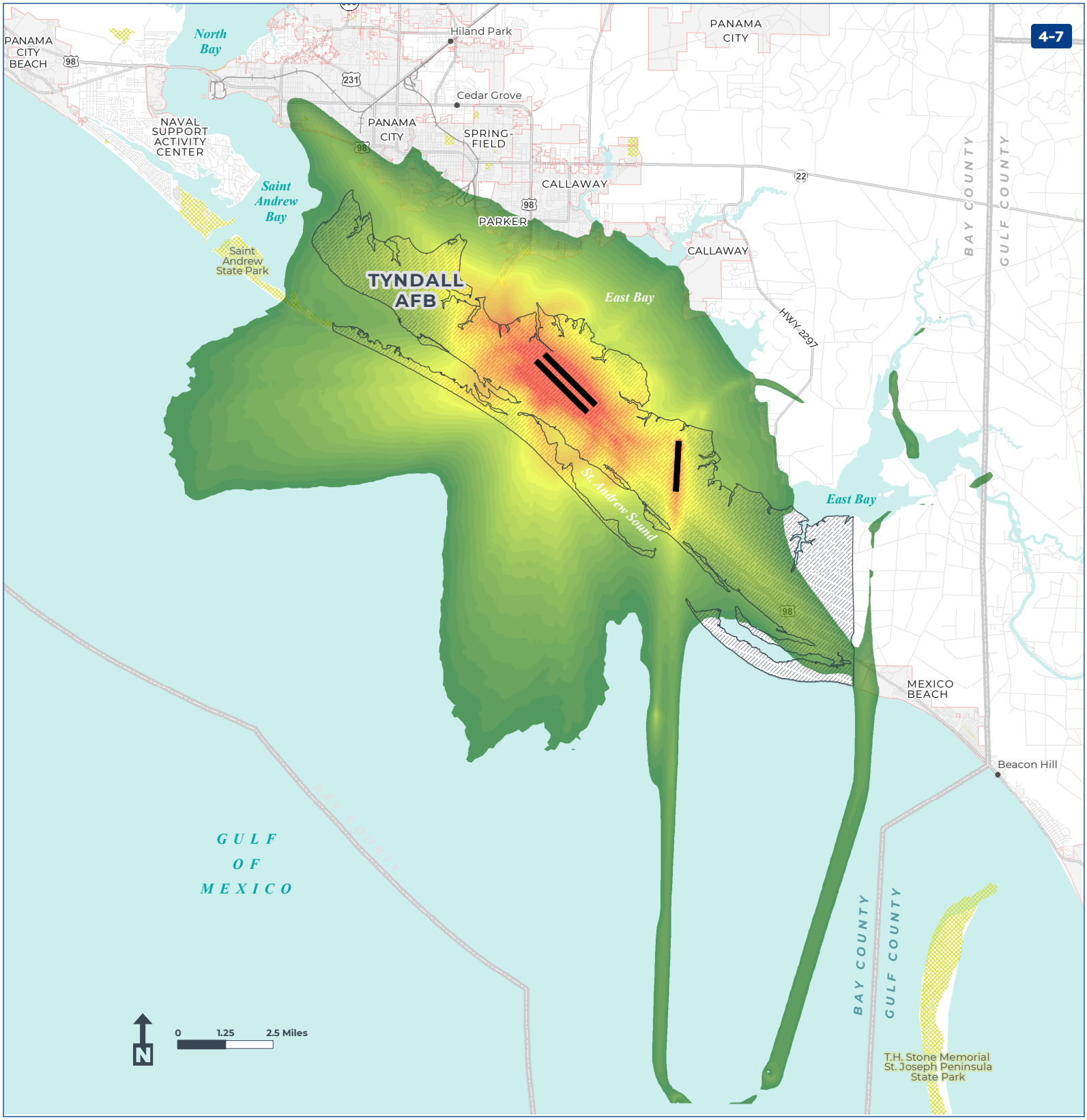


TYNDALL AFB

2023 AICUZ NOISE CONTOURS

CITY
PARK
RUNWAY
TYNDALL AFB
2023 TAFB AICUZ CONTOURS (dB)

Figure 4-2 2023 TAFB AICUZ Study Noise Contours

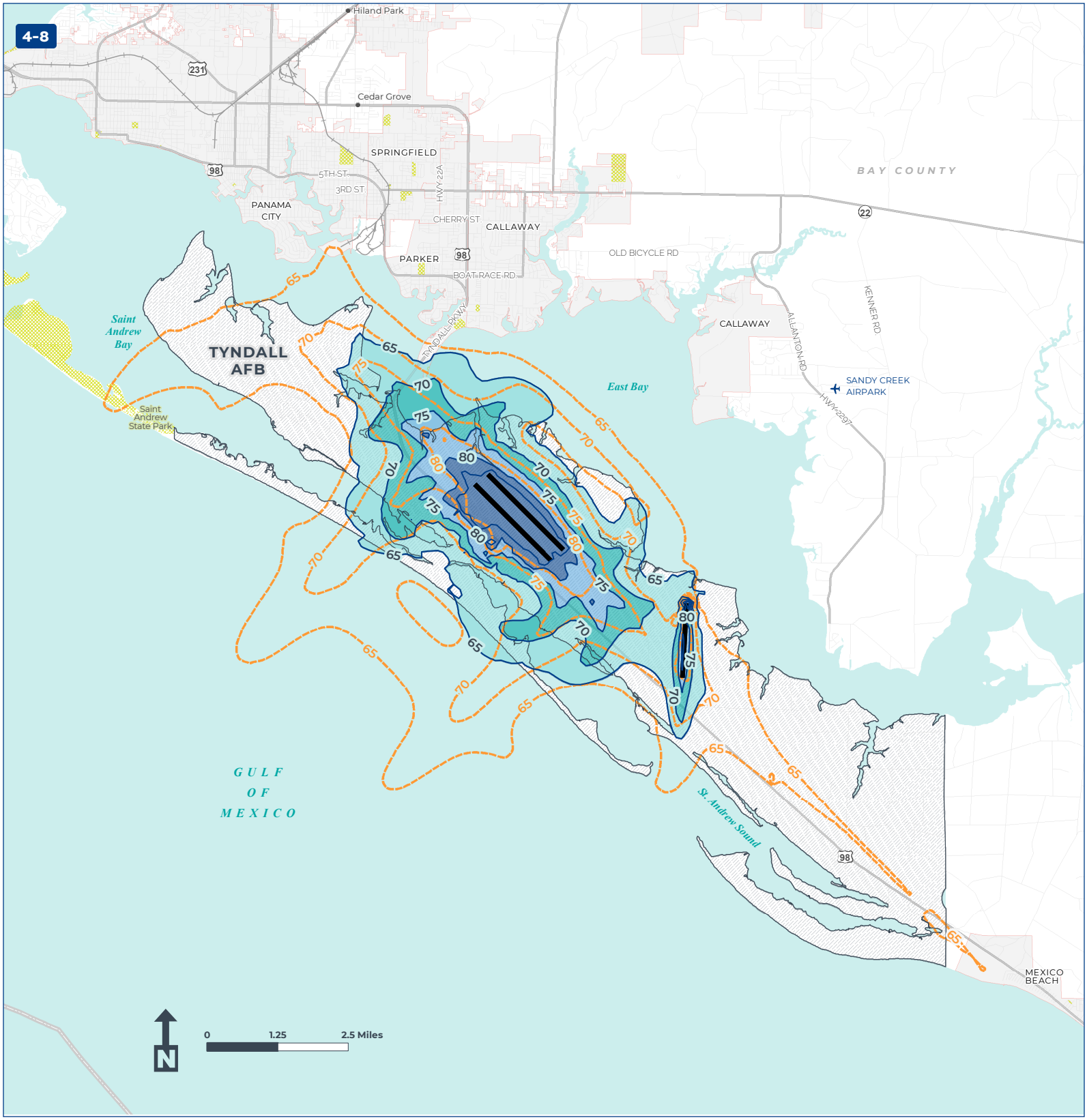


TYNDALL AFB

2023 AICUZ NOISE CONTOURS
WITH GRADIENT SHADING

CITY
PARK
RUNWAY
TYNDALL AFB
dB DNL

Figure 4-3 2023 TAFB AICUZ Study Noise Contours with Gradient Shading



TYNDALL AFB

COMPARISON OF 2016 AICUZ CONTOURS TO 2023 AICUZ CONTOURS

- CITY
- PARK
- RUNWAY
- TYNDALL AFB
- 2016 TAFB AICUZ CONTOURS (dB)

2023 TAFB AICUZ CONTOURS (dB)

- 65-69
- 70-74
- 75-79
- 80

Figure 4-4 Comparison of 2023 TAFB AICUZ Study Noise Contours to 2016 TAFB AICUZ Study Noise Contours

Also, with respect to comparisons of the single-event noise generated by the F-35 versus the F-22 (the F-22 is in large part the basis of the 2016 TAFB AICUZ Study noise contours, with the most operations modeled), it is important to restate that the noise contours in the 2016 TAFB AICUZ Study are measured in DNL, which is an average noise metric. DNL is not a noise level heard at any given time, associated with any given aircraft but instead represents long-term noise exposure over the course of an entire year. This means that while noise from an F-35 single event may be louder than that of an F-22 performing the same activity, this does not necessarily translate to the size of the DNL noise contours. This is because the DNL noise contours account for other factors, including total number of aircraft operations during the year, flight tracks, etc., and DNL is the required metric to be used in an AICUZ study to provide land use compatibility recommendations.

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

The total off-base area exposed to a minimum of 65 dB DNL totals 4,332 acres (See Table 4-3). This includes approximately 3,340 acres (77 percent) in the 65-69 dB DNL noise contour and includes 64 residents. A total of 0 acres (0 percent) and 0 citizens falls within remaining noise contours.

4.4 Noise Abatement

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

For this reason, the Air Force has established a noise program aimed at reducing and controlling the emission of noise and vibrations associated with the use of military aircraft, weapon systems, and munitions while maintaining operational requirements. TAFB seeks to recognize potential noise concerns before they become an issue requiring abatement. However, the base does have procedures, documented under the TAFB Instruction 11-250, Flying Operations, that are aimed at protecting the installation's neighbors and structures from the harmful effects of noise and vibrations.

To minimize noise pollution for the TAFB workforce and communities surrounding the airfield, noise abatement procedures—per TAFB Instruction 11-250—have been put in place and include the following:

- **Ensure that established quiet hours** are observed between 2200 and 0600 local times unless otherwise coordinated.
- Also, per *TAFBI11-250,* 325TH **Operational Support Squadron annotates all planned quiet, restricted noise and Distinguished Visitor (DV) restricted noise periods on its weekly scheduling meeting slides as well as on the daily schedule.** Requests are sought two weeks in advance for desired quiet periods. The 325TH OSS publishes a letter for each restricted noise period and quiet period outlining procedures applicable to that ceremony and acts as the central POC for quiet period and restricted noise period execution.

- **Aircraft Maintenance acts as the central POC for short notice DV requests and specific times may or may not be annotated on the weekly scheduling meeting slides.** Aircraft Maintenance will enter quiet period information in the Notice to Air Missions system. Procedures for each type of quiet period are as follows:
- **Distinguished Visitor Restricted Noise Period.** For informal greetings and farewells of DVs by base officials at the transient ramp. Engine starts/runs, and AGE runs on the MU-2 and transient ramps are suspended.
- **Restricted Noise Period (Military Ceremonies at Flag Park, etc.).** Normal taxi, engine runs, and vehicle operations on ramp authorized. The intent of a restricted noise period is to minimize noise levels on the non-flight line side of the base.
- **Flight Line Ceremonies, Etc.** No take-offs, engine starts, engine runs, patterns, low approaches are permitted. Flight line use of AGE equipment is prohibited. Landings, due to fuel state or emergency, will be via straight-in to the outside runway (unless safety dictates otherwise). The intent of a quiet period is to have no aircraft or AGE noise of any kind near the flight line side of the base. Quiet periods planned during normal local flying window require 325TH Operations Group approval. Quiet periods planned during normal 53 WEG flying window require coordination with 53 WEG.

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

4.5 Noise Complaints

At times, military operations may generate noise complaints. The Air Force evaluates all noise complaints to ensure future operations, when possible, do not generate unacceptable noise. Concerned citizens are encouraged to contact the TAFB Public Affairs (PA) personnel with any noise complaints. **The TAFB PA Department can be reached by phone at (850) 283-3333.**

When the TAFB PA Department receives a noise compliant, all necessary information is gathered and documented regarding the incident (i.e., complainant name, date and time of incident, location of incident). This information is logged into a noise complaint form and also added into a noise complaint tracker. The noise complaint is then routed to 325TH OSS to the airfield manager for action. The airfield manager then provides a response to the PA Department as to whether or not the incident was caused by a TAFB aircraft. Following the airfield manager's response, the PA Department then follows up and closes the loop with the complainant.

TAFB also posts information on the installation website and social media accounts regarding any anticipated changes to aircraft operations. Postings typically include alerts about upcoming events affecting aircraft operations (e.g., air shows, special operations, etc.) that can be shared publicly. These sites and accounts include:

https://www.Tyndall.af.mil/

FACEBOOK /TeamTyndall
TWITTER /TeamTyndall

Aerial view of downtown Panama City, Florida.

5

5 COMMUNITY AND AIRCRAFT SAFETY

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

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

5.1 Clear Zones and Accident Potential Zones

In the 1970s and 1980s, the military conducted studies of historical accident and operations data throughout the military. The studies showed that most aircraft mishaps occur on or near the runway, diminishing in likelihood with distance from the runway. Based on these studies, the DoD identified CZs and APZs as areas where an aircraft accident is most likely to occur if an accident were to take place; however, it should be noted that CZs and APZs are not predictors of accidents. The studies identified three areas that, because of accident potential, planners should consider for population density and land use restrictions: the CZ, APZ I, and APZ II. The CZs and APZs for Class B runways are described in the list below and are depicted on Figure 5-1:

- **Clear Zone.** At the end of all active DoD runways is an area known as the "Clear Zone." The CZ for Class B runways has an area of 3,000 feet square centered on the end of the runway. All active runways have CZs and should remain undeveloped.
- **APZ I.** Beyond the CZ is APZ I. APZ I is 3,000 feet in width and 5,000 feet in length along the extended runway centerline.
- **APZ II.** APZ II is the rectangular area beyond APZ I. APZ II is 3,000 feet in width by 7,000 feet in length along the extended runway centerline.

Within the CZ, the only land uses compatible with military aircraft operations and defense missions are undeveloped lands and certain right-of-way and agricultural uses. For this reason, it is the Air Force's policy, where possible, to acquire real property interests in land within the CZ to ensure incompatible development does not occur. Within APZ I and APZ II, a variety of land uses are compatible; however, higher density uses (e.g., schools, apartments, churches) and more intense uses (e.g., office buildings, strip malls) should be restricted because of the greater safety risk in these areas. Chapter 6 discusses land use and recommendations for addressing incompatibility issues within APZs for each of TAFB's runways.

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

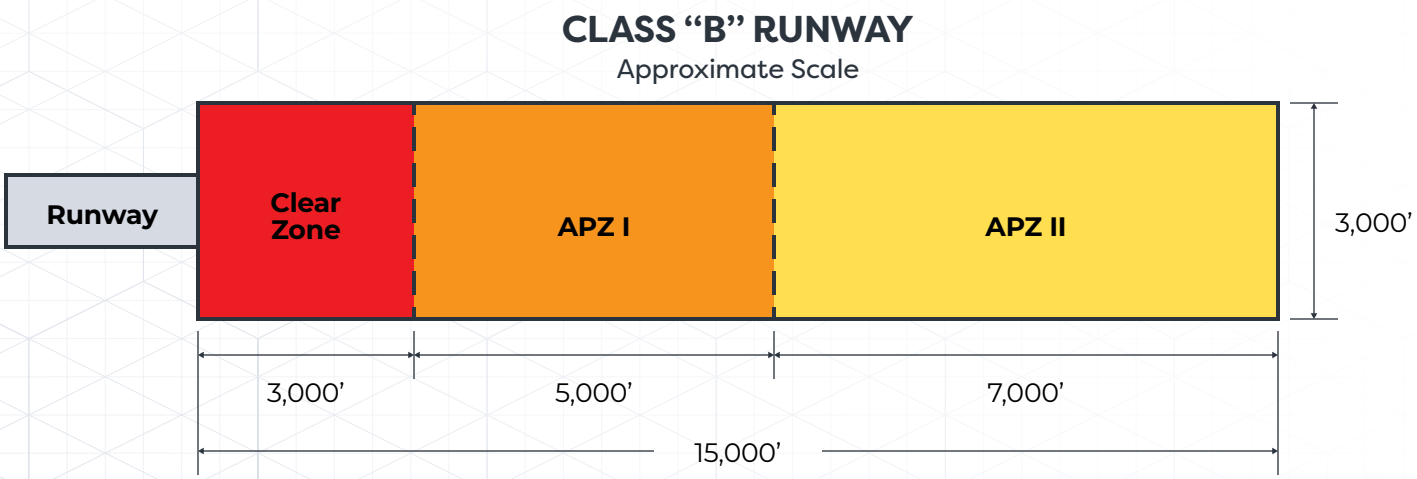


Figure 5-2 depicts the CZs and APZs for Runways 14R/32L and 32R/14L. The CZs and APZs for the drone runway, 01/19, are also depicted. The CZs and APZs for all three runways are straight in reflecting the installation's most prevalent operations. TAFB's CZs and APZs, are unchanged from the 2016 TAFB AICUZ Study. To the northeast at the end of Runway 14 R and 14L, TAFB's CZ and APZ I do not extend beyond the base boundary, but APZ II does extend into St. Andrew Bay. To the southwest off of Runway 32 R and 32L, the CZ and APZ I and APZII are contained within the installation boundary.

With respect to the TAFB drone runway, there are also two safety zones associated with it (See Figure 5-2). The drone runway CZ and APZs dimensions are identical to those of the main runways.

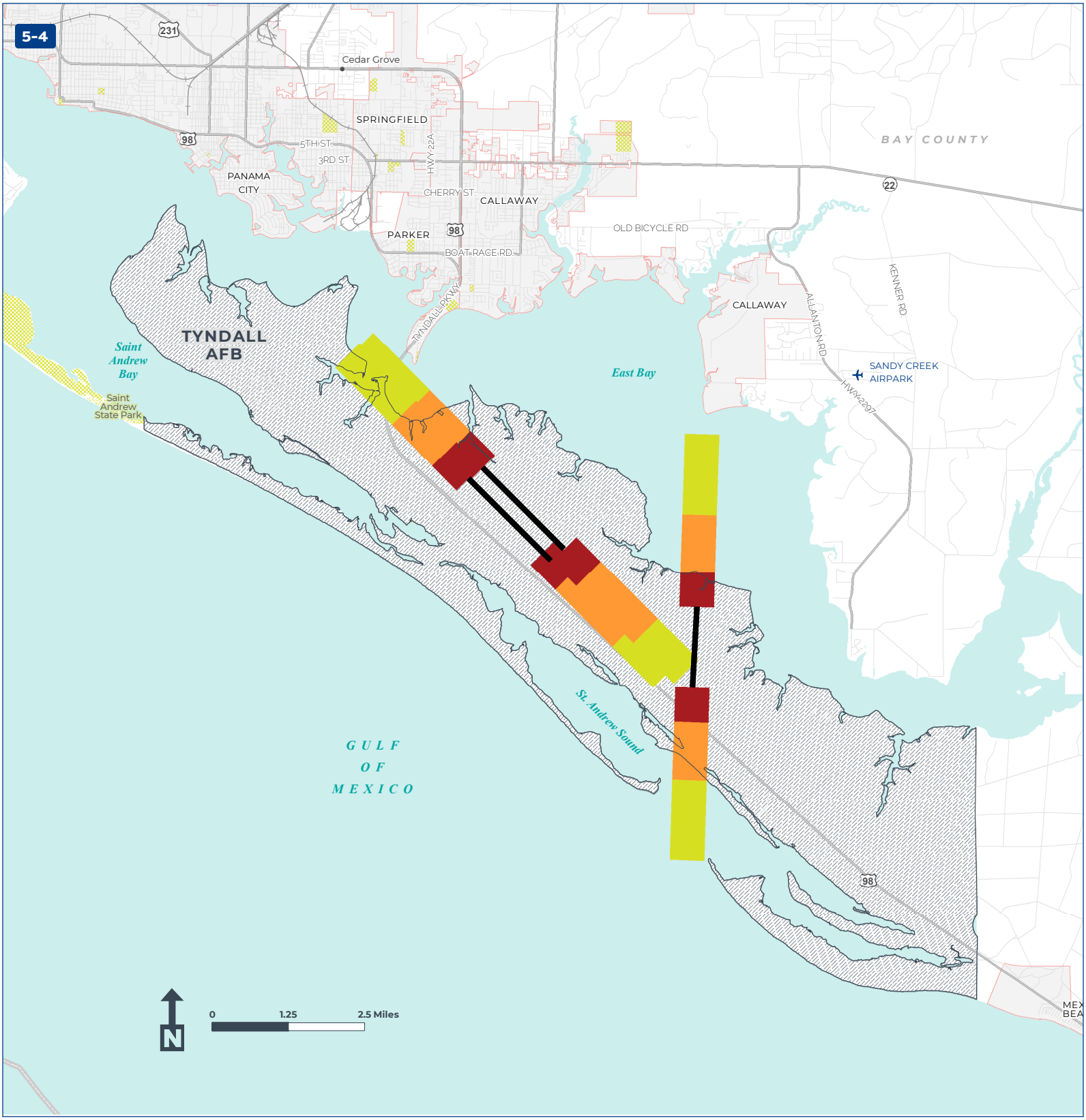
Table 5-1 tabulates the off-base land acreage and estimated population within the CZs and APZs for TAFBs fixed wing and drone runway. There are 679 and 1,437 off station acres within the safety zones (CZ, APZ I and APZ II) for the fixed wing runways (14L/32R and 14R/32L) and drone runway (01/19), respectively. Given the location of these zones, there are zero residents residing within the fixed wing and drone runways.

Table 5-1 Off-installation Land Area and Estimated Population within the CZs and APZs, TAFB Fixed Wing and Drone Runways

Fixed Wing Zone	Acres	Population
CZ	11.2	0
APZ I	135.7	0
APZ II	532.8	0
Total	**679.7**	**0**

Drone Runway Zone	Acres	Population
CZ	22.2	0
APZ I	450.6	0
APZ II	964.7	0
Total	**1,437.5**	**0**

Source: ESRI, 2022, U.S. Census ACS, Five Year Estimates, 2020.



TYNDALL AFB

2023 TAFB AICUZ CLEAR ZONES
AND ACCIDENT POTENTIAL ZONES

- PARK
- CITY
- RUNWAY
- TYNDALL AFB
- CLEAR ZONE (CZ)
- ACCIDENT POTENTIAL ZONE (APZ-I)
- ACCIDENT POTENTIAL ZONE (APZ-II)

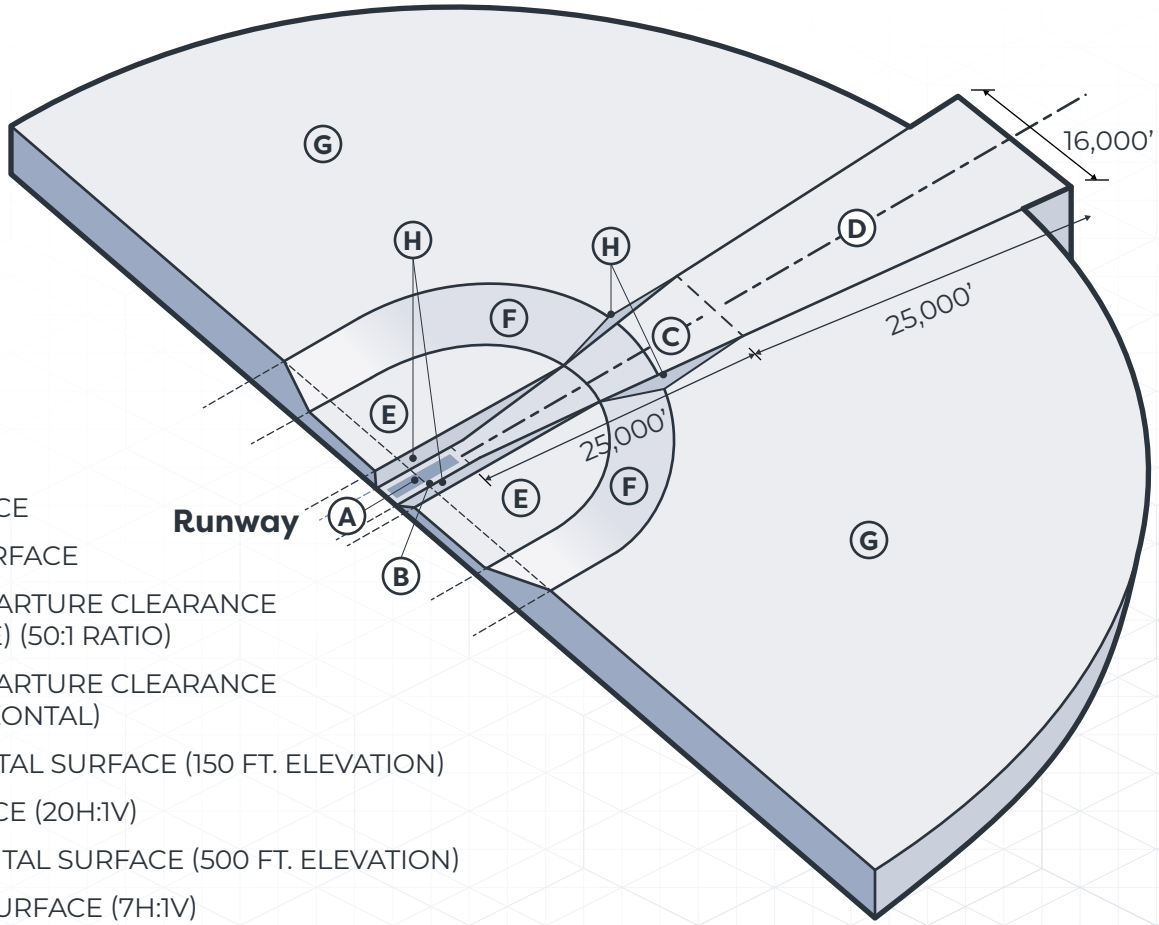
Figure 5-2 2023 TAFB AICUZ Study Clear Zones and Accident Potential Zones

5.2 Imaginary Surfaces

The DoD and Federal Aviation Administration (FAA) identify a complex series of imaginary planes and transition surfaces that together define the airspace needed to remain free of obstructions around an airfield. Obstruction-free imaginary surfaces form a complex bowl around an airfield to ensure safe flight approaches, departures, and pattern operations. Obstructions include natural terrain and man-made features such as buildings, towers, poles, wind turbines, cell towers, and other vertical obstructions to airspace navigation.

There are different imaginary surfaces for fixed-wing runways (depending on type of aircraft supported by the runway) and rotary-wing runways/helipads. An illustration of the imaginary surfaces for typical Class B fixed-wing runways such as those at TAFB is depicted on Figure 5-4. Table 5-2 provides brief descriptions for each of these surfaces.

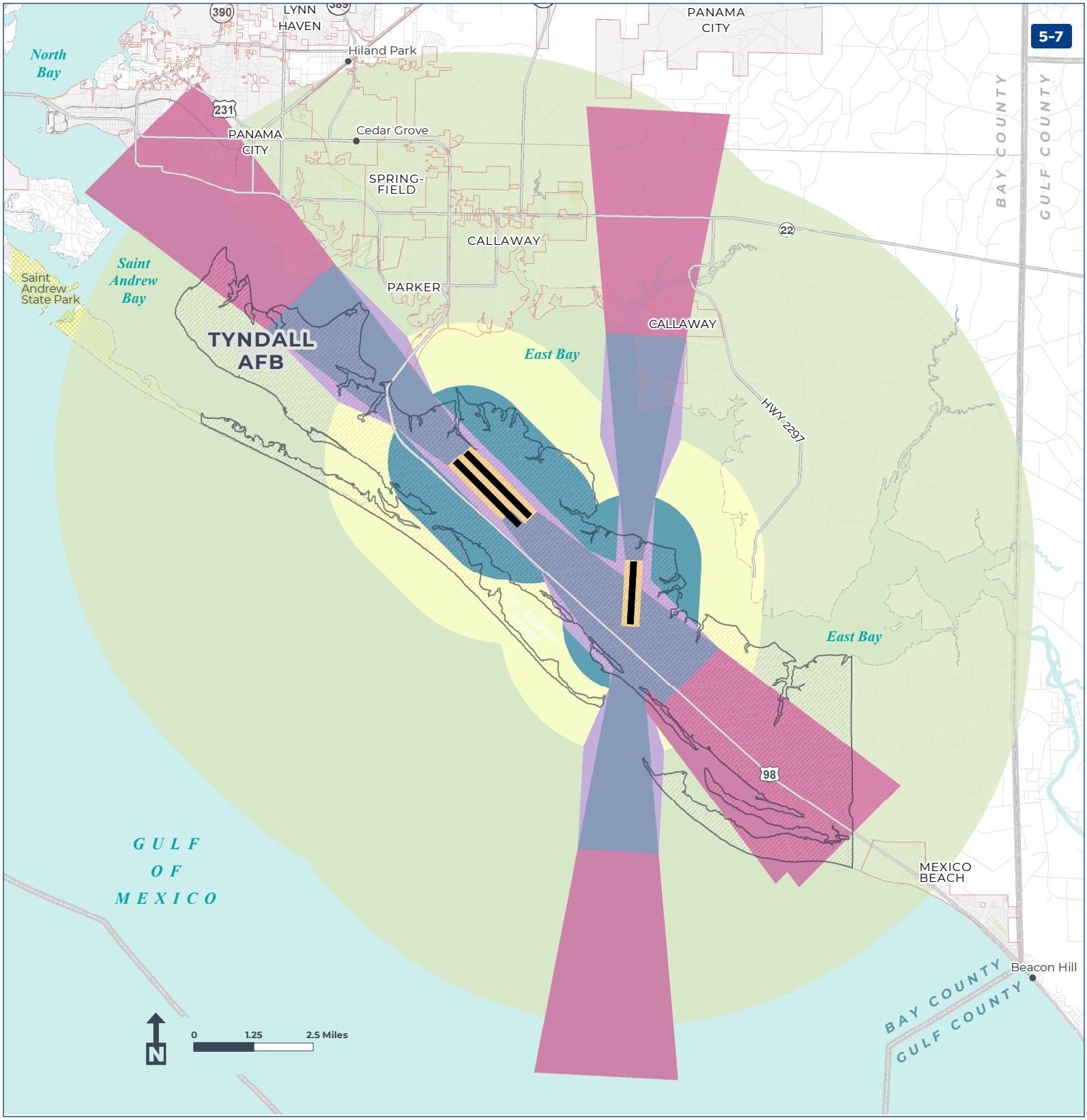
Figure 5-3 Imaginary Surfaces and Transition Planes for Class B Fixed-Wing Runways



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

Table 5-2 Descriptions of Imaginary Surfaces for Military Airfields with Class B Runways

Primary Surface	An imaginary surface symmetrically centered on the runway, extending 200 feet beyond each runway end that defines the limits of the obstruction clearance requirements near the landing area. The width of the primary surface is 2,000 feet, or 1,000 feet on each side of the runway centerline.
Approach-Departure Clearance Surface	An imaginary surface symmetrically centered on the extended runway centerline, beginning as an inclined plane (glide angle) at the end of the primary surface (200 feet beyond each end of the runway), and extending for 25,000 feet. The slope of the approach-departure clearance surface is 50:1 until it reaches an elevation of 500 feet above the established airfield elevation. It then continues horizontally at this elevation to a point 50,000 feet from the starting point. The width of this surface at the runway end is 2,000 feet, flaring uniformly to a width of 16,000 feet at the end.
Inner Horizontal Surface	This imaginary surface is an oval plane at a height of 150 feet above the established airfield elevation. The inner boundary intersects with the approach-departure clearance surface and the transitional surface. The outer boundary is formed by scribing arcs with a radius of 7,500 feet from the centerline of each runway end and interconnecting these arcs with tangents.
Conical Surface	An inclined imaginary surface extending outward and upward from the outer periphery of the inner horizontal surface for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation. The slope of the conical surface is 20:1. The conical surface connects the inner and outer horizontal surfaces.
Outer Horizontal Surface	An imaginary surface that is located 500 feet above the established airfield elevation and extends outward from the outer periphery of the conical surface for a horizontal distance of 30,000 feet.
Transitional Surface	An imaginary surface that extends outward and upward at an angle to the runway centerline and extended runway centerline at a slope of 7:1. The transitional surface connects the primary and the approach-departure clearance surfaces to the inner horizontal, the conical, and the outer horizontal surfaces.



TYNDALL AFB

TAFB RUNWAY AIRSPACE IMAGINARY SURFACES AND TRANSITION PLANES

- TYNDALL AFB
- PARK
- CITY
- RUNWAY
- A: PRIMARY SURFACE
- C: APPROACH DEPARTURE (50:1)
- D: APPROACH DEPARTURE (HORIZONTAL)
- H: TRANSITIONAL SURFACE (7:1)
- E: INNER HORIZONTAL SURFACE
- F: CONICAL SURFACE (20:1)
- G: OUTER HORIZONTAL SURFACE

Figure 5-4 Runway Airspace Imaginary Surfaces and Transition Planes for TAFB

5.3 Hazards to Aircraft Flight Zone

Certain land uses and activities pose potential hazards to flight. To ensure land uses and activities are examined for compatibility with flight operations, the Air Force has identified a HAFZ, which is defined as the area within the imaginary surfaces that are shown on Figure 5-4 above. Please note that the area and shape of the HAFZ may change with the encroachment issue at hand. For instance, issues related to bird/wildlife aircraft strike hazards (BASH) may follow natural boundaries, encompass local bodies of water, and extend along flight paths. Unlike noise zones and safety zones, the HAFZ does not have recommended land use compatibility tables that list potential uses. Instead, the HAFZ is a "consultation zone" that project applicants and local planning bodies consult with the Air Force to ensure their project or land uses are compatible with Air Force operations. These land use and activity compatibility considerations include:

KEY RECOMMENDATION

The height of construction can negatively impact flight operations during and after construction. File Form FAA 7460-1, Notice of Proposed Construction or Alteration. The form can be filed electronically at https://oeaaa.faa.gov

HEIGHT

Tall objects can pose significant hazards to flight operations or interfere with navigational equipment (including radar). Currently, height challenges are being managed within and surrounding TAFB airspace and in areas where aircraft from TAFB operate. The county agencies involved with approvals of permits for construction should require developers to submit calculations showing that projects meet the height restriction criteria of 14 Code of Federal Regulations (CFR) 77.17 for TAFB. City and county agencies may also consider requiring that a "Determination of No Hazard" be issued by the FAA for any tall objects within this zone.

KEY RECOMMENDATION

If developers wish to mirror TAFB lighting standards, the standards can be accessed within TAFB's updated Installation Facility Standards found at: www.TyndallIFS.com

VISUAL INTERFERENCE

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

LIGHT EMISSIONS

Bright lights, either direct or reflected, in the airfield vicinity can impair a pilot's vision, especially at night. A sudden flash from a bright light causes a spot, or "halo," to remain at the center of the visual field for a few seconds or more, rendering a person virtually blind to all other visual input. This is particularly dangerous for pilots at night, when the flash can diminish the eye's adaptation to darkness. The eyes partially

recover from this adaptation in a matter of minutes, but full adaptation typically requires 40 to 45 minutes. Specific examples of light emissions that can interfere with the safety of nearby aviation operations include:

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

KEY RECOMMENDATION

Sudden exposure to laser radiation during a critical phase of flight, such as on approach to landing or departure, can distract or disorient a pilot and cause temporary visual impairment. Local governments should become familiar with FAA rules and provide information to developers, buyers, and tenants.

BIRD/WILDLIFE AIRCRAFT STRIKE HAZARD

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

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

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

TAFB BASH Program is constructed with guidance from the following documents:

+ *BASH Plan 910—325TH FW BASH Plan*
+ *AFI 91-212—Air Force Instruction 91-212, BASH Management Program*
+ *AFI 32-7042—Air Force Instruction 32-7042, Solid and Hazardous Waste Compliance*
+ *AC 150/5200-33C—FAA Advisory Circular*
+ *150/5200-33C, Hazardous Wildlife Attractants on or near Airports AC*
+ *150/5200-34A—FAA Advisory Circular*
+ *150/5200-34A, Construction or Establishment of Landfills near Public Airports*
+ *40 CFR 258—40 Code of Federal Regulations Part 258, Criteria for Municipal Solid Waste landfills*

TAFB implements a BASH program to identify and reduce safety hazards to aviation caused by bird and wildlife collisions. The BASH team conducts formal wildlife surveys to identify and document bird species, abundance, behavior, seasonal migrations, and attractants that create hazards to aviation. The team evaluates the BASH plan annually to make recommendations for habitat modifications and management strategies to minimize the risk of bird and wildlife collisions with aircraft. The program is currently conducting a wildlife hazard assessment (WHA) to identify environmental impacts from Hurricane Michael that may affect the attractants and behavior of hazardous bird and wildlife species. Large birds and flocking species pose the greatest threat and potential for damaging strikes. Known hazardous species in and around TAFB include but are not limited to raptor species, the osprey, waterfowl, gulls, terns, shorebirds, the eastern meadowlark, the European starling, and the mourning dove.

In accordance with Florida State Law *Title XI Section 163.3175, Title XI Section 163.3177(4), and Title XI Section 163.3177(5)(c),* other key components/requests of the TAFB BASH planning team include the following:

- **TAFB requests notification of and opportunity to provide advisory comments** on proposed changes to comprehensive plans, plan amendments, and proposed changes to land development regulations that, if approved, would affect the intensity, density, or use of the land adjacent to or in close proximity to the base.
- **Include TAFB BASH recommendations** and considerations from the WHA in the Bay County-TAFB Compatible Use Plan.
- **Include the BASH program manager on the notification list of the local planning board** or equivalent review entity for all communities located within 5 miles of the installation, so the BASH program manager will receive notification of any proposed project and have the opportunity to review it for attractiveness to hazardous wildlife.

TAFB BASH personnel (with the oversight of the installation Safety Office) also ensure the airfield, aircraft movement area (approach/departure corridors, drop zones, etc.), and operational airspace outside the aircraft movement area are not utilized as wildlife conservation easements.

BASH personnel or program managers at TAFB also seek to establish independent relationships and communicate with all federal, state, and local wildlife-related agencies and off-base private landowners as necessary, and with other concerned installation agencies. This is done so that the community considers local bird/wildlife habitat management or modifications (to include dispersal or depredation

activity), environmental or land management activity, land uses (landfills, agricultural crop seasons), current or projected community projects off installation with the potential to affect wildlife activity on or near the installation, and encroachment issues in its planning process.

RADIO FREQUENCY/ ELECTROMAGNETIC INTERFERENCE

The American National Standards Institute defines **electromagnetic interference (EMI) as any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics** or electrical equipment.

EMI can be induced intentionally, as in forms of electronic warfare, or unintentionally, as a result of spurious emissions and responses, such as high-tension line leakage and unshielded industrial machinery. In addition, EMI may be caused by atmospheric phenomena, such as lightning or precipitation static.

New generations of military aircraft are highly dependent on complex electronic systems for navigation and critical flight and mission-related functions. Consequently, communities should use care when siting any activities that create EMI. Many of these sources are low-level emitters of EMI. However, when combined, they have an additive quality.

EMI also affects consumer devices, such as cell phones, FM radios, televisions, and garage door openers. In some cases, the source of interference occurs when consumer electronics use frequencies set aside for military use.

KEY RECOMMENDATION

It is recommended that local governments develop and distribute a “Compatible Use of the Electromagnetic Spectrum” brochure at the time any building permit is issued for the subject property.

DRONES/UNMANNED AIRCRAFT SYSTEMS

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

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

KEY RECOMMENDATION

Non-military drones operating in the flight paths of aircraft taking off or landing at TAFB are a safety hazard for pilots, passengers, and people congregating on the ground. Drone users should become familiar with FAA rules related to drone use near military airports. Local governments should provide information to developers, buyers, and tenants, such as:

+ FAA Press Release. New Drone Rules Take Effect Today (https://www.faa.gov/newsroom/new-drone-rules-take-effect-today)
+ Recreational Flyers & Modeler Community-Based Organizations
+ Fact Sheet (https://www.faa.gov/uas/recreational_flyers);
+ Small Unmanned Aircraft Systems (UAS) Regulations (Part 107) (https://www.faa.gov/newsroom/small-unmanned-aircraft-systems-uas-regulations-part-107)

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

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

Overall, drones have not been a major concern at TAFB, but with the increase of recreational and commercial use of drones, this could become a more prominent issue.

6

6 LAND USE COMPATIBILITY ANALYSIS

CZs, APZs, noise zones, shown on Figure 6-1 for TAFB, and the HAFZ comprise the AICUZ footprint for an air installation, and TAFB's AICUZ footprint is the basis for its land use compatibility analysis. The AICUZ footprint defines the minimum recommended area within which land use controls are needed and requested to enhance the health, safety, and welfare of those living or working near a military airfield and to preserve the installation's flying mission. The AICUZ footprint, combined with the guidance and recommendations set forth in the AICUZ study, are the fundamental tools necessary for the planning process to achieve overall land use compatibility.

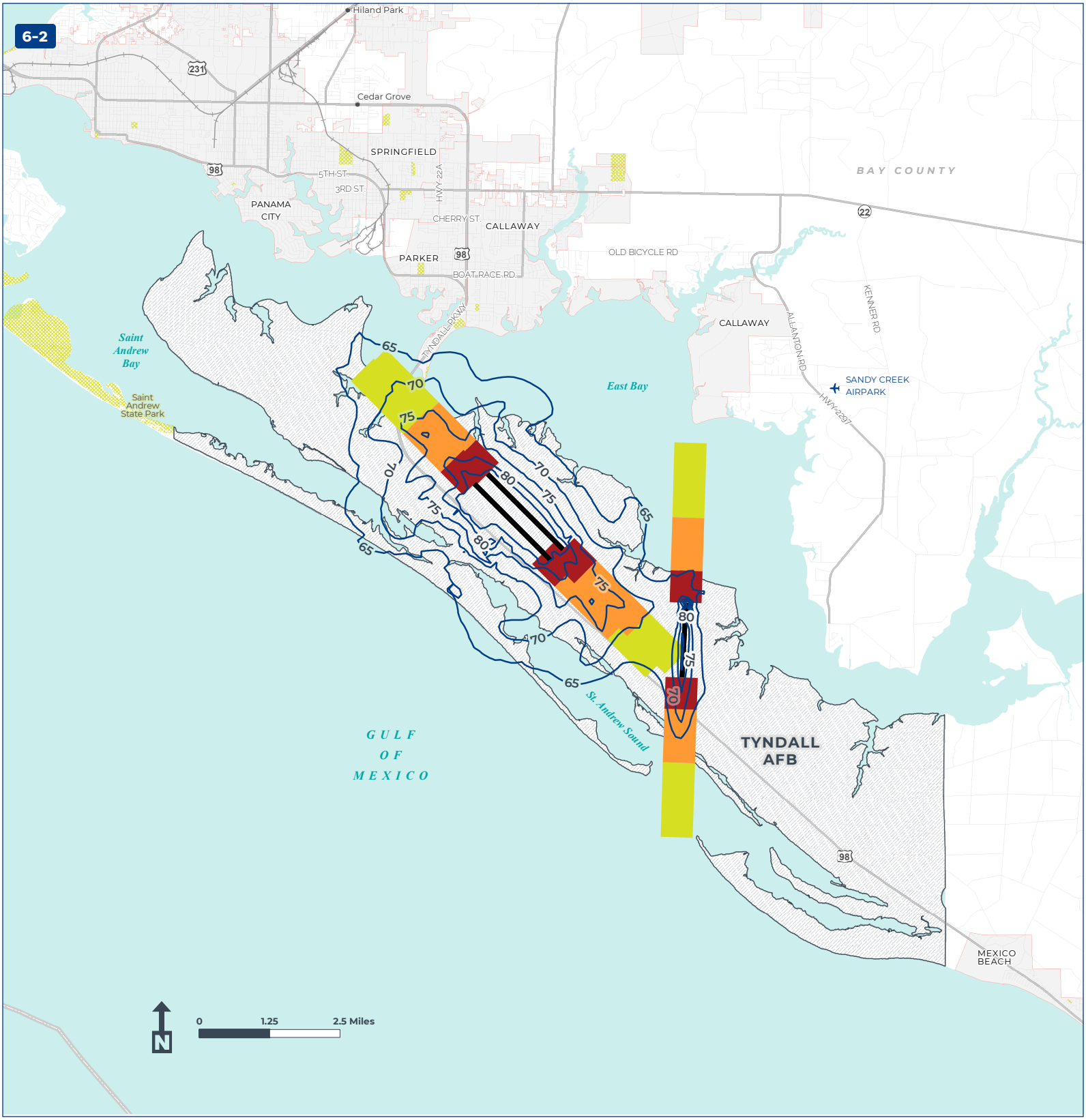
KEY RECOMMENDATION

The Air Force recommends that local and regional governments adopt the AICUZ noise zones, CZs, APZs, and HAFZ into planning studies, regulations, and processes to best guide compatible development around installations.

6.1 Land Use Compatibility Guidelines and Classifications

In an effort to establish long-term compatibility for lands within the vicinity of military air installations, the DoD has created land use compatibility recommendations based on the Federal Highway Administration's Standard Land Use Coding Manual (SLUCM). These guidelines are used by DoD personnel for on-installation planning and for engaging with the local community to foster compatible land use development off-installation. Table A-1 of Appendix A shows the suggested land use compatibility guidelines within the CZs and APZs. Table A-2 of Appendix A provides land use compatibility recommendations within noise zones for aircraft noise.

Section 6.4 presents the compatibility analysis and concerns regarding development within noise zones and APZs associated with TAFB.



TYNDALL AFB

TAFB COMPOSITE AICUZ FOOTPRINT

- CITY
- PARK
- RUNWAY
- TYNDALL AFB
- CLEAR ZONE (CZ)
- ACCIDENT POTENTIAL ZONE (APZ-I)
- ACCIDENT POTENTIAL ZONE (APZ-II)
- 2023 TAFB AICUZ CONTOURS (dB)

Figure 6-1 TAFB 2022 Composite AICUZ Footprint

6.2 Planning Authorities, Stakeholders, and Policies

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

STATE OF FLORIDA PLANNING AND GROWTH MANAGEMENT

The State of Florida has one of the most comprehensive and progressive land use planning programs in the country. The authority and responsibility for establishing and implementing the roles, processes, and powers of comprehensive planning programs to guide and control future development in Florida is vested in local governments because local governments have regulatory authority over the use of land. Regulatory authority over the use of land means that local governments are the agencies that issue development permits.

The land use planning program in Florida is commonly referred to as "Growth Management" and is found in a broad collection of laws, rules, regulations, and policies affecting all planning and development activities of the state and local governments.

In 1985 Florida enacted the Local Government Comprehensive Planning and Land Development Regulation Act, Chapter 163, Part II, Florida Statutes. This statute requires that all local governments adopt, maintain, and implement land use plans and development regulations for all future development actions. It also requires that all geographic areas within the state be included within the jurisdiction of a local comprehensive plan and that all development actions be consistent with the adopted plan. All 67 counties and all of the cities and towns, as well as the Walt Disney World area, the Reedy Creek Improvement District, have adopted local comprehensive plans.

BAY COUNTY, FL

Within unincorporated areas of Bay County, land use planning and zoning and related land development is led by the Bay County Department of Planning and Zoning.

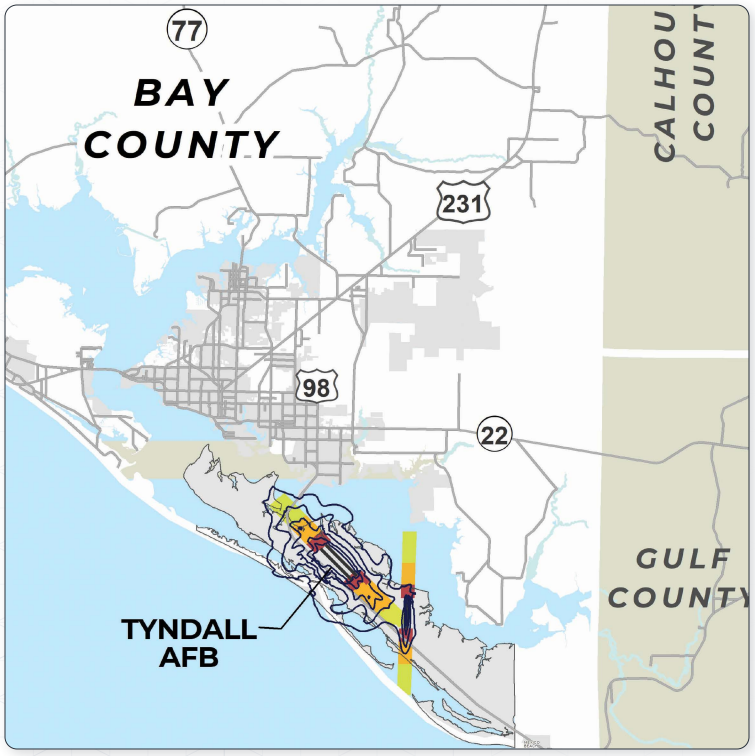
TAFB's noise contours fall partly within unincorporated Bay County (see inset map). Bay County Department of Planning and Zoning reviews all developments within unincorporated Bay County (excluding single family homes) for consistency with the Bay County Land Development Regulations. The Department oversees:

- **Comprehensive Planning.** Includes a Future Land Use Map that assigns land use designations (e.g., "Residential," "Commercial," etc.) to all parcels of land in unincorporated Bay County.
  - The *Bay County Comprehensive Plan* (which was updated in 2009) also identifies Service Areas, Special Treatment Zones, Military Influence Areas, and the West Bay Detailed Specific Area Plan.
  - The Plan lays out the goals, objectives, and polices representing the adopted growth management strategies to guide future development in Bay County. The Plan also provides strategies to promote economic development, provide open space and recreational opportunities, conserve and protect environmental resources, and insure the adequate provision of utilities and infrastructure.
- **Concurrency Management.** Contains Adopted Level of Service Standards and Maximum Service Volumes for County and State Road segments monitored by the County.
- **Permitting.** Issues or reviews permits for artificial reef, grading, land clearing, off and on-premise signage, On-premise signs, and tree removal
- **Development Review.** Reviews all developments excluding single family homes. Developments are reviewed for consistency with the Bay County Land Development Regulations.

The following are important references to TAFB from the Bay County Comprehensive Plan, Future Land Use Element that speak directly to development restrictions (i.e., height restrictions), disclosure and coordination requirements for project developers considering projects around TAFB.

- **Objective 3.4.** Identify and designate overlays on the FLUM to be used as "Special Treatment Zones" (STZ) for purposes of dealing with unique or desirable circumstances.

Bay County, Florida



- **Policy 3.4.1.** Airfield Installation Compatibility Use Special Treatment Zones shall be the Clear Zones (CZ) and Accident Potential Zones (APZ) for Tyndall Air Force Base.
  - The AICUZ area for TAFB shall include the lands and waters described in the TAFB 2008 AICUZ Study. Development restrictions described in that Study shall apply within the AICUZ area.
  - In addition, any applications for development over fifty feet in height to be located in T4S, R13W, Sections 22, 25, 26, and 35 will be transmitted to TAFB for review and comment. Any development that would threaten the integrity and mission of TAFB shall be prohibited.

KEY RECOMMENDATION

Recommend the "proximity to a military installation" real estate disclosure described in Bay County Ord #15-04, 20 Jan 2015, Policy 3.4.11 be followed which states "The developer shall provide a disclosure to its customers, both in the contract of sale [or lease] and in the recorded covenants, which describes the locality of TAFB to the property and notifies the customers that resulting effects from potential noise and vibration from the operations of TAFB may affect their enjoyment of the property."

- **Policy 3.4.11.** The following sub-area policies shall apply to a 165-acre parcel, located along Highway 98, west of and adjacent to the City of Mexico Beach incorporated City Limits, referenced in the comprehensive plan amendment which was adopted by the County through Ordinance #15 – 04 on January 20, 2015:
- The developer shall provide a disclosure to its customers, both in the contract of sale and in the recorded covenants, which describes the locality of TAFB to the property and notifies the customers that resulting affects from potential noise and vibration from the operations of TAFB may affect their enjoyment of the property. This disclosure will also detail possible radio frequency interference.
- The developer shall coordinate with TAFB the construction of any communications towers and any other communications facilities that may adversely impact the operations of the Base.
- Any proposal to amend the density, height, lighting restrictions, or noise abatement standards listed in this policy shall be provided to TAFB for comment and review.

TAFB | BAY COUNTY COMPATIBLE USE PLAN

In 2021 Bay County completed an important document called the TAFB–Bay County Compatible Use Plan (CUP). The CUP is a collaborative planning effort among active military installations, surrounding communities, federal officials, residents, business owners, and other community stakeholders. The project is funded through the DOD Office of Local Defense Community Cooperation (OLDCC).

KEY RECOMMENDATION

The density of development can negatively impact flight operations and add to light pollution. These impacts can be mitigated by allowing TAFB at least 30-days to comment on any clustering or density transfer proposals for developments in close proximity to the installation and consider impact to TAFB mission when approving such plans.

The objective of the CUP is to "identify compatible land uses and growth management guidelines to reduce encroachment adjacent to the military installation while continuing to foster growth within the community".

Actions identified in the TAFB-Bay County CUP are extensive. Some examples of these actions and recommendations include the following:

- Adopt overlay districts into each jurisdiction's Comprehensive Plan and Land Development Code that identifies the Special Use Airspace used by the Installation.
- Establish Military Influence Areas (MIA) and Military Influence Overlay Districts (MIOD) within the five cities and the County located within the Study Area to address areas that require special considerations due to noise, use, or airspace.

KEY RECOMMENDATION

The communities in Bay County should continue to work with TAFB to advance the recommendations of the TAFB–Bay County CUP.

- Increase public understanding of the training mission of the Installation, its unique nature and importance for national security.
- Provide information to jurisdictions, developers, and interested citizens regarding Installation training areas and the potential noise levels from such activities.

Appendix D highlights key recommendations from the 2021 CUP. These recommendations provide for additional actions by local governments to improve land use decisions that may affect the mission of TAFB. The recommended actions are aimed at improving the compatibility of land uses around TAFB with the base's mission now and in the future.

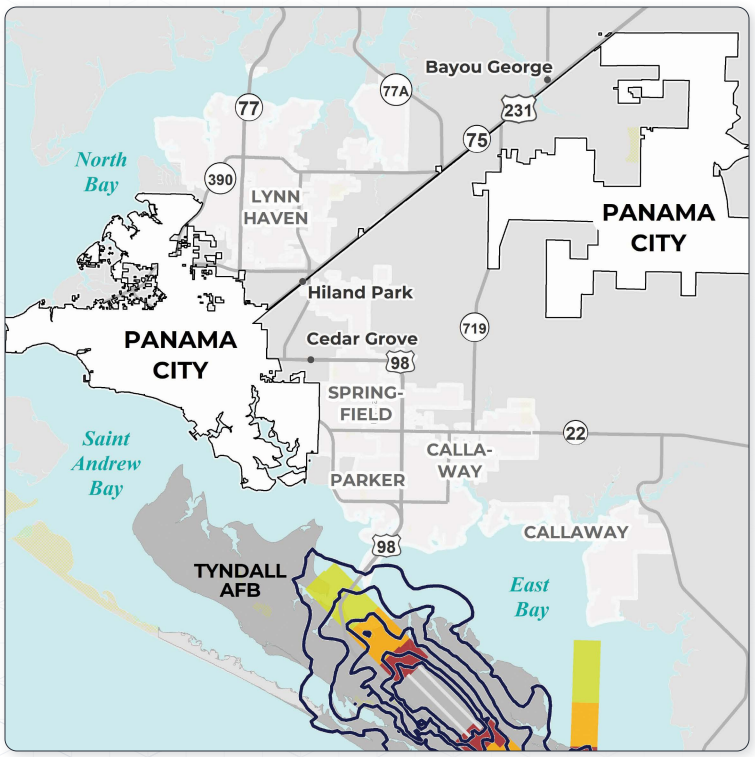
CITY OF PANAMA CITY, FLORIDA

Planning and development matters in the City of Panama City are addressed by the Department of Development Services. Development Services oversees amendments to the City's Comprehensive Plan and the new Unified Land Development Code. Responses to citizens' residential and commercial property concerns are also addressed by Development Services requests.

The TAFB noise contours do not extend into the City of Panama City (see inset map).

The City's 2018 Comprehensive Plan does not mention TAFB except to designate an ex-officio nonvoting member on the Local Planning Agency from TAFB. The city does possess a Military Overlay Influence District (MOID) focused on Naval Support Activity (NSA) Panama City. Policy 1.4 of the Comprehensive Plan states the MOID shall be established to ensure that the installation remains viable and able to fulfill their mission.

City of Panama City, Florida



CITY OF PARKER, FLORIDA

Within the City of Parker, planning and development is managed by the Permitting Department. This department is comprised of the Planning Commission, Land Development Regulations, Comprehensive Planning and the City's Code of Ordinances. The TAFB noise contours extend into the City of Parker (see inset map) north of Tyndall on South Tyndall Parkway.

The *City's Comprehensive Plan (May 2019)* has a planning horizon that looks out to 2040. The Plan contains a number of important references to TAFB, including:

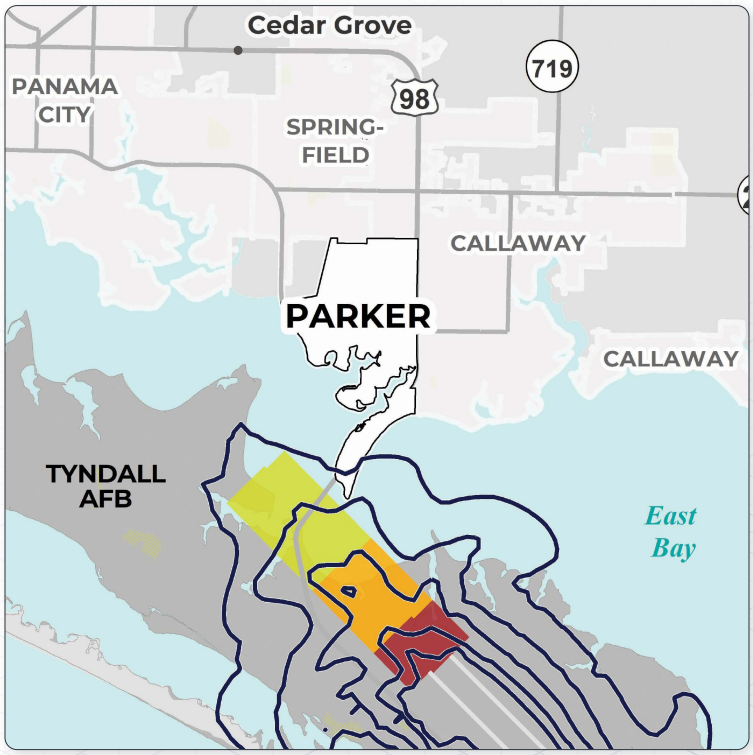
- **Policy 1.1.7,** Incorporates by reference the March 2016 version of the Air Installation Compatible Use Zone (AICUZ) map for TAFB as an overlay on the Future Land Use Map.
- **Policy 1.2.7** of the Plan requires that all plats completely or partially within a noise contour equal to or above the 65 dB DNL as depicted on the adopted AICUZ overlay contain a disclosure statement that the subject property is located near TAFB and is possibly subject to noise, military aircraft and hazards associated with a major U.S. Air Force Base.
- **Policy 1.2.10.** For any development within any noise contour equal to or above the 65 dB DNL as depicted on the adopted AICUZ overlay, applicants proposing structures which meet and/or exceed the federal notification criteria pursuant to 14 C.F.R FAR Part 77.13, shall provide to the City written evidence of a Federal Aviation Administration (FAA) aeronautical study based on the submittal of FAA Form 7460-1 or electronic equivalent. The applicant shall provide a written copy of a FAA aeronautical study which has determined the proposed structure is not a hazard to air navigation before obtaining any development permit or such requirement shall become a condition to the development permit.

KEY RECOMMENDATION

Local communities should continue work with TAFB to ensure current information is available on proposed development projects in the vicinity of TAFB (i.e., within the TAFB HAFZ—See Section 5.3) and that a pathway for TAFB to provide input regarding compatibility concerns is in place.

- **Policy 8.7.2.** The City will establish procedures for referring proposed comprehensive plan amendments and proposed Land Development Regulations changes within the City to TAFB for review and comment.
- **Policy 8.9.1.** The City of Parker will recruit businesses relating to and supportive of TAFB in order to create synergistic relationships between businesses and the Air Force Base

City of Parker, Florida



The City's Planning Commission is made up of four Commissioners all with voting rights. Plans requiring approval are reviewed internally then sent to Anchor Marine (the City's Engineering contractor) for review. Plans then come before the Planning Commission. The Parker City Council has final approval on major developments.

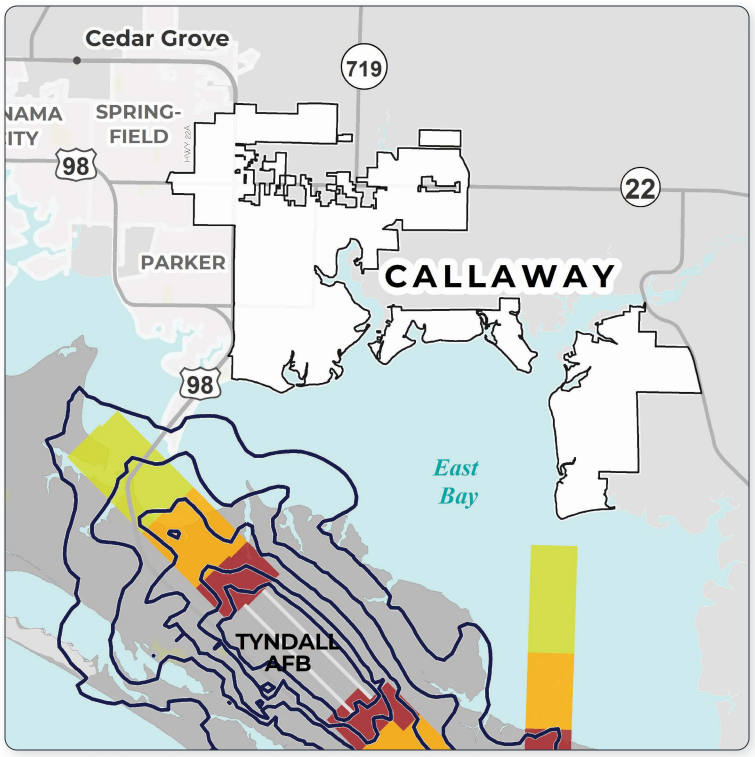
CITY OF CALLAWAY, FLORIDA

The City of Callaway Department of Planning is responsible for providing information to citizens, developers, and elected and appointed officials on planning and land development issues facing the city. This includes assistance in the formulation and administration of plans, regulations, programs, and budgets for capital projects.

The Planning Department also provides information on the Comprehensive Plan and Land Development Regulations, and the process involved when developing or redeveloping within Callaway, as well as providing assistance with required applications and permits.

The department assists the City in maintaining its Comprehensive Plan Land Development Regulations. Similar to the City of Parker, Callaway's Comprehensive Plan 2025, also makes several supportive references to TAFB including the following:

- **Objective 13.** The City shall coordinate with Tyndall Air Force Base on land use decisions that may affect the mission of the military installation;
  - **Policy 13.1.** The City shall solicit comments from a designated representative of Tyndall Air Force Base. These comments will be considered when making comprehensive planning or land development regulation decisions. The comments will also be forwarded to the state planning agency.
  - **Policy 13.2.** A representative member of Tyndall Air Force Base shall be included as an ex officio, non-voting member of the land planning board.
- **Objective 1.8.** The City shall coordinate with Tyndall Air Force Base on land use decisions that may affect the mission of the military installation.
  - **Policy 1.8.1.** The City shall solicit comments from a designated representative of Tyndall Air Force Base. These comments will be considered when making comprehensive planning or land development regulation decisions. The comments will also be forwarded to the state planning agency.

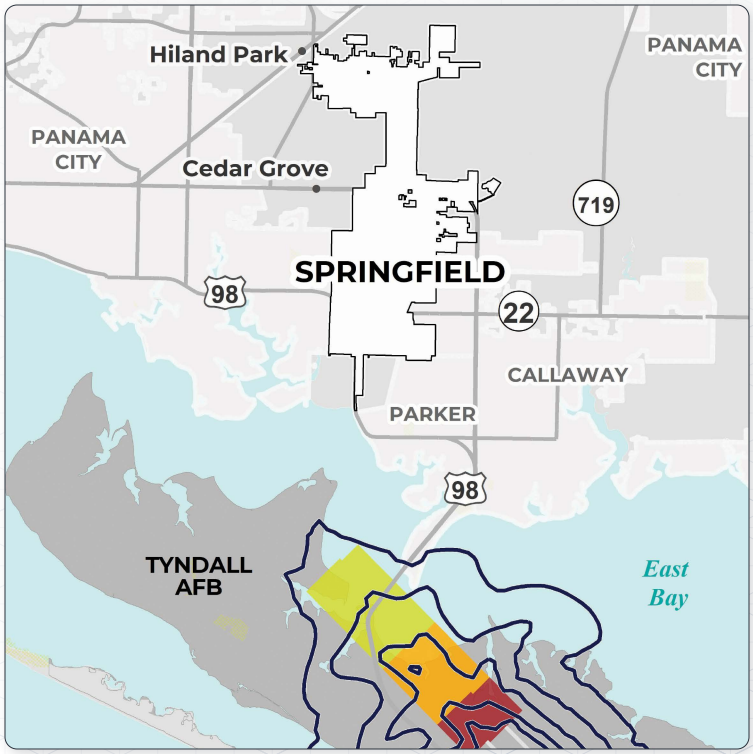


City of Callaway, Florida

The City's Planning Board consists of seven members who are appointed by and advise the members of the City Commission. Some of the board's duties include preparing and recommending in accordance with Florida Statutes, a Comprehensive Plan, monitoring and overseeing the effectiveness and status of the city's Comprehensive Plan and coordinating the city's planning efforts and programs with those of other Bay County jurisdictions.

CITY OF SPRINGFIELD, FLORIDA

The City of Springfield does not have a dedicated Planning Department. It procures the services of engineering contractor to support its planning needs. The mayor of the city and his staff also attend to planning and land development matters in the city of Springfield.



City of Springfield, Florida

6.3 Land Use and Proposed Development

The land use compatibility analysis evaluates existing and future land uses and zoning near TAFB to determine compatibility conditions. Existing land use is assessed to determine current land use activity, while future land use and zoning are used to project development and potential growth areas. Land use and zoning geographic information system (GIS) data utilized were obtained from the IT/GIS and planning-focused departments of the Bay County.

In order to analyze the compatibility of nearby land uses surrounding TAFB, the use of each parcel of land is characterized into the following land use categories. While the specific categories used by each local government may vary, these generalized categories provide a starting point for each analysis. Appendix A of this study, Land Use Compatibility Tables, provides further description on the SLUCM land use categories along with notes on general allowable uses for TAFB surrounding jurisdictions. Appendix C provides a table illustrating how the multiple jurisdictions local land use designations were consolidated into the following generalized categories:

- **Commercial.** Includes offices, retail stores, hospitality/restaurants and other types of commercial establishments.
- **Industrial.** Includes manufacturing, warehouses and other similar uses.
- **Public/Quasi-Public.** Includes publicly owned lands and utilities and land to which the public has access, including military reservations and training grounds, public buildings, schools, churches, cemeteries, and hospitals.
- **Open/Agriculture/Low Density.** Passive open space and agricultural areas.
- **Recreation.** Land areas designated for recreational activity, such as parks, wilderness areas and reservations, conservation areas, and areas designated for trails, hikes, camping, etc.
- **Residential.** Includes all types of residential activity, such as single and multi-family residences and rural residential, mobile homes.
- **Undeveloped.** Includes undeveloped parcels
- **Transportation/Utility.** Includes major and minor transportation systems and areas designated to support utilities.
- **Undesignated.** Includes some parcels that had no indicated value or were listed as "undesignated" in the original datasets.

Existing land use and parcel data provided by local communities were evaluated to ensure an actual account of land use activity regardless of conformity to zoning classification or designated planning or permitted use. Additionally, local management plans, policies, ordinances, and zoning regulations were evaluated to determine the type and extent of land use allowed in specific areas. (For details on how the generalized existing land use layer was created see Appendix C).

6.3.1 Existing Land Uses

As mentioned in earlier sections, TAFB is located on a peninsula, surrounded to the west and south by the Gulf of Mexico and to the north by Saint Andrew Bay and East Bay. Figure 6-1 presents the existing land uses for the area that surrounds TAFB and those areas exposed to the 65 dB DNL and greater noise contours.

To the northeast of TAFB the predominant existing land use is residential. In the communities closest to the base including the Cities of Parker, Callaway, Springfield and Panama City—residential uses exist along East Bay along with a mix of commercial and Public/Quasi-public uses along the major transportation corridors (i.e., U.S. Route 98). There is also a large Industrial area located across the Bay from TAFB associated with the businesses such as West Rock Paper Mill, Smith Industrial Services and Eastern Ship Building. Further to the northwest, St. Andrews State Park is located on the barrier island north of TAFB, in the Gulf of Mexico.

Along the east side of the East Bay, land uses primarily consist of undeveloped lands and are managed primarily for conservation/habitat. There is also some low-density residential development located in the area across the Bay from TAFB (i.e., in the area of Richard Bayou Estates). Other residential areas in this location occur along Davis Point Road (Highway 2297) which continue to show evidence of some damage from Hurricane Michael with downed trees and damaged structures throughout the area.

Additional Industrial uses occur further south near Murray Point and primarily include ship building operations (Eastern Ship Building).

To the south commercial and residential uses occur in the vicinity of Mexico Beach.

U.S. Route 98 is an east-west highway and is the primary corridor that through Panama City. Then it crosses Saint Andrew Bay via the DuPont Bridge, continueing through TAFB, and on to the City of Mexico Beach. U.S. 98 links to regional primary and secondary transportation routes with access to Panama City and Bay County. These routes contain the majority of commercial and public properties. Residential units are located along the secondary and tertiary routes throughout the region.

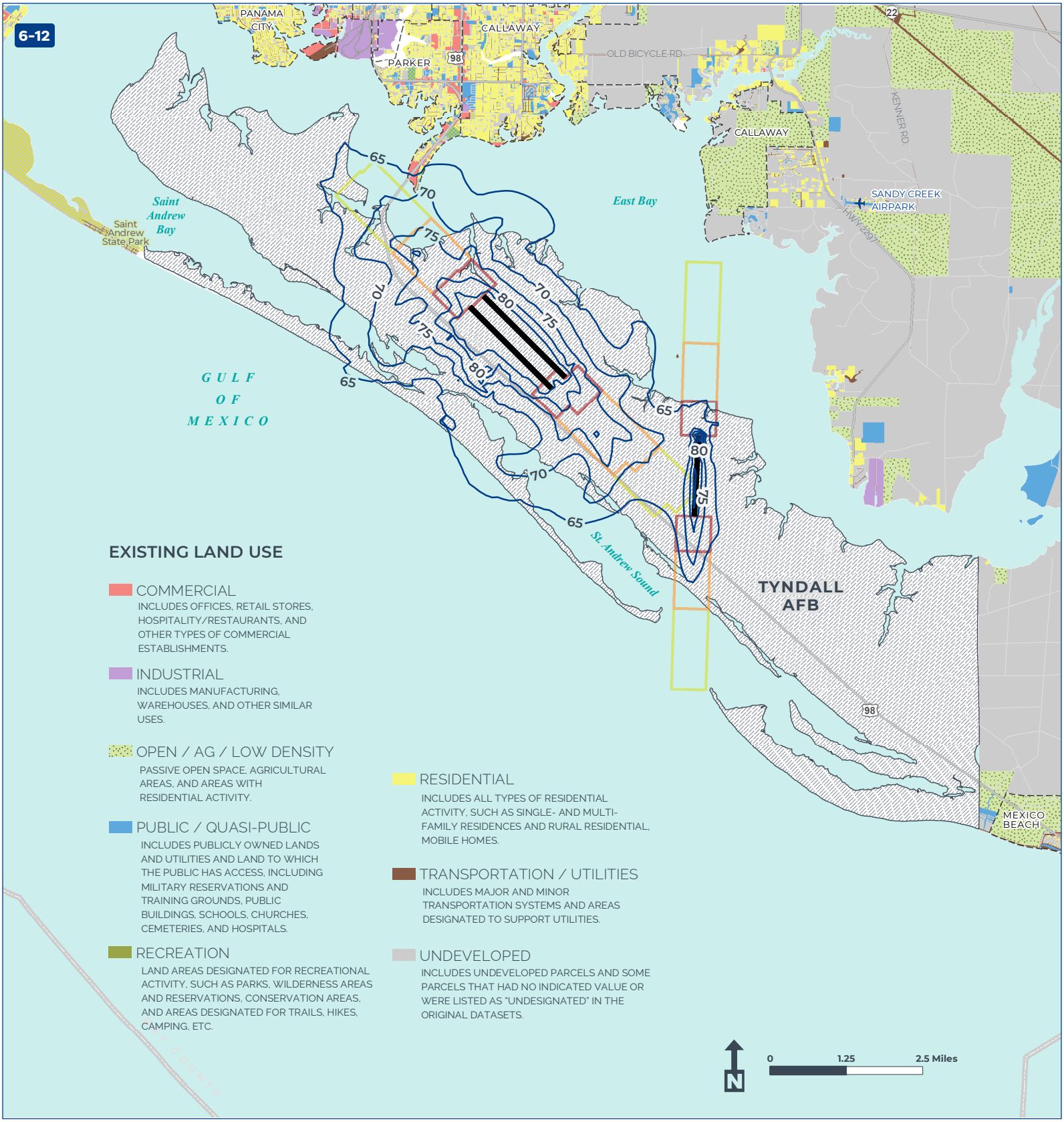
6.3.2 Current Zoning

Figure 6.3 presents an overlay of the 2023 TAFB noise contours, CZs and APZs on a map displaying the current generalized zoning in the vicinity of TAFB. (For details on how the generalized zoning layer was created, see Appendix C).

Land surrounding TAFB generally reflects and is supportive of existing land use patterns in the surrounding cities and unincorporated Bay County. Overall, a few areas exist within the cities and County where the land use designations are not aligned with current zoning.

Zoning within the waterfront areas north of Saint Andrew Bay in Panama City, Parker, and Callaway are similar to existing land use areas. These areas are zoned primarily for industrial, commercial, and residential activities.

Areas along the eastern shore of the East Bay segment are zoned primarily for Open/Agricultural/Low density uses, and areas zoned for residential uses surround the mouth of the Laird Point and Piclalene Bayous.



TYNDALL AFB

EXISTING LAND USE AND
2023 AICUZ NOISE CONTOURS,
CZS AND APZS

CITY
PARK
RUNWAY
TYNDALL AFB
CLEAR ZONE (CZ)
ACCIDENT POTENTIAL ZONE (APZ-I)
ACCIDENT POTENTIAL ZONE (APZ-II)
2023 TAFB AICUZ CONTOURS (dB)

Figure 6-2 TAFB Existing Land Use and 2023 AICUZ Noise Contours, CZs, and APZs

Within unincorporated Bay County, Shell Island Beach (located to the South of St. Andrews State Park), situated on a barrier island to the northwest of the base, is designated as Public/Quasi-Public use and Open/Ag/Low Density. Shell Island is an undeveloped 7-mile-long barrier island and beach that makes up the southern reach of St. Andrews State Park. Accessed via private boat or the official Shell Island Shuttle, the island is a local must-see location for visitors who want the pristine beach experience. Swimming and snorkeling are great. Hiking inland on the island offers the opportunity to explore rare Florida coastal plant, bird, and wildlife communities in their natural condition.

Areas along U.S. 98 just northeast of TAFB are zoned primarily residential and commercial along South Tyndall parkway. These areas are outside of the high noise zones and safety zones for TAFB but could have the potential for increased density residential and commercial in future state conditions as the area redevelops.

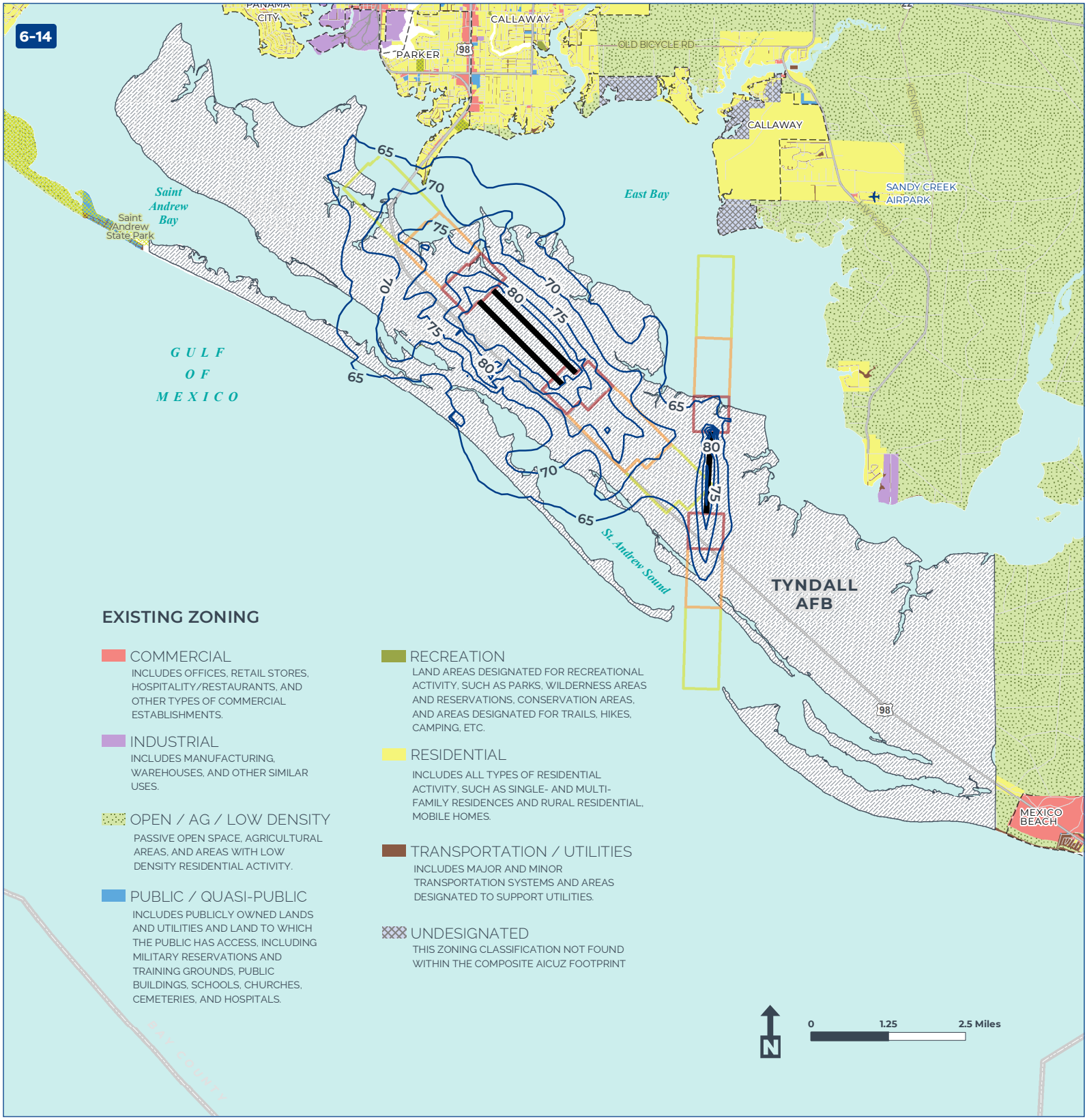
In the City of Mexico Beach, the area adjacent to TAFB is primarily zoned a mix of commercial, open space/agricultural/ low density and residential. These areas are also outside of any of TAFB's noise zones or accident potential zones.

FUTURE LAND USE

Figure 6-4 shows generalized future land use surrounding TAFB area, which closely reflects local zoning maps. (For details on how the generalized future land use layer was created, see Appendix C).

In Bay County, future land use is identified in the Future Land Use Element of County's Comprehensive Plan. Zoning as described in section 6.3.2 and future land uses around TAFB are essentially identical.

Future land use designations for the areas around TAFB are generally consistent with existing land use designations and fall predominantly into a mix of residential, commercial and open/agriculture/low density.

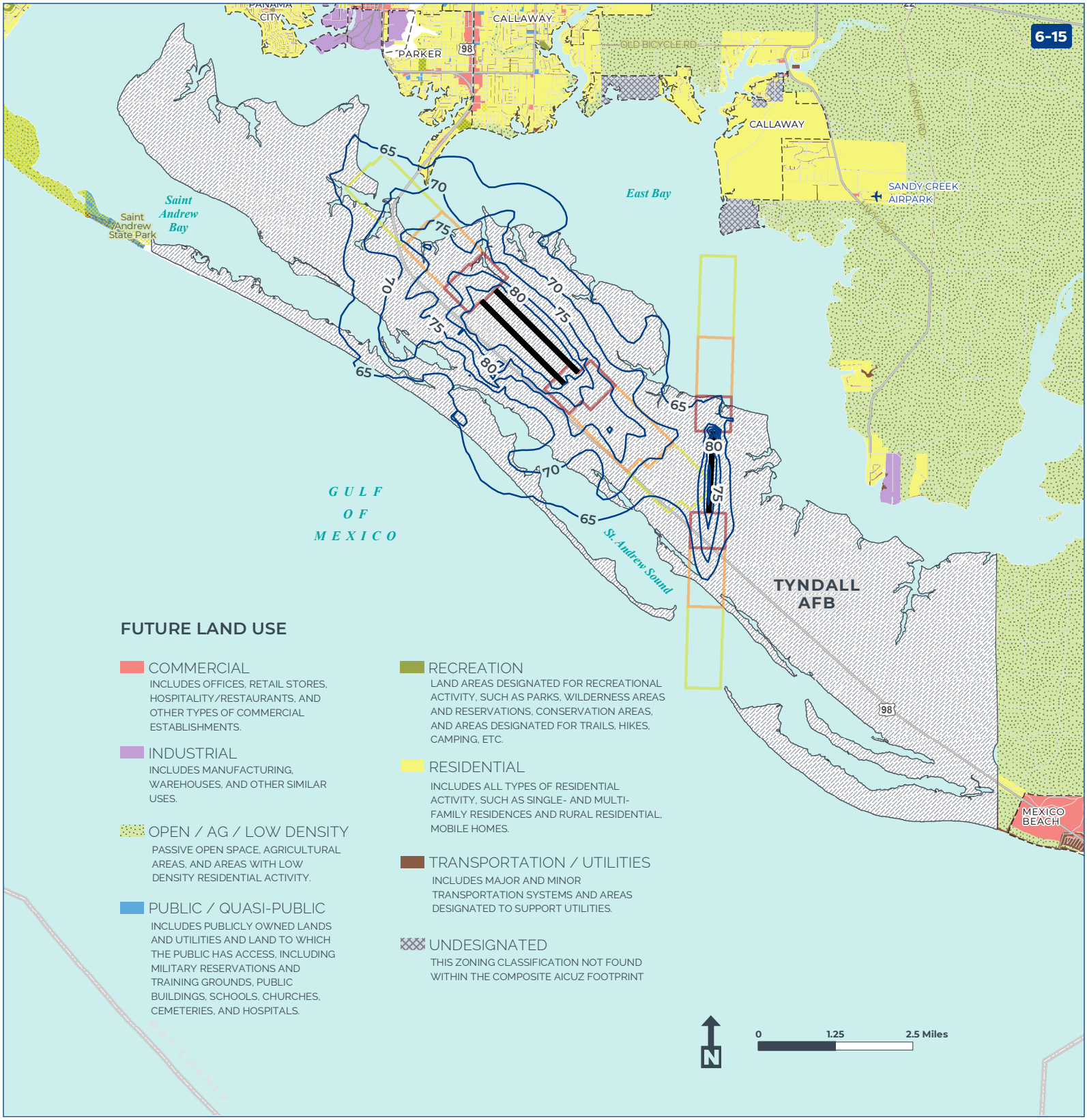


TYNDALL AFB

EXISTING ZONING AND
2023 AICUZ NOISE CONTOURS,
CZS AND APZS

- CITY
- PARK
- RUNWAY
- TYNDALL AFB
- CLEAR ZONE (CZ)
- ACCIDENT POTENTIAL ZONE (APZ-I)
- ACCIDENT POTENTIAL ZONE (APZ-II)
- 2023 TAFB AICUZ CONTOURS (dB)

Figure 6-3 Existing Zoning and 2022 AICUZ Noise Contours, CZs, and APZs for TAFB



TYNDALL AFB

FUTURE LAND USE AND
2023 AICUZ NOISE CONTOURS,
CZS AND APZS

- CITY
- PARK
- RUNWAY
- TYNDALL AFB
- CLEAR ZONE (CZ)
- ACCIDENT POTENTIAL ZONE (APZ-I)
- ACCIDENT POTENTIAL ZONE (APZ-II)
- 2023 TAFB AICUZ CONTOURS (dB)

Figure 6-4 Future Land Use and 2022 AICUZ Noise Contours, CZs, and APZs for TAFB

6.4 Compatibility Concerns

6.4.1 Land Use Analysis

Land use describes how land is developed and managed, and is characterized by the dominant function occurring within an area. To compare land use consistently across jurisdictions, this analysis uses generalized land use classifications illustrating land use compatibility across common land use types. These generalized land use categories are not exact representations of the local community's land use designations, but combine similar land uses like those introduced in Section 6.3 – Land Use and Proposed Development (see Appendix C).

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

Generalized Land Use Category	Noise Zone (dB DNL)								
	<65	65-70	70-75	75-80	80-85	85+	CZ	APZ I	APZ II
Residential	Yes	No[2]	No[2]	No	No	No	No	No	No[3]
Commercial	Yes	Yes	Yes[4]	Yes[4]	No	No	No	Yes[4]	Yes[4]
Industrial	Yes	Yes	Yes	Yes	Yes[2]	No	No	Yes[4]	Yes[4]
Public/Quasi-Public	Yes	Yes[4]	Yes[4]	Yes[4]	No	No	No	No	Yes[4]
Recreation	Yes	Yes[4]	Yes[4]	No	No	No	No	Yes[4]	Yes[4]
Transportation/Utilities	Yes	Yes	Yes	Yes	Yes	No	No	Yes[4]	Yes
Open/Agriculture/Low Density	Yes	Yes[4]	Yes[4]	Yes[4]	Yes[4]	Yes[4]	No	Yes[4]	Yes[4]
Undeveloped	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: **Key:** Compatible Incompatible Compatible with Restrictions

Notes:

[1] This generalized table demonstrates the land compatibility guidelines. Refer to Appendix A for use in determining land use compatibility.

[2] Residential land uses within the greater than 65 dB DNL noise zone are considered incompatible. However, if residential uses are considered essential, noise-attenuation measures should be incorporated into the building structures.

[3] Residential land uses in APZ II are considered incompatible, with the exception of density less than two dwellings per acre.

[4] Compatible with restrictions.

For the purpose of this analysis, the DoD AICUZ compatibility guidelines (Tables A-1 and A-2 of Appendix A) utilize the SLUCM standards to provide generalized land use classifications. Table 6-1 provides generalized compatibility guidelines for the SLUCM categories. Land use compatibility falls into one of four categories: **(1) Compatible; (2) Compatible with Restrictions; (3) Incompatible; and (4) Incompatible with Exceptions**. The conditionally compatible land use (i.e., categories 2 and 4) may require incorporation of noise attenuation measures into the design and construction of structures and further evaluation to be considered "compatible," and may require density limitations for land in APZs, or other modifications in order to be deemed compatible.

From right, Brig. Gen. Mark Slominski, director of the Air Force Civil Engineer Center's Facaility Engineering Directorate, and Lt. Col. Andrew Hoisington, Tyndall Program Management Office Execution Branch Chief, look over the construction plan model for Tyndall Air Force Base, Florida, in March 2021.

6.4.2 Existing Land Use Compatibility Concerns

Existing land use compatibility for areas exposed to the 65 dB DNL noise contour and greater for TAFB is provided in Figure 6-5, Table 6-2 and inset below. As mentioned previously, the majority of the noise contours for TAFB and all of the safety zones are either contained on station or over water and do not extend appreciably into the surrounding community.

As a result, there is little to no incompatible off station existing land use surrounding TAFB. The only incompatible land identified is approximately four acres of residential land use in the 65 dB DNL noise contour in the area of South Tyndall Parkway just northeast of the Dupont Bridge. Residential land use is not compatible in the 65 dB DNL noise zone. The East Bay Flats multi-family residential development in the City of Parker is presently being constructed in this area, and while multi-family residential use is considered incompatible in this location, at the request of the City and development planners, TAFB installation planners have provided information to mitigate impacts.

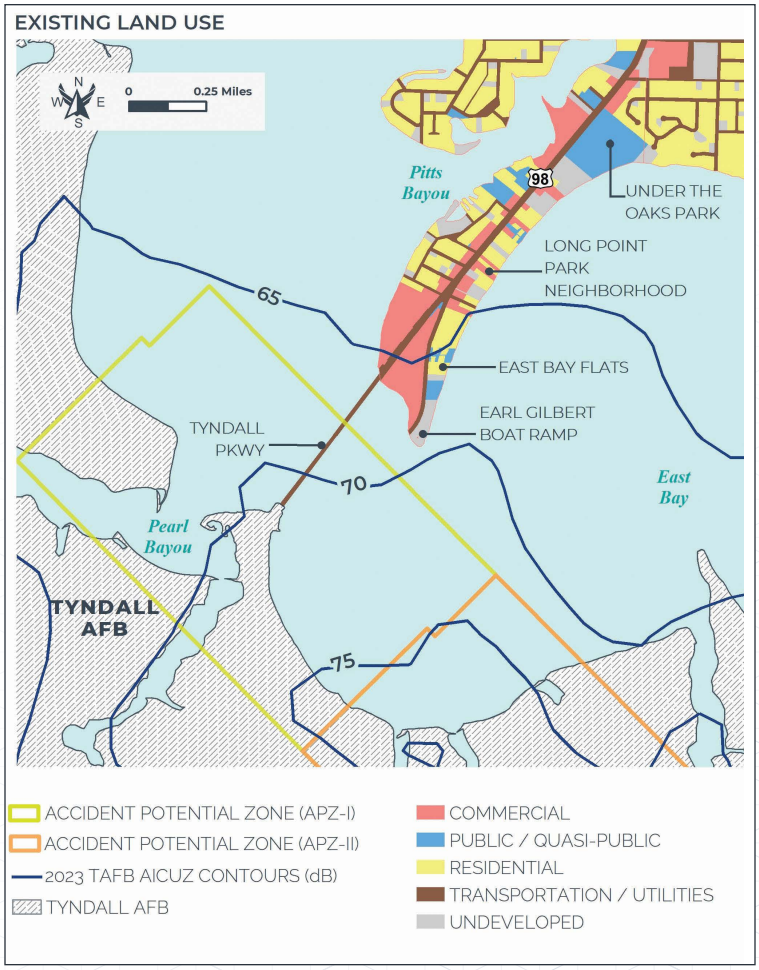


Table 6-2 Off-installation Existing Land Use Acreage within Noise Zones

Designation	Generalized Land Use Category[1]	65-69	70-74	75-79	80+	Total
Incompatible	Commercial	—	—	—	—	—
	Industrial	—	—	—	—	—
	Public/Quasi-Public	—	—	—	—	—
	Recreation	—	—	—	—	—
	Open/Agriculture/Low Density	—	—	—	—	—
	Residential	3.8	—	—	—	**3.8**
	Transportation/Utility	—	—	—	—	—
Compatible	Commercial	11.6	—	—	—	**11.6**
	Industrial	—	—	—	—	—
	Public/Quasi-Public	3.1	—	—	—	**3.1**
	Recreation	—	—	—	—	—
	Open/Agriculture/Low Density	—	—	—	—	—
	Residential	—	—	—	—	—
	Transportation/Utility	6.9	1.1	—	—	**8.1**
	Undeveloped	6.7	—	—	—	**6.7**
Subtotals	**Incompatible**	**3.8**	**—**	**—**	**—**	**3.8**
	Compatible	**28.3**	**1.1**	**—**	**—**	**28.3**
Total		**32.1**	**1.1**	**—**	**—**	**3,746.4[2]**

Notes: All noise contour areas on the installation are excluded from the counts.

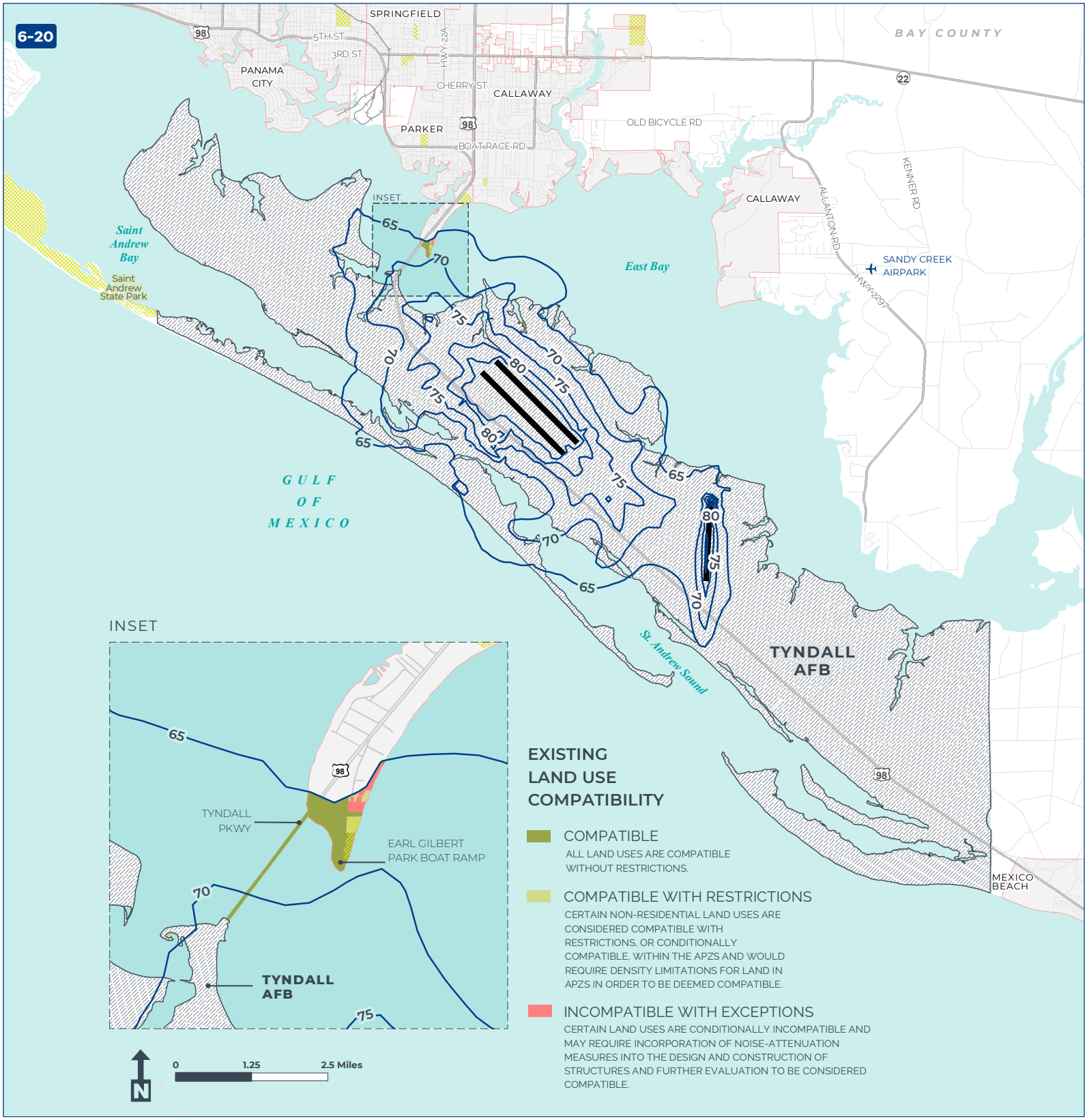
[1] Refer to Appendix A for details. [2] Total also includes 3,713.1 acres designated as Water not included in table.

Table 6-3 Off-installation Existing Land Use Acreage within CZ and APZs

Designation	Generalized Land Use Category[1]	CZ	APZ I	APZ II	Total
Incompatible	Commercial	—	—	—	—
	Industrial	—	—	—	—
	Public/Quasi-Public	—	—	—	—
	Recreation	—	—	—	—
	Open/Agriculture/Low Density	—	—	—	—
	Residential	—	—	—	—
	Transportation/Utility	—	—	—	—
	Undeveloped	—	—	—	—
Compatible	Commercial	—	—	—	—
	Industrial	—	—	—	—
	Public/Quasi-Public	—	—	—	—
	Recreation	—	—	—	—
	Open/Agriculture/Low Density	—	—	—	—
	Residential	—	—	—	—
	Transportation/Utility	—	—	2.9	**2.9**
	Undeveloped	—	—	—	—
Subtotals	**Incompatible**	—	—	—	—
	Compatible	—	—	—	—
Total		—	—	**2.9**	**2117.1[2]**

Notes: All CZ and APZ areas on the installation are excluded from the counts.

[1] Refer to Appendix A for details. [2] Total also includes 2,117 acres designated as Water not included in table.

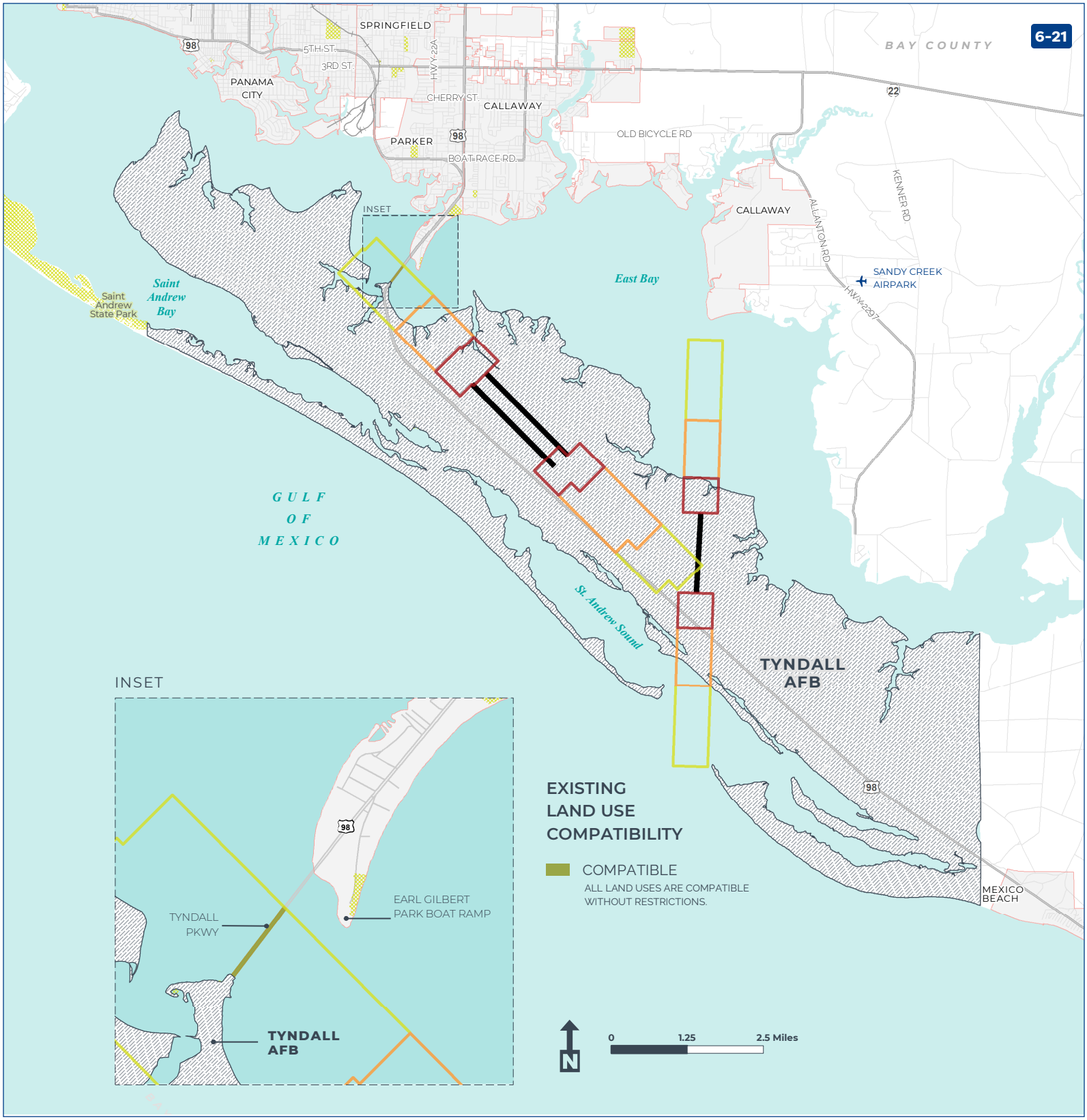


TYNDALL AFB

INCOMPATIBLE EXISTING LAND USE
WITH AICUZ NOISE CONTOURS

CITY
PARK
RUNWAY
TYNDALL AFB
2023 TAFB AICUZ CONTOURS (dB)

Figure 6-5 Incompatible Existing Land Use within Noise Contours



TYNDALL AFB

INCOMPATIBLE EXISTING LAND USE WITHIN CLEAR ZONES AND ACCIDENTAL POTENTIAL ZONES

- CITY
- PARK
- RUNWAY
- TYNDALL AFB
- CLEAR ZONE (CZ)
- ACCIDENT POTENTIAL ZONE (APZ-I)
- ACCIDENT POTENTIAL ZONE (APZ-II)

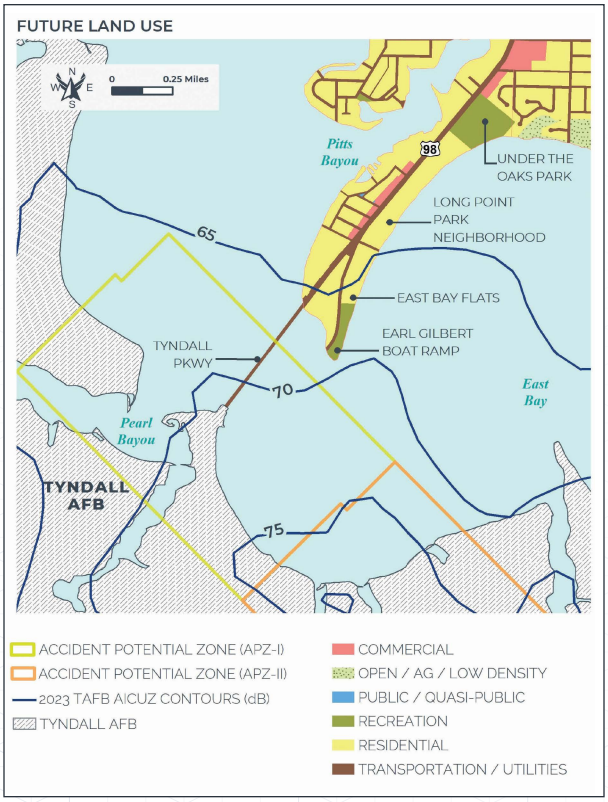
Figure 6-6 Incompatible Existing Land Use within CZs and APZs

6.4.3 Future Land Use Compatibility Concerns

Off station land outside of TAFB boundaries exposed to TAFB noise contours and APZs are shown on Figure 6-7 and inset below. Future land use compatibility acreages are provided in Table 6-4.

Similar to the existing land use compatibility analysis, because the majority of the noise contours for TAFB and all of the safety zones are either contained on station or over water and extend into the surrounding community in a very minor way, there is little incompatibility with future land use.

It should be noted that in the City of Parker 2025 Comprehensive Plan, the area northeast of Dupont Bridge is designated as a Mixed-Use District (MU). **These districts are intended to provide areas for medium to high density residential development and low intensity commercial development.** The mixed-use concept is specifically intended to provide flexibility in the planning and permitting process by allowing a range of land uses within one district. For the purposes of the TAFB AICUZ compatibility analysis, this area was coded as Residential however low intensity commercial land use is also permittable in portions of this area.



The only incompatible future land use identified is 21 acres of land designated as residential in the 65 dB DNL noise contour (See Table 6-4 and Figure 6-7). This area is located on South Tyndall Parkway just north of the DuPont Bridge in the City of Parker. The 16 acres increase in residential future land use—when compared to the existing land use—is primarily from the parcels on the northwest side of the Parkway being designated as residential. These parcels are located within TAFB's 65 dB DNL contours. Residential land use is not compatible in the 65 dB DNL noise zone. The East Bay Flats multi-family residential development in the City of Parker, presently being constructed on the southeastern side of South Tyndall Parkway, is considered incompatible. City of Parker officials indicate there is potential for additional multi-family residential development to occur in this area in the future.

As mentioned previously, TAFB installation planners are aware of the East Bay Flats development and have provided information to mitigate impacts. There is also a new 14-acre mixed-use change under review that would allow residential units planned for the west side of South Tyndall Parkway in the 65 dB DNL contour—occurring just north of TAFB (See Figure 6-9)

See section 6.4.4 for an additional discussion of future growth areas around TAFB.

Table 6-4 Off-installation Future Land Use Acreage within Noise Zones

Designation	Generalized Land Use Category[1]	65-69	70-74	75-79	80+	Total
Incompatible	Commercial	—	—	—	—	—
	Industrial	—	—	—	—	—
	Public/Quasi-Public	—	—	—	—	—
	Recreation	—	—	—	—	—
	Open/Agriculture/Low Density	—	—	—	—	—
	Residential	16.5	—	—	—	**16.5**
	Transportation/Utility	—	—	—	—	—
Compatible	Commercial	—	—	—	—	—
	Industrial	—	—	—	—	—
	Public/Quasi-Public	—	—	—	—	—
	Recreation	6.5	—	—	—	**6.5**
	Open/Agriculture/Low Density	—	—	—	—	—
	Residential	—	—	—	—	—
	Transportation/Utility	6.9	1.1	—	—	**1.1**
	Undeveloped		—	—	—	—
Sub Totals	**Incompatible**	**16.5**	**—**	**—**	**—**	**16.5**
	Compatible	**13.4**	**1.1**	**—**	**—**	**14.5**
Total		**29.9**	**1.1**	**—**	**—**	**3746.4[2]**

Notes: All noise contour areas on the installation are excluded from the counts.

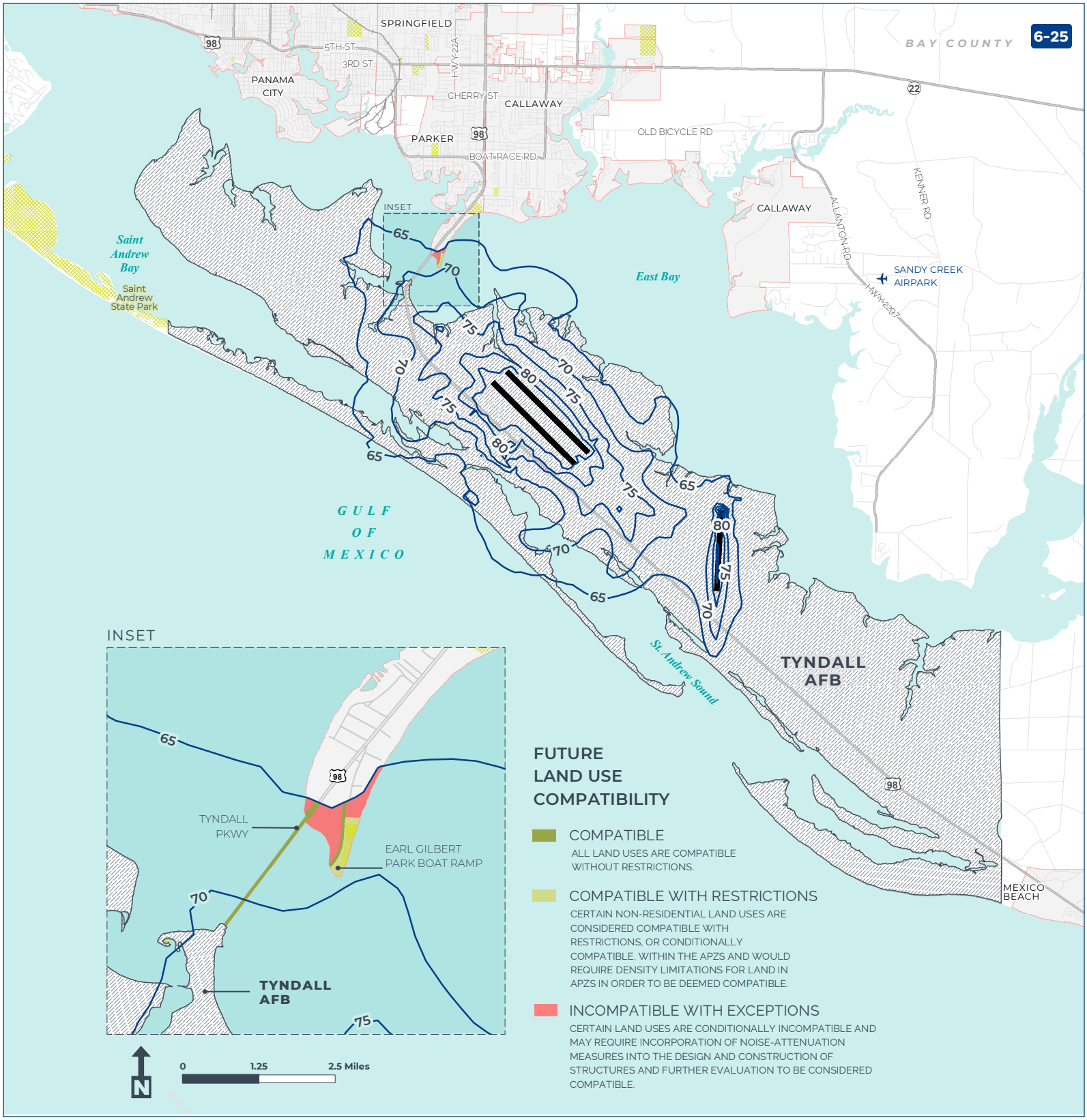
[1] Refer to Appendix A for details. [2] Total also includes 3,715.5 acres designated as Water not included in table.

Table 6-5 Off-installation Future Land Use Acreage within CZs and APZs

Designation	Generalized Land Use Category[1]	CZ	APZ I	APZ II	Total
Incompatible	Commercial	—	—	—	—
	Industrial	—	—	—	—
	Public/Quasi-Public	—	—	—	—
	Recreation	—	—	—	—
	Open/Agriculture/Low Density	—	—	—	—
	Residential	—	—	—	—
	Transportation/Utility	—	—	—	—
	Undeveloped	—	—	—	—
Compatible	Commercial	—	—	—	—
	Industrial	—	—	—	—
	Public/Quasi-Public	—	—	—	—
	Recreation	—	—	—	—
	Open/Agriculture/Low Density	—	—	—	—
	Residential	—	—	—	—
	Transportation/Utility	—	—	2.9	—
	Undeveloped	—	—	—	—
Subtotals	**Incompatible**	—	—	—	—
	Compatible	—	—	—	—
Total		—	—	**2.9**	**2,117.1[2]**

Notes: All CZ and APZ areas on the installation are excluded from the counts.

[1] Refer to Appendix A for details. [2] Total also includes 2,114.2 acres designated as Water not included in table.



TYNDALL AFB

INCOMPATIBLE FUTURE LAND USE
WITH AICUZ NOISE CONTOURS

CITY
PARK
RUNWAY
TYNDALL AFB
2023 TAFB AICUZ CONTOURS (dB)

Figure 6-7 Incompatible Future Land Use within Noise Contours

TYNDALL AFB

INCOMPATIBLE FUTURE LAND USE WITHIN CLEAR ZONES AND ACCIDENTAL POTENTIAL ZONES

- CITY
- PARK
- RUNWAY
- TYNDALL AFB
- CLEAR ZONE (CZ)
- ACCIDENT POTENTIAL ZONE (APZ-I)
- ACCIDENT POTENTIAL ZONE (APZ-II)

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

6.4.4 Future Growth Areas and Potential Development Projects Around TAFB

There are no existing or proposed projects within the TAFB AICUZ that warrant major concern from the standpoint of compatibility with TAFB aircraft operations. In general, growth trends in this region are occurring away from TAFB to the north and east. The communities of Panama City, Callaway, Parker and Springfield are seeing most mixed-use and residential growth in the northern parts of their cities away from TAFB. Similarly, Bay County residential growth is occurring and projected to continue to occur well to the northwest of the base (See Figure 6-9).

However, most leadership officials in the municipalities surrounding TAFB believe that as the base takes on its new F-35 mission, development in the region will follow. While some of this growth is already happening and tied to the continued recovery and rebuilding following Hurricane Michael, other growth is projected to occur and is associated with the growth in the mission at TAFB.

As a result, there are projects, plans and initiatives in the region that TAFB planners should continue to monitor and continue to work with local communities on to ensure they have current information and a pathway for providing input regarding compatibility if there are concerns regarding the projects (some of these potential projects and growth areas are shown on Figure 6-9. They are overlayed with the TAFB HAFZ):

KEY RECOMMENDATION

To ensure land uses and activities are examined for compatibility with flight operations, the Air Force has identified a HAFZ, which is defined as the area within the imaginary surfaces. Unlike AICUZ zones, the HAFZ does not have recommended land use compatibility tables that list potential uses. The HAFZ is a "consultation zone" that project applicants and local planning bodies should use as a tool to facilitate consultations with the Air Force to ensure their project or land uses are compatible with TAFB operations.

City of Panama City. New residential growth in Panama City is occurring primarily to the northeast in an area known as the North Panama City annexation area. Residential growth closer to base is primarily in fill in nature as the city in this area is mostly built out. In addition, residential growth is also occurring on the former Panama City airport location, in an area called Sweetwater Village.

City of Parker. There is a new 18-acre development on the east side of South Tyndall Parkway in the 65 dB DNL contour—occurring just north of TAFB (See Figure 6-9). East Bay Flats is a multi-family housing development offering one-, two- and three-story apartments. The development was coordinated with input from TAFB and construction methods (i.e., sound attenuation elements) is integrated into the development. City of Parker officials indicated that an additional similar style development is projected to occur on currently vacant parcels across the street from East Bay Flats. City of Parker also mentioned the potential for a proposed pier in this location as well.

Rendering of East Bay Flats Apartment Homes located one mile northeast of TAFB on South Tyndall Parkway

City of Callaway. Future residential developments in the City of Callaway includes Bridge Harbor Townhomes, Callaway Bayou Townhomes, and Alexander's Park. These are major residential developments that are underway (See Figure 6-9). An estimated 600 plus residential units are presently in development in the city. In addition, because the city extends infrastructure south and provides water to the Eastern shipyard area, it is expected that growth could occur along this infrastructure corridor to the southeast on what is currently vacant/undeveloped land.

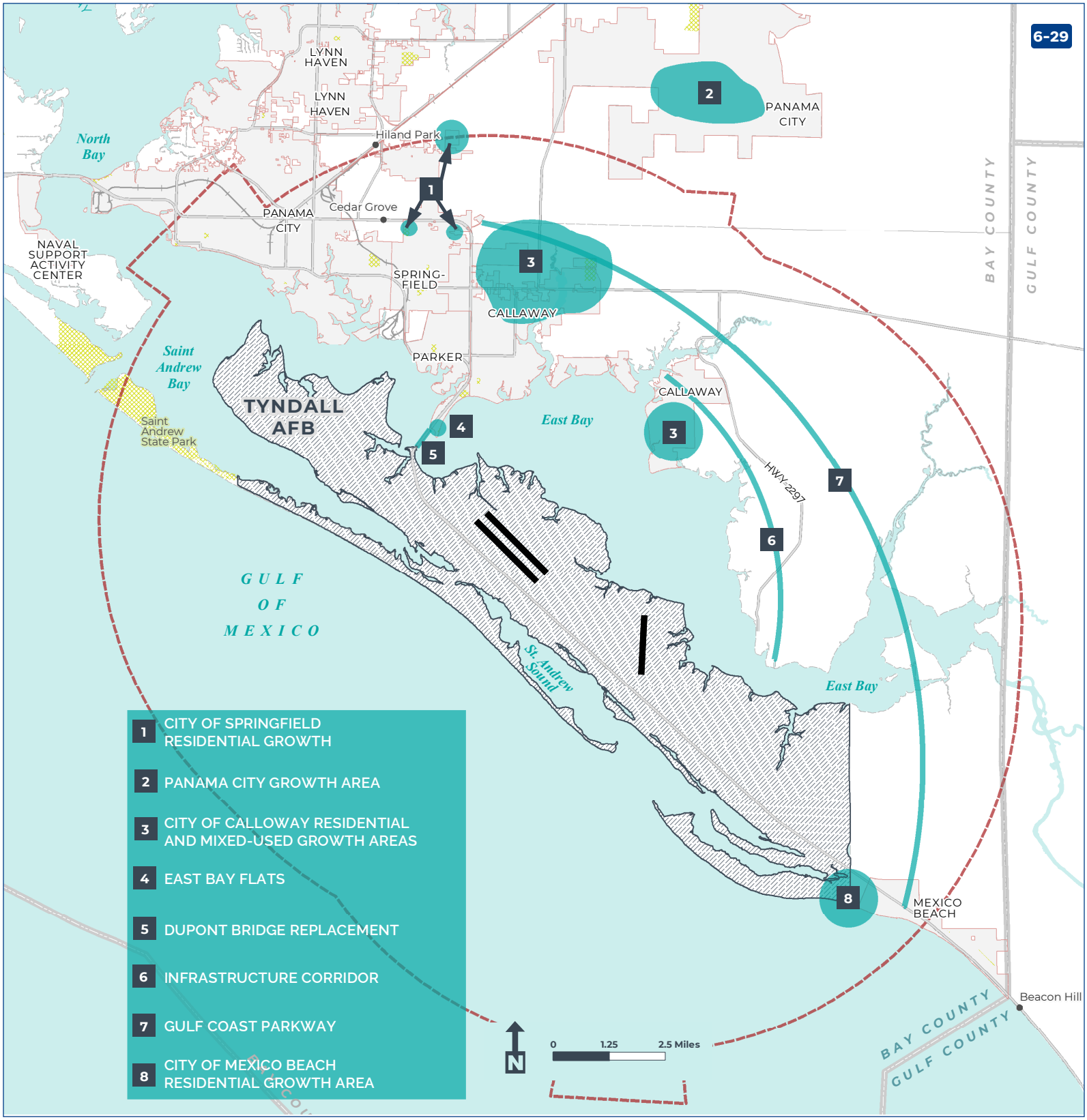
City of Springfield. Residential growth is occurring in the northern portion of the city. This area is mostly residential in nature. The City of Springfield views itself and is planning to be a major destination for individuals working at TAFB as it builds out its new mission.

City of Mexico Beach. Mexico Beach is still rebuilding from Hurricane Michael with similar residential development as previously characterized the area. Developments include the 550-acre Planned Unit Development to be built by the St. Joe Company. Plans call for building townhomes, apartments, single family houses, and a town center, with hopes that the community will evolve for years to come in association with TAFB growth. Sugar Sands is another 64-lot platted residential parcel with 4 homes built to date. This location is between Mexico Beach and TAFB in unincorporated Bay County.

Gulf Coast Parkway. The 36-mile Gulf Coast Parkway project (See Figure 6-9) will improve mobility in northeast Florida and provide what is essentially a missing link in the regional transportation network. It will provide another route for those traveling from the Mexico Beach area or Gulf County to Panama City. In addition, it is projected the project would stimulate economies within the region, enhance regional mobility and hurricane evacuation, increase TAFB Base security; and relieve regional traffic congestion.

Florida Department of Transportation has completed the Project Development and Environment (PD&E) Study for this project. Due to the length of the project and the availability of funding, the project will be constructed in segments. Whether an interim two-lane typical section is constructed initially and widened when traffic warrants, or the ultimate four-lane typical section is constructed, will depend on whether the segment being constructed uses an existing road alignment and traffic demand justifies the full four-lane. The first segment to be advanced has right-of-way acquisition scheduled for FY2019/2020 and construction scheduled for FY 2020-2021. All remaining segments, regardless of phase, are not planned to begin until after 2040.

Replacement of Dupont Bridge. The Florida Department of Transportation plans to replace the Dupont bridge that connects TAFB with most of Bay County. The bridge connects TAFB and the cities to the northeast of the base. The project is expected to start in 2024. The bridge will be built east of the existing bridge that it will replace. Officials estimate the project will take three to four years to complete.



TYNDALL AFB

FUTURE GROWTH AREAS AND POTENTIAL DEVELOPMENT PROJECTS

- TYNDALL AFB
- PARK
- CITY
- RUNWAY
- GROWTH AREA / DEVELOPMENT PROJECTS
- HAZARD AIRCRAFT FLIGHT ZONE (HAFZ)

Figure 6-9 Future Growth Areas and Development Projects Around TAFB


7

7 IMPLEMENTATION

Implementation of the 2023 TAFB AICUZ Study must be a joint effort between TAFB and the surrounding communities. This AICUZ Study provides the best source of information to ensure land use planning decisions made by local municipalities are compatible with a future installation presence. This chapter discusses the roles of all partners in this collaborative planning effort.

7.1 Military Role

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

TAFB is responsible for flight safety, noise abatement, and participation in existing local jurisdictional land use planning processes as part of its AICUZ Program responsibilities. Air Force policy and guidance requires that installation leadership periodically review existing practices for flight operations and evaluate these factors in relationship to populated areas and other local situations.

TAFB WILL:

- **Ensure that, wherever possible, air operations planners route flights over sparsely populated areas** to reduce the exposure of lives and property to a potential accident.
- **Periodically review existing traffic patterns, instrument approaches, weather conditions, and operating practices** and evaluate these factors in relationship to populated areas and other local conditions. The purpose of this review is to limit, reduce, and control the impact of noise from flying operations on surrounding communities.
- **Consider the establishment of a community forum** between the installation and surrounding stakeholders to discuss land use and other issues of concern; the installation anticipates holding these meetings on an annual basis.
- **Schedule land use planning meetings** to provide a forum for agencies to meet and discuss future development and to address issues that may surface because of new proposals.
- **Provide copies of the AICUZ study to local, county, tribal, and regional planning departments** and zoning administrators to aid in the planning process and provide copies of the AICUZ study to appropriate state and federal agencies.

Preparation and presentation of this 2023 TAFB AICUZ Study is one phase in continuing Air Force participation in the local planning process. The Air Force recognizes that, as the local community updates its land use plans, TAFB must be ready to provide additional input, as needed.

7.2 State and Regional Roles

As noted in Section 6.2, in the State of Florida, land use planning and zoning is delegated to municipal and county governments, which are empowered to create comprehensive general plans and coordinate local land use plans. Recommendations for working with local governments to encourage compatible land use are discussed below, in Section 7.3.

BAY DEFENSE ALLIANCE

The Bay Defense Alliance (BDA) was formed during the 1993 Base Realignment and Closure Commission process and consists of an all-volunteer, 30-member board. The BDA is organized with Air Force, Navy, and U.S. Coast Guard teams dedicated to ensuring the long-term stability of missions at TAFB, Naval Support Activity Panama City, and U.S. Coast Guard Station Panama City. The board of directors of the BDA includes former senior military and defense civilians, community leaders, and economic development partners, including the Bay Economic Development Alliance, Bay County Chamber and Panama City Beaches Chamber of Commerce, Florida State University (Panama City Campus), Gulf Coast State College, and the Bay County Board of Commissioners. The BDA partners with the Florida Defense Alliance, an organization composed of Florida's leading community defense support organizations, and leverages local support with defense grant programs provided by the Florida Defense Support Task Force (FDSTF), Enterprise Florida, Inc., and the Department of Economic Opportunity. Local installations generate $3.162 billion in gross domestic product, representing 32.8% of the Bay County economy. The local community has received more than $9 million in Florida grant funding for projects that add to the military value of the installations. Like many defense support organizations, BDA was formed with a clear understanding that defense installations will remain strong and efficient when they have the full support of the communities around them and the ongoing commitments of both military and elected leadership.

FLORIDA DEFENSE SUPPORT TASK FORCE (FDSTF)

The FDSTF is the main body of support for the defense industry in Florida, awarding grants and guiding the future of military operations in the state. The FDSTF is a legislatively mandated council (created by Florida Statute 288.987) whose mission is to preserve, protect, and enhance Florida's military missions and installations.

The FDSTF is charged with:

- **Working with Florida's military base commanders** to prevent encroachment from impacting mission capabilities for military forces based in Florida;
- **Maintaining and expanding the missions** of Florida's military installations;
- **Improving transportation access** to Florida's military installations;
- **Assisting installations** in meeting DoD renewable energy goals; and
- **Strengthening state support for military families and veterans** with a focus on education, health care, employment, and family programs.

TYNDALL HONORARY COMMANDERS

TAFB inducts members of the local community as honorary commanders. These individuals are part of TAFB's initiative to maintain the strong relationships between the base and the local community through mutually beneficial professional partnerships. In April 2022, 25 new honorary commanders were inducted. Each honorary commander is paired with a commander on base, providing opportunities for both specific understanding of that unit's mission and general awareness of TAFB as a whole. In the midst of the rebuild of TAFB and the local community at large, leaders at all levels agree community partnerships are more vital than ever.

TAFB COMMUNITY PARTNERSHIP PROGRAM

The TAFB Community Partnership Program is composed of innovative partnerships designed to promote cooperation between the base and Bay County. Five agreements between TAFB and the local community were put into place. The five partnerships recognized include the Medical Training Affiliation Agreement, the Law Enforcement Driving Course, the SkillBridge Program, and the Military Spousal Employment program.

READINESS AND ENVIRONMENTAL PROTECTION INTEGRATION

TAFB pursues funding sources through existing federal government programs, such as DoD's Readiness and Environmental Protection Integration (REPI) Program, for protection of mission-sensitive areas. TAFB's REPI strategy is ongoing and is a collaboration with regional stakeholders.

The REPI Program is one installation-support tool AFCESA is leveraging to help the 325TH FW rebuild TAFB after it suffered a direct hit from Hurricane Michael. One such example of the REPI strategy at TAFB includes a combined $10 million to help shape the "Installation of the Future" and protect the base's fighter mission. This includes an estimated $5.25 million from The Nature Conservancy, Inc. The project supports a multifaceted approach to improve the resiliency of the installation, including constructing up to 1,000 feet of living shoreline and 3,500 feet of submerged shoreline. Additionally, the project will create 1,500 feet of oyster reef habitat and protect or enhance the shoreline habitat next to TAFB's drone runway, a critical base operation. The conservancy was the nominating partner and will serve with TAFB as the execution agent.

The REPI Program fosters multi-agency initiatives and collaboration to preserve compatible land uses near military installations and ranges. These efforts preserve and enhance DoD assets and capabilities in support of military readiness through the creation of unique cost-sharing partnerships with state and local governments and private conservation organizations.

7.3 Local Government Role

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

- **Local government planners consider AICUZ policies and guidelines when developing or revising city comprehensive plans** and use AICUZ overlay maps and Air Force Land Use Compatibility Guidelines (see Appendix A) to evaluate existing and future land use proposals.
- **Ensure that new development applications or properties** that are applying for a change of use are submitted to TAFB to afford the opportunity for the base to assess those applications for potential impacts on defense missions. The TAFB PA Department can provide a land use planning point of contact.
- **Adopt or modify zoning ordinances to reflect the compatible land uses** outlined in the 2023 TAFB AICUZ Study, including the creation of military airport overlay zones.
- **Local governments review their capital improvement plan, infrastructure investments, and development policies** to ensure they do not encourage incompatible land use patterns near TAFB, with particular emphasis on utility extension and transportation planning.
- **Local governments implement height and obstruction ordinances** that reflect current Air Force and 14 CFR 77 requirements, presented in this study as HAFZs.
- **Fair disclosure ordinances be enacted** to require disclosure to the public for those AICUZ study items that directly relate to military operations at TAFB.
- Where allowed, **local governments require real estate disclosure for individuals purchasing or leasing property** within noise zones, CZs, or APZs.
- **Enact or modify building/residential codes** to ensure that any new construction near TAFB has the recommended noise-level reduction measures incorporated into the design and construction of structures.
- Government planning bodies **monitor proposals for tall structures,** such as wind turbines and communication towers, to ensure that new construction does not pose a hazard to navigable airspace around TAFB. Where appropriate, coordinate with the FAA on the height of structures.
- **Local government land use plans and ordinances reflect AICUZ study recommendations** for development in CZs, APZs, and noise zones.
- **Local governments consult with TAFB on planning and zoning actions** that have the potential to affect installation operations.

- **Invite the Air Force leadership to be ex-officio members on boards, commissions, and regional councils** addressing long-range development and other planning policies.
- **Encourage the development of a working group of city, county, and TAFB representatives** to discuss land use concerns and major development proposals that could affect military operations.

7.4 Community Role

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

REAL ESTATE PROFESSIONALS AND BROKERS

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

DEVELOPERS

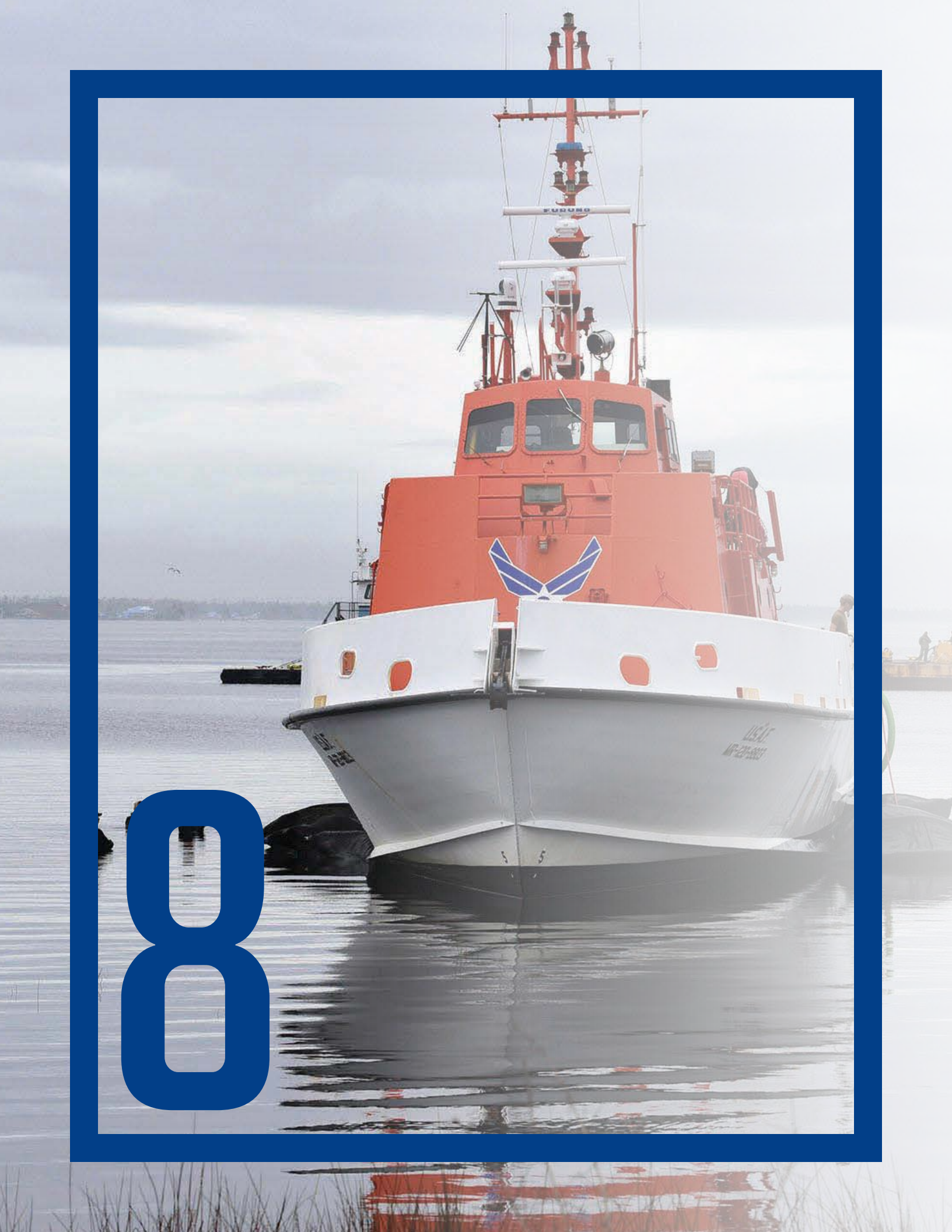
- Know where the noise zones, CZs, or APZs encumber land near the air installation. Consult with TAFB on proposed developments within the AICUZ footprint.
- Participate in local discussions regarding existing zoning ordinances and subdivision regulations to support the compatible land uses outlined in this AICUZ study through implementation of a zoning overlay district based on noise contours and the locations of CZs or APZs.

LOCAL CITIZENS

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

While the installation and community are separated by a fence, it is recognized that TAFB activities and operations may affect the community. Likewise, community activities and development decisions can affect TAFB's ability to complete its local hometown mission. The local military and community goals can be mutually achieved through a combination of collaborative planning and partnerships, open communication, and close relationships. The AICUZ study can provide a foundation on which related communication can be based to ensure that the community and its hometown military installation can continue to coexist for many years.

Questions about the AICUZ Program may be directed to the installation **Public Affairs Department at (850) 283-3333.**


8

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WARNING - DO NOT CUT CANOPY
WITHIN 3 INCHES OF CANOPY FRAME
WARNING - DO NOT CUT CANOPY
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A

APPENDIX A

LAND USE COMPATIBILITY TABLES

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

While the table uses Standard Land Use Coding Manual (SLUCM) categories for organization, it varies from SLUCM as the coding system does not differentiate based on population density. Some uses warrant additional evaluation due to the variation of densities of people, intensity of use, or other characteristics that could impact safety of flight. Floor Area Ratio (FAR) recommendations are included within the table to guide suggested maximum density for non-residential uses. General notes and specific footnotes at the bottom of the table provide additional information and compatibility considerations.

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

Table A-1 Recommended Land Use Compatibility for Clear Zones and Accident Potential Zones

Land Use Name And SLUCM Category	Clear Zone	APZ-I	APZ-II	Maximum Density
Residential Use Group (SLUCM Category 10)				
Residential Uses, Inclusive of All Residential Units I.e., Any Type of Single or Multiple Dwelling Units.	N	N	Y[1,2]	Maximum density of 2 dwelling units per acre
Mobile Home Parks or Courts	N	N	N	
Transient Lodgings	N	N	N	
Manufacturing Use Group (SLUCM Categories 20 & 30)				
Food and Kindred Products; Textile Mill Products; Manufacturing; Stone, Clay, Glass, Primary Metal and Fabricated Metal Products; Manufacturing	N	N	Y	Max FAR 0.56 in APZ II
Fabric Products; Leather and Similar Materials; Chemicals and Allied Products; Petroleum Refining and Related Industries; Rubber and Miscellaneous Plastic Products; Manufacturing; Precision Manufacturing	N	N	N	
Lumber and Wood Products; Manufacturing Furniture and Fixtures; Paper and Allied Products; Printing, Publishing, and Allied Industries Miscellaneous Manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
Transportation, Communication and Utilities Use Group (SLUCM Category 40)				
Rail, Motor Vehicle, Aircraft, Marine etc. Transportation, Highway and Street Right-Of-Way, Automobile Parking, and Utilities, Telephone, Cellular and Radio Communication	N[3]	Y[4]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
Solid Waste Disposal, (Landfills, Incinerators, etc.)	N	N	N	
Trade (SLUCM Category 50)				
Wholesale Trade	N	Y	Y	Maximum FAR of 0.28 in APZ I & .56 in APZ II
Retail Trade – Building Materials	N	Y	Y	Maximum FAR of 0.20 in APZ-I and 0.40 in APZ-11;
Retail Trade – Hardware, Paint, and Farm Equipment Stores,	N	Y	Y	Maximum FAR of 0.12 in APZ I and 0.24 in APZ II
Retail Trade – Including Neighborhood Centric Shops	N	N	Y	Maximum FAR of 0.16 in APZ II
Mass Retailing, Super Stores, Strip Malls, Shopping Centers,[5] Discount Clubs, Home Improvement Stores, etc.; Eating and Drinking Establishments	N	N	N	

Table A-1 Recommended Land Use Compatibility for Clear Zones and Accident Potential Zones

Land Use Name And SLUCM Category	Clear Zone	APZ-I	APZ-II	Maximum Density
Retail Trade – Food Such as Groceries, Bakeries, Confectionaries, Meat Markets, and Fast Food Establishments	N	N	Y	Maximum FAR of 0.24 in APZ II
Retail Trade – Automotive, Marine Craft, Aircraft, and accessories	N	Y	Y	Maximum FAR of 0.14 in APZ I & 0.28 in APZ II
Retail Trade – Apparel and Accessories, Furniture, Home, Furnishings and Equipment	N	N	Y	Maximum FAR of 0.28 in APZ II
Other Retail Trade	N	N	Y	Maximum FAR of 0.16 in APZ II
Services (SLUCM Category 60)				
Finance, Insurance, Real Estate, Personal, Professional and Miscellaneous Services (Office Uses Only) Services	N	N	Y	Maximum FAR of 0.22 in APZ II
Cemeteries	N	Y[6]	Y[6]	
Warehousing and Storage Services	N	Y	Y	Maximum FAR of 1.0 in APZ I; 2.0 in APZ II
Repair Services and Contract Construction	N	Y	Y	Maximum FAR of 0.11 APZ I; 0.22 in APZ II
Hospitals, Nursing Homes, and Other Medical Facilities; Educational Services, Childcare Services, Child Development Centers, and Nurseries	N	N	N	
Government Services	N	N	Y	Maximum FAR of 0.24 in APZ II
Cultural, Entertainment and Recreational Use Group (SLUCM Category 70)				
Nature Exhibits	N	Y[7]	Y[7]	
Cultural Activities, Auditoriums, Concert Halls, Places of Worship; Outdoor Music Shells, Museums, Outdoor Displays, Amphitheaters, Sports Arenas, Spectator Sports, Resorts and Group Camps, or Other Places of Assembly	N	N	N	
Amusements – Fairgrounds, Miniature Golf, Driving Ranges; Amusement Parks, Etc.	N	N	Y[11]	
Recreational Activities (Including Golf Courses, Riding Stables, Water Recreation), Parks	N	Y[7]	Y[7]	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II

Table A-1 Recommended Land Use Compatibility for Clear Zones and Accident Potential Zones

Land Use Name And SLUCM Category	Clear Zone	APZ-I	APZ-II	Maximum Density
Other Cultural, Entertainment and Recreation	N	Y[6]	Y[6]	
Resource Production and Extraction (SLUCM Category 80)				
Agriculture and Livestock Farming, Including Grazing and Feedlots	Y[8]	Y[8]	Y[8]	
Agriculture Related Activities	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Forestry Activities[9]	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Fishing Activities	N[10]	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Mining Activities	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Other Resource Production or Extraction	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II
Other (SLUCM Category 90)				
Undeveloped Land	Y	Y	Y	
Water Areas	N	N	N	

Key: Land Use Recommendations

Y (Yes) Land use and related structures compatible without restrictions.

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

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

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

Notes: General Notes for All Uses

a. The suggested maximum occupancy for commercial, service, or industrial buildings or structures in APZ I is 25 people per acre, and 50 people per acre in APZ II. Outside events should normally be limited to assemblies of not more than 25 people an acre in APZ I, and maximum assemblies of 50 people an acre in APZ II.

b. Recommended FARs are calculated using standard parking generation rates for various land uses, vehicle occupancy rates, and desired density in APZ I/II. For APZ I, the formula is FAR = 25 people an acre/ (Average Vehicle Occupancy x Average Parking Rate x (43560/1000)). The formula for APZ II is FAR = 50/ (Average Vehicle Occupancy x Average Parking Rate x (43560/1000)).

c. No structures (except airfield lighting and navigational aids necessary for the safe operation of the airfield when there are no other siting options), buildings, or above ground utility and communications lines should normally be located in Clear Zone areas on or off the air installation. The Clear Zone is subject to the most severe restrictions.

d. Safety of flight should be considered when evaluating development that includes explosive potential; generates smoke, steam, am or dust; and steam, creates electronic interference; lighting or glare; poor tall structures.

e. The suggested maximum occupancy for commercial, service, or industrial buildings or structures in APZ I is 25 people per acre, and 50 people per acre in APZ II. Outside events should normally be limited to assemblies of not more than 25 people an acre in APZ I, and maximum assemblies of 50 people an acre in APZ II.

f. Recommended FARs are calculated using standard parking generation rates for various land uses, vehicle occupancy rates, and desired density in APZ I/II. For APZ I, the formula is FAR = 25 people an acre/ (Average Vehicle Occupancy x Average Parking Rate x (43560/1000)). The formula for APZ II is FAR = 50/ (Average Vehicle Occupancy x Average Parking Rate x (43560/1000)).

g. No structures (except airfield lighting and navigational aids necessary for the safe operation of the airfield when there are no other siting options), buildings, or above ground utility and communications lines should normally be located in Clear Zone areas on or off the air installation. The Clear Zone is subject to the most severe restrictions.

h. Safety of flight should be considered when evaluating development that includes explosive potential; generates smoke, steam, am or dust; and steam, creates electronic interference; lighting or glare; poor tall structures.

i. Development of renewable energy resources, including solar and geothermal facilities and wind turbines, may impact military operations through hazards to flight or electromagnetic interference. Each new development should be analyzed for compatibility on a case-by-case basis that considers both the proposal and potentially affected mission.

j. Water features that may attract waterfowl and present bird/wildlife aircraft strike hazards (BASH), or activities that produce dust or light emissions that could affect pilot vision are generally not compatible and should be evaluated on a case-by-case basis.

k. Evaluation of potential land management actions occurring on public and private lands, such as prescribed burns, should identify the hazard (i.e., visual impairment) to aircraft flight safety and to de-conflict operations occurring at the base (i.e., scheduled exercises and training requirements).

l. This compatibility table identifies places of worship as a cultural gathering. However, religious institutions provide a wide variety of services and in these instances refer to the applicable category.

Footnotes Specific to Certain Land Uses:

1. The suggested maximum density for detached single-family housing is two dwelling units per acre to encourage retention of farming and open space.

2. Where a parcel is partially located in an APZ II, clustered development is encouraged on the portion outside the APZ while maximizing open space within the APZ.

3. All roads within the Clear Zone are discouraged, but if required, they should not be wider than two lanes and the rights-of-way should be fenced (frangible) and not include sidewalks or bicycle trails. Nothing associated with these roads should violate obstacle clearance criteria.

4. Above ground passenger terminals and above ground power transmission or distribution lines are not recommended. Prohibited power lines include high-voltage transmission lines and distribution lines that provide power to cities, towns, or regional power for unincorporated areas.

5. A shopping center is an integrated group of commercial establishments that is a planned, developed, owned, or managed as a unit. Shopping center types include strip, neighborhood, community, regional, and super-regional facilities anchored by small businesses, a supermarket or drug store, discount retailer, department store, or several department stores, respectively. The maximum recommended FAR should be applied to the gross leasable area of the shopping center.

6. Land uses in the APZs should be passive open space; ancillary places of public assembly are not recommended.

7. Low occupancy facilities are compatible with these uses; however, playgrounds and marinas are not recommended.

8. Activities that attract concentrations of birds creating a hazard to aircraft operations are not compatible.

9. Lumber and timber products removed due to establishment, expansion, or maintenance of Clear Zone lands owned in fee will be disposed of in accordance with applicable DoD guidance.

10. Controlled hunting and fishing may occur for the purpose of wildlife management.

11. Amusement centers, family entertainment centers or amusement parks designed or operated at a scale that could attract or result in concentrations of people, including employees and visitors, greater than 50 people per acre at any given time are incompatible in APZ II run-ups. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.

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

The table is organized based on Standard Land Use Coding Manual (SLUCM) categories; however, it varies from SLUCM as the coding system does not differentiate based on noise-sensitivity. Some uses warrant additional evaluation due to potential for annoyance and activity interference. General notes and specific footnotes at the bottom of the table provide additional information and considerations for compatibility determinations.

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

Table A-2 Recommended Land Use Compatibility for Noise Zones

	A-Weighted Dnl Levels (dB)					
Land Use Name and SLUCM Category	**<65**	**65-70**	**70-75**	**75-80**	**80-85**	**85+**
Residential Use Group (SLUCM Category 10)						
Residential Uses, Inclusive Of All Residential Units (i.e., Any Type of Single or Multiple Dwelling Units)	Y	N[1]	N[1]	N	N	N
Mobile Home Parks or Courts	Y	N	N	N	N	N
Transient Lodgings	Y	N[1]	N[1]	N[1]	N	N
Manufacturing Use Group (SLUCM Categories 20 & 30)						
Manufacturing and Industrial Uses	Y	Y	Y[2]	Y[3]	Y[4]	N
Precision Manufacturing	Y	Y	Y[2]	Y[3]	N	N
Transportation, Communication and Utilities Use Group (SLUCM Category 40)						
Rail, Motor Vehicle, Aircraft, Marine and Other Transportation, and Communication Systems And Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Highway and Street Right-of-Way, Automobile Parking	Y	Y	Y	Y	Y	N
Telephone, Cellular and Radio Communication	Y	Y	Y[2]	Y [3]	N	N
Trade (Slucm Category 50)						
Wholesale Trade	Y	Y	Y[2]	Y[3]	Y[4]	N
Building Materials, Hardware and Farm Equipment Sales	Y	Y	Y[2]	Y[3]	Y[4]	N
Mass Retailing, Super Stores, Strip Malls, Shopping Centers, Discount Clubs, Home Improvement Stores, Etc., Eating and Drinking Establishments	Y	Y	Y[2]	Y[3]	N	N

Table A-2 Recommended Land Use Compatibility for Noise Zones

	A-Weighted Dnl Levels (dB)					
Land Use Name and SLUCM Category	**<65**	**65-70**	**70-75**	**75-80**	**80-85**	**85+**
Services (Slucm Category 60)						
Finance, Insurance and Real Estate, Personal, Professional and Miscellaneous Services; Religious Activities	Y	Y	Y[2]	Y[3]	N	N
Cemeteries	Y	Y	Y[2]	Y[3]	Y[4]	Y[5]
Warehousing/Storage and Repair Services	Y	Y	Y[2]	Y[3]	Y[4]	N
Hospitals/Medical, Childcare and Development Services, Educational Facilities	Y	Y[2]	Y[3]	N	N	N
Nursing homes	Y	N[1]	N[1]	N	N	N
Governmental	Y	Y	Y[2]	Y[3]	N	N
Cultural, Entertainment and Recreational Use Group (SLUCM Category 70)						
Cultural Activities, Auditoriums and Concert Halls	Y	Y[2]	Y[3]	N	N	N
Nature Exhibits	Y	Y	N	N	N	N
Public Assembly	Y	Y	N	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Outdoor Sports Arenas, Spectator Sports	Y	Y[6]	Y[6]	N	N	N
Amusements	Y	Y	Y	N	N	N
Outdoor Recreational Activities	Y	Y	Y[2]	Y[3]	N	N
Resorts, Camps, Parks and Other C/E/R Activities	Y	Y	Y[2]	N	N	N
Resource Production And Extraction (SLUCM Category 80)						
Agriculture and Forestry	Y	Y[7]	Y[8]	Y[9]	Y[9]	Y[9]
Livestock Farming, Animal Breeding	Y	Y[7]	Y[8]	N	N	N
Fishing, Mining and Other Resource Production or Extraction	Y	Y	Y	Y	Y	Y

Key: Land Use Recommendations

Y (Yes) Land use and related structures compatible without restrictions.

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

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

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

Notes: General Notes for All Uses

a. Compatibility designations in Table A-2 generally refer to the principal use of the site. If other uses with greater sensitivity to noise are proposed, a determination of compatibility should be based on that use which is most adversely affected by operational noise.

b. When appropriate, noise level reduction (NLR) may be necessary to achieve compatibility. NLR (outdoor to indoor) is achieved through the incorporation of sound attenuation into the design and construction of a structure. Measures to achieve an indoor noise reduction do not necessarily solve noise issues outside the structure and additional evaluation may be warranted. Building location, site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure, particularly from aircraft ground maintenance run-ups. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.

c. Land uses below 65db DNL are generally compatible. However, localities, when evaluating the application of these guidelines, should consider possible annoyance tied to land uses that involve predominately outdoor activities, or where quiet is a basis for the use.

d. Land use that involves outdoor activities in areas above 80db DNL are not recommended, but if the community allows such activities, hearing protection devices should be worn when noise sources are present.

Footnotes Specific to Certain Land Uses

1. Residential

a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-70 and strongly discouraged in DNL 70-75. The absence of viable alternative development options should be determined and an evaluation should be conducted locally prior to local approvals indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these zones.

b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 decibels (dB) in DNL 65-70 and 30 dB in DNL 70-75 should be incorporated into building codes and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-80.

c. Normal permanent construction can be expected to provide an NLR of 20 dB, thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation, upgraded sound transmission class ratings in windows and doors, and closed windows year-round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.

2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

5. Buildings where public is received, are not recommended.

6. Land use is compatible provided special sound reinforcement systems are installed.

7. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 25dB should be incorporated into the design.

8. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 30dB should be incorporated into the design.

9. Residences are not compatible.


B

APPENDIX B

KEY TERMS

Day-Night Average Sound Level (DNL). DNL is a composite noise metric accounting for the sound energy of all noise events in a 24-hour period. In order to account for increased human sensitivity to noise at night, DNL includes a 10-dB penalty for events occurring during the acoustical nighttime period (10:00 p.m. through 7:00 a.m.). See section 4.3 for additional information.

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

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

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

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

APPENDIX C

EXISTING LAND USE, FUTURE LAND USE, AND ZONING COMPARISON

Bay County Existing Land Use Categories

Category	AICUZ Categories	Category	AICUZ Categories
Airport/Port Improve	Transportation/Utility	**Municipal**	Public/Quasi Public
Airport/Port Vacant	Transportation/Utility	**Nightclub/Bars**	Commercial
Beauty/Nail Salon	Commercial	**No AG Acreage**	Open/Ag/Low Density
Car Wash	Commercial	**Office Bldg**	Commercial
Churches	Public/Quasi Public	**Open Storage**	Commercial
City Vacant	Public/Quasi Public	**Packing Plants**	Industrial
Clubs/Lodges/Halls	Public/Quasi Public	**Parking/MH Park Lot**	Public/Quasi Public
Colleges	Public/Quasi Public	**Pastureland 1**	Open/Ag/Low Density
Community Shopping	Commercial	**Private Schools**	Public/Quasi Public
Condominium	Residential	**Professional Bldg**	Commercial
Cooperatives	Public/Quasi Public	**Public Schools**	Public/Quasi Public
County	Public/Quasi Public	**Railroad**	Transportation/Utility
County Vacant	Public/Quasi Public	**Rec And Park Land**	Recreation
Day Care	Public/Quasi Public	**Repair Service**	Commercial
Drive-In Rest.	Commercial	**Res Common Area/Elem**	Public/Quasi Public
Dry Cleaners	Commercial	**Restaurants/Cafe**	Commercial
Federal	Public/Quasi Public	**Retirement Homes**	Residential
Federal Vacant	Public/Quasi Public	**Rights-of-Way**	Transportation/Utility
Financial Bldg	Commercial	**Service Station**	Commercial
Gym	Commercial	**Single Family**	Residential
Heavy Manufacture	Industrial	**Skating Ring**	Commercial
Homes for the Aged	Public/Quasi Public	**State Vacant**	Public/Quasi Public
Hotels and Motels	Commercial	**Store/OFC/Res Condo**	Commercial
Improved AG	Open/Ag/Low Density	**Store/Office/Resid**	Commercial
Insurance Company	Commercial	**Stores, 1 Story**	Commercial
Light Manufacture	Industrial	**Supermarket**	Commercial
Military	N/A	**Tiitf**	Undeveloped
Miscellaneous Res	Residential	**Timberland 50-59**	Undeveloped
Mobile Home	Residential	**Timberland 60-69**	Undeveloped
Mortuary/Cemetary	Public/Quasi Public	**Timberland 70-79**	Undeveloped
Multi-Family 10 Less	Residential	**Timberland 80-89**	Undeveloped
Multi-Family 10+ UTS	Residential	**Timberland 90+**	Undeveloped

Bay County Existing Land Use Categories (Continued)

Category	AICUZ Categories
Timberland Unclass	Undeveloped
Utilities	Transportation/Utility
Vacant	Undeveloped
Vacant Comm./XFOB	Commercial
Vacant Commercial	Commercial
Vacant Industrial	Industrial
Vacant/XFOB	Undeveloped
Veh Sale/Repair	Commercial
Warehouse-Storage	Commercial
Wholesale Outlet	Commercial

Bay County Future Land Use Categories

Category	AICUZ Categories
AG	Open/Ag/Low Density
AGT	Open/Ag/Low Density
COMM	Commercial
CON	Open/Ag/Low Density
CSV	Open/Ag/Low Density
CSVR	Open/Ag/Low Density
GC	Commercial
GCOM	Commercial
HDRES	Residential
IN	Industrial
IND	Industrial
LDR	Residential
LDRES	Residential
MDRES	Residential
MIXU	Residential
MU	Residential
MU2	Residential
NCOM	Commercial
P/I	Public/Quasi Public
PI	Public/Quasi Public
PRS	Open/Ag/Low Density
PUB	Public/Quasi Public
REC	Recreation
RES	Residential
RESCONHAB	Residential
RLD	Residential
S/R	Residential
TC	Commercial
TMU	Commercial
TR	Transportation/Utilities
UN	Undesignated
UR	Residential

Bay County Zoning Categories

Category	AICUZ Categories
AG	Open/Ag/Low Density
AG-1	Open/Ag/Low Density
AG-2	Open/Ag/Low Density
C-1	Commercial
C-C	Commercial
COM-1	Commercial
CON	Open/Ag/Low Density
CSVH	Open/Ag/Low Density
CSVP	Open/Ag/Low Density
CSVR	Open/Ag/Low Density
GC	Commercial
GC 1	Commercial
GC 2	Commercial
HI	Industrial
I-P	Public/Quasi Public
IND-2	Industrial
LI	Industrial
MFHD	Industrial
MFHD-M	Industrial
MLU	Residential
MU 1	Residential
MU 2	Residential
MU 3	Residential
P	Recreation
P/I	Public/Quasi Public
PD	Residential
PI	Public/Quasi Public
PRS	Open/Ag/Low Density
R-1	Residential
R-10	Residential
R-2	Residential
R-3	Residential
R-5	Residential
R-5M	Residential
R-6	Residential
R-6M	Residential
R-7	Residential
R-8	Residential
R-9	Residential
R-MF	Residential
R-MFMD	Residential
REC	Residential
RLD	Residential
RLD 1	Residential
RLD 2	Residential
See FLU	
SR-1	Residential
TC	Commercial
THD	Residential
TMU	Commercial
TR	Transportation/Utilities
UN	Undesignated
UR 1	Residential
UR 2	Residential
AG	Open/Ag/Low Density
AG-1	Open/Ag/Low Density
AG-2	Open/Ag/Low Density
C-1	Commercial
C-C	Commercial
COM-1	Commercial
CON	Open/Ag/Low Density
CSVH	Open/Ag/Low Density

Bay County Zoning Categories (Continued)

Category	AICUZ Categories
CSVP	Open/Ag/Low Density
CSVR	Open/Ag/Low Density
GC	Commercial
GC 1	Commercial
GC 2	Commercial
HI	Industrial
I-P	Public/Quasi Public
IND-2	Industrial
LI	Industrial
MFHD	Industrial
MFHD-M	Industrial
MLU	Residential
MU 1	Residential
MU 2	Residential
MU 3	Residential
P	Recreation
P/I	Public/Quasi Public
PD	Residential
PI	Public/Quasi Public
PRS	Open/Ag/Low Density
R-1	Residential
R-10	Residential
R-2	Residential
R-3	Residential
R-5	Residential
R-5M	Residential
R-6	Residential
R-6M	Residential
R-7	Residential
R-8	Residential
R-9	Residential

Category	AICUZ Categories
R-MF	Residential
R-MFMD	Residential
REC	Residential
RLD	Residential
RLD 1	Residential
RLD 2	Residential
SR-1	Residential
TC	Commercial
THD	Residential
TMU	Commercial
TR	Transportation/Utilities
UN	Undesignated
UR 1	Residential

D

APPENDIX D

TAFB LAND USE COMPATIBILITY PLAN COMPATIBILITY CRITERIA

Recommendation	Action	Applicable Areas
Adopt Overlay Districts	Adopt overlay districts into each jurisdiction's Comprehensive Plan and Land Development Code that identifies the Special Use Airspace used by the Installation.	· City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Coordinate with Neighboring Counties	Coordinate with neighboring counties to identify the Special Use Airspace utilized for mission training by the Installation. Adopt overlay districts within each County's Comprehensive Plan and Land Development Regulations to ensure the continued use of Special Use Airspace is not threatened by encroachment.	· Bay, Gulf, Franklin, Liberty, Calhoun, Jackson, and Washington Counties
Adopt Federal Aviation Obstruction Evaluation requirements in Local Land Development Regs	Adopt language within each jurisdiction's Land Development Regulations that require Federal Aviation Regulation Part 77 Obstruction Evaluations for any proposed development that meets the criteria for notice.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Form CUP Implementation Committee	The Bay County–Tyndall AFB CUP Technical Working Group should transition to a CUP Implementation committee and be responsible for monitoring the implementation of the recommended CUP strategies and act as a forum for continued communication about the CUP after it is completed.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Establish a GIS Database	Establish a GIS Database that includes the Installation and surrounding municipalities. This database would incorporate all the CUP 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.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Establish a Clearinghouse Website	Establish a clearinghouse website to provide updates to the community on Installation issues such as scheduled training events, controlled burns, night training, mariner notices, etc.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB

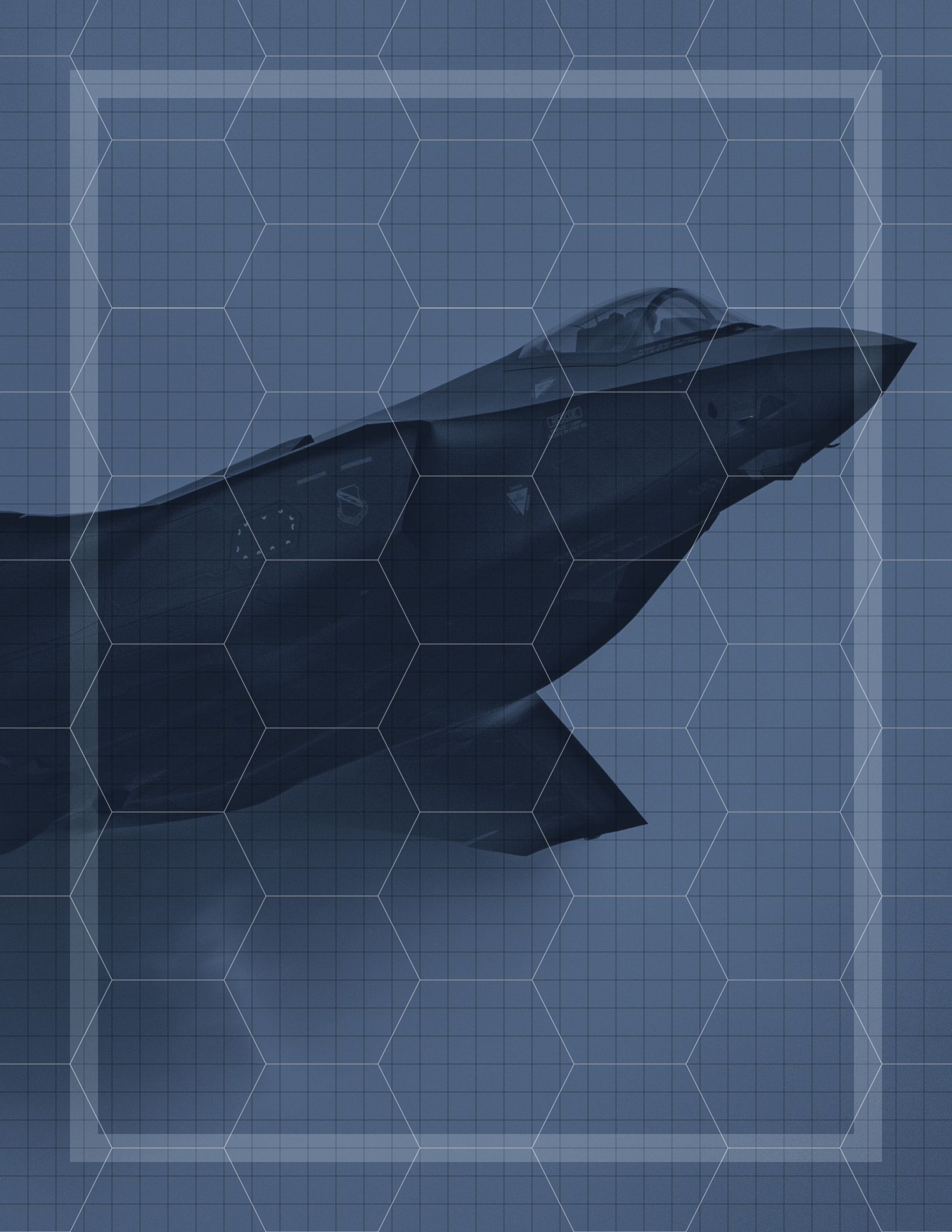
Recommendation	Action	Applicable Areas
Expand Community Outreach Efforts	Expand community outreach efforts to promote social media sites, websites, and other Installation platforms to inform the public of ongoing and upcoming issues and events.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Update Local Planning Organization Websites	Update jurisdiction and regional planning organization websites to link to the Installation web page, provide contact information, relevant activities, etc.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Publish Points of Contact	Identify and publish points of contact for the community and Installation to make them widely known and easily identifiable.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Establish a CUP Coordination Committee	Establish a CUP coordination committee.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Develop Uniform Standards for Land Use Notification Requirements	Develop uniform standards for land use notification requirements for the various government agencies within the MIOD that will provide for a streamlined process of coordination and communication.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Develop a Communication Manual	Develop a Communication Manual that provides information about the installation, the five cities and the County within the Study Area and each entities' respective missions, responsibilities, and geographic service areas.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB

Recommendation	Action	Applicable Areas
Lobby to Protect the Gulf Range Complex from Encroachment	Coordinate with local governments, organizations, and business to support, educate, and lobby local leaders, state representatives, and legislators to protect the Gulf Range Complex from encroachment.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Adopt an Overlay District	Adopt an overlay district for the portion of the Gulf Range Complex Radio Tower Corridor that is located within Bay County to protect the line of sight from vertical obstruction and frequency interference.	· Bay County · Tyndall AFB
Establish Overlay Districts	Coordinate with Gulf and Franklin Counties to develop and establish overlay districts within each municipality that the corridor passes through to ensure that the line-of-sight for the Gulf Range Microwave Corridor is protected from vertical obstruction and frequency interference.	· Bay County · Gulf County · Franklin County · Tyndall AFB
Establish Military Influence Areas (MIA) and Military Influence Overlay Districts (MIOD)	Establish MIA and MIOD within the five cities and the County located within the Study Area to address areas that require special considerations due to noise, use, or airspace. Incorporate these MIAs and MIODs into Comprehensive Plans and Land Development Regulations.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Update Comprehensive Plans and Land Development Regulations	Prepare complete updates to the City of Callaway and the City of Springfield Comprehensive Plans and updates to the Land Development Regulations for the Cities of Parker, Callaway, and Springfield.	· Bay County · City of Springfield · City of Callaway · City of Parker
Develop and Distribute MIOD Property Owner Information	Develop and distribute property owner information to provide details on applicable regulations that govern development within the MIOD.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB

Recommendation	Action	Applicable Areas
Create MIA Notification Policies	Create notification policies within the land development regulations that require providing detailed site plans, project build out descriptions, elevations, and construction plans, when necessary and where appropriate, within the MIA.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Analyze the Transfer of Development Rights from Agricultural Areas	Conduct a study to analyze the transfer of development rights from agricultural areas adjacent to or within the noise contours associated with the training areas of the Installation.	· Bay County · Tyndall AFB
Expand Agricultural Land Protections and Programs	Expand agricultural land protections and programs within the MIOD. Work with the Federal and State governments to identify funding opportunities for the creation of long-term leases that enable farmland to remain in agricultural use.	· Bay County · Tyndall AFB
Formal Policies for Technical Assistance	Establish formal policies and a mechanism to seek regular input from the Installation representatives for technical assistance.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Utilize a MOU	Utilize a MOU to identify and describe a Formal Development Notification Process among the Jurisdictions, Agencies, and the Installation.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Review Capital Improvement Plans	Conduct annual reviews of jurisdictional Capital Improvement Plans with the Installation to determine compatibility with the mission of the Installation.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB

Recommendation	Action	Applicable Areas
Increase Public Understanding	Increase public understanding of the training mission of the Installation, its unique nature and importance for national security.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Model Existing Height Regulations	Use the LIDAR performed by the U.S. Army Corps of Engineers to develop a 3-Dimensional Imaginary Surfaces GIS Model of existing height regulations compared to the FAA's allowable heights.	· Bay County · Tyndall AFB
Conduct a Risk Study with Gulf County	Coordinate and conduct a study with Gulf County to identify areas that may present a risk to the Installation training mission and develop strategies to mitigate such risks.	· Gulf County · Bay County · Tyndall AFB
Coordinate with Gulf County on Land Use Decisions	Coordinate with Gulf County on land use decisions in close proximity to the eastern boundary of the Installation to ensure that land use decisions in the adjacent county do not adversely affect the Installation.	· Gulf County · Bay County · Tyndall AFB
Undertake a Growth Management Assessment	Undertake a Growth Management Assessment to evaluate the impacts of the Installation's change in mission on the surrounding communities. Develop a Growth Management Plan.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB · State of Florida
Provide Noise Information	Provide information to jurisdictions, developers, and interested citizens regarding Installation training areas and the potential noise levels from such activities.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB

Recommendation	Action	Applicable Areas
Develop a List of Noise Attenuation Standards	Develop a list of recommended noise attenuation standards that could be given to developers and homeowners for their use.	· Bay County · Tyndall AFB
Develop Education Materials Re: Noise	Develop education materials regarding Installation noise that can be utilized by local real estate agents and distributed to potential property buyers.	· Bay County · Tyndall AFB
Conduct a Feasibility Study of the Possibility of Requiring Property Seller Disclosure Documents	Conduct a feasibility study of the possibility of requiring property seller disclosure documents regarding military operations for properties located near the Installation and evaluating the use of real estate disclosures for subdivision of land within a defined area.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Educate the Community about Noise	Educate the community on efforts the Installation undertakes regarding issues including noise frequency and intensity; these efforts include reducing noise or scheduling exercises to reduce the impact on the community.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Limit Development of Sensitive Uses	Limit the development of nursing homes, churches, hospitals, schools, manufactured home parks, and other similar uses within specified noise contours.	· Bay County · City of Panama City · City of Springfield · City of Callaway · City of Parker · City of Mexico Beach · Tyndall AFB
Develop a MIOD with Gulf County within Noise Contours of the Sky X Range	Coordinate with Gulf County and develop a MIOD along with education materials for the portion of the County within the noise contours of the Sky X Range.	· Bay County · Tyndall AFB



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