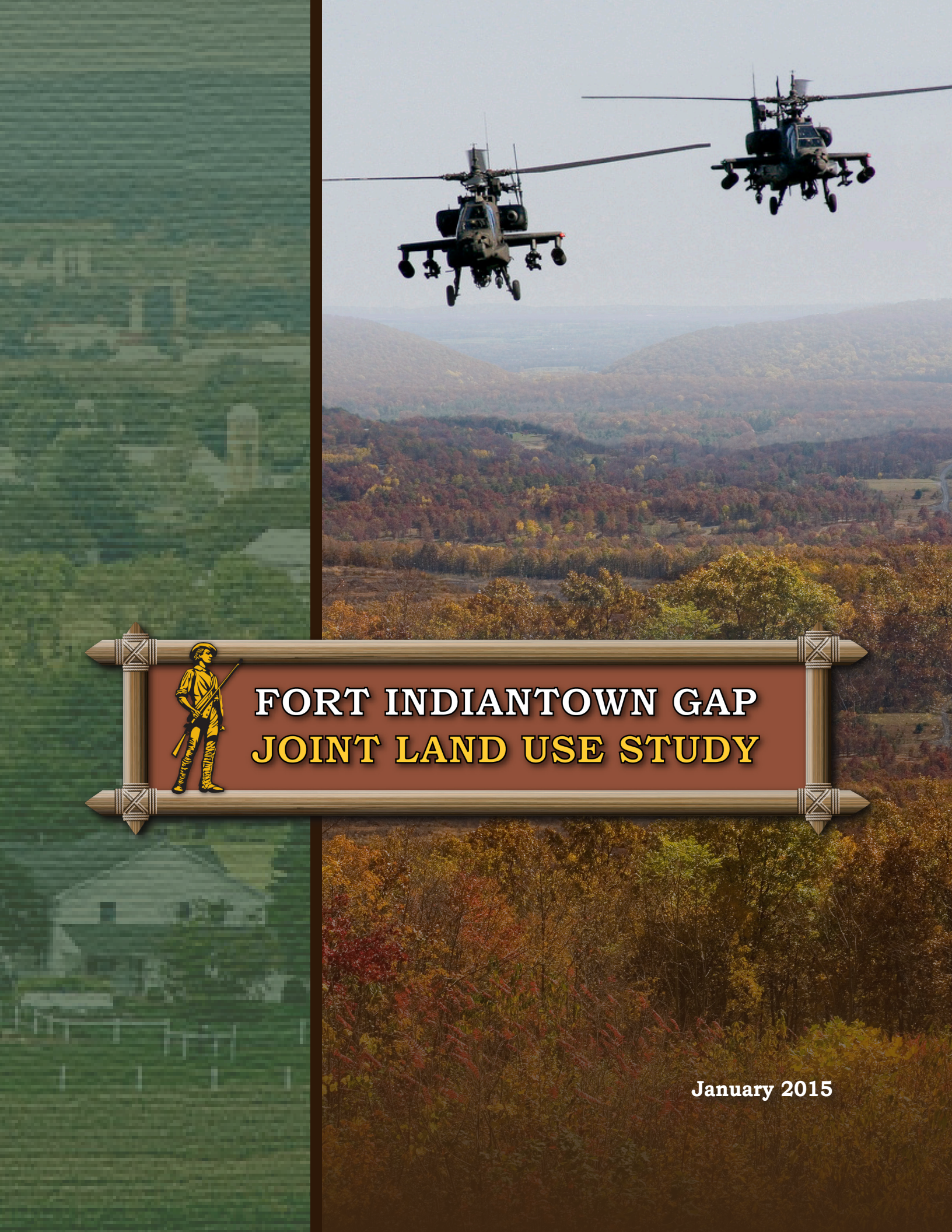

FORT INDIANTOWN GAP
JOINT LAND USE STUDY

January 2015

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This study was prepared under contract with the Lebanon County, Pennsylvania, with financial support from the Office of Economic Adjustment, Department of Defense, Lebanon County, Pennsylvania, and Dauphin County, Pennsylvania. The content reflects the views of the key JLUS partners involved in the development of this study and does not necessarily reflect the views of the Office of Economic Adjustment.

Matrix DESIGN GROUP

FORT INDIANTOWN GAP

JOINT LAND USE STUDY

JLUS Grant Manager
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Lebanon, PA 17042

Prepared by

Matrix DESIGN GROUP

January 2015

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Executive Committee

The Executive Committee (EC) served an active and important role in providing policy direction during the development of the Fort Indiantown Gap Joint Land Use Study. The EC comprised the following individuals:

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Technical Committee

The Technical Committee (TC) served a key role in the development of the Fort Indiantown Gap Joint Land Use Study. They provided the overall technical support, review, and guidance for the study. The TC was composed of the following individuals:

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Please see the next page.

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Tables and Figures

A

ACHP	Advisory Council on Historic Preservation
ACEPP	Agricultural Conservation Easement Purchase Program
ACP	Access Control Point
ACSIM	Assistant Chief of Staff for Installation Management
ACUB	Army Compatible Use Buffer
ADNL	weighted day-night level
AEC	Army Environmental Center
AGL	Above Ground Level
AHPA	Archaeological Historic Preservation Act of 1974
AICUZ	Air Installation Compatible Use Zone
AIRFA	American Indian Religious Freedom Act of 1978
APZ	Accident Potential Zone
AR	Army Regulation
ARNG	Army National Guard
ARPA	Archaeological Resources Protection Act of 1979
AT /FP	Anti-Terrorism / Force Protection
ATAG	Assistant to the Adjutant General

B

BASH	Bird Aircraft Strike Hazard
BLM	Bureau of Land Management
BOA	Board of Aviation
BRAC	Base Realignment and Closure

C

CA	Comprehensive Agreement
CAA	Clean Air Act
CAB	Combat Aviation Brigade
CACTF	Combined Arms Collective Training Facility
CDNL	C-weighted day-night level
CEQ	Council on Environmental Quality
CERFP	Enhanced Response Force Package
CFMO	Construction and Facility Management Office
CFR	Code of Federal Regulations
CIP	Capital Improvements Program
CP	Comprehensive Plan
CRM	Cultural Resource Manager
CST	Civilian Support Team
CWA	Clean Water Act
CZ	Clear Zone

D

dB	decibel
dBA	weighted decibel
DC	Dauphin County
DCA	Departmental Consulting Archaeologist
DMVA	Department of Military and Veterans Affairs
DNL	day-night level
DOD	U.S. Department of Defense
DOD	Department of Defense
DOI	Department of the Interior
DSCOPS	Operations Manager in the Directorate of Operations

E

EA	Environmental Assessment
EAATS	Eastern Army Aviation Training Site
EC	Executive Committee
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
EPR	Environmental Program Requirements
EQR	Environmental Quality Report
ESA	Endangered Species Act
EST	Engagement Skills Trainer

F

FAA	Federal Aviation Administration
FGDC	Federal Geographic Data Standards
FMO	Facilities Management Office
FOIA	Freedom of Information Act
FONSI	Finding of No Significant Impacts
FPCON	Force Protection Condition
FPPA	Farmland Protection Policy Act
FTIG	Fort Indiantown Gap
FY	Fiscal Year

G

GIS	Geographic Information System

H

HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HCLOS	high capacity line of sight
HIA	Harrisburg International Airport
HQDA	Headquarters, Department of the Army

I

ICRMP	Integrated Cultural Resources
ICUZ	Installation Compatible Use Zone
IDA	International Dark Sky Association
IESNA	Illuminating Society of North America
IFS	Integrated Facilities System
IGA	Intergovernmental Agreement
IGMR	Indiantown Gap Military Reservation
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
ISR	Installation Status Report
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
ISR	Installation Status Report
ITAM	Integrated Training Area Management

J

JAG	Judge Advocate General
JFHQ	Joint Force Headquarters
JLUS	Joint Land Use Study

K

km2	square kilometers

L

LC	Lebanon County
LCTA	Land Condition Trend Analysis
LUPZ	Land Use Planning Zone

M

MAAF	Muir Army Air Field
MACOM	Major Army Command
MBTA	Migratory Bird Treaty Act
MBTS	Medical Battalion Training Site
MFR	Memorandum for Record
MHz	megahertz
MILES	Multiple Integrated Laser Engagement System
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MOUT	Military Operations in Urban Terrain
MPC	Municipalities Planning Code
MTC	Maneuver Training Center

N

NAAQS	National Ambient Air Quality Standards
NACO	National Association of Counties
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NCTC	Northeast Counterdrug Training Center
NEPA	National Environmental Policy Act of 1969, as amended
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NGO	Non-Governmental Organization
NGTC	National Guard Training Center
NHPA	National Historic Preservation Act of 1966, as amended
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination
NRHP	National Register of Historic Places
NTA	Northern Training Area
NTIA	National Telecommunications and

O

ODEP	Officer of Department of Environmental Protection
OEA	Office of Economic Adjustment
ONMP	Operational Noise Management Program

P

PA	Programmatic Agreement
PA	Pennsylvania
PAANG	Pennsylvania Air National Guard
PAARNG	Pennsylvania Army National Guard
PADEP	Pennsylvania Department of Environmental Protection
PAM	Pamphlet (Army Regulations)
PAO	Public Affairs Office
PAO	Public Affairs Office
PASDC	Pennsylvania State Data Center
PennDOT	Pennsylvania Department of Transportation
PL	Public Law
PNG	Pennsylvania National Guard
POC	point of contact
POTO	Planning Operations and Training Office

R

REC	Record of Environmental Consideration
REOTS	Regional Equipment Operator Training School
ROD	Record of Decision
RPDP	Real Property Development Plan
RSG	Regional Support Group
RTLP	Range and Training Land Program
RTS-M	Regional Training Site Maintenance

S

SASP	Statewide Airport System Plan
SBCT	Stryker Brigade Combat Team
SCC	State Conservation Commission
SDS	Spatial Data Standards
SGL	State Game Lands
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SJA	Staff Judge Advocate
SL&D	Subdivision and Land Development Ordinance
SOP	Standard Operating Procedure
SR	State Route
SRP	Sustainable Range Program

T

TC	Technical Committee
THPO	Tribal Historic Preservation Officer
TRR	tactical radio relay

U

UAS	Unmanned Aerial System
UCC	Uniform Construction Code
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers
USACERL	United States Army Construction Engineering Research Laboratory
USAPHC	United States Army Public Health
USC	United States Code
USFWS	United States Fish and Wildlife Service
USPFO	United States Property and Fiscal Office
UTES	Unit Training Equipment Site

V

V	Visual Flight Rules

Access Control Point

A specific location is designated for security purposes to restrict entry into an installation. The purpose of an ACP is to prevent unauthorized access to the installation while maximizing vehicular-traffic flow. An ACP may be in the form of a staffed check-point where personnel check identification badges for permission to entry, physical barriers, vehicular restrictions, or other measures to deny access to a particular area.

Air Traffic Control (ATC)

The system used to direct aircraft in flight, using controllers from both the Federal Aviation Administration and the military.

Ambient Light

The general background illumination that comes from all directions and has no visible source.

Ambient Noise

The background noise that is usually present within an existing environment (built or natural) comprising sounds from many sources, both near and far.

Attenuation

Attenuation is a reduction in the level of sound resulting from an object's distance from the noise source or absorption by the surrounding topography, the atmosphere, barriers, construction techniques and materials, and other factors. Sound attenuation in buildings can be achieved through the use of special construction practices that reduce the amount of noise that penetrates the windows, doors, and walls of a building. Sound attenuation measures may be incorporated during initial construction or as additional construction for existing buildings.

A-weighted Decibel (dBA)

Unit of measurement for noise using a logarithmic scale and measured using the A-weighted sensory network on a noise-measuring device. An increase or decrease of 10 decibels corresponds to a tenfold increase or decrease in sound energy. A doubling or halving of sound energy corresponds to a 3-dBA increase or decrease.

A-weighting

The A-weighting of decibels (dBA) was designed to work primarily with higher frequency sounds. In military noise, this would encompass such sounds as those from generators, aircraft, maneuver drills, and general transportation.

Battalion

A military unit generally composed of multiple companies with a headquarters section (approximately 300 to 1,000 soldiers).

Bivouac

A temporary settlement or shelter consisting of tents, field kitchens, chemical toilets, and showers surrounded by fighting positions.

BNOISE2

A computerized tool that displays noise contours for artillery and explosive operations.

Brigade

A military unit smaller than a division, usually composed of multiple battalions with a headquarters section, to which are attached smaller units tailored to meet anticipated requirements (approximately 3,000 to 5,000 soldiers).

Cantonment Area

Permanent military station, usually containing administration buildings, barracks, and support facilities.

Company

A military unit usually composed of multiple platoons with a headquarters section (approximately 150 soldiers).

Controlled Perimeter

A physical boundary around an installation where access is controlled and sometimes monitored or inspected. Controlled perimeters can also be inside an installation's, normally fenced, boundary as are additional perimeters around more restrictive areas.

Convoy

An organized and controlled group of vehicles that moves over the same route at the same time and under one commander.

C-weighting

The C-weighting of decibels (dBC) is used for intense signals containing low frequency sound energy like those that emanate from large gun blasts, sonic booms, and detonations.

Day-Night Average Sound Level (DNL)

DNL represents an average sound exposure over a 24-hour period. During the nighttime period (10:00 p.m. to 7:00 a.m.), averages are artificially increased by 10 dB. This weighting reflects the added intrusiveness and the greater disturbance potential of nighttime noise events attributable to the fact that community background noise typically decreases by 10 dB at night. For National Guard activities, the DNL may be A-weighted (ADNL) when used to measure aviation noise, or C-weighted (CDNL) when used to measure large caliber weapons noise.

Decibel (dB)

The physical unit commonly used to describe noise levels. It is a logarithmic sound pressure unit of measure used for describing the amplitude of sound, as it is heard by the human ear.

Environmental Assessment (EA)

A publication that provides sufficient evidence and analysis to show whether a proposed system will adversely affect the environment or be environmentally controversial. If the proposed system will adversely affect the environment or be controversial, an EIS is prepared to disclose impacts.

Environmental Impact Statement

As defined in the Council on Environmental Quality regulations, a detailed written report that provides a "full and fair discussion of significant environmental impacts, and (informs) decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment." The draft EIS evaluates a range of reasonable alternatives and their associated impacts and presents a preferred alternative if one option is clearly favored above the others. After departmental review, the draft EIS is circulated among agencies and the public for comment. Following the public hearing held to formally record comments on the draft, a final EIS is prepared incorporating public and agency input and recommending a selected alternative.

Fixed Wing Aircraft

A generic term used in this document to reference the broadest class of aircraft; those in which aerodynamic lift is generated when the airframe including the fixed, or non-rotating, wing is moved through the air by forward thrust from a jet engine or engine driven propeller. Fixed-wing types customarily include fighter, attack, transport, observation, reconnaissance, and trainer aircraft.

Flight Path

The line connecting the successive positions occupied, or to be occupied, by an aircraft, missile, or space vehicle as it moves through air or space.

Frequency Impedance

The interruption of electronic signals due to the existence of a structure or object between the source of the signal and its destination (receptor).

Frequency Interference

The inability to effectively distribute or receive a particular frequency because of similar frequency competition. As the use of the frequency spectrum increases (such as the rapid increase in cellular phone technology over the last decade) and as development expands near military installations and operational areas, the potential for frequency spectrum interference increases.

Frequency Spectrum

The entire range of electromagnetic frequencies used for communications and other transmissions, which includes frequencies used for radio, cellular phones, and television. In the performance of typical

operations, the military relies on a range of frequencies for communications and support systems. Similarly, public and private users rely on a range of frequencies to support daily life.

Geographic Information System (GIS)

A computer system that allows environmental analysts to compile, analyze, and model information relevant to proposals that require environmental analysis. It is also a tool that assists decision making by providing a visual depiction of complex data, customized for the situation and circumstances associated with the decision.

Glare

The presence of excessively bright light, such as direct or reflected sunlight, or artificial light, such as sport field and stadium lights at night. Glare reduces visibility and can completely impair vision when very intense.

Helipad

An area used by combat helicopters for taking off and landing.

Imaginary Surface

The areas surrounding a heliport or runway that must be kept clear of objects that might damage an aircraft. A man-made or natural object that projects above an imaginary surface is an obstruction.

Impulse (or Impulsive) Noise

Noise of short duration (typically less than one second), high intensity, abrupt onset and rapid decay, and often rapidly changing spectral composition. Impulsive noise is characteristically associated with such sources as explosions, impacts, the discharge of forearms, the passage of supersonic aircraft (creating sonic booms), and many industrial processes.

Inholdings

Privately owned land inside the boundary of a publicly owned or protected area such as a military installation, national park, national forest, state park. Inholdings result from private ownership of lands prior to the designation of the land as its public or government use, which then end up grandfathered within the legally designated boundary.

Installation

A grouping of facilities, located in the same general vicinity, over which the installation commander has authority.

Maneuver Areas

Range on which employment of live/inert ordnance is prohibited, used for maneuver element training only.

Night Vision Devices

Image intensifying optical device that use a variety of technologies to provide enhanced vision at night. Night vision devices are in use in all branches of the military, but especially by pilots and Special Forces units.

Noise

Any sound that is undesirable because it interferes with speech and hearing. If intense enough, it can damage hearing.

Noise Contour

Noise contours consist of noise impact lines constructed by connecting points of equal noise level measured in dB and identify areas on a map that fall within that particular dB noise contour.

Noise Exposure Map

A noise exposure map consists of a scaled, geographic depiction of a noise source, its noise contours, and surrounding area.

Noise Level Reduction

The difference, in decibels, between the sound level outside a building and the sound level inside a designated room in the building (usually A-weighted). The NLR is dependent upon the transmission loss characteristics of the building surfaces exposed to an exterior noise source, the particular noise characteristics of the exterior noise source, and the acoustic properties if the designated room in the building.

Noise Sensitive Receptors / Noise Sensitive Land Uses

This term refers to land uses that are typically more sensitive to noise, including residential development, hotels / motels, hospitals, convalescent homes and facilities, schools, day care facilities, libraries, churches, and other similar land uses.

Noise Zones

Noise Zone I is the noise zone that includes all areas in which the PK15(met) decibels are less than 87 (for small arms), the ADNL is less than 65 (for aircraft), and/or the CDNL is less than 62 (for large arms and explosions). This area is suitable for all types of land use. Noise Zone II includes areas where the PK15(met) decibels are between 87 and 104, the ADNL is between 65 and 75, and/or the CDNL is between 62 and 70. Land uses for this zone should typically be limited to manufacturing, warehousing, transportation, and resource protection. Noise Zone III is the zone located closest to the source of noise. It includes PK15(met) decibels greater than 104, ADNL greater than 75, and/or CDNL greater than 70. No noise sensitive uses should occur within this area due to the severity of noise. There is also a Land Use Planning Zone (LUPZ) at the upper end of Noise Zone I and includes areas where the CDNL is between 57 and 62 or the ADNL is between 60 and 65. It does not include land for PK15(met). This zone accounts for variability in seasonal operations where certain times of the year may include a greater amount of operations than normal.

PK15(met)

PK15(met) refers to the peak sound level, factoring in the statistical variations caused by weather, that is likely to be exceeded only 15 percent of the time (i.e., 85 percent certainty that sound will be within this range). This condition only exists in modeling (one cannot take a PK15(met) reading on the ground) and is used for land use planning with small arms, as well as additional information for large arms and other impulsive sound. A PK15(met) level of greater than 130 dB has a high risk of complaints, 115-130 dB has a moderate risk of complaints, and below 115 dB has a low risk of complaints.

Platoon

A subdivision of a company-size military unit, normally consisting of two or more squads or sections (approximately 30 soldiers).

Prescribed Burn

The controlled and intentional ignition of grass, shrub, or forest fuels for the specific purpose reducing vegetation for purposes such as forest management, farming, or habitat restoration.

Range

A place equipped for practice in shooting at targets.

Restricted Airspace

Airspace designated under Federal aviation regulations, within which the flight of aircraft is subject to restriction. Most restricted areas are designated joint use, and operations in the area may be authorized by the controlling Air Traffic Control facility when it is not being utilized by the using (military) agency.

Ricochet

To rebound at least once from a surface.

Rotary Wing Aircraft

An aircraft that derives its lift and forward thrust that allow it to fly from the rotation of blades on an approximately vertical central axis such as a helicopter.

Safety Fans

Access restrictions for each type of weapon fired on any range.

Small Caliber / Small Arms

Conventional military weapons less than 20 millimeters in diameter.

Squad

The smallest tactical unit of military personnel, usually consisting of approximately ten soldiers.

Stryker

A highly deployable-wheeled armored vehicle that combines firepower, battlefield mobility, survivability and versatility, with reduced logistics requirements. The Stryker is the combat vehicle of choice for the Army's Brigade Combat Teams.

Training Corridor

A designated area of land used for training purposes.

Unmanned Aerial Vehicle (UAV) / Unmanned Aerial System (UAS)

A remotely controlled or autonomous aircraft used for surveillance and strike missions. These aircraft are useful in situations where it is too dangerous to use manned aircraft.

Unweighted Peak

The peak, single event sound level without weighting, on the ground. This measurement takes into account everything from berms, to weather, to the length of the grass. However, it is only reflective of that moment in time under those exact conditions. Consequently, there is no particular confidence that the measurement is reliable in other situations, such as the 85 percent certainty of the PK15(met).

Vibration

The oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other change in the environment.

Weighted Sound Level

A sound level (in decibels) that has been weighted to correspond with the non-linear sensitivity of the human ear. A-weighting discriminates against the lower frequencies and is used to measure most common military sounds such as transportation and small-arms fire.

Yearly Day-Night Average Sound Level (Ldn)

Ldn refers to the 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between 10:00 p.m. and 7:00 a.m. the following day, averaged over a span of one year.

Please see the next page.

1. Introduction

1.1 JLUS Project Overview

The Fort Indiantown Gap (FTIG) Joint Land Use Study (JLUS) is a collaborative planning effort led by Lebanon County in partnership with the townships of Union and East Hanover in Lebanon County; Dauphin County containing the townships of East Hanover and West Hanover; and FTIG. The JLUS was undertaken in an effort to guide planning and development in the areas surrounding FTIG to facilitate mitigation of future issues and strengthen coordination among all entities involved in the process.

The FTIG JLUS advocates a proactive approach to encourage increased communication about decisions relating to land use regulation, conservation, and natural resource management issues affecting both the community and the military. This study seeks to avoid conflicts previously experienced between the United States (US) military and local communities in other areas of the US and throughout the world by engaging the military and local decision-makers in a collaborative planning process. The intent of the process is to establish and encourage a working relationship among military installations and their proximate communities to act as a team to prevent and / or reduce encroachment issues associated with current and future missions and local growth. The term encroachment refers to incompatible uses of land, air, water, and other resources that may individually or cumulatively impact the military's ability to carry out its testing and training mission.

The compatibility factors considered in this JLUS are described in the Compatibility Assessment (Section 5 of the JLUS or Chapter 5 of the Background Report). Upon review of these factors and identification of issues with the communities, FTIG, JLUS committees, and the public, a set of strategies to address compatibility concerns was developed.

The recommended strategies are based on a toolbox of methods used to address compatibility issues and address the use of policy, planning and zoning, coordination and communication, and outreach methods. ***One of the key recommendations is the formation of a JLUS Coordination Committee responsible for overseeing the implementation progress in the months and years after the JLUS is completed.*** The recommended strategies are outlined in more detail in Section 6.

1.2 What Is a Joint Land Use Study?

A JLUS is a planning process accomplished through the collaborative efforts of key stakeholders in a defined study area. These stakeholders include local community, state, and federal officials, residents, business owners, local tribal governments, nongovernmental organizations, and the military who come together to identify compatible land uses and growth management guidelines within the JLUS study area. The purpose of a JLUS is to identify compatible land uses and growth management guidelines for areas proximate to active military installations, such as FTIG. The intent of the process is to establish and nurture a working relationship between a military installation and its host communities and proximate local jurisdictions, whose collaborative efforts prevent and / or alleviate encroachment issues associated with existing mission objectives and potential mission expansion (no installation boundary expansion) while fostering community economic development goals.

Although primarily federally funded by the Office of Economic Adjustment (OEA), Department of Defense (DOD), a JLUS is produced by and for local communities. The project management entity for the FTIG JLUS is the Lebanon County Planning Department.

1.3 JLUS Goal and Objectives

The goal of the FTIG JLUS is to protect the viability of current and future training operations, while simultaneously guiding community growth, sustaining the environmental and economic health of the region, and protecting public health, safety, and welfare.

To help meet this goal, three primary JLUS objectives were identified.

- Understanding. Convene community and military representatives to identify, confirm, and understand the compatibility issues and concerns in an open forum, taking into consideration both the community's and military's perspectives and needs. This includes increasing public awareness, education, and opportunities for input organized in a cohesive outreach program.
- Collaboration. Encourage cooperative land use and resource planning among FTIG and surrounding communities so that future community growth and development are compatible with the training and operational missions at FTIG, while at the same time seeking ways to reduce operational impacts on adjacent lands within the study area.
- Actions. Provide a set of mutually supported tools, activities, and procedures from which local jurisdictions, agencies, and FTIG can select, prepare, and approve / adopt and to ultimately implement the recommendations developed during the JLUS process. The actions proposed include both operational measures to mitigate installation impacts on surrounding communities and local government and agency approaches to reduce community impacts on military operations.

These tools will help decision makers resolve compatibility issues and prioritize projects within the annual budgeting process of their respective entity / jurisdiction.

1.4 Why Prepare a Joint Land Use Study?

Although military installations and nearby communities may be separated by a defined property boundary, they often share natural and manmade resources such as land use, airspace, water, and infrastructure. Despite the many positive interactions among local jurisdictions, agencies, and the military, and because so many resources are shared, the activities or actions of one entity can pose unintended negative impacts on another, resulting in conflicts. As communities develop and expand in response to growth and market demands, land use approvals have the ability to locate potentially incompatible development closer to military installations and operational / training areas. The result can initiate new, or exacerbate existing, land use and other compatibility issues, often referred to as encroachment, which can have negative impacts on community safety, economic development, and sustainment of military activities and readiness.

Collaboration and joint planning among military installations, local communities, and agencies should occur to protect the long-term viability of existing and future military missions. Working together also enhances the health of economies and industries of communities before incompatibility becomes an issue. Recognizing the close relationship that should exist between installations and adjacent communities, the OEA implemented the JLUS program in an effort to mitigate existing and future conflicts and enhance communication and coordination among all affected stakeholders. This program aims to preserve the sustainability of local communities within the JLUS study area while protecting current and future operational and training missions at FTIG.

1.5 Pennsylvania National Guard

The Pennsylvania National Guard (PNG) comprises both the Pennsylvania Air National Guard (PAANG) and Pennsylvania Army National Guard (PAARNG). The commander of the 19,000-member Pennsylvania National Guard is the Adjutant General. The Adjutant General is responsible for a joint military force (Air Force and Army) that reaches from Joint Headquarters at FTIG to approximately 90 communities across the Commonwealth. FTIG serves as PNG's Joint Force Headquarters.

The National Guard is responsible for both a federal and state mission. The federal mission is to maintain properly trained and equipped units available for prompt mobilization for war, national emergencies, or as otherwise needed. In time of war or national emergency, or in support of any military operation worldwide, the US President has the authority for calling the PNG into action in support of its federal mission. Pennsylvania units have participated in every conflict America has faced. Since September 11, 2001, more than 35,000 PNG soldiers and airmen have deployed in support of global contingencies.

In peacetime, the governor serves as the PNG commander in chief, exercising control through Pennsylvania's Adjutant General, a state cabinet-level position responsible for command, control, and supervision of National Guard units - Army and Air - allocated to the Commonwealth, six state-owned veterans' homes, and programs for Pennsylvania's one million veterans. In the event of natural disaster or civil emergency, the governor may order Guard personnel and equipment into service to assist state and local authorities. The PNG also provides community support through programs such as the counterdrug program, which provides trained people and specialized equipment to assist state and local law enforcement agencies in the fight against illegal drugs.

Economic and Strategic Importance

The Pennsylvania Department of Military and Veterans Affairs (DMVA), headquartered at FTIG, fulfills a dual mission: 1) to provide services to the commonwealth's 1.1 million veterans and their families; and 2) to support the PNG also headquartered at FTIG. The DMVA is one of Pennsylvania's largest employers, with armories and air bases operating in 90 communities in 52 counties throughout the state.

FTIG is a major contributor to the economic health of the Commonwealth of Pennsylvania, the South Central Pennsylvania region, and the local economies of Lebanon and Dauphin counties providing an economic impact of $573 million in fiscal year 2014. In addition to the more than 100,000 individual students and trainees who rotate through FTIG annually, approximately 2,100 people work full-time at FTIG. They include state and federal civilians; military technicians; members of the Active Guard and Reserve program; active-duty soldiers; and employees of contractors and non-DMVA tenants.

FTIG is a unique asset within the DOD. It is the only major military training center in Pennsylvania and the only live-fire training site in the state. FTIG's extensive training resources provide unique training opportunities for guardsmen throughout Pennsylvania as well as other National Guard units as far away as Kentucky and New Mexico. In addition to its function as a National Guard Training Center, FTIG continues to support training for units of the Marine Corps Reserve, Naval Reserve, Active Army, and Army Reserve, as well as federal, state, and local law enforcement agencies. FTIG is one of the busiest National Guard Training Centers in the US.

FTIG has served an important role in America's history as a training and deployment center and continues to support our country through an expanded set of missions. The PNG is responsible for preparing the troops for combat, performing worldwide combat and combat support operations, providing global reach and the projection of United States military power in support of national objectives; and, at the command of the governor, providing trained personnel to support state and local authorities in times of natural disaster or civil discord.

Community Activities and Stewardship

The PAARNG has an award-winning environmental program whose management team oversees environmental regulatory requirements, including the

protection of cultural resources and issues for all PAARNG properties in Pennsylvania. Limited civilian use of open space and recreational lands and other services are permitted at the installation's discretion, including:

- Community Club
- Blue Mountain Sports Arena
- Swimming pool (outdoor)
- Post Exchange, gas station, convenience store, military clothing store
- Scouting trips, youth camps, civic tours
- Hunting and fishing (including special access for the disabled)
- Major public events (Armed Forces Day celebration, Battle of the Bulge re-enactment)
- Pennsylvania National Guard Military Museum

Additional resources such as the PAARNG Armory in Lebanon, Pennsylvania that operates as a local family assistance center and several Pennsylvania State Parks are located either adjacent to, or in close proximity to FTIG.

1.6 Public Outreach

The JLUS process was designed to create a locally relevant document that builds consensus and obtains support from the various stakeholders involved. To achieve the JLUS goals and objectives, the FTIG JLUS process included a public outreach program that provided a variety of opportunities for interested parties to contribute to its development.

Stakeholders

Stakeholders include individuals, groups, organizations, and governmental entities interested in, affected by, or affecting the outcome of the JLUS project. Stakeholders identified for the FTIG JLUS included, but were not limited to:

- Local jurisdictions
- DOD officials (including OEA representatives) and military installation personnel
- Local, regional, and state planning, regulatory, and land management agencies
- Landholding and regulatory federal agencies
- The public (including residents, landowners, and local businesses)
- Environmental advocacy organizations
- Nongovernmental organizations
- Other special interest groups (including local educational institutions and school districts)

Executive Committee and Technical Committee

The development of the FTIG JLUS was guided by two committees, comprising county and township leaders, FTIG personnel, federal and state agencies, resource agencies, local governments, and other stakeholders.

JLUS Executive Committee (EC). The EC consists of officials from participating jurisdictions, military installation leadership, and representatives from other interested and affected agencies. The EC is responsible for the overall direction of the JLUS, preparation, and approval of the study design, approval of policy recommendations, and approval of draft and final JLUS documents.

JLUS Technical Committee (TC). The TC is responsible for identifying and studying technical issues. Membership includes local planners, military base planners, business and development community representatives, natural resource protection organizations, and other subject matter experts as needed to help assist in the development and evaluation of implementation strategies and tools. Items discussed by the TC were brought before the EC for consideration and action.

The EC and TC served as liaisons to their respective stakeholder groups. EC and TC members were charged with conveying committee activities and information to their organizations and constituencies and relaying their organization's comments and suggestions to both committees for consideration. Meetings were held throughout the process to ensure the JLUS identified and appropriately addressed local issues. EC members were encouraged to set up meetings with their organizations and / or constituencies to facilitate this input. The responsibilities and list of participants for the JLUS sponsors, the EC, and the TC are identified in Tables 1-1, 1-2, and 1-3, respectively.

Table 1-1. JLUS Sponsor Responsibilities and Participants

Responsibilities	Participants
■ Coordination ■ Accountability ■ Grant Management ■ Financial Contribution	■ Lebanon County

Table 1-2. JLUS Executive Committee Responsibilities and Participants

Responsibilities	Participants
■ Policy Direction ■ Study Oversight ■ Monitoring ■ Report Acceptance	■ Lebanon County ■ Dauphin County ■ East Hanover Township (LC) ■ Fort Indiantown Gap

Table 1-3. JLUS Technical Committee Responsibilities and Participants

Responsibilities	Participants
■ Identify Issues ■ Provide Expertise to Address Technical Issues ■ Evaluate and Recommend Implementation Options to the EC ■ Provide Draft and Final Report Recommendations to the EC	■ Lebanon County ■ Union Township (LC) ■ East Hanover Township (LC) ■ Dauphin County ■ Tri-County Regional Planning Commission ■ Pennsylvania Department of Military and Veterans Affairs ■ Fort Indiantown Gap

Public Workshops

A series of public workshops were held throughout the JLUS development. These workshops provided an opportunity for the exchange of information with the greater community, assisted in identifying the issues to be addressed in the JLUS, and provided input on the proposed strategies. Each workshop included a traditional presentation and a facilitated exercise providing a "hands on," interactive opportunity for the public to participate.

East Hanover Township Public Workshop #2; October 2013.

Public Outreach Materials

Several publications were developed during the course of the JLUS to keep the public informed and knowledgeable about how a JLUS is conducted and what to expect as the end product. Direct mail postcards, website notifications, and press releases were utilized to notify the public of upcoming meetings. Materials were handed out during the public workshops, posted to the project website, and made available at local libraries for easy access.

JLUS Fact Sheet / Compatibility Factors Brochure. At the beginning of the JLUS program, a JLUS Fact Sheet was developed describing the JLUS program, objectives, methods for public input in the process, and the FTIG JLUS proposed study area. This Fact Sheet was made available at the meetings for review by interested members of the public.

This Fact Sheet also served as an informational brochure that describes each compatibility factor considered for evaluation in the JLUS development.

Strategy Tools Brochure. JLUS strategies constitute a variety of actions that local governments, military installations, agencies, and other stakeholders can take to promote compatible land use planning. This brochure provided an overview of the strategy types that can be applied to address compatibility issues around FTIG.

Website. A project website was developed and maintained for the stakeholders, public, and media representatives that provided access to project information. This website was maintained for the entire duration of the project to make information and project updates easily accessible. Information contained on the website included program points of contact, schedules, documents, maps, public meeting information, and downloadable comment forms. The project website can be accessed at www.ftig-jlus.com.


Fort Indiantown Gap Joint Land Use Study

Communication and Coordination

In any planning effort, plans can only move toward successful implementation if frequent ongoing communication is maintained among local jurisdictions, the military, state and federal agencies, landowners, and the public. Enhanced communication and coordination is an integral component to successful compatibility planning in support of the military's existing and potential future mission(s).

Comprehensive / General / Master Plans

These are long-range plans that outline goals and policies to guide the physical development in a local jurisdiction (county, city, township, etc.). These plans are designed to serve as the jurisdiction's blueprint for future decisions concerning physical development as well as for land use, infrastructure, public services, and resource conservation. These types of plans consist of written text discussing the community's goals, objectives, policies, and programs for the distribution of land use as well as one or more diagrams illustrating the general location of existing and future land uses, roadways, public facilities and parks and open space.

Deed Notifications / Restrictions

Deed restrictions, or covenants, are written agreements that restrict or limit some of the rights associated with property ownership. These restrictions are recorded with the deed for the property and are attached to the property when it is sold to a new owner (i.e., they remain in effect). Deed restrictions are private agreements or contracts executed between a motivated buyer and a willing seller.

Habitat Conservation Tools

The primary objective of habitat conservation tools is the protection of sensitive natural habitats and the species that occupy them. An example of this is the federal Endangered Species Act (ESA) which allows for the development of Habitat Conservation Plans (HCPs). An HCP identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The primary objective of the HCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use.

Hazard Mitigation Plans

Hazard mitigation is defined as any sustained, cost effective action to reduce or eliminate long-term risk to people, property, and the environment from natural and man-made hazards and their effects. Hazard Mitigation Plans include actions that have a positive impact over an extended period of time. This distinguishes them from emergency planning or emergency services, which are associated with preparedness for immediate response to, and short-term recovery from, a specific event. Hazard mitigation actions, which can be used to eliminate or minimize the risk to life and property, comprise three categories: (1) those that keep the hazard away from people, property, and structures; (2) those that keep people, property, and structures away from the hazard; and (3) those that reduce the impact of the hazard.

Legislative Tools

State and local legislation can have a significant impact on compatibility planning by allowing, restricting, or limiting the tools available to local jurisdictions to control land use planning activities. Legislative tools are designed to encourage changes in state and local laws and ordinances to support the objectives of the recommended JLUS strategies.

Memorandum of Understanding (MOU)

A Memorandum of Understanding (MOU) is a contract between two or more government entities. The governing bodies of the participating public agencies must take appropriate legal actions (often adoption of an ordinance or resolution) before such agreements become effective. The purpose of an MOU is to establish a formal framework for coordination and cooperation. These agreements may also assign roles and responsibilities for all of the agreement's signatories. These agreements are also known as Joint Powers Agreements or Interlocal Agreements.

Military Influence Areas (MIA)

A Military Influence Area (MIA) is a formally designated geographic planning area where military operations may impact local communities, and conversely, where local activities may affect the military's ability to carry out its mission. An MIA is designated to promote an orderly transition between community and military land uses to ensure that they are compatible.

Fort Indiantown Gap JLUS Strategy Tools Brochure


FORT INDIANTOWN GAP JOINT LAND USE STUDY

Fact Sheet #2: Overview/Compatibility Factors

What Is a Joint Land Use Study?

A Joint Land Use Study (JLUS) is a cooperative land use planning effort conducted as a joint venture between an active military installation, surrounding jurisdictions, state and federal agencies, and other affected stakeholders. The Fort Indiantown Gap JLUS is funded by a grant from the Office of Economic Adjustment (OEA) and contributions by Lebanon County.

The JLUS effort can directly benefit both Fort Indiantown Gap and the surrounding region by:

- Protecting the health and safety of surrounding residents and workers;
- Preserving long-term land use compatibility between Fort Indiantown Gap and the surrounding communities;
- Promoting community planning; and
- Encouraging a cooperative spirit between the military installation and community officials.

JLUS Objectives

UNDERSTANDING. Increase communication between the military, local jurisdictions, and stakeholders to promote an understanding of the strong economic and physical relationship between Fort Indiantown Gap and its neighbors.

COLLABORATION. Promote collaborative planning between the military, local jurisdictions, and stakeholders in order to ensure a consistent approach in addressing compatibility issues.

ACTIONS. Develop and implement strategies for reducing the impacts of incompatible activities on the community and military operations. Design tools to support compatibility in the future.

How long will the JLUS project take?

The Fort Indiantown Gap JLUS is expected to be completed in early 2015.

Who will guide the JLUS development?

Two committees (comprised of city, county, military, and other stakeholders), together with the public, will guide the development of the JLUS. Each group has an important role to play:

EXECUTIVE COMMITTEE (EC). The EC is responsible for leading the direction of the JLUS and monitoring the implementation and adoption of policies and strategies.

TECHNICAL COMMITTEE (TC). The TC is made up of representatives from different agencies and the development community who possess the technical knowledge needed to guide and assist the JLUS process. The TC identifies and addresses technical issues, provides feedback on report development, and assists in the development and evaluation of implementation strategies and tools.

PUBLIC. The public can be involved in the development of the JLUS by providing input and guidance to the process, by informing the representatives of the EC of their concerns and recommendations, by submitting comments and feedback online at www.ftig-jlus.com, and by attending the three public workshops.

Why is it important to partner with Fort Indiantown Gap?

Fort Indiantown Gap is one of the busiest National Guard training sites in the country, training more than 100,000 troops each year. The installation serves as a pre-deployment training site for all branches of our military as they prepare for a variety of operating environments and homeland defense missions. The commitment to training support excellence is also extended to law enforcement professionals and other government agencies at the federal, state, and local levels.

In addition, the Pennsylvania Department of Military and Veterans Affairs (DVMA) is headquartered at Fort Indiantown Gap. DVMA has a dual mission: 1) to provide services to Pennsylvania's 1.1 million veterans and their families; and 2) to support the Pennsylvania National Guard, which is also headquartered at Fort Indiantown Gap.

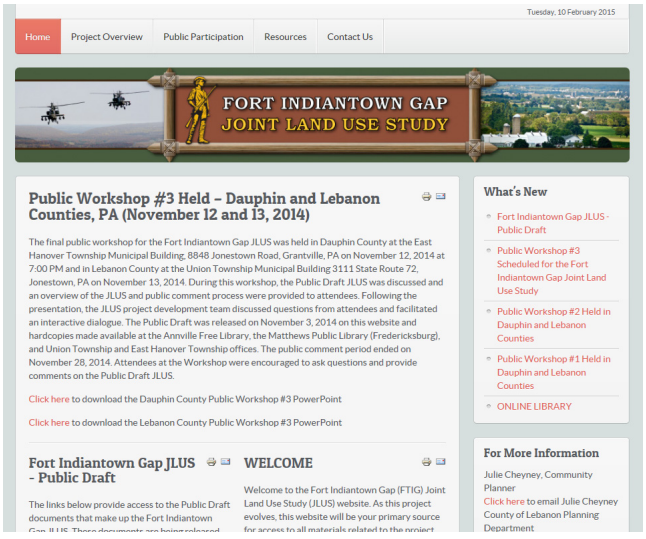
In fiscal year 2009, Fort Indiantown Gap employed more than 2,600 full- and part-time military personnel and over 500 full-time civilian employees, making it one of the largest employers in Lebanon County. In addition, the fiscal year 2009 economic impact of Fort Indiantown Gap into the local economy was more than $480 million.

Another great benefit from the Fort is the numerous community services it provides to Lebanon County and the surrounding areas. Fort Indiantown Gap provides mutual aid and community services on many fronts.

It is important to partner with the installation on relevant and long-range planning projects to ensure the viability and sustainability of the economic impact and community benefit that Fort Indiantown Gap provides to the local region. The JLUS process strives to deepen the understanding of the benefit the Fort provides for the community and conversely, the community provides for the Fort.

Stay up-to-date on the Fort Indiantown Gap JLUS at: www.ftig-jlus.com

Fort Indiantown Gap JLUS Fact Sheet #2


Tuesday, 10 February 2015

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FORT INDIANTOWN GAP JOINT LAND USE STUDY

Public Workshop #3 Held – Dauphin and Lebanon Counties, PA (November 12 and 13, 2014)

The final public workshop for the Fort Indiantown Gap JLUS was held in Dauphin County at the East Hanover Township Municipal Building, 8848 Jonestown Road, Grantville, PA on November 12, 2014 at 7:00 PM and in Lebanon County at the Union Township Municipal Building 3111 State Route 72, Jonestown, PA on November 13, 2014. During this workshop, the Public Draft JLUS was discussed and an overview of the JLUS and public comment process were provided to attendees. Following the presentation, the JLUS project development team discussed questions from attendees and facilitated an interactive dialogue. The Public Draft was released on November 3, 2014 on this website and hardcopies made available at the Annville Free Library, the Matthews Public Library (Fredericksburg), and Union Township and East Hanover Township offices. The public comment period ended on November 28, 2014. Attendees at the Workshop were encouraged to ask questions and provide comments on the Public Draft JLUS.

Click here to download the Dauphin County Public Workshop #3 PowerPoint

Click here to download the Lebanon County Public Workshop #3 PowerPoint

Fort Indiantown Gap JLUS - Public Draft

The links below provide access to the Public Draft documents that make up the Fort Indiantown

WELCOME

Welcome to the Fort Indiantown Gap (FTIG) Joint Land Use Study (JLUS) website. As this project evolves, this website will be your primary source

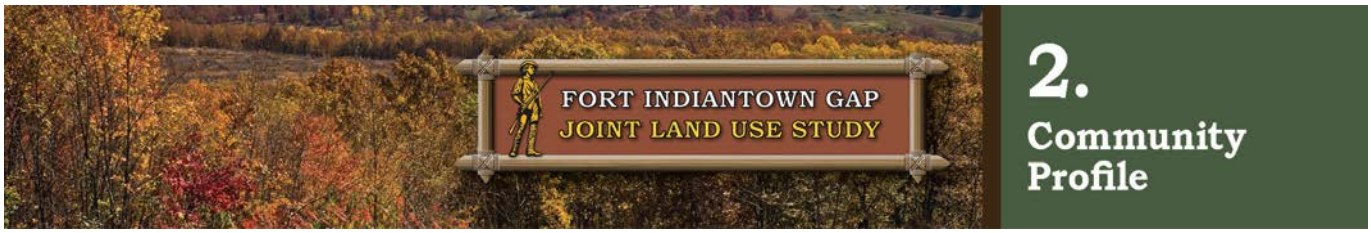
What's New

- Fort Indiantown Gap JLUS - Public Draft
- Public Workshop #3 Scheduled for the Fort Indiantown Gap Joint Land Use Study
- Public Workshop #2 Held in Dauphin and Lebanon Counties
- Public Workshop #1 Held in Dauphin and Lebanon Counties
- ONLINE LIBRARY

For More Information

Julie Cheyney, Community Planner
Click here to email Julie Cheyney County of Lebanon Planning Department

Fort Indiantown Gap JLUS Website



2.1 Project Study Area

FTIG stretches between Lebanon and Dauphin counties in southeastern central Pennsylvania. FTIG is located on approximately 17,100 acres in the heart of Pennsylvania, within the historic Pennsylvania Dutch country. The installation lies between US Interstate 81 (I-81) and a northeast running stretch of Pennsylvania State Game Lands (SGL), approximately 20 miles northeast of the state capital at Harrisburg.

The FTIG JLUS study area is designed to address all land near FTIG that may impact, or be impacted by, current or future military operations. Therefore, due to its location within four municipalities (East Hanover and West Hanover Townships in Dauphin County, and Union and East Hanover Townships in Lebanon County), the primary JLUS study area was identified based on the area experiencing the most direct impacts, such as noise and proximity to flight safety zones associated with FTIG. Additionally, an indirect study area was identified as the general area within a three mile radius from the installation perimeter to consider impacts on transportation systems and general coordination and communication amongst municipalities; however this area may expand or contract based on the compatibility factor being assessed. The primary characteristics evaluated in determining the study area were compatibility factors associated with military mission readiness and land uses such as those producing noise and vibration, and /or dust and smoke, and those requiring infrastructure extensions.

2.2 JLUS Study Area Communities

Most of FTIG lies in northwestern Lebanon County, with its western portion in Dauphin County. FTIG is approximately 5 miles wide (north to south) and 11 miles long (east to west). FTIG Second Mountain borders the facility to the north while the facility's southern border abuts I-81 immediately south of the junction with Interstate 78. Located outside the immediate suburbs of Harrisburg, FTIG is situated among rural farmland, organized into townships and small communities along state highways and interstates.

Lebanon County covers a total of 362 square miles, of which 45 percent is still used for agriculture. Nearly 12,335 acres of the county are part of the FTIG facilities while an additional 23,000 acres are categorized as SGL. Much of the landscape consists of gently rolling hills and the steep mountain slopes of the Blue and South Mountains. This unique topography contributes to the rural nature of the area which continues to make it a desirable place to live and visit.

The area's agricultural heritage remains evident today; though much of the last century was shaped by the rise and fall of steel operations based at the American Iron and Steel Manufacturing Company in the City of Lebanon.

East Hanover Township in Lebanon County covers approximately 33 square miles, bordered to the north by SGL, and to the south by Swatara Creek. FTIG occupies nearly half of the total land in the township. The township is located on the southern boundary of FTIG along I-81 in rural Lebanon County. The area is mostly rural with limited commercial development along William Penn Highway (Highway 22). The area is home to Memorial Lake State Park, located adjacent to FTIG, in addition to the Indiantown Gap National Cemetery, also associated with the installation.

Union Township in Lebanon County is located directly east of FTIG and encompasses the eastern portion of the installation within its jurisdictional boundaries. The township encompasses an area of nearly 30 square miles of mostly rural land, including farmland, rural residential, FTIG facilities, state parks, and open space. The facilities at FTIG, including Muir Army Airfield (MAAF), account for roughly one-third of the land within the township.

Dauphin County is home to the state capital of Harrisburg, PA. The county's location and role as host of the state seat of government have played a significant part in the development of the region. The county encompasses nearly 558 square miles of land, and lies approximately 100 miles west of Philadelphia and 200 miles east of Pittsburgh.

East Hanover Township is the third largest township in Dauphin County with 39 square miles of land, of which approximately one-third is occupied by FTIG. The township is rural in character, but is expected to grow in the future due to growth pressure from the City of Harrisburg 12 miles to the west. The Pennsylvania National Racetrack and recently opened Hollywood Casino (2008) are located within the jurisdictional boundary. These two key tourist destinations are located immediately south of FTIG's southern boundary just beyond Mountain Road and just over five miles from FTIG's cantonment area (the most urbanized area of FTIG).

Dauphin County's West Hanover Township was established in 1842 by Scotch-Irish and German farmers who introduced the farming culture that continues today. The township covers approximately 23 square miles of land. The township's economy has historically centered on agriculture, and the township remained predominately rural until the late 1950's when the construction of I-81 attracted suburban development to the east away from Harrisburg. Today, most of the population is settled along I-81 and Highway 22 with limited commercial development at the I-81 and Highway 39 interchange.

2.3 Current Development Overview within the Study Area

The majority of the land that surrounds FTIG is rural and is composed of agricultural uses, forestland, or low density residential. Further south, approaching Harrisburg, heavier density development occurs in incorporated suburbs. There are some privately-owned properties (inholdings) within FTIG, many with occupied houses.

The northern border of FTIG is adjacent to a large swath of land that makes up SGL 211. This land is situated on Second Mountain, which forms the northern border of FTIG. The land is used primarily for conservation and hunting and is home to Bashore Boy Scout Camp and multiple smaller state park facilities. East of FTIG is Union Township. I-81 turns north near the southeast corner of FTIG. Land uses on the eastern side of the installation are primarily agricultural and open space, with low density residential and limited commercial and manufacturing throughout. Lickdale Elementary School is approximately one mile from FTIG's boundary at I-81. I-81 runs along the southern boundary of the FTIG cantonment area. Union and East Hanover (Lebanon County) townships are located south of FTIG's main entrance, with primarily agriculture, forestland, and rural residential land uses. The Hollywood Casino, adjacent racetrack, and the Manada Golf Course are each within half a mile of FTIG's boundary, which may catalyze future development.

The western end of FTIG lies within East Hanover Township (Dauphin County). The land outside the installation is primarily forestland with limited residential and agricultural uses. The area is still several miles from the suburban development associated with Harrisburg.

Economic Growth Trends

Growth pressures from Harrisburg, expanding tourist destinations, and FTIG's location relative to the I-81 corridor have already begun to contribute to increased residential, commercial, and industrial development in the region, particularly in the southern portion of Dauphin County and along the interstate corridor into Lebanon County. I-81 provides a north-south connection along the Appalachian Mountains and traverses eight Pennsylvania counties, providing not only a means of transit for both intrastate and interstate travel, but also serving as a conduit for growth.

The study area has experienced a population growth rate higher than state averages. The only community in the study area that saw a decline in population between the years of 1990 to 2010, was East Hanover Township in Lebanon County. While Lebanon County saw more of its growth in the southern portions of the county, Dauphin County's growth, as exhibited by West Hanover's rate of almost 53 percent, began to expand eastward from Harrisburg towards FTIG. Both counties' growth rates are approximately double than that of the state, indicating that development pressures will continue to be seen in these jurisdictions.

The primary economic activity throughout the study area is centered on the agriculture industry dating back to the early colonial period. As increasing development pressures have grown from Harrisburg, suburban development has increased, particularly in Dauphin County, bringing both new residents and the local commercial and retail services to support them. The development of major interstates through the region in the post-war years and a change in regional industries has brought increased activity in the manufacturing and transportation of goods through the area. Attractions such as Hershey Park, the Penn National Race Course, and Hollywood Casino and other state parks and open spaces have brought an increasing tourism base to the region.

Efforts to diversify Harrisburg's economy with new post-industrial sectors have brought substantial growth to the region and Dauphin County in the insurance, healthcare, and retail trade industries. These now represent the largest industries in the county, in addition to hospitality and food services. Lebanon County has leveraged its accessibility to transportation networks to encourage the placement of manufacturing and transportation jobs with firms such as Tyco Electronics and Swift Transportation. While overall employment figures are lower than their pre-recession 2007 highs, growth has occurred in recent years in major sectors of the county's economy such as manufacturing, transportation, healthcare, and hospitality.

Please see the next page.

3. Military Profile

3.1 Pennsylvania National Guard

The PNG comprises both PAANG and PAARNG. The commander of the 19,000-member Pennsylvania National Guard is the Adjutant General. The Adjutant General is responsible for a joint military force (Air Force and Army) that reaches from Joint Headquarters at FTIG to approximately 90 communities across the Commonwealth. FTIG serves as PNG's Joint Force Headquarters.

The National Guard is responsible for both a federal and state mission. The federal mission is to maintain properly trained and equipped units available for prompt mobilization for war, national emergencies, or as otherwise needed. In time of war or national emergency, or in support of any military operation worldwide, the US President has the authority for calling the PNG into action in support of its federal mission. Pennsylvania units have participated in every conflict America has faced. Since September 11, 2001, more than 35,000 PNG soldiers and airmen have deployed in support of global contingencies.

In peacetime, the governor serves as the PNG commander in chief, exercising control through Pennsylvania's Adjutant General, a state cabinet-level position responsible for command, control, and supervision of National Guard units - Army and Air - allocated to the Commonwealth, six state-owned veterans' homes, and programs for Pennsylvania's one million veterans. In the event of natural disaster or civil emergency, the governor may order Guard personnel and equipment into service to assist state and local authorities. The PNG also provides community support through programs such as the counterdrug program, which provides trained people and specialized equipment to assist state and local law enforcement agencies in the fight against illegal drugs.

3.2 Fort Indiantown Gap Mission

The FTIG installation is operated and managed by the FTIG Garrison Headquarters, responsible for administering and managing the training, engineering, administrative, and logistical operations for assigned, attached, transient, tenant units, or joint forces activities at the facility or using facility assets. The installation's primary mission is to provide administrative, logistical, maintenance, and family support to active and reserve component units training at the installation, as well as for tenant and off-post activities in central and eastern Pennsylvania. The installation provides training support to the PAARNG, National Guard, Reservists, and members of all services to meet the ongoing need for a highly trained US military presence throughout the world. To meet this mission, training facilities that reflect the diverse conditions soldiers will encounter in war are needed, and soldiers must be trained to adapt to the constantly changing conditions of the areas in which they engage in combat to maintain military readiness and preparedness.

There are four primary missions at FTIG:

1. To provide a major year-round training facility and the highest-quality training opportunities for the PAARNG and other military and civilian users.
2. To provide the infrastructure, services, and site logistical support necessary to operate training and support facilities.
3. To provide, operate, maintain, and control facilities and equipment that support the pre-mobilization training of military forces.
4. To provide quality of life services and programs and conduct proactive community relations.

FTIG Facilities and Cantonment Area

Cantonment Area. The cantonment area is the more urbanized portion of FTIG, which includes a mix of

structures dating from World War II to newly constructed modern buildings. The 2,600-acre cantonment area is located in the southern portion of the installation, separated from the other half of the installation by Blue Mountain to the north and is bounded by I-81 to the south and east.

The cantonment area is divided into functional areas dedicated to specific uses such as operations, education, and maintenance and includes many important facilities, such as operational and administrative buildings, the PNG and DMVA headquarters buildings and support facilities, classroom and educational facilities, dormitories, barracks and lodging, medical clinic, chapel, conference center, shopping and dining options, and recreational and athletic facilities. Several training areas (e.g., tank trails, small weapons ranges along Range Road, and bivouac) are also located in this area. Specifically, the Unit Training Equipment Site (UTES), small arms firing ranges, an Unmanned Aerial Vehicle / Unmanned Aerial System (UAS) facility and airstrip, and MAAF are located within the cantonment area.

Muir Army Airfield. The MAAF is the sixth busiest airport in Pennsylvania and the second busiest heliport in the US when measured in terms of daily takeoffs and landings, averaging more than 70,000 take-offs and landings per year. The primary operations at MAAF are for rotary-wing aircraft. A rotary wing aircraft is an aircraft that derives its lift from the rotation of blades on an approximately vertical central axis such as a helicopter. It supports the Eastern ARNG Aviation Training Site (EAATS), which is the second largest helicopter training facility in the US. The airfield is fully-instrumented and has its own air traffic control tower. Its single runway measures approximately 4,000 feet long; however, an extension to approximately 6,000 feet is currently being explored as part of FTIG's 25 year construction plan.

Training Corridor

The 12,000-acre training corridor is located north of the cantonment area and is bounded by Second Mountain to the north and Blue Mountain to the south. This is where the majority of the installation's field training takes place with 50 training areas serving various purposes. There are a wide variety of different types of training and facilities located in the corridor used for activities including bivouac, maneuver, vehicle training, unit tactics, convoy training, weapons firing, and air-to-ground weapons firing. The types of training that occur in the corridor include the following:

- Vehicle maneuver areas
- The Combined Arms Collective Training Facility (CACTF)
- Urban assault course
- Live fire shoothouse
- Live fire breach exercise facility.
- Live fire infantry squad battle course
- Third world villages
- MK19 / 50 caliber firing range
- Heavy machine gun range
- Sniper field fire range
- Bollen Air-to-Ground Weapons Range

Special Use Airspace

Special Use Airspace is the airspace where military activity or unusual flight conditions may occur. The type of special uses airspace at FTIG comprises Restricted Airspace designated in areas where flight or ground activities must be confined because they may be considered hazardous to nonparticipating aircraft. There are five designated Restricted Airspaces at FTIG which range from floor elevations at ground level up to 25,000 feet above ground level. These areas are used for weapons testing, observation, low-altitude exercises, cargo carrying, night operations, water bucket training, and tactical aviation training.

Military Training Routes

Military Training Routes (MTRs) are one-way flight corridors used to practice low-altitude, high speed, terrain-following training missions. There are three MTRs comprising a 13-mile-wide corridor terminating approximately 6 miles north of FTIG over Weiser State Forest. The MTRs have assigned altitudes of ground level to 18,000 feet above ground level for operational speeds in excess of 250 knots.

Current and Future Operations

Training occurs throughout approximately 40 training ranges and range facilities that cover roughly 17,000 acres on FTIG. Training activities include firing

ranges, maneuver areas, vehicle training, air-to-ground ranges, rotary-wing operations, urban assault courses, and combat simulators. The installation is divided into more than 50 training areas offering specific capabilities and amenities to support the needs of the unit or soldiers training there. There are currently 3,133 acres of heavy maneuver training land and 10,523 acres of light maneuver training land at FTIG.

The rotary-wing aircraft represents the vast majority of flight activity or approximately 96 percent of all aircraft operations. Training activities focus on low-altitude flight maneuverability, cargo transport, use of night vision equipment, and tactical maneuverability. The flight training area includes closed-loop patterns involving MAAF, training areas and landing zones within the NTA, and flight corridors extending east and north from FTIG into the Northern Training Area (NTA). The closed-loop patterns involving MAAF are generally contained within the FTIG boundaries with the exception of a small portion that extends into East Hanover Township in Lebanon County and is bounded by I-81. The NTA encompasses an area outside of FTIG that extends from the northwest side of FTIG to the northeast / east side of FTIG comprising SGL and private property; it includes three training areas and 25 landing zones.

The Bollen Range provides pilots with realistic training in attacking ground targets from the air. All fixed-wing bombing and strafing activities are accomplished with inert ordinance; however, some types of training bomb munitions have small propellant charges (equivalent to two shotgun shells) to disperse a marking agent to aid in the scoring process.

Rotary air operations are also conducted at the Bollen Range. Rotary operations consist of low-level attacks, less than 100 feet above ground level (AGL) with machine guns, chain guns, or rockets.

Although no new major missions are currently programmed for FTIG, the recent completion of a 25-year Real Property Development Plan (RPDP) provides an overview and outlook of the installation's future needs. One major project currently under consideration is the potential extension of the MAAF runway to meet both recently updated specifications for airfield standards permitting C-12 aircraft to use the runway and accommodation of potential new missions in the future.

Another proposed addition to FTIG is the construction of a tactical assault landing strip for C-130 aircraft to allow for touch and go landings. This landing strip would be located in the training corridor. This facility could open up FTIG for increased operations. Future additional aviation–related activities include a new UAS facility planned for the northeastern quadrant of FTIG's training corridor.

3.3 Military Mission Operational Footprint

FTIG's operational footprint is a result of the following components:

- Aircraft safety zones
- Imaginary surfaces
- Noise contours
- Restricted Airspace

Aircraft Safety Zones

MAAF is encompassed by a standard regulatory Class D airspace. FTIG's airspace usage is generally limited to military flight and is controlled on a local level by the control tower at the MAAF in the cantonment area. In addition, Army regulations require a 3,500-foot safety arc for ammunition supply points, which prohibits any armed aircraft from entering that restricted airspace.

MAAF has safety zones associated with its runway to limit and guide development and protect the safety of the public and pilots while simultaneously allowing for continued economic growth. The DOD has created safety zones around runways and landing areas that are based on historical data where an aircraft accident is most likely to occur, if one should occur. These safety zones are broken down into Clear Zones (CZ), Accident Potential Zone (APZ) I and APZ II and are based on the dimensions of the runway. The orientation of the safety zones is determined by the typical flight patterns that aircraft take directionally when approaching the runway or landing area. The safety zones associated with MAAF are illustrated on Figure 1.

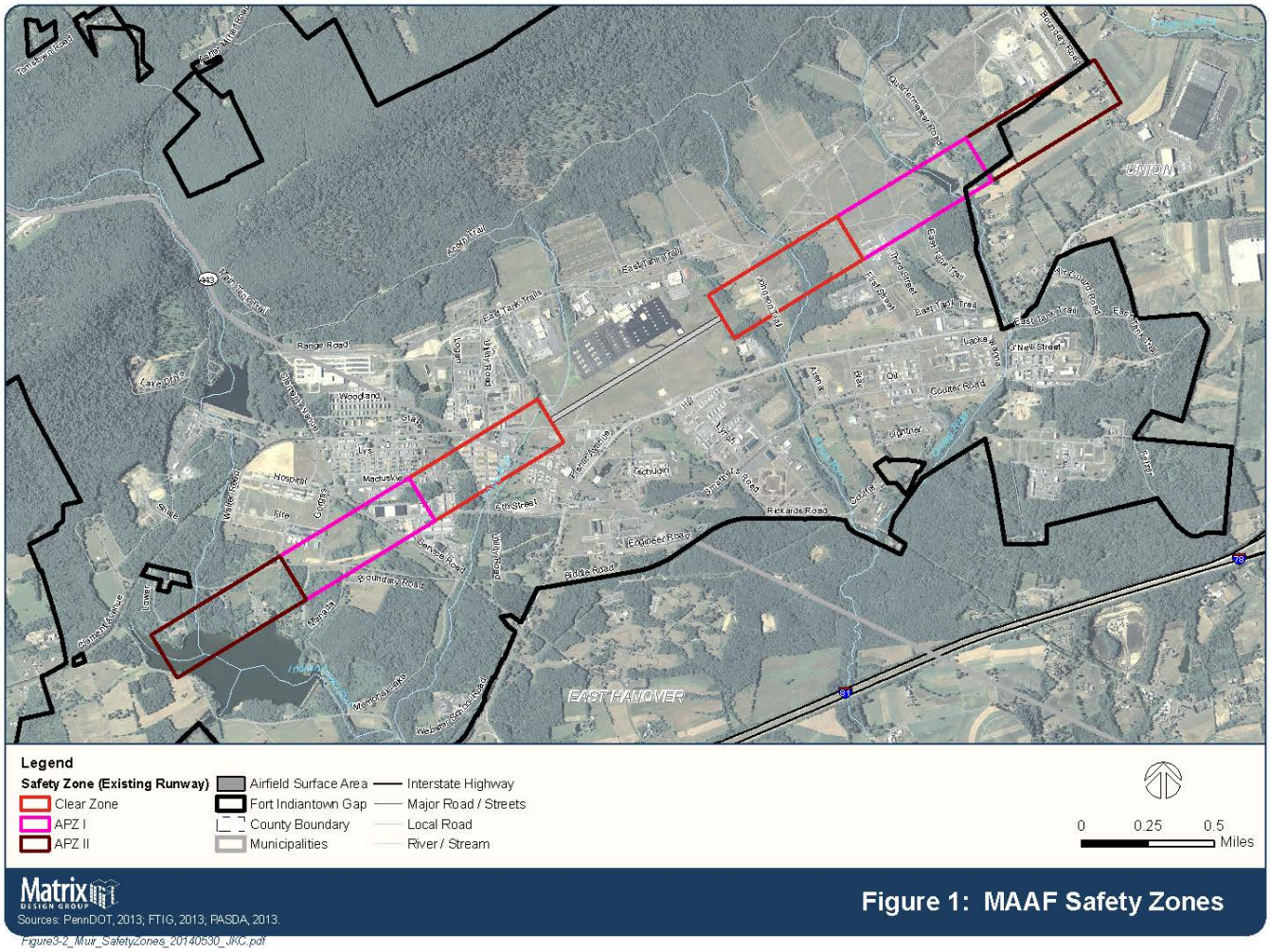


Figure 1: MAAF Safety Zones

Within these zones, there are recommended restrictions on types, densities, and heights of land uses. For safety reasons, CZs should be entirely clear of any obstructions, whether they are man-made or natural, unless they are necessary for aircraft landing. As a result, it is generally the DOD's policy to acquire either the land or a long-term lease or easement of the land, when possible, to prevent any development or growth on it. The guidelines for development within APZ I are less stringent than in the CZ, but development should be limited, and residential is generally not recommended.

Imaginary Surfaces

The Federal Aviation Administration (FAA) has identified certain imaginary surfaces around runways that are used to determine how structures and facilities are evaluated to identify if they pose a vertical obstruction in relation to the airspace around a runway. The imaginary surfaces build upon each other and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. Each type of imaginary surface has different dimensions and different planes or slopes in which a structure intruding upon it may be considered a vertical obstruction. The conical surfaces and the approach-departure clearance surfaces are the two primary areas of concern, and both go over populated areas in the nearby communities. Figure 2 illustrates the imaginary surfaces associated with the FTIG's MAAF runway.

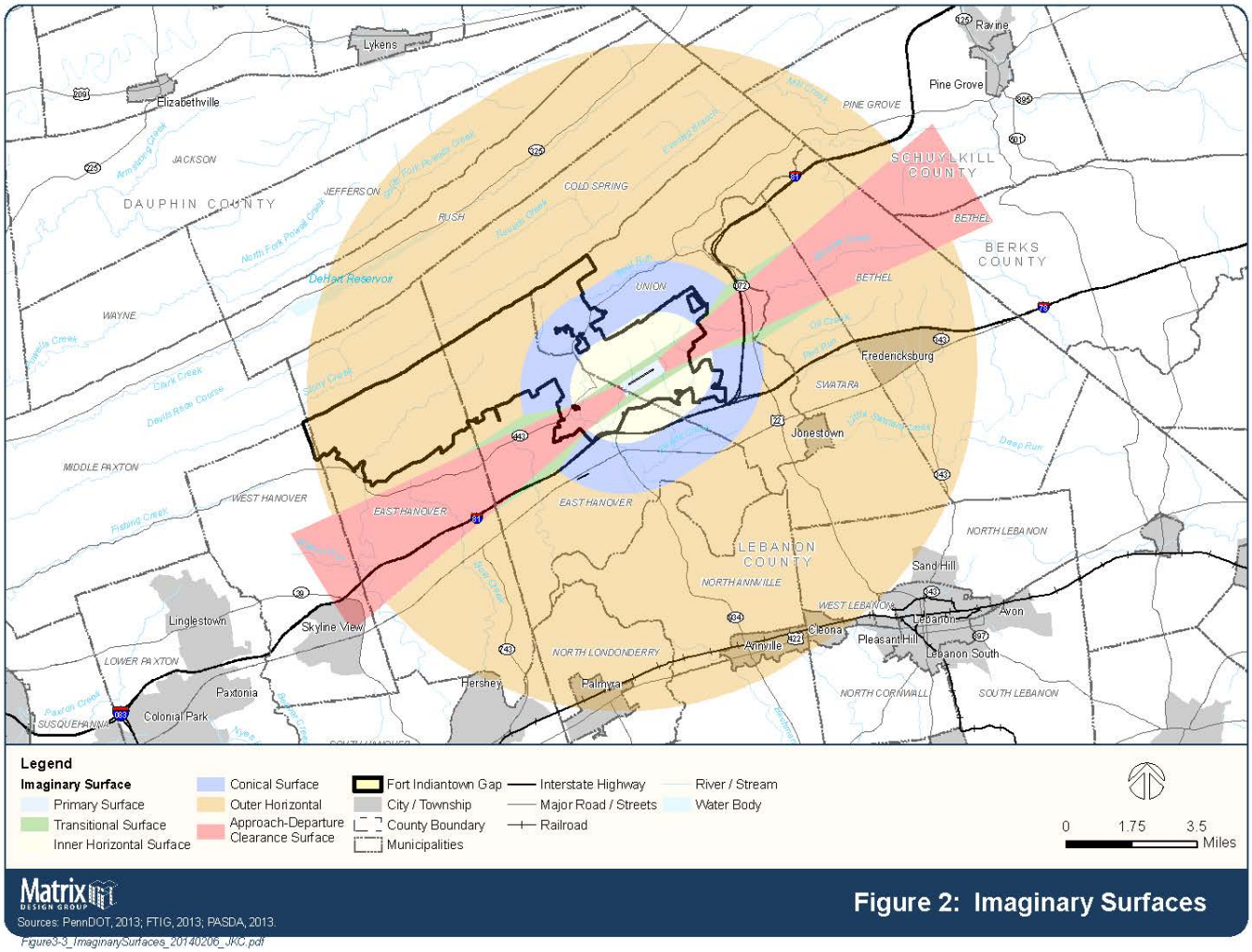


Figure 2: Imaginary Surfaces

Surface Danger Zones

Department of the Army (DA) Pamphlet (PAM) 385-63 Range Safety, provides implementation guidance including standards and procedures for the safe firing of munitions and demolition for training and target practice. This guidance includes requirements for establishing surface danger zones (SDZs) associated with the types of range activities conducted.

An SDZ is an area around a weapons firing range from which the access of all military personnel and civilians is restricted due to the inherent dangers associated with the firing of live munitions. An SDZ typically includes the weapons firing position, target impact area and a secondary buffer area, which is an additional distance where errant projectile/munitions fragments may land without risking harm to life or property.

There are multiple SDZs at FTIG associated with the range firing areas throughout the 12,000-acre training corridor. All of the SDZs are contained within the FTIG boundary, consistent with the provisions of DA PAM 385-63 which stipulates that no part of the SDZ may leave the installation property.

Noise

The primary sources of noise at FTIG include training for tank, artillery, and mortar crews; air to ground gunnery and bombing from aircraft; detonation of demolition ordnance; helicopter flights; fixed wing aircraft flight; small arms training; and heavy equipment, tracked vehicle training, and other vehicular noise sources.

Large Caliber Weapons Noise. The key ranges and weapons training facilities that are sources of the large caliber noise contours include: 18 field artillery firing points capable of supporting 105 mm and 155 mm artillery, 14 mortar firing points capable of supporting the conduct of fire for mortars from 60 mm through 120 mm and a computerized Multiple Integrated Laser Engagement System (MILES) range. The model shows that the annual average noise contours are almost completely contained within the training site; only a small portion of the Zone II and Land Use Planning Zone (LUPZ) extend beyond the western boundary of the installation into land that is currently undeveloped and classified as agricultural as well as a single plot of land that is identified as a residential land use. The LUPZ is an area occurring between Zones I and II – allowing for greater noise impacts than Zone I, but less noise impacts than Zone II. Noise-sensitive land uses are still generally acceptable within this area. The LUPZ and Zone II noise contours also affect residential inholdings on post. These noise impacts are discussed in greater detail in Chapter 5 of the JLUS Background Report. As depicted on Figure 3, the Noise Zone III from large caliber firing remains localized to the ranges on post.

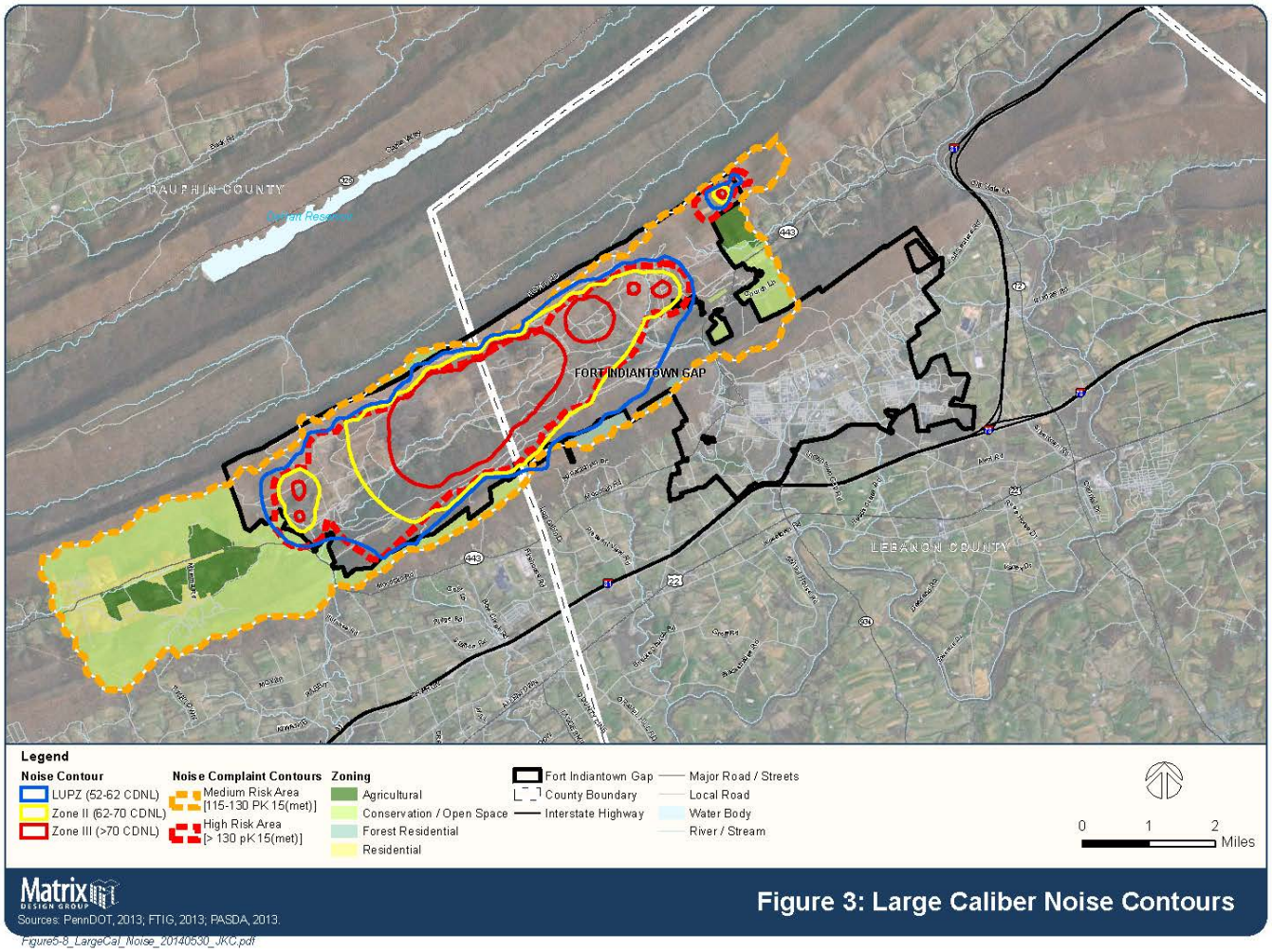
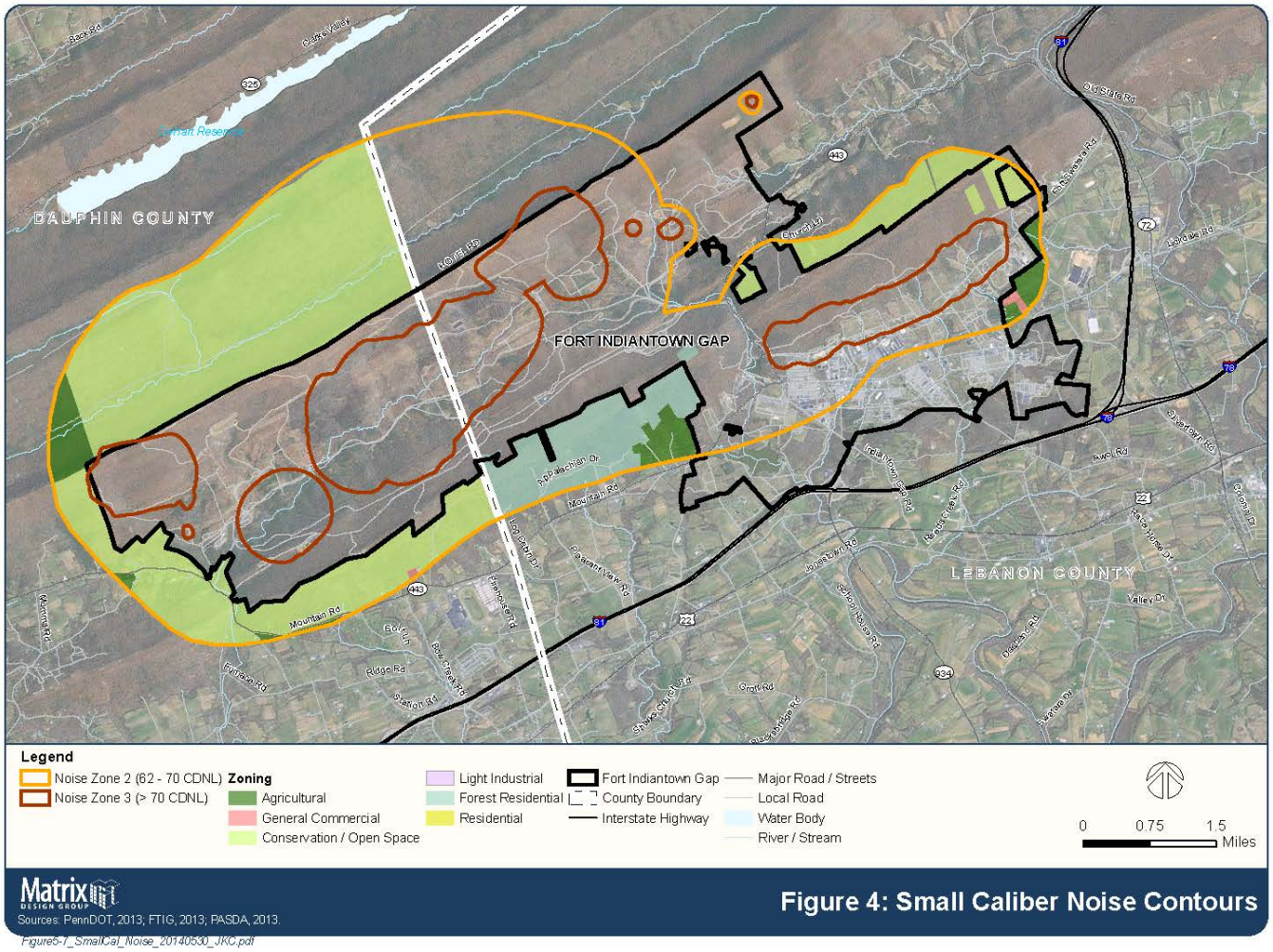


Figure 3: Large Caliber Noise Contours

Small Arms Noise. Small arms noise is generated by the firing of small caliber weapons (weapons less than 20 mm) and is among the most common sources of military noise. According to the most recent noise modeling available (PAARNG Statewide Operational Noise Management Plan, 2012), the Zone III from small caliber firing remains relatively localized to the ranges though small areas exist off post. Zone III extends beyond the installations northern and western boundaries an estimated 300 and 120 meters respectively. The Zone II extends beyond the installation's northern, western, and southern boundaries. The impacts of land uses located within these noise contours are discussed in greater detail in Chapter 5 of the JLUS Background Report. The noise zones due north of FTIG are based on an overestimation of predicted noise levels. The mountainous topography would minimize the effects of noise, but current small arms noise modeling does not have the capability to account for it. The Zone II extends into the residential inholding on post. The noise contours associated with these small arms operations are depicted on Figure 4.



Aircraft Noise. As shown on Figure 5, Noise Zones II and III associated with aircraft activity at MAAF are currently contained within the FTIG boundary. The LUPZ (60 ADNL) extends off post primarily into agricultural and wooded areas, but small residential lots are contained within the LUPZ due south of the installation. Individual overflights have the potential to annoy those living in close vicinity to the flight routes. Because air-to-ground flights are dispersed throughout the Bollen Range, the level of operations was not high enough to generate a Noise Zone.

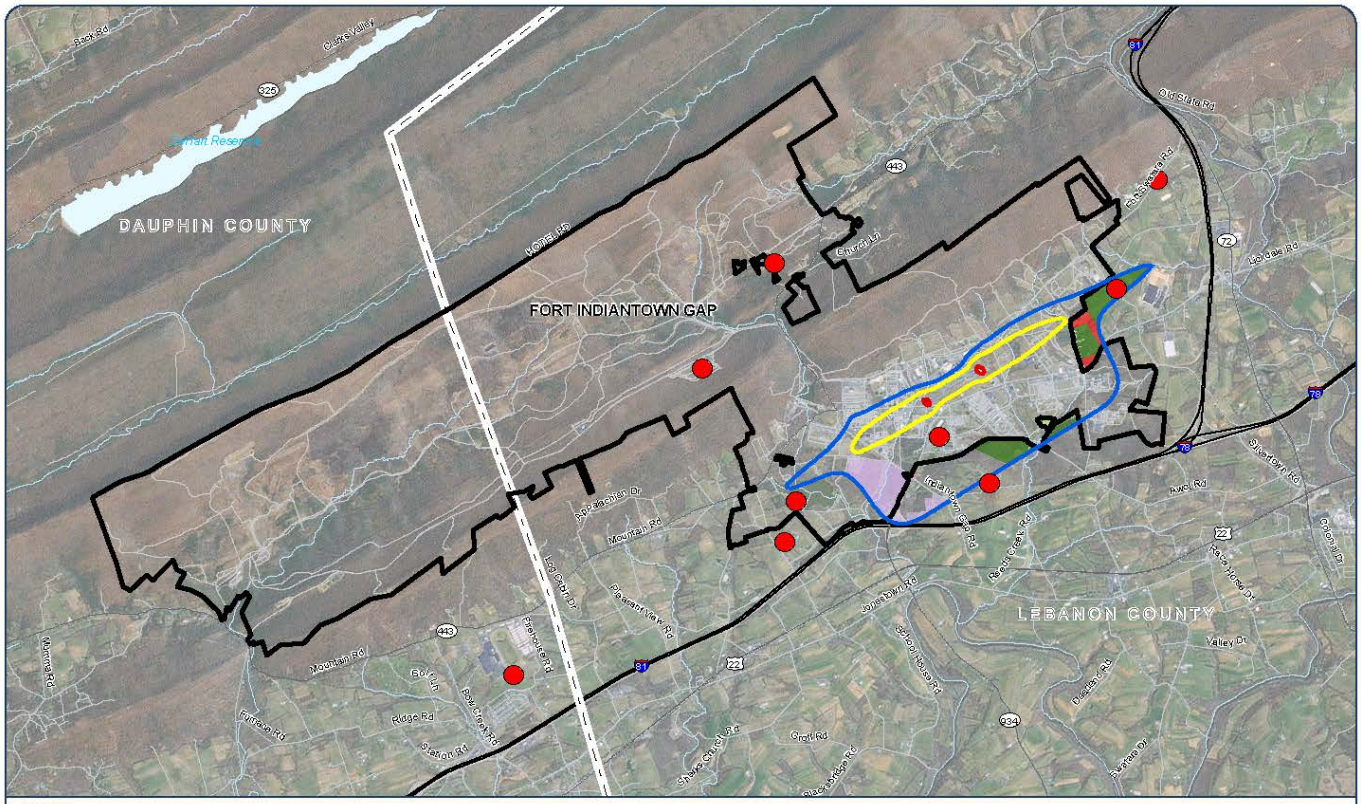
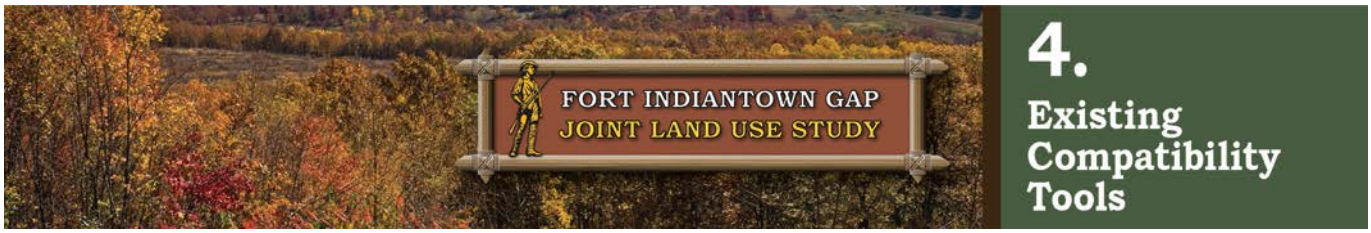


Figure 5: Aircraft Noise Contours

Please see the next page.



There are a number of existing plans and programs that are either designed to address compatibility directly or that indirectly address compatibility issues through the topics they cover. As compatibility issues were assessed, both plans and programs currently in use, and tools available for use, by study area jurisdictions were reviewed to assess their applicability to issues identified.

A detailed overview of applicable planning tools and determination of how each may be applied to address compatibility is provided in Chapter 4 of the JLUS Background Report. The tools listed in this section are not an exhaustive list, but are meant to provide a brief overview of the primary tools currently utilized in the JLUS Study Area.

4.1 Federal

Army Compatible Use Buffer

The Army Compatible Use Buffer (ACUB) program was initiated by the DOD to encourage coordination between military installations and local jurisdictions to address encroachment and conservation concerns. The most recent ACUB plan for FTIG was revised in November 2012. The plans seeks to address growing encroachment concerns as they relate to realistic training opportunities and the continued viability of FTIG as a significant training center for the US Army and the Pennsylvania National Guard.

The 2012 revisions address multiple levels of compatibility, including environmental, noise, and encroachment concerns. Environmental considerations include the Regal Fritillary Butterfly Habitat Study Area, the Kittatinny Ridge Raptor Migration Route, as well as other local and regional species and habitats of concern. The plan also outlines noise management policies in accordance with the Statewide Operational Noise Management Plan adopted in 2006. These programs seek to maximize the amount of land available for training operation while responsibly addressing conservation and potential nuisance concerns. The plan outlines land conservation priority areas to limit development, particularly to the east side of the installation which faces increasing residential development pressures. The implementation of these plans and policies assist in coordinating local and regional compatibility measures around FTIG.

Bird / Wildlife Aircraft Strike Hazard

FTIG prepared a Bird / Wildlife Aircraft Strike Hazard (BASH) plan in 2009 to minimize the threat of bird strikes to aircraft and protect local wildlife. The plan is based on hazards from both resident and seasonal bird populations as well as for other species of wildlife. Implementation of specific actions within the plan is continuous, while other recommendations are implemented as required by bird or other wildlife activity. These measures are especially significant to support helicopter training operations conducted at FTIG. The 2009 plan is designed to increase awareness, promote safety, establish procedures, and increase coordination with other agencies to mitigate bird strike hazards. The plan specifically outlines numerous recommendations for mitigation including:

- Facilities management, including tarmac and turf maintenance guidelines, tree removal, and boundary fence installation.
- Habitat manipulation measures such as wetland removal within the Airport Operating Area, anti-perching devise installation, and nesting prevention.
- Conducting dispersal operations using standard frightening techniques such as bioacoustics, pyrotechnics, gas cannons, or others.
- Training personnel on the Bird Avoidance Model and Avian Hazard Advisory System, flight planning, management and communication procedures, and wildlife discouragement practices.
- Designating airport personnel or contractors to engage in a wildlife control program.

The plan also calls for a Bird Hazard Warning Group (BHWG) and outlines their responsibilities while establishing procedure to identify high hazard situations and their mitigation. The BASH plan also addresses procedures for reporting incidents when they do occur. All damaging and non-damaging bird/wildlife strikes are reported to the BHWG using the Air Force Safety Automated System (AFSAS). When bird/wildlife strikes occur to captive or live munitions (explosive/missiles), these are reported as if the bird/wildlife hit the aircraft.

Department of Defense Conservation Partnering Initiative

In 2003, Congress amended Title 10 U.S.C. §2684a and §2692a (P.L. 107-314), the National Defense Authorization Act, to give authority to the DOD to partner with other federal agencies, states, local governments, and conservation based Non-Governmental Organizations (NGOs) to set aside lands near military bases for conservation purposes and to prevent incompatible development from encroaching on and interfering with military missions. This law provides an additional tool to support conservation and environmental stewardship on and off military installations.

Federal Aviation Act

The Federal Aviation Act (14 CFR Part 77) was passed in 1958 to provide methods for overseeing and regulating civilian and military use of airspace over the United States. The Act requires the Secretary of Transportation to make long-range plans that formulate policy for the orderly development and use of navigable air space. The intent is to serve the needs of both civilian aeronautics and national defense, but does not specifically address the specific needs of military agencies. Military planning strives to work alongside local, state, and federal aviation law and policies but sometimes must supersede these and other levels of government due to national security interests. The FAA was created as a result of the Act for a variety of purposes, including the management of airspace over the US.

The 500-foot rule, promulgated by the FAA, states that every citizen of the United States has "a public right of freedom of transit in air commerce through the navigable air space of the United States". The rule was formally announced in the 1963 Court of Claims ruling of *Aaron v. United States* and states that flights 500 feet or more AGL do not represent a compensable taking because flights 500 feet AGL enjoy a right of free passage without liability to the owners below.

Another important outcome of the Act is FAA Regulation Title 14 Part 77, commonly known as Part 77, which provides the basis for evaluation of vertical obstruction compatibility. This regulation determines compatibility based on the height of proposed structures or natural features in relation to their distance from the ends of a runway. Using a distance formula from this regulation, local jurisdictions can easily assess the height restrictions near airfields. Additional information on Part 77 is located on the Federal Aviation Administration Internet site at http://www.faa.gov/.

As of January 29, 2013, the main focus of Part 77 is to establish standards used to determine obstructions within navigable airspace, typically within a certain distance from an airport or airfield. It defines an obstruction to air navigation as an object that is of greater height than any of the following heights or surfaces in the following manner:

- A height of 499 feet AGL at the site of the object.
- A height that is 200 feet AGL or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length. This height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 499 feet.
- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

- A height within an en route obstacle clearance area, including turn and termination areas, of a federal airway or approved off-airway route that would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of a civilian airport or any imaginary surface established under 77.19, DOD: 77.21, and heliports: 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.
    - Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:
        - 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.
        - 15 feet for any other public roadway.
        - 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.
        - 23 feet for a railroad.
        - For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

The FAA has identified certain imaginary surfaces around runways that are used to determine how structures and facilities are evaluated to identify if they pose a vertical obstruction in relation to the airspace around a runway.

The levels of imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The dimension or size of an imaginary surface depends on the runway classification.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 is a federal regulation that established a US national policy promoting the protection and enhancement of the environment and requires federal agencies to analyze and consider the potential environmental impact of their actions. The purpose of NEPA is to promote informed decision-making by federal agencies by making detailed information concerning significant environmental impacts available to both agency leaders and the public. The EIS is a public process that welcomes participation by the community.

All projects receiving federal funding require NEPA compliance and documentation. NEPA is applicable to all federal agencies, including the military. Not all federal actions require a full Environmental Impact Statement (EIS). Actions that may not cause a significant impact result in the preparation of an Environmental Assessment (EA). An EIS is a report that describes and assesses the potential environmental effects of a particular action or project in which the federal government is involved. An EIS for a proposed project outlines in detail the proposed actions, alternative actions, and their probable environmental ramifications. An EA is similar to an EIS but prepared for proposed projects that are more concise and do not require the same level of scrutiny and detail as an EIS.

A NEPA document can serve as a valuable planning tool for local planning officials. An EA or EIS can assist in the determination of potential impacts that may result from changing military actions or operations and their effect on municipal policies, plans and programs, and the surrounding community. Public hearings are required for all EIS documents released under NEPA. An EA requires publishing the draft EA and Finding of No Significant Impact (FONSI) and also allowing public comment for a period of 30 days. An EA can either result in a FONSI or a Record of Decision (ROD) that concludes there will be a significant impact. The

information obtained by the EA / EIS is valuable in planning coordination and policy formation at the local government level.

NEPA mandates that the military analyze the impact of its actions and operations on the environment, including surrounding civilian communities. Inherent in this analysis is an exploration of methods to reduce any adverse environmental impact.

Readiness and Environmental Protection Initiative

The Readiness and Environmental Protection Initiative (REPO) program enables the DOD to work with state and local governments, NGOs, and willing landowners to limit encroachment and incompatible land use through land acquisition by the establishment of conservation easements, land trusts, or the purchase of property. The program provides funding to support these land acquisition efforts to preserve the land around military installations, wildlife habitats, and local communities.

4.2 Pennsylvania National Guard / Fort Indiantown Gap

Pennsylvania Army National Guard Statewide Operational Noise Management Plan

The Operational Noise Management Program was established by the Army as the framework for the control of noise produced by Army activities in accordance with the Noise Control Act of 1972 which seeks to limit the effects of any activity which may, "present danger to the health and welfare of this Nation's population" (Public Law 92-574 1972). The primary strategy for noise management is the ONMP.

The current ONMP for FTIG was adopted in 2012. Since rotary-wing aviation activities compose a significant training activity at FTIG, route and flight paths are determined with noise management in mind, particularly with regards to residential development near the installation. Additionally, numerous ranges are used for night and day laser tank gunnery, large weapon mortar fire (60mm through 120 mm), 105mm and 155mm artillery fire, small arms, machine gun fire, 40mm grenade launch, blast, high explosives, anti-tank explosives, and ground maneuver training.

The Pennsylvania Army National Guard (PAARNG) ONMP provides a methodology for analyzing noise related to military training operations, educates and discusses noise mitigation measures, noise complaint management procedures, and noise abatement protocol. The PAARNG ONMP outlines land use guidelines which communities can use to encourage and support compatibility planning. It also describes the noise environment at FTIG and the use of terrain to mitigate the impacts of noise to off-base land uses. Sources of off-base noise include artillery firing, aerial gunnery, night flying training, and helicopter flights. The plan discusses the installation and the community attitudes towards the installation relative to training exercises and subsequent noise generation. To address noise concerns, the PAARNG ONMP considers areas with noise-sensitive land uses that are exposed to generally unacceptable noise levels. There are three noise zones: Noise Zones III, II, and I.

- Zone I – Noise that occurs in this area is compatible with most noise-sensitive land uses, such as housing, schools, and medical facilities.
- Zone II – Noise occurring in this area is generally incompatible with noise-sensitive land uses.
- Zone III – Noise occurring in this area is incompatible with noise-sensitive land uses.

In addition to these three zones, the ONMP also includes a fourth zone the LUPZ. The LUPZ is an area occurring between Zones I and II – allowing for greater noise impacts than Zone I, but less noise impacts than Zone II. Noise-sensitive land uses are still generally acceptable within this area.

4.3 State of Pennsylvania Departments

Pennsylvania Department of Conservation and Natural Resources

The Pennsylvania Department of Conservation and Natural resources (DCNR) was established in 1995 and is responsible for maintaining and preserving the 120 state parks; managing the 2.2 million acres of state forest land; providing information on the state's ecological and geologic resources; and establishing community conservation partnerships with grants and technical assistance to benefit rivers, trails, greenways, local parks and recreation, regional heritage parks, open space and natural areas. The mission of the DCNR's Conservation Division is to provide natural resource management and support at PNG and activities throughout. One of its major focuses is currently working with FTIG to ensure the long term health, viability, and productivity of FTIG's natural resources in order to continuously improve the training, working, and living environment for soldiers, their families, and the public.

Pennsylvania Department of Military and Veterans Affairs

The Pennsylvania DMVA was initially established in 1793 as the Adjutant General Department, later renamed to the DMVA in 1996. The DMVA is responsible for administering the PNG, which is a component of the DMVA; and administers various programs of assistance to veterans. The DMVA has a dual mission: to provide quality service to the Commonwealth's veterans and their families, and to oversee and support PNG members by:

- Providing resources and assistance to Pennsylvania's nearly one million veterans and their families, and providing quality care for aging and disabled veterans.
- Preparing the PNG for combat, performing worldwide combat and combat support operations, providing global reach and the projection of U.S. military power in support of national objectives; and, at the command of the governor, providing trained personnel to support state and local authorities in times of natural disaster or civil strife.

4.4 State of Pennsylvania Plans and Programs

Pennsylvania Act 164, Chapter 59, Airport Operation and Zoning

The Commonwealth of Pennsylvania recognizes the need for collaborative land-use management between local communities and transportation entities in order to contain costs and ensure the state's system has room to grow to meet future demand. Pennsylvania's Airport Hazard Zoning law, Act 164 was established to improve and promote land use compatibility with airports throughout the state. Act 164 requires those municipalities that fall within an airport hazard area to adopt, administer, and enforce airport zoning regulations.

Pennsylvania validates its commitment to protecting and preserving aviation facilities within the Commonwealth through Act 164, Chapter 59, Airport Operation and Zoning. According to Subchapter B: Airport Zoning § 5912 any:

> *"municipality which includes an airport hazard area created by the location of a public airport is required to adopt, administer and enforce zoning ordinances pursuant to this subchapter if the existing comprehensive zoning ordinance for the municipality does not provide for the land uses permitted and regulate and restrict the height to which structures may be erected or objects of natural growth may be allowed to grow in an airport hazard area".*

The Airport Zoning Act addresses the creation of a joint airport zoning board through § 5912(b) stating:

> *"Where any airport hazard area appertaining to an airport is located outside the territorial limits of the municipality encompassing the airport, all of the municipalities involved may, by ordinance or resolution, create a joint airport zoning board which shall have the same power to adopt, administer and enforce airport zoning regulations applicable to the airport hazard area in question as that vested by subsection (a) in the municipality within which the area is located. Each joint airport zoning board shall have as members two representatives appointed by each municipality participating in its creating and, in addition, a chairman elected by a majority of the members so appointed."*

The Airport Zoning Act defines airports that are subject to this regulation as public airports and includes facilities designated as heliports which can be used only by rotary wing aircraft. It does not address private airports.

Revisions in 2000 authorized municipalities to prepare multi-municipal comprehensive plans to guide growth on more of a regional basis by designating growth areas and rural resource areas. Municipalities may enter into intergovernmental cooperative agreements to develop and implement a regional comprehensive plan. The MPC incentivizes jurisdictions to plan regionally with programs such as the sharing of state tax revenue and impact fees with other municipalities in the region, and to adopt transfer of development rights programs. The adoption of a comprehensive plan is mandatory only for counties. Municipalities are encouraged to adopt a comprehensive plan but are not required to do so.

Pennsylvania Municipalities Planning Code

The Pennsylvania Municipalities Planning Code (MPC) is the state's standard zoning enabling legislation which gives local jurisdictions the authority to engage in zoning and planning processes. The intent of the Pennsylvania Municipalities Planning Code is "to encourage municipalities to adopt municipal or joint municipal comprehensive plans generally consistent with the county comprehensive plan" and "to ensure that municipalities adopt zoning ordinances which are generally consistent with the municipality's comprehensive plan". Municipalities are not legally bound by statute to adopt comprehensive plans. Municipalities may adopt zoning ordinances, and they shall be generally consistent with the municipality's comprehensive plan. However, no action of a municipality is considered invalid or can be challenged on the basis that it is inconsistent or fails to comply with a comprehensive plan.

Pennsylvania Statewide Airport System Plan

The Pennsylvania Statewide Airport System Plan (SASP) was carried out in 2002 with updates in 2007 to identify the need and importance of airport hazard zoning to protect the airspace around airports. The Bureau of Aviation (BOA) conducted a statewide Airport Hazard Zoning and Land Use Compatibility Enhancement Study which categorized land uses on and around airports to establish guidelines supporting compatibility planning around present and future airports and expansions. The project included an update to PennDOT's Airport Land Use Compatibility Guidelines. The project was intended to develop a hazard zoning ordinance for each public airport in Pennsylvania and produce a map of incompatible land use encroachment.

The project represented an opportunity to address the military presence and its air-related facilities at the same time local governments assess their issues with civilian airports. The final report, *Action Plan for Implementing Local Airport Hazard Zoning Ordinances* was issued March 2011. At the time this report was released, only 23 percent of the 680 municipalities required to implement airport hazard zoning had done so. While there are currently no jurisdictions in the JLUS study area required to adopt airport hazard zoning for civilian airports, these specifications may be applied to increase compatibility with flight operations at FTIG.

4.5 Lebanon County

Lebanon County is located in southeast central Pennsylvania and contains the majority of FTIG in its northwest area between the Blue and Second Mountains. According to the 2007 comprehensive plan, the county contained 26 municipalities that included 18 townships, seven boroughs, and the City of Lebanon, which is the county seat.

The following is a review of the existing planning tools (policies, programs, and plans) utilized by Lebanon County.

Lebanon County Comprehensive Plan

The Lebanon County Comprehensive Plan is the policy document that guides the long range development plans for the county. It sets the goals and objectives upon which the county officials base their development decisions. The 2007 update of the Comprehensive Plan contains elements outlining land use, transportation, community facilities and utilities, economic development, natural resources, open space, historic resources, housing, energy conservation, and regional development. The guidelines outlined in the Comprehensive Plan are important because of their potential impacts on operations at FTIG, which is located largely within the county.

Lebanon County Zoning

Most of the municipalities in Lebanon County have adopted their own zoning regulations. The county does not have a separate zoning ordinance that addresses unincorporated municipalities. Thirteen municipalities that have adopted their own zoning regulations rely on the county to enforce these ordinances. Cold Spring Township currently has no zoning ordinance in place.

Lebanon County Building Code

The building code, or Uniform Construction Code (UCC), is intended to regulate building construction, materials, alteration and occupancy to ensure health, safety and welfare. The building code regulates building construction such that it is compatible with military installations, including sound attenuation for residences within applicable noise zones. Building codes, similar to other regulatory tools, are considered semi-permanent.

In Lebanon County, building codes are adopted at the municipal level. Lebanon County's existing building code does not require sound attention for residential uses or public gathering places that are located in areas affected by noise.

Lebanon County Subdivision and Land Development Ordinance

There are special relationships with counties and municipalities within the state of Pennsylvania. The jurisdiction of a county subdivision and land development (S&LD) ordinance is limited to land in municipalities that have no S&LD ordinance. If a municipality enacts an S&LD ordinance, the county's S&LD ordinance is repealed in that municipality. A municipality may adopt the county's S&LD by reference and by separate ordinance and may designate the county planning agency to administer the ordinance. At present, 13 municipalities are under the county S&LD ordinance, which was last updated in December 2013, and 13 municipalities have their own S&LD ordinance. S&LD ordinances are semi-permanent tools because the S&LD can be amended.

A review of the subdivision regulations has identified the following related to military compatibility:

1. Provisions related to military compatibility, e.g., airport, noise, lighting, vibration or height are not addressed.
2. The requirements do not require the delineation of noise contours, where applicable.
3. The requirements do not require the delineation of aircraft safety zones.
4. The approval process does not require notification to future property owners purchasing land in a subdivision that may be impacted by noise and vibration associated with military operations.

4.6 East Hanover Township (Lebanon County)

East Hanover Township has utilized the three most common planning tools in Pennsylvania (comprehensive plan, zoning ordinance and subdivision regulations) to achieve its development goals. The following review of the existing planning tools (policies, programs and plans) utilized by the Township provides a brief analysis of the ability of these tools to address land use and military compatibility. The planning tools evaluated are listed below.

East Hanover Township Comprehensive Plan

Lebanon County's East Hanover Township recently (2013) updated its Comprehensive Plan. This plan is the policy document that outlines the township's development and preservation goals and objectives for the next 20 years. The comprehensive plan contains sections for the following elements: proposed future land use, housing, transportation, community facilities, water supply, and natural and historic resources protection. The guidelines outlined in the Comprehensive Plan are important because of their potential impacts on operations at FTIG, which is located in the northern portion of the township.

East Hanover Township Zoning

East Hanover Township recently (2013) adopted its own zoning ordinance, and it is administered and enforced by the Lebanon County Planning Department.

Provisions related to the administration and enforcement of all building and zoning permits within the township are identified in Article 25 and include the following disclaimer as a requirement:

> *"The majority of the lands within the INS – Institutional Zoning District are located within an area where land is used for military operations. Owners, residents, and other users in this district, and in the Township overall, may be subjected to inconvenience, discomfort, and the possibility of injury to property and health arising from normal and accepted military operations and practices including, but not limited to, noise, vibration, odors, dust, the operation of machinery of any kind including aircraft and military vehicles, and the discharge of weapons. Owners, occupants, and users in this district, and in the Township overall, should be prepared to accept such inconveniences, discomfort, and possibility of injury from such military operations, and are hereby put on official notice that Federal and State laws may bar them from obtaining a legal judgment against such military operations."*

East Hanover Township Building Code

East Hanover Township has adopted the Lebanon County UCC. The Lebanon County Planning Department administers the UCC within its jurisdiction.

East Hanover Township Subdivision and Land Development Code

Lebanon County's East Hanover Township has not adopted its own S&LD regulations. The Lebanon County Planning Department administers the Lebanon County S&LD ordinance within the township.

4.7 Union Township

Union Township has utilized a variety of planning tools to achieve its goals for orderly development and a safe environment for its residents. The following is a review of the existing planning tools (policies, programs and plans) utilized by the township along with a brief analysis identifying their ability to address land use and military compatibility. The planning tools evaluated are listed below.

Union Township Zoning

Union Township first adopted its own zoning ordinance in 1976 as amended through 2008. It is administered and enforced by Union Township. The code does not define airport and does not include a definition for military airport; however, airports are allowed as a special exception in the open space/timberland conservation district meeting certain standards such as (clear zones and height restrictions) and may need to be reconciled with requirements for military airports.

Union Township Building Code

Union Township has adopted the UCC and uses a third party to enforce it within the township.

Union Township Subdivision and Land Development Code

Union Township adopted its own S&LD ordinance in 2001 and administers it within the jurisdiction. Provisions related to military compatibility, e.g., airport, noise, lighting, vibration or height are not included.

4.8 Dauphin County

Dauphin County is the largest county in the study area and is home to the state capital of Harrisburg. The county contains the western portions of FTIG along its border with Lebanon County. While Dauphin County has experienced significant suburban growth outwards from the capital in recent years, it has long supported mission protection at FTIG.

Dauphin County Comprehensive Plan

The Dauphin County Comprehensive Plan is the policy document that guides long range development plans for the county. It also describes the established criteria and guidelines for the land use regulation and growth policies of the municipalities located throughout the county. The 2008 update of the Comprehensive Plan contains elements outlining historic, cultural, and natural resources; population growth projections, economic development plans; land use policies; housing; transportation; community facilities, services, and utilities; and administration and finance. The guidelines outlined in the general plan are important because of their potential impacts on operations at FTIG.

The county cannot require municipalities to adopt the Dauphin County Comprehensive Plan's goals, objectives, and policies of which could impact coordinated compatibility planning and efforts. However, a municipal comprehensive plan must be generally consistent with the Dauphin County Comprehensive Plan. The plan does not address the military presence from a land use compatibility standpoint.

Dauphin County / Tri-County Regional Planning Commission Model Zoning Ordinance

The Tri-County Planning Commission is a regional organization that provides planning technical support to Dauphin County. The Tri-County Planning Commission has prepared a model zoning ordinance for use by Dauphin County as well as Perry and Cumberland counties. Although Dauphin County has not adopted the model zoning ordinance and currently has no zoning in place, the model zoning ordinance was made available by Tri-County Regional Planning Commission in 2008.

Dauphin County Building Code

Dauphin County has not adopted nor does it administer a building code. Each municipality within the county adopts its own building code. Without a building code, it may be more difficult to implement and enforce certain compatibility measures such as sound / noise attenuation county-wide.

Dauphin County Subdivision and Land Development Ordinance

In 2011, the Dauphin County Board of Commissioners adopted the Dauphin County S&LD Ordinance as authorized by the Pennsylvania Municipalities Planning Code. The 2011 ordinance replaced the 1970 ordinance as amended and "has been adopted to generally reflect the Tri-County Regional Planning Commission Model Subdivision and Land Development Ordinance which was published in April 2008". In 2011, the Dauphin County Planning Commission authorized the administration of the County S&LD ordinance for seven of its 40 municipalities. The other municipalities have adopted an S&LD ordinance.

While subdivision and land development regulations typically define the standards, procedures and other requirements for subdivision and land development, they also have the ability to serve as a tool to prevent or limit future encroachment onto the installation or adjacent operational areas by specifying what types of infrastructure improvements associated with a subdivision or land development may be or may not be allowable, such as street lights.

By limiting requirements for streetlights, particularly in relation to dark sky provisions, the subdivision and land development regulations can be used as a foundation to ensure mission sustainability. Subdivision and land development regulations are considered semi-permanent planning tools because such regulations provide the regulatory foundation for subdivision and land development only and can be amended at any time by the state or the local jurisdiction.

A review of the subdivision and land development regulations has identified the following related to military compatibility:

1. The regulations in the subdivision and land development ordinance do not include any provisions related to military compatibility, e.g., airport, noise, lighting, vibration, or height.
2. The requirements do not require the delineation of noise contours, where applicable, on zoning maps or development applications.
3. The requirements do not require the delineation of flight safety zones where applicable on zoning maps or development applications.
4. The approval process does not require notification to future property owners purchasing land in a subdivision that may be subject to the effects of military or airport operations such as noise and vibration.

5. Compatibility Issues

5.1 Compatibility Factors and Issue Identification

Compatibility, in relation to military readiness, is defined as the balance or compromise between community and military needs and interests. The goal of compatibility planning is to promote an environment where both entities communicate, coordinate, and implement mutually supportive actions that allow them to achieve their respective objectives.

Numerous factors influence whether community and military plans, programs, and activities are compatible or in conflict. For the FTIG JLUS, 23 compatibility factors were reviewed to confirm the presence of, and establish priorities for, the key study area issues. These compatibility factors are organized into three broad categories: man-made, natural resources, and competition for scarce resources.

Of the compatibility factors reviewed, several factors were determined not to have any associated compatibility issues. These factors, listed below, are included at the end of this chapter for the purpose of future consideration and evaluation.

- Energy Development
- Local Housing Availability
- Air Quality
- Cultural Resources
- Legislative Initiatives
- Water Quality / Quantity
- Scarce Natural Resources
- Roadway Capacity

At the initial committee and public meetings, these groups were asked to identify the location and type of compatibility issues they thought existed today, or could occur in the future. Information on planning processes, particularly as they relate to compatibility, was collected and assessed. This included comprehensive plans, zoning ordinances, subdivision and land development ordinances, building codes and other applicable ordinances / codes. Information was also collected relevant to current growth trends and current development applications. Throughout the course of the JLUS, the issues identified were examined and expanded upon to determine the appropriate level of concern and develop recommendations to address or mitigate the issues.

5.2 Compatibility Assessment

Interagency Coordination / Communication

Interagency coordination relates to the level of interaction on compatibility issues among military installations, jurisdictions, land and resource management agencies, and conservation authorities. Interagency communication serves the general welfare by promoting a more comprehensive planning process inclusive of all affected stakeholders. Interagency coordination also seeks to develop and include mutually beneficial policies for both communities and the military in local planning documents and processes.

Fort Indiantown Gap Training Center has established a formal process to communicate and exchange information with its surrounding communities. An assigned staff officer of the installation attends the regularly scheduled municipality meetings of the following jurisdictions: Lebanon County, East Hanover Township (Dauphin County), East Hanover Township (Lebanon County), Union Township. Information provided to elected officials and the community includes dates of scheduled artillery/mortar fire, dates of explosives demolition, scheduled prescribed burns of training areas, significant public events impacting local communities. Fort Indiantown Gap has established a recorded information telephone message at (717) 861-2007 along with print, radio, television and social media outlets to provide current notification of activities and events. An extensive Fort Indiantown Gap website provides information to everyone on news, events, activities, and facilities of the installation. In addition, Fort Indiantown Gap participates in Ex Officio status on the Executive Board of the Lebanon Valley Chamber of Commerce, serving also as the chair of the Military Affairs Committee. Fort Indiantown Gap also serves as a supporting partner with the Northern Lebanon Recreation and Parks Commission.

The following Interagency Coordination / Communication issues were identified:

- Formal communication between FTIG and adjacent communities. No formal process exists for communication exchange between FTIG and communities; limited communication presents challenges in the coordination of changes in operations and activities affecting the communities.
- Public input into FTIG development. The process and/or timing for public input into FTIG development are not transparent / not known by the public. Host communities and the public feel they have no input in regard to what is developed on FTIG.
- There is no military representation in local planning agencies. The local jurisdictions do not currently engage FTIG representatives in their planning processes, development reviews, or to obtain technical information relative to FTIG operations that could be affected by community development near the installation.

5.3 Land Use

The basis of land use planning relates to the government's role in protecting the public's health, safety, and welfare. County and local jurisdictions' growth policy / comprehensive plans, zoning, and subdivision / land development ordinances can be the most effective tools for avoiding, or resolving, land use compatibility issues. These tools ensure the separation of land uses that differ significantly in character. Land use separation also applies to properties where the use of one property may impact the use of another. For instance, industrial uses are often separated from residential uses to avoid impacts related to noise, odors, lighting, etc.

The following Land Use issues were identified:

- Confusion stemming from FTIG inholdings. Several inholdings within FTIG have created confusion over property boundaries and land use control application.

5.4 Safety

Safety zones are areas in which development and concentrations of people should be minimized due to the potential higher risks to public safety in these areas. Issues to consider include aircraft accident potential

zones, weapons firing range safety zones, and explosive safety zones.

The following Safety issues were identified:

- Future expansion of fixed wing operations would expand safety zones. Potential changes or expansion of fixed wing operations would extend safety zones beyond FTIG boundaries over developed private property.
- New and emerging technologies could require modifications to Range safety zones. New and emerging technologies in weapons, ammunition, and target engagement scenarios could extend the safety buffer areas of Range Surface Danger Zones.

5.5 Vertical Obstructions

Vertical obstructions comprise buildings, trees, structures, equipment, or other features of varying heights that encroach into the navigable airspace used for military operations. Generally, the height and distance of the object from the nearest airfield or heliport are the two biggest factors that cause an object to be considered a vertical obstruction. As is the case with FTIG, mountainous terrain can also be a contributing factor. These objects, when located at a certain height or in a specific location, can present a safety hazard to both the public and military personnel and potentially impact military readiness.

Typically, the objects of greatest concern are those closest to an airfield or heliport. However, objects reaching heights of 1,000 feet or more can compromise low-level flight operations by limiting the areas where such operations can occur. These objects may include a range of obstructive items from man-made (such as telephone poles and power lines) to natural (such as tall trees and other land features).

- Existing and future vertical obstructions impact FTIG operations. Existing transmission lines and communication towers impact FTIG aviation approach and departure clearance surfaces and have necessitated workarounds. The location of additional communication and transmission towers on mountainous terrain limits the potential for future mission changes at FTIG.
- Vertical improvements adjacent to FTIG are incompatible with future FTIG's mission. Union Township height regulation within zoning ordinance contains exceptions: height limitations do not apply to spires; microwave, television, transmission, or radio towers; silos; antennas; or water tanks. Locating additional communication and transmission towers on mountainous terrain limits the potential for future mission changes at FTIG.

5.6 Infrastructure Extensions

This factor covers the extension or provision of infrastructure (roads, sewer, water, etc.). Infrastructure plays an important role in land use compatibility. On the positive side, infrastructure can enhance the operations of an installation and community by providing needed services, such as sanitary sewer treatment capacity and transportation systems. Conversely, infrastructure can become an encroachment issue if enhanced or expanded without consideration for how future development may occur. The extension or expansion of community infrastructure to a military installation or areas proximate to an installation have the potential to induce growth, potentially leading to incompatible uses and conflicts between military mission and civilian communities. Through careful planning, the extension of infrastructure can serve as a mechanism to guide development into appropriate areas, protect sensitive land uses, and improve compatibility of land uses and military mission.

- Infrastructure expansion near FTIG. Limited sewer expansion options exist outside of FTIG's influence areas. Poor siting for expansion could result in incompatible development.

5.7 Anti-Terrorism / Force Protection

Anti-Terrorism / Force Protection (AT / FP) relates to the safety of personnel, facilities, and information on an installation from external threats. Methods to protect

the installation and its supportive facilities can impact off-installation uses.

- Unsecured perimeter. FTIG does not have controlled access, which allows the public to approach several range areas. PA Route 443, a public roadway, transects FTIG through the cantonment and training areas.

5.8 Noise

Sound is the mechanical energy transmitted by pressure waves in a compressible medium, such as air. Sound that reaches unwanted levels is referred to as noise.

The central issue of noise is the impact, or perceived impact, on people, animals (wild and domestic), and general land use compatibility. Exposure to high noise levels can have a significant impact on human activity, health, and safety.

- Noise associated with range firing activity. Noise from artillery and demonstration / small arms training is heard outside FTIG and negatively affects existing residents and livestock.
- Noise associated with aircraft. Flight activities and flights paths associated with FTIG occur and track off the installation; noise complaints increase when aircraft do not follow designated routes. Noise associated with night training activities also cause an increase in the number of complaints.

5.9 Vibration

Vibration is an oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other change in the environment. Vibration may be caused by military and / or civilian activities.

- Concern about vibrational effects on real property. Noticeable vibration from military activities (e.g., heavy / large vehicle maneuvers and heavy weapons firing) is occurring outside FTIG, which is raising concerns by residents about potential property damage.

5.10 Dust / Smoke / Steam

Dust results from the suspension of particulate matter in the air. Dust (and smoke) can be created by fire (controlled burns, agricultural burning, and artillery exercises), ground disturbance (agricultural activities, military operations, grading), industrial activities, or other similar processes. Dust, smoke, and steam are compatibility issues if sufficient in quantity to impact flight operations (such as reduced visibility or cause equipment damage), public health, or safety.

- Dust and smoke impacts outside FTIG. Dust and smoke from construction projects, training activities, and prescribed burns conducted by FTIG migrate and / or are carried by prevailing winds off of FTIG into public areas and private properties.

5.11 Light and Glare

This factor refers to man-made lighting (street lights, airfield lighting, building lights) and glare (direct or reflected light) that disrupts vision. Light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations. Conversely, high intensity light sources generated from a military area (such as ramp lighting) may have a negative impact on the adjacent community.

Technology evolution has made it possible for warfare to excel at night. Night vision devices and other special operations tactics are deployed to enable strategic nighttime warfare. Thus, nighttime warfare enables the military to execute tactical operations under the cover of darkness. In order to be successful in combat, the military must train under conditions and environments similar to what is found in combat theaters. Night vision devices allow military personnel to train in near-daylight conditions during nighttime hours.

- Night training opportunities. Lighting may limit helicopter and night vision training opportunities. High-intensity lighting associated with the Hollywood Casino, Penn National Race Course, Hershey Amusement Park, and commercial development in Lickdale, PA creates and / or contributes to light pollution and / or sky glow. If not controlled, residential lighting associated with new housing developments may contribute to light pollution and / or sky glow.

5.12 Frequency Spectrum Interference / Capacity

Frequency spectrum impedance and interference refers to the interruption of electronic signals by a structure or object (impedance) or the inability to distribute / receive a particular frequency because of similar frequency competition (interference).

- Demand for frequency spectrum. Commercial telephone carrier spectrum use is impinging upon and constraining FTIG spectrum use.

5.13 Public Trespassing

This factor addresses trespassing, either purposeful or unintentional, onto a military installation. Military areas that are located on, or adjacent to, public lands owned by other entities (i.e. federal, state, or local) designated for public access, recreation, or for livestock grazing often experience issues related to public trespassing into training ranges and other areas with safety hazards from military operations.

- Recreational users trespass onto FTIG. Persons using State Game Lands – located directly north of FTIG, the Appalachian National Scenic Trail – located along the FTIG northern and eastern boundaries, and the Horseshoe Trail located along the FTIG western boundary occasionally trespass onto FTIG training areas, which results in safety issues for both FTIG and the trespassers.
- Inadequate FTIG perimeter demarcation. The FTIG perimeter is not clearly marked in areas adjacent to private property. FTIG faces encroachment and potential loss of property via incorrect placement of improvements, e.g., fences by property owners on FTIG's perimeter.
- Intentional and unintentional trespass onto inholdings. The boundary between inholdings and FTIG land is indistinguishable in areas, resulting in unintentional trespass. Despite posted signs clearly delineating inholding, visitors on FTIG disregard signage and trespass onto inholding.

5.14 Threatened and Endangered Species

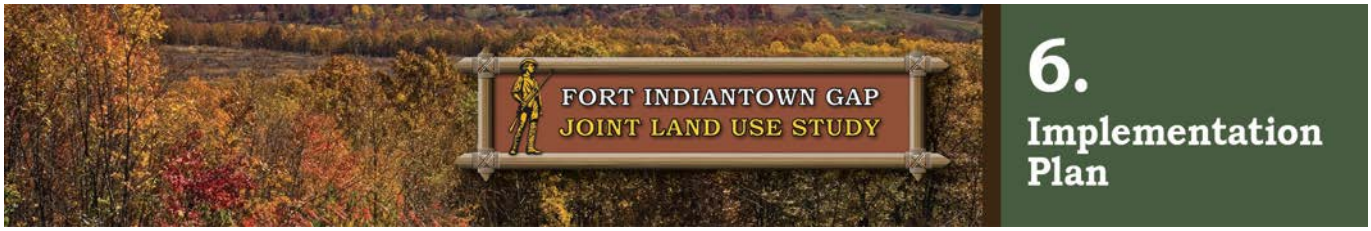
A threatened species is one that may become extinct if protective measures are not taken to safeguard the species or its habitat. An endangered species is one that has a very small population and is at greater risk than a threatened species of becoming extinct. The presence of threatened and endangered species may require special development considerations and should be included early in planning processes to ensure compatibility with military missions.

- State-listed rare species on FTIG. A Pennsylvania-listed rare butterfly species, the regal fritillary, has been identified at FTIG. FTIG is also host to regal fritillary habitat in range areas. Suitable habitat for the butterfly requires military training activity to disturb soils.

5.15 Land / Air Spaces

The military manages or uses land, air, and sea space to accomplish testing, training, and operational missions. These resources must be available and of a sufficient size, cohesiveness, and quality to accommodate effective training and testing. Military operations and civilian activities can compete for limited space; use of shared resources can impact future growth in operations and activities for all users.

- Adjacency of FTIG inholdings to training areas.
  The locations of inholdings on FTIG affect FTIG's ability to conduct some training operations.



6.1 Implementation Plan

This section identifies and organizes the recommended courses of action (strategies) that have been developed through a collaborative effort between representatives of Lebanon County and its JLUS partners: local jurisdictions, FTIG, state and federal agencies, local organizations, the general public, and other stakeholders that own or manage land or resources in the region. Because the FTIG JLUS is the result of a collaborative planning process, the strategies in this section represent a true consensus plan; a realistic and coordinated approach to compatibility planning developed with the support of stakeholders involved throughout the process.

The JLUS strategies incorporate a variety of actions that can be taken to promote compatible land use and resource planning. Existing and potential compatibility issues arising from the civilian / military interface can be removed or mitigated through implementation. The recommended strategies function as the heart of the JLUS document and are the culmination of the planning process.

The key to the implementation of strategies is the establishment of the JLUS Coordination Committee (see Strategy COM-1A) to oversee the execution of the JLUS. Through this committee, local jurisdictions, FTIG, and other selected partners can continue their collaboration to establish procedures, recommend, or refine specific actions, and adjust strategies over time to promote the resolution of key compatibility issues through realistic strategies and implementation.

6.2 Implementation Plan Guidelines

The key to a successful plan is balancing the different needs of all involved stakeholders. In working towards a balanced plan, several guidelines became the basis upon which the strategies were developed. These guidelines included:

- In concert with the Pennsylvania state laws, the Implementation Plan was developed with the understanding that the recommended strategies must not result in a taking of property value. In some cases, it may be determined that recommended strategies can only be implemented with new enabling legislation.
- In order to minimize regulation, where appropriate, strategies were recommended only for specific geographic areas to resolve the compatibility issues identified.
- Similar to other planning processes that include numerous stakeholders, the challenge is to create a solution or strategy that meets the needs of all parties. In lieu of eliminating strategies that do not have 100% buy-in by all stakeholders, it was determined that the solution / strategy may result in the creation of multiple strategies that address the same issue but would be tailored to individual jurisdictions or agencies.

6.3 Military Compatibility Areas

In compatibility planning, the generic term "Military Compatibility Area" (MCA) is the term used to formally designate a geographic area where military operations may impact local communities, and conversely, where local activities may affect the military's ability to carry out its mission. The MCAs are geographic areas where the majority of the recommended strategies apply. The proposed FTIG Military Compatibility Area Overlay District (MCAOD) is an area that incorporates all of the MCAs.

The use of MCAs and MCAODs ensures that strategies are applied to the appropriate areas, and that locations not affected by a specific compatibility issue are not impacted by regulations or policies that are not appropriate for their location or circumstance.

The MCAs are proposed to accomplish the following purposes:

- Promote an orderly transition between community and military land uses so that land uses remain compatible.
- Protect public health, safety, and welfare.
- Maintain operational capabilities of military installations and areas.
- Promote the awareness of the size and scope of military training areas to protect areas separate from the actual military installation (i.e., critical air space) used for training purposes.
- Establish compatibility requirements within the designated area, such as requirements for sound attenuation, real estate disclosure, and air navigation easements.

There are four proposed MCAs for the area around FTIG. These MCAs (described in the following paragraphs) are:

- Safety MCA
- Noise MCA
- Vertical Safety MCA
- Light MCA

Figure 6 shows the combined MCAOD overlay and Figures 7 through 10 provide individual maps of each MCA.

Safety Military Compatibility Area

The Safety MCA is comprised of the existing airfield's Clear Zone (CZ), Accident Potential Zones I and II (APZ I and APZ II), and an additional buffer extending one-quarter mile to each side of the safety zones and one-half mile from the end of APZ II. The additional buffer is proposed as a means to provide an enhanced level of protection to the airfield safety zones and proactively address future mission changes that could result in a change in airfield classification. Airfield classifications may change as a result of changes in the use, size, or position of an active runway that result in an enlargement of the safety zones.

The proposed Safety MCA identifies areas where measures would be applied to regulate compatible land use types and densities / intensities. The MCA contains four subzones: CZ, APZ I, APZ II, and the additional safety buffer. The current location of each safety subzone is based on the airfield layout and air operations identified in FTIG's 2009 Real Property Development Plan and Master Plan. The boundaries of each subzone may need to be amended as future planning efforts evolve.

Each of the safety zones has recommended guidelines of the type of development that should not occur within them. These guidelines can be found in the DOD United Facilities Criteria (UFC) 3-260-01, under Land Use Compatibility Guidelines for Clear Zone and Accident Potential Zones. Within the CZ, most land uses are incompatible with aircraft operations. It is recommended that no development be located within CZs.

Compatibility guidelines preclude land uses that concentrate large numbers of people (such as residences, apartments, churches, and schools) from being constructed within the APZs. While the likelihood of an accident is remote, the DOD recommends low density land uses within the APZs to ensure the maximum protection of public health and property.

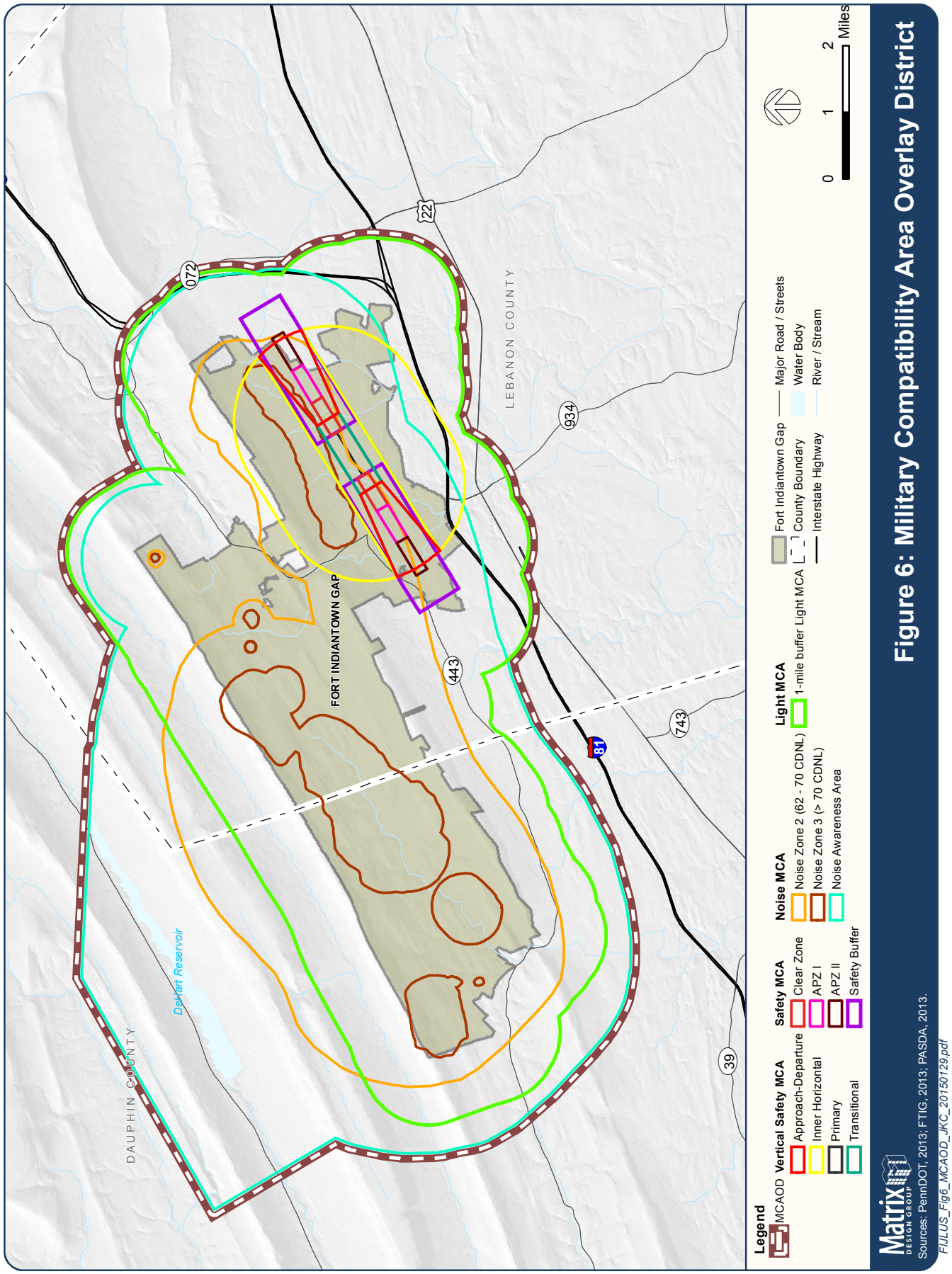
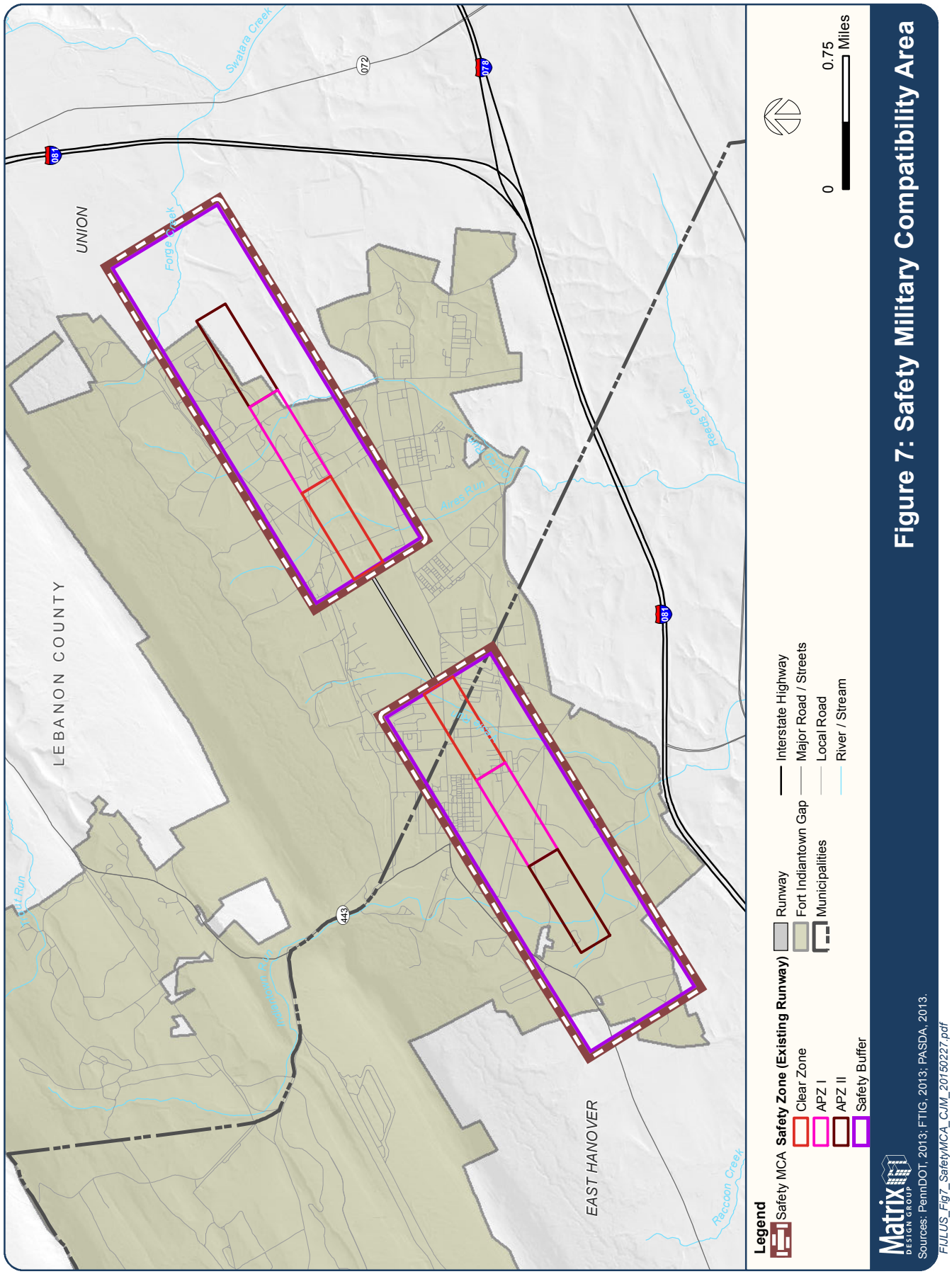
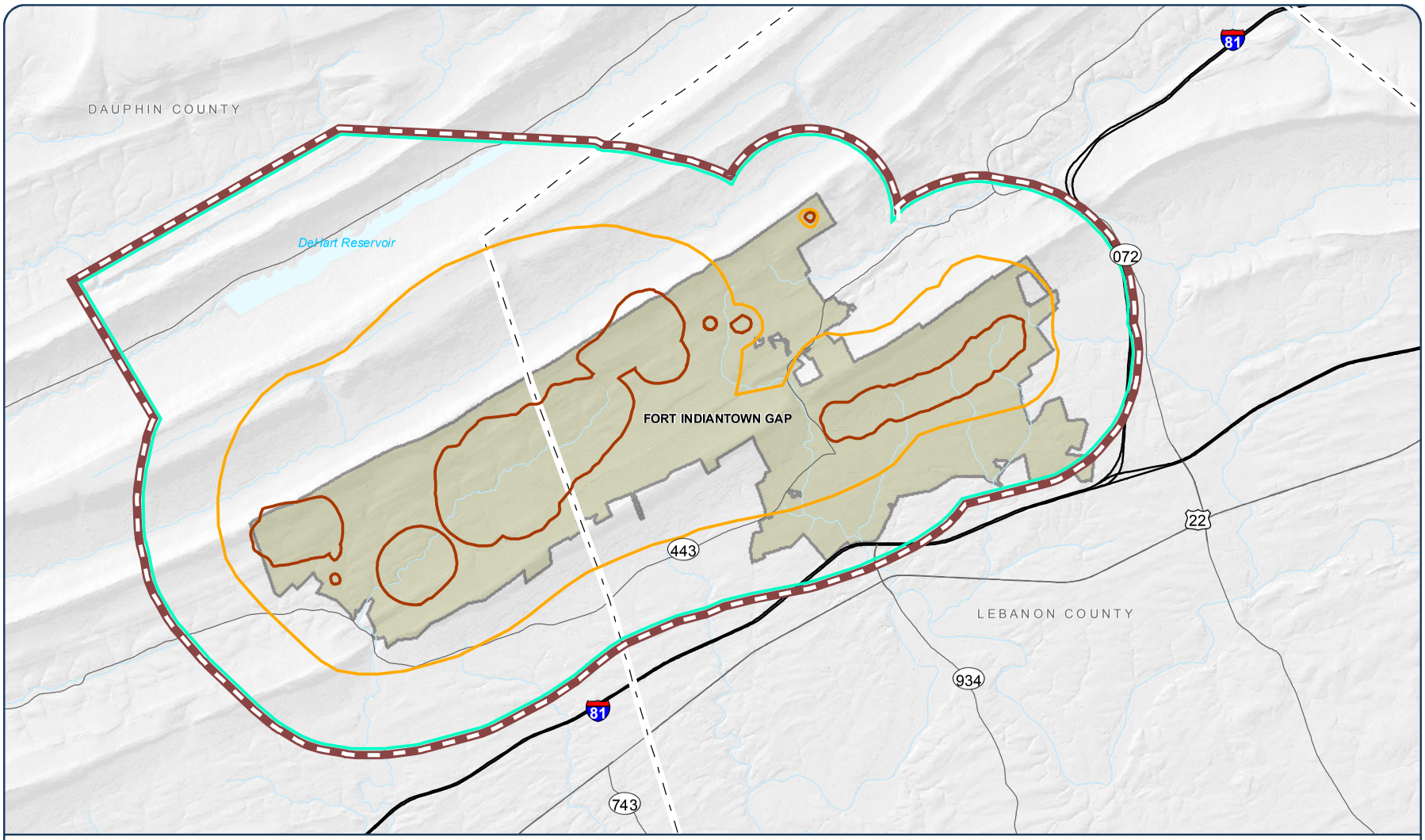


Figure 6: Military Compatibility Area Overlay District
FORT INDIANTOWN GAP
LEBANON COUNTY
DAUPHIN COUNTY
Dekart Reservoir
22
072
934
443
743
81
39
Legend
MCAOD Vertical Safety MCA
Approach-Departure
Inner Horizontal
Primary
Transitional
Safety MCA
Clear Zone
APZ I
APZ II
Safety Buffer
Noise MCA
Noise Zone 2 (62 - 70 CDNL)
Noise Zone 3 (> 70 CDNL)
Noise Awareness Area
Light MCA
1-mile buffer Light MCA
Fort Indiantown Gap
County Boundary
Interstate Highway
Major Road / Streets
Water Body
River / Stream
0
1
2
Miles
Matrix DESIGN GROUP
Sources: PennDOT, 2013; FTIG, 2013; PASDA, 2013.
FULUS_Fig6_MCAOD_JKC_20150129.pdf

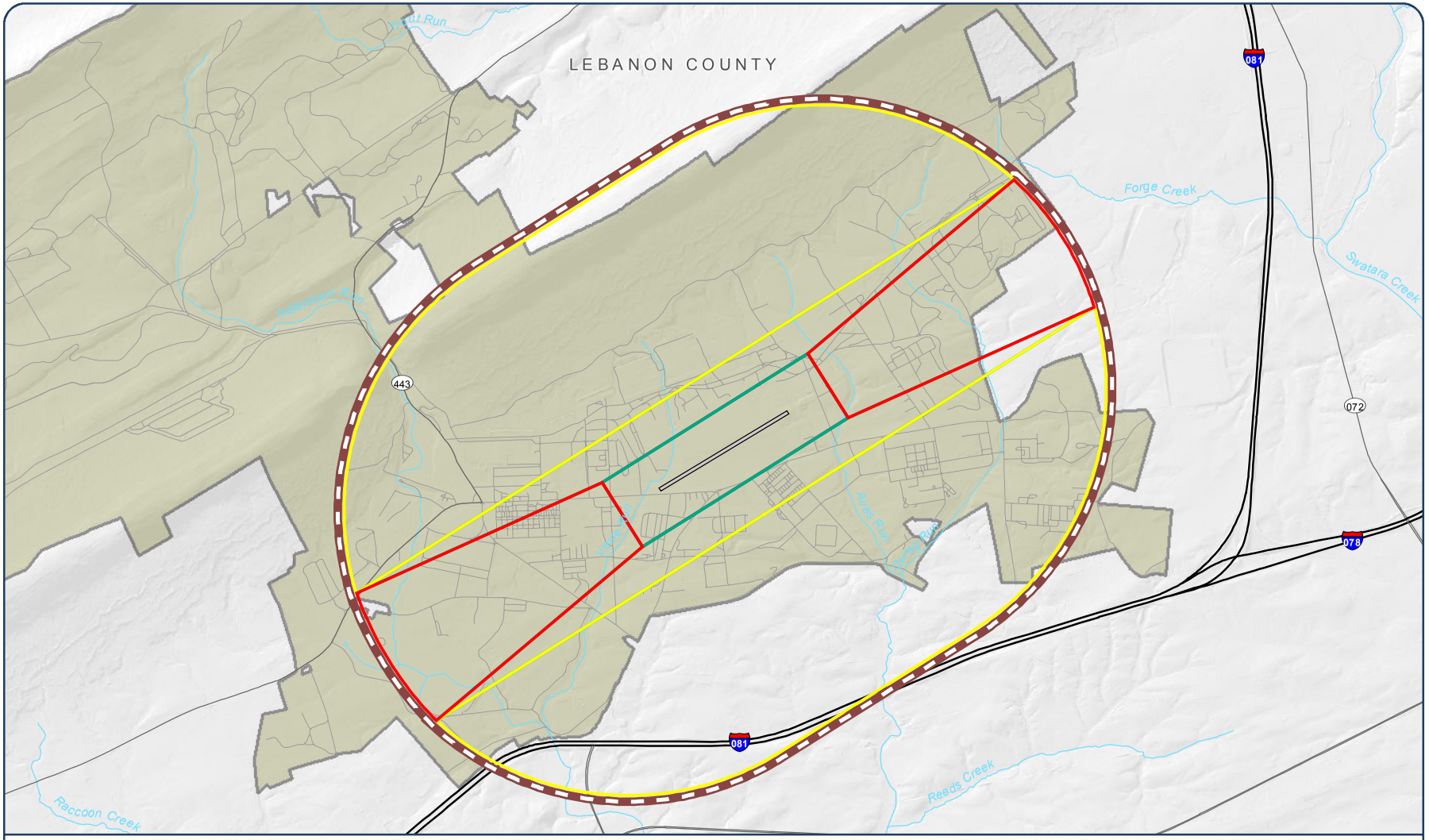

LEBANON COUNTY
UNION
EAST HANOVER
Swatara Creek
Forge Creek
Ares Run
Reeds Creek
Raccoon Creek
Hammer Run
Killinger Run
081
072
078
181
443
Legend
Safety MCA
Safety Zone (Existing Runway)
Clear Zone
APZ I
APZ II
Safety Buffer
Runway
Fort Indiantown Gap
Municipalities
Interstate Highway
Major Road / Streets
Local Road
River / Stream
0
0.75
Miles
Figure 7: Safety Military Compatibility Area
Matrix DESIGN GROUP
Sources: PennDOT, 2013; FTIG, 2013; PASDA, 2013.
FIULUS_Fig7_SafetyMCA_CJM_20150227.pdf



Sources: PennDOT, 2013; FTIG, 2013; PASDA, 2013.

FIJLUS_Fig8_NoiseMCA_JKC_20150129.pdf

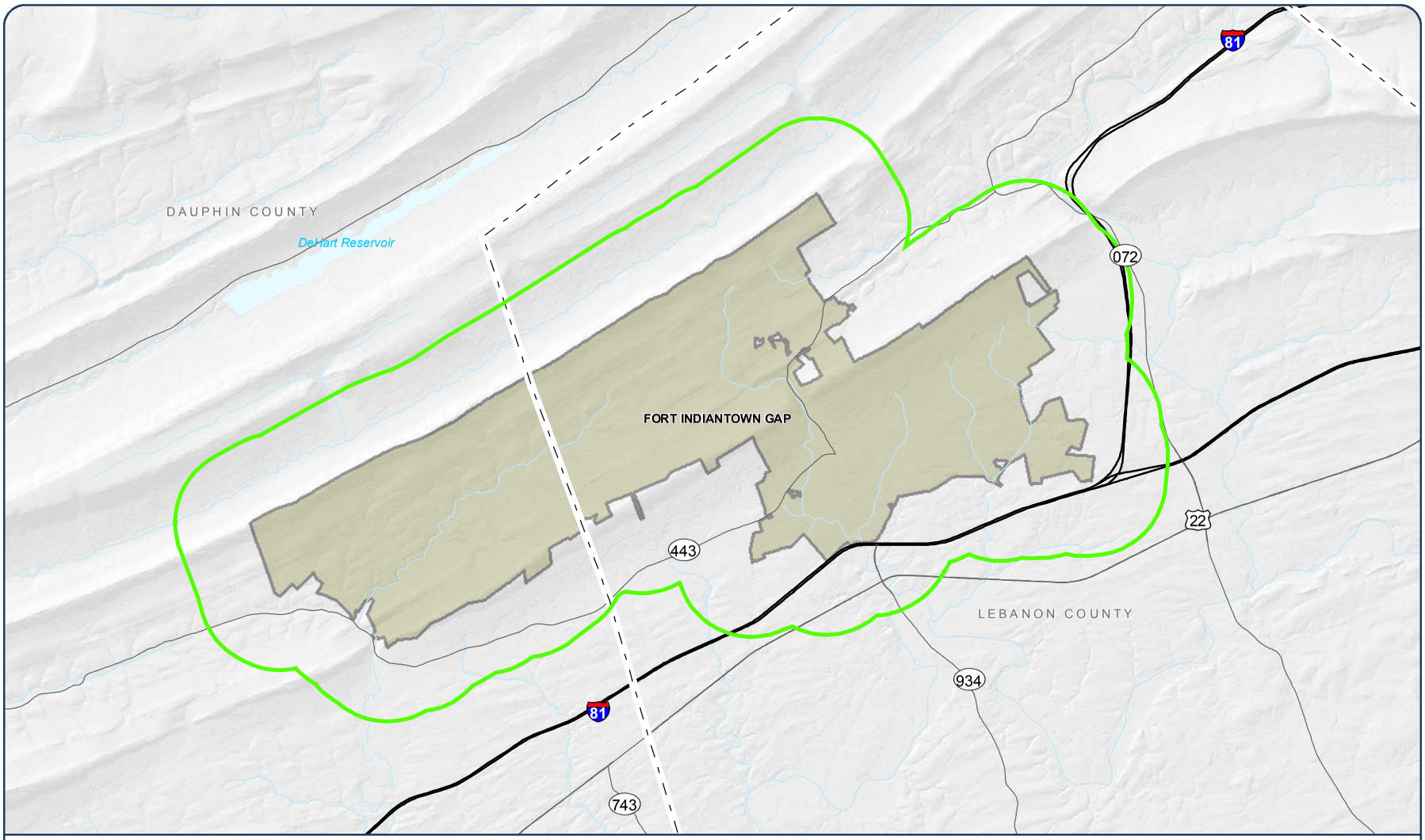
Figure 8: Noise Military Compatibility Area



Sources: PennDOT, 2013; FTIG, 2013; PASDA, 2013.

Figure 9: Vertical Safety Military Compatibility Area

FIJLUS_Fig9_ImagMCA_CJM_20150227.pdf



Matrix DESIGN GROUP

Sources: PennDOT, 2013; FTIG, 2013; PASDA, 2013.

FIJLUS_Fig10_LightingMCA_JKC_20150112.pdf

Figure 10: Light Military Compatibility Area

Low density single family residential uses (1 to 2 units per acre) can be compatible when located within APZ II. Other compatible uses include agriculture, limited intensity office / retail, and light industrial.

Development within the additional safety buffer should be reviewed for compatibility with both current military mission and anticipated future operational changes on a case-by-case basis. Specific development guidelines may need to be identified should FTIG's safety zones be restructured in the future.

Noise Military Compatibility Area

The Noise MCA includes all lands located off-installation that fall within the noise contours greater than 65 decibels, A-weighted (ADNL) or 62 decibels C-weighted (CDNL) noise levels associated with military activities, as well as an additional one mile buffer past the 65 ADNL noise contour to be proactive for possible future missions at FTIG. This buffer also encompasses land areas that are subject to noise levels less than 65 ADNL or 62 CDNL that are usually suitable for all types of development and areas identified by FTIG as posing either a high or medium risk of noise complaints to occur including areas of low-level high performance flight such as the Restricted Airspace north of the installation.

Noise is often a concern to the public surrounding military installations that have flying missions. Residential developments and other noise sensitive land uses within this MCA may be subject to sound attenuation measures to reduce interior noise impacts to achieve a maximum interior noise level of 45 dB DNL.

Without a requirement for sound attenuation via building code requirements, certain uses such as residential, uses that congregate large groups, schools, healthcare facilities, and outdoor parks and recreation are not compatible within areas that experience noise levels of 65 dB DNL or greater. Uses that are compatible within aircraft noise contours are office / retail and manufacturing / industrial when interior noise levels experienced are less than 70 dB DNL. The local building code can be used to require the implementation of noise-attenuation measures for all new development within the Noise MCA. Although this tool will not prevent incompatible development, building codes can maximize compatibility to the greatest extent possible.

Additional information and technical background explaining the various noise measurement units (i.e., ADNL / CDNL vs. dB) and specific noise contours associated with both arms and aviation is provided in the Background Report.

Vertical Safety Military Compatibility Area

The Vertical Safety MCA is based on the DOD imaginary surfaces, encompassing the Inner Horizontal Surfaces, which restricts development of buildings and structures up to 150 feet above airfield elevation, and the Approach-Departure Clearance Surface. The Vertical Safety MCA is intended to denote the importance of following the DOD imaginary surfaces with regard to structure height and is not intended to reduce or change DOD guidance with regard to maximum height of structures.

A potential source for aircraft accidents to occur is related to the presence of vertical obstructions in areas that are frequently used by low flying aircraft, such as rotary wing aircraft. Examples of potential vertical obstructions include communications towers (radio, television, cellular, microwave, etc.), silos, electric transmission towers and lines, and similar manmade structures. While the presence of vertical obstructions can sometimes be mitigated by altering training routes, increasing minimum allowable flight altitudes or similar risk reduction measures, the proliferation of vertical obstructions or their placement along key flight routes can cause long term changes in the viability of military airspace and training operation, ultimately affecting the sustainability of the military training mission.

The purpose of the Vertical Safety MCA is to regulate the height of all structures and buildings within the area defined by DOD criteria known as imaginary surfaces. The imaginary surfaces are a three dimensional geographic area comprised of approach and departure airspace corridors and safety buffers. Vertical obstruction issues are a major concern to flight operations and training due to the potential for a building or structure to extend into navigable airspace

and impede the safety of flight operations. Vertical obstructions that can affect flight safety include, but are not limited to, communication towers, transmission lines, silos, buildings, and trees.

Low flying aircraft are also susceptible to bird air strikes which create the potential for damage to aircraft or injury to aircrew or local populations. However, because helicopters are less likely than most fixed-wing aircraft to suffer major damage from BASH incidents and due to the success of FTIG's BASH program, the Vertical Safety MCA provides only a limited area where land uses that may attract birds and wildlife should be discouraged. The majority of this area is contained within the FTIG installation only impacting pockets private land to the north, south and west of the FTIG cantonment area.

Light Military Compatibility Area

The Light MCA consists of a buffer of one mile from the perimeter of the installation. New development that falls within this MCA may be subject to lighting regulations that include fully-shielded and / or full-cutoff light fixtures. It is also recommended that a retrofit program that incentivizes the replacement of old/incompatible lighting fixtures with new fixtures consistent with the new lighting regulations.

Night vision has become an essential tool for the U.S. military. The ability and necessity of being able to train in low light environments is now a critical component of modern military training and doctrine. Pilots fly fighter planes and helicopters with night vision devices, and soldiers on the ground use night vision goggles to perform functions in the dark of night. The conduct of night vision training requires low levels of light in order to allow for the safe and proper use of night vision devices. Light pollution from sources both on and off FTIG has the potential to impact night training, and if left uncontrolled, could eliminate the ability to use night vision devices.

In addition to the decrease in effectiveness of night training activities when light intrusion increases, increases in the scope and intensity of outdoor light sources pose potential safety concerns. A temporary loss of vision can occur when night vision devices are exposed to bright light. This is of particular concern with regard to air safety, where pilots rely on the use of night vision devices on a routine basis for night flying activities.

The Light MCA addresses areas that may generate lighting levels that may affect FTIG's operations and night training missions. There are two types of light pollution that can impact military operations: point source lighting, which directly impacts night vision device use and training, and ambient lighting or background lighting, where the cumulative effect of light pollution diminishes the capability and safe use of night vision device training. Light intensity decreases with distance, therefore, the more distance between the light source and the military installation, the greater the reduction of light pollution impacts.

6.4 How to Read the Implementation Plan

The strategies developed are designed to address the issues identified during preparation of the JLUS. The purpose of each strategy is to:

- avoid future actions, operations, or approvals that would cause a compatibility issue,
- eliminate an existing compatibility issue,
- reduce the adversity of an existing issue, and / or
- provide for on-going communications and collaboration.

In an effort to list and describe the strategies in an efficient manner, they have been arranged in a table to correspond with their compatibility factor. The issue within each factor topic is presented first to provide a linkage between the strategy and the condition it is to resolve or minimize. The following paragraphs provide an overview of how to read the information presented for each strategy in the JLUS.

- Strategy ID Number. Each strategy is also assigned an identification letter code (i.e., COM-1A, COM-1B, COM-1C, etc.). The letters are assigned in order to provide a unique and easy reference for each strategy. A strategy's

reference number is composed of the Compatibility Issue number and this ID.

- Military Compatibility Area (MCA)/ Location. The MCA / location identifies what geographic area the strategy applies to (i.e., Safety MCA, Noise MCA, etc.). The MCA geographies for the FTIG strategies are described and illustrated on the previous pages of this JLUS. Some of the strategies are designated as "General", meaning that they do not have a specific geography associated with them, and some are designated as "MCAOD", meaning that they cover the entire MCAOD for that study area.
- Strategy. In bold type is a title that describes the strategy. This is followed by the complete strategy statement that describes the action needed.
- Timeframe. The timeframe is an estimate of how long it will take to implement the strategy (short-range [one year], mid-range [one to three years], long-range [three to five years], or n-going). On-going refers to strategies that will be needed on a continuous, intermittent, or as-needed basis.
- Responsible Partner. At the right end of the strategy table are a set of columns, one for each jurisdiction, military entity, agency, and organization with responsibilities relevant to implementation of the JLUS strategies. If an entity has responsibility relative to implementing a strategy, a mark is shown under their name. This mark is one of two symbols that represent their role. A solid square (■) designates that the entity identified is primarily responsible for implementing the strategy. A hollow square (□) designates that the entity plays a key supporting role, but is not directly responsible for implementation.

The JLUS strategies are presented on the following pages organized alphabetically by compatibility factor.

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
Anti-Terrorism / Force Protection (AT)											
AT-1	**ISSUE**	**Unsecured Perimeter around FTIG.** ■ FTIG does not have controlled access, which allows the public to approach several range areas. ■ PA Route 443, a public roadway, transects FTIG through the cantonment and training areas.									
AT-1A	**General**	**Implement FTIG's Access Control Point Plan.** Pursue the implementation of a limited secure perimeter that meets or exceeds DOD AT/FP guidelines and standards and still allows for the efficient functioning of FTIG. All range areas should be secured through access control points. Disruption of access to public roadways should be avoided through the use of access control points and rerouting of public access routes as appropriate and feasible. Additional Partner*: Pennsylvania Department of Transportation*	Short							■	□
Biological Resources (BIO)											
BIO-1	**ISSUE**	**State-Listed Rare Species on FTIG.** ■ A Pennsylvania-listed rare butterfly species, the regal fritillary, has been identified at FTIG. FTIG is also host to regal fritillary habitat in range areas. Suitable habitat for the butterfly is in part a result of the military's activities that result in soil disturbance.									
BIO-1A	**General**	**Continue Monitoring of Butterfly Habitat and Population.** Continue and enhance monitoring of rare species that reside on FTIG to promote the continued existence without harm by military activity on	On-Going							■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
BIO-1A (cont'd)		FTIG. Pursue partnerships with local and state environmental groups to establish and maintain a second location suitable for regal flitterary butterfly habitat.									
BIO-1B	**General**	**Educate Public about Relationship between Military Presence and Butterfly Habitat.** Continue to increase awareness of relationship between soil disturbance from military activities and regal butterfly habitat.	On-Going							■	
Communication / Coordination (COM)											
COM-1	**ISSUE**	**Formal Communication Between FTIG and Adjacent Communities.** ■ No formal process exists for communication and information exchange between FTIG and communities; limited communication presents challenges in the coordination of changes in operations and activities affecting FTIG's neighboring communities. ■ Adequate and timely communication between FTIG and the jurisdictions, agencies, and organizations engaged in planning and resource management in the study area is vital to the compatibility planning process. Bi-directional communication from FTIG to identified stakeholders and vice versa concerning their activities is needed.									
COM-1A	**General**	**Establish a JLUS Coordination Committee.** Establish a JLUS Coordination Committee to maintain efficient and effective coordination among the JLUS partners and to oversee the implementation of JLUS recommendations. The JLUS Coordination Committee should meet on a regular basis as agreed upon by the Committee and be responsible for establishing effective	Short	■	■	■	■	■	■	■	□

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
COM-1A (cont'd)		and timely means of communication for the purpose of coordinating and addressing compatibility concerns and issues. Members should include representatives from Lebanon County, East Hanover Township (LC), Union Township, Dauphin County, the Tri-County Regional Planning Commission, the Pennsylvania Department of Military and Veterans Affairs, Fort Indiantown Gap representatives, and other community partners as determined appropriate. Other Potential Members: *Any additional entities deemed appropriate (i.e., entities from the JLUS Technical or Executive Committees)*.									
COM-1B	**General**	**Establish and Advertise a single Fort Indiantown Gap Point of Contact.** Establish and advertise a single point of contact (POC) for all community complaints and inquiries. Communication procedures, including methods for providing input, posing inquiries, and expected response time should be made publicly available through the FTIG website, Lebanon County website, Dauphin County website, and posted in public facilities such as community centers, municipal buildings, and local newsletters.	On-Going	☐	☐	☐	☐	☐	■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
COM-1C	**General**	**Expand Communication Efforts to Reach a Broader Audience.** Similar to transportation / highway message systems, utilize local AM radio to provide the public information on activities and events occurring at FTIG. Post signage as appropriate in visible and accessible locations. Consider social media to supplement methods of public information outreach.	Short	☐	☐	☐	☐	☐	■	■	
COM-2	**ISSUE**	**Provide Additional Opportunities for Public Input into FTIG Development Process.** The process and/or timing for public input into FTIG development are not transparent / not known by the public. Host communities and the public feel they have no input in regards to what is developed on FTIG. Although FTIG meets notification requirements provided under appropriate regulations (such as DOD instruction and NEPA), enhanced communications efforts with the public on the following topics (and others as determined appropriate) would improve overall coordination and cooperation with activity planning, etc.: ■ Proposed projects ■ Recreational activities and opportunities ■ Cultural resources events and activities ■ Changes in and notifications about operations outside the typical schedule ■ Changes to activities and / or types of aircraft accessing the installation									
COM-2A	**General**	**Initiate Community Awareness Program and Protocols with Jurisdictions.** FTIG should initiate enhanced communication by meeting with each municipality located within its area of influence to develop a plan for increasing community awareness and support of FTIG activities. The	Short	☐	☐	☐	☐	☐	■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
COM-2A (cont'd)		focus of this plan will be to reach a greater public audience for events, such as FTIG meetings and community events held on the installation, as well as make FTIG's public communication more transparent. The program should include outreach activities, such as tours of the installation, development of informational brochures to be mailed to neighbors and posted on appropriate websites, identification of a single public relations point of contact for FTIG, and making contact information widely available.									
COM-2B	**MCAOD**	**Include FTIG as an 'Ex-Officio' on Local Planning Commissions and Organizations.** Establish a Memorandum of Understanding (MOU) between local jurisdictions and FTIG to formalize a process that provides copies of certain types of development proposals, rezoning, and other land use or regulation changes for lands located within the MCAs to FTIG for review and comment. The MOU should address an effective process that promotes a productive communication and coordination process that can be maintained and reproduced in the future. This supports a proactive approach for identifying potential conflicts early in the proposed development	Short	■	■	■	■	■		☐	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
COM-2B (cont'd)		application. Review periods shall conform to existing community processes for providing comment. The process of formalizing FTIG review and comment should include: ■ Definition of project types that require review ■ Definition of project types that require military attendance at pre-application meetings ■ Identification of the points of contact for all coordination ■ Formal procedures for requesting and receiving comments ■ Standard timelines for responses consistent with State law and local/county procedures. Procedures should be reviewed annually and updated as appropriate by the JLUS Coordination Committee.									
COM-2C	**MCAOD**	**Require a Military Operations Nuisance Disclaimer with the Sale of Properties Located within FTIG MCAOD.** The disclaimer should be issued by the applicable Planning Department and identify the property's location relative to FTIG. The disclaimer will serve as notification that FTIG regularly employees training exercises that produce excessive noise and other impacts such as	Short	■	■	■	■	■	■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
COM-2C (cont'd)		possible vibration as well as describe and provide maps of the MCAOD and each MCA.									
COM-2D	**General**	**Conduct a Good Neighbor Program.** FTIG should conduct, on a bi-annual basis, a Good Neighbor Program where they send out letters to all adjacent property owners inviting them to a FTIG Neighbor Town Hall meeting. The purpose of the meeting will be to allow for an open exchange of information to maintain transparent communication and provide a platform for FTIG to inform neighbors and interested citizens of any upcoming mission changes or operations and maintenance events that may have an impact on the neighbors and whereby the adjacent property owners can provide input and pose questions to FTIG representatives. The open houses would be held in rotating locations on FTIG and in the host communities on a bi-annual (twice yearly) basis.	Mid	☐	☐	☐	☐	☐	■	■	
COM-2E	**General**	**Allow Public Review of Military Planning Documents.** FTIG should provide public versions of key planning documents for review and comment prior to finalization. Key planning documents could include, but not be limited to, the following:	On-Going	☐	☐	☐	☐	☐	■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
COM-2E (cont'd)		■ Master Plan Updates ■ Real Property Development Plan Updates ■ Noise Management and Operational Plans ■ Integrated Cultural Resource Management Plan ■ Other documents as appropriate, and when agreed to be used for official use only ■ Integrated Natural Resource Management Plan									
Dust / Smoke / Steam (DSS)											
DSS-1	**ISSUE**	**Dust and Smoke Impacts Off of FTIG.** Dust and smoke from construction projects, training activities, and prescribed burns conducted by FTIG migrate and / or are carried by prevailing winds off of FTIG into public areas and private properties.									
DSS-1A	**General**	**Increase public awareness of need for burns.** Develop public information to explain the purpose of prescribed burns and how they protect the base as well as the community. Enhance communication and coordinated scheduling of prescribed burns to the surrounding communities.	Mid	☐	☐	☐	☐	☐	■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
Frequency Spectrum Capacity (FSC)											
FSC-1	**ISSUE**	**Increased Demand for Frequency Spectrum.** Commercial telephone carrier spectrum use is impinging upon and constraining FTIG spectrum use.									
FSC-1A	**General**	**Ensure Compatible Frequencies.** The Federal Communications Commission is the government entity responsible for managing frequency usage. The military is assigned certain frequencies to use that generally do not interfere with civilian uses. The continued usage of only assigned frequencies should ensure no interference between military and civilian uses. Other Entity: *Federal Communications Commission*	On-Going							■	■
Infrastructure Extensions (IE)											
IE-1	**ISSUE**	**Infrastructure Expansion Near FTIG.** Limited sewer expansion options exist outside of FTIG's influence areas. Poor siting for expansion could result in incompatible development.									
IE-1A	**MCAOD**	**Establish requirements for review of proposed infrastructure expansion projects.** Require an impact review for all proposed infrastructure (sewer, utility, and transportation) improvements and expansions prior to approval of any proposed developments within the MCAOD. Include FTIG representative in development review process.	Long	■	■	■	■	■		□	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
Land Use (LU)											
LU-1	**ISSUE**	**Confusion Stemming from FTIG Inholdings and Properties Proximate to FTIG That Are Not Subject to Zoning Controls.** Several inholdings within FTIG have created confusion over property boundaries and land use control application.									
LU-1A	**MCAOD**	**Develop and Distribute Property Owner Educational Materials.** An information packet should be developed for those who own property within the boundaries of FTIG and who are located within each MCA. The informational packet should include applicable regulations that restrict certain types of development as a result of incompatibility with FTIG operations or types of development that would not be compatible. Educational materials that explain the history and mission of FTIG should also be included.	On-Going	☐	☐	☐	☐	☐	■	■	
LU-1B	**Vertical Safety MCA**	**Establish an Airport Overlay District.** Per Act 164, Chapter 59, Airport Operation and Zoning Pennsylvania Airport Zoning Regulations: establish an "airport district overlay" that will serve as the basis for the establishment of the Military Compatibility Areas Overlay District (MCAOD). Per Act 164 requirements, the MCAOD ordinance will include: purposes of	Short	■	■	■	■	■	☐	☐	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
LU-1B (cont'd)		the district, definitions, airport zones, airport zone height limitations; permits required; use restrictions; nonconforming uses; variances; conflicting regulations; and amending the official zoning map by the adoption of an official supplementary airport overlay zoning map.									
LU-1C	**MCAOD**	**Define and Establish Military Compatibility Areas (MCAs).** Create a Military Compatibility Area Overlay District (MCAOD) containing Military Compatibility Areas (MCAs) that reflect the types and intensity of compatible uses. The MCAOD is the collective geographic area of all of the MCAs combined. The MCAs established should be used by local jurisdictions to identify areas where specific compatibility issues are more likely to occur and address ways to avoid compatibility issues. The four MCA's should include: *Safety MCA*: Includes the Clear Zone (CZ) and Accident Potential Zones (APZs) I and II; *Noise MCA*: Includes areas within the 65 ADNL (62 CDNL) contour for aircraft and explosives noise as well as an additional one mile beyond the boundaries of the 65 ADNL (62 CDNL) noise contour to allow for FTIG operational changes; *Vertical Safety MCA*: Includes the Inner Horizontal Surfaces and Approach-Departure Clearance	On-Going	■	■	■	■	■	☐	☐	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
LU-1C (cont'd)		Surfaces for Muir Army Airfield's runway; and *Light MCA*: Encompasses the areas within one nautical mile of the FTIG perimeter. Where appropriate, the jurisdictions should incorporate the MCAOD and MCA boundaries on their zoning map and future land use maps and include the zones on their websites for easy access by the public.									
LU-1D	**General**	**Update Comprehensive Plans to Include Military Compatibility Policies.** Policies that support the proposed MCAs and encourage uses that are compatible with FTIG operations should be incorporated into jurisdiction's Comprehensive Plans. Update and adopt the future land use map and supporting goals, objectives, and policies that encourage compatible growth around FTIG. FTIG representatives should be included as a stakeholder in the development and regular updates of the plan.	Short	■	■	■	■	■	☐	☐	
LU-1E	**MCAOD**	**Update Local Jurisdiction Zoning Codes.** Update zoning map and zoning code to be consistent with any changes or updates that may have occurred to the future land use plan / Comprehensive Plan as part of LU-1B, LU-1C, and LU-1D.	Mid	■	■	■	■	■	☐	☐	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
LU-1F	**MCAOD/ General**	**Seek Acquisition of ACUB Priorities** Pursue acquisition of properties located within FTIG boundaries, those identified as priorities in FTIG's ACUB program.	On-Going						■	■	
LU-1G	**General**	**Enhance Economic Development Efforts to Address Compatibility.** Develop marketing materials and guidelines that identify the type of industries that are compatible with FTIG's mission and the type of industries that are not compatible with the military mission. These materials should be developed in partnership with selected business owners in the region to assist in the identification of the most effective marketing technique for the area.	Short	■	■	■	■	■	□	□	
Land, Air and Sea Space Competition (LAS)											
LAS-1	**ISSUE**	**Adjacency of Inholdings and Hunting Areas to Training Areas.** The locations of inholdings and hunting areas on FTIG affect the FTIG's ability to conduct some training operations. Operations are halted or delayed to allow access to inholdings.									
LAS-1A	**General**	**Enhance Communication of Training Operations Through the Game License Application Process.** Develop an alert system through PSAs, a channel on amateur radio, social media notifications, and the posting of signage that alerts hunters to planned or ongoing training operations. Alerts should explain training schedules and state	On-Going							■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
LAS-1A (cont'd)		that training operations may occur at random times and take precedence over recreational activities.									
LAS-1B	**General**	**Keep Media Contacts Informed of FTIG Schedules.** Provide frequent and updated information, including the schedules of aircraft training and other operations, to local media. Post schedule on relevant web sites linked to the FTIG website.	On-Going	☐	☐	☐	☐	☐	■	■	
LAS-1C	**General**	**Seek Acquisition to Support Mission** Pursue acquisition of properties that affect the ability of FTIG to perform mission activities and those identified as priorities in FTIG's ACUB program.	Short						■	■	
Light and Glare (LG)											
LG-1	**ISSUE**	**Night Training Opportunities.** Lighting may limit night helicopter and night vision training opportunities. High intensity lighting associated with the Hollywood Casino, Penn National Race Course, Hershey Amusement Park, and commercial development in Lickdale, PA creates and / or contributes to light pollution and / or sky glow. If not controlled, residential lighting associated with new housing developments may contribute to light pollution and / or sky glow.									
LG-1A	**Light MCA/ General**	**Develop and Establish Dark Sky Lighting Ordinance.** The municipalities surrounding FTIG should adopt "Dark Skies" ordinances that minimize urban sky glow and the potential for light	Mid	■	■	■	■	■	☐	☐	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
LG-1A (cont'd)		trespass onto adjacent properties. Specific development standards should be incorporated into the zoning ordinances and building codes of each jurisdiction and address areas adjacent to the installation boundary. The lighting ordinance should also include regulation of lighting such as LED billboards in important flight paths and the approach and departure corridors. Properties within the Light MCA (one mile from FTIG perimeter) will be subject to mandatory requirements of this ordinance. Compliance with the ordinance would be voluntary for all other properties.									
LG-1B	**General**	**Coordinate Lighting Improvements Projects with Nearby Industrial and Commercial Uses.** FTIG should reach out to nearby industrial and commercial entities (such as the Hollywood Casino and Race Track) that may have the potential to impact night training activities as a result of their need to maintain a well-lit environment at night. FTIG should work with each of these entities to develop a plan for decreasing light impacts associated with nighttime activities and events through the use of lighting retrofits, timed devices, etc.	Long	☐	☐	☐	☐	☐	■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
Noise (NOI)											
NOI-1	**ISSUE**	**Noise Associated with Range Firing Activity.** Noise from artillery and demonstration / small arms training is heard off of FTIG and negatively affects existing residents and livestock.									
NOI-1A	**Noise MCA**	**Address Animal Keeping within Military Influence Areas.** Amend local zoning codes to disallow intensive animal keeping in areas of high noise. Intensive animal keeping should not be permitted within the MCAOD.	Mid	■	■	■	■	□		□	
NOI-2	**ISSUE**	**Noise Associated with Aircraft.** Flight activities and flight paths associated with FTIG occur and FTIG flight paths occur and track off the installation; noise complaints increase when aircraft do not follow designated routes. Noise associated with night training activities also cause an increase in the number of complaints.									
NOI-2A	**Noise MCA**	**Amend Building Codes.** Amend the local building codes to require sound attenuation that achieves an interior noise level of 45 dB for any new buildings or substantially improved buildings containing noise sensitive uses located within the Noise MCA.	Mid	■	■	■	■	■	□	□	
NOI-2B	**General**	**Educate Local Builders on Sound Attenuation.** Work with local construction and development organizations to ensure that builders and relevant skilled trades are familiar with the noise attenuation measures, how to incorporate them in a cost-effective	On-Going	■	■	■	■	■	□	□	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
NOI-2B (cont'd)		manner, and how to market them as a benefit to clients and prospective clients.									
Public Trespassing (PT)											
PT-1	**ISSUE**	**Recreational Users Trespass onto FTIG.** Persons using State Game Lands-located directly north of FTIG, the Appalachian National Scenic Trail-located along the FTIG northern and eastern boundaries, and the Horseshoe Trail-located along the FTIG western boundary, occasionally trespass onto FTIG training areas, which results in safety issues for both FTIG and the trespassers.									
PT-1A	**General**	**Incorporate Safety Awareness into Recreational User Pass Application Process.** IN PROCESS Require all persons accessing FTIG for recreational purposes to undergo safety awareness training. As part of the training, educational pamphlets to create awareness about restricted military lands and airspace should be developed and distributed. FTIG requires a mandatory safety briefing with awareness training for persons accessing FTIG for recreational purposes.								■	
PT-1B	**General**	**Improve FTIG Signage with Safety Warnings.** Place proper signage in strategic locations around FTIG that warns of military operations and the potential repercussions of interfering with ongoing activities.	Short						■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
PT-2	**ISSUE**	**Inadequate FTIG Perimeter Demarcation.** The FTIG perimeter is not clearly marked in areas adjacent to private property. FTIG faces encroachment and potential loss of property via incorrect placement of improvements, e.g., fences, by property owners on FTIG's western perimeter.									
PT-2A	**General**	**Pursue the Implementation of Proposed Access Control Points and Secured Perimeter.** Consistent with the proposed security improvements and subsequent environmental impact statement, pursue funding for the implementation of a limited secure perimeter, including access control points and enhanced signage demarcating the installation perimeter. Additionally, "No Trespassing" signage should be installed near potential access points and along the fence.	Mid						■	■	
PT-3	**ISSUE**	**Intentional and Unintentional Trespass onto Inholdings.** The boundary between inholdings and FTIG land is indistinguishable in areas, resulting in unintentional trespass. Despite posted signs clearly delineating inholding, hunters on FTIG disregard signage and trespass into inholding.									
PT-3A	**General**	**Seek Acquisition of Inholdings.** FTIG should work with the State of Pennsylvania to develop an acquisition plan that ultimately results in the consolidation of property and eliminate all inholdings.	On-Going						■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
PT-3B	**General**	**Ensure Property Boundary Demarcation with Fences.** As a short term solution until property acquisition occurs, FTIG should work with private residents to construct temporary fences to clearly mark the boundaries of private inholdings.	Short						■	■	
Safety Zones											
SAF-1	**ISSUE**	**Future expansion of fixed wing operations would expand safety zones.** Potential changes or expansion of fixed wing operations would extend safety zones beyond FTIG boundaries over developed private property.									
SAF-1A	**Safety MCA**	**Incorporate Safety MCA into Local Planning Documents.** Incorporate the Safety Military Compatibility Area into local zoning codes and in Comprehensive Plans by reference. The Safety MCA should address areas located within existing safety zones and one half mile beyond in order to allow for future mission and operational changes by FTIG.	Mid	■	■	■	■	■	□	□	
SAF-1B	**Safety MCA**	**Update Zoning Codes to Address Safety Zones.** Update and / or develop zoning codes to require residential uses and other uses that are proposed within safety zones to undergo a special approval process that includes FTIG review. Uses that would require additional review include, but are not limited to, those within the	Mid	■	■	■	■	■	□	□	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
SAF-1B (cont'd)		Agricultural District that currently permit residential structures, churches, commercial day care, family day care facility, and other group care facilities.									
SAF-1C	**General**	**Provide Safety Zone Maps to Local Realtors and Title Companies.** Dauphin and Lebanon counties should provide maps of the flight safety zones to local realtors and title companies. Maps should include a delineation of properties/areas that are, and may be in the future, subject to operational impacts associated with FTIG flight operations. Information should also include a description of FTIG mission and activities, including the Bollen Range.	Short	■	☐	☐	■	■	☐	☐	
SAF-1D	**Safety MCA**	**Development Deed Notifications for Future Land Sales / Exchanges.** All land divisions, building permits, and other proposed development actions located inside of and within one half mile of a current Accident Potential Zone (APZ) should be required to file a deed notification that identifies the property's location within this area and describes the area of the property located within the APZ as defined by the military. The notice should describe FTIG mission and activities and the potential impacts associated with FTIG's operations.	Short	■	☐	☐	■		☐	☐	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
SAF-2	**ISSUE**	**New and emerging technologies could require modifications to Range safety zones.** New and emerging technologies in weapons, ammunition, and target engagement scenarios could extend the safety buffer areas of Range Surface Danger Zones.									
SAF-2A	**General**	**Continue to Monitor Changes in Army Technologies and Evaluate Safety Buffer Requirements.** Continue to monitor changes in new and emerging technologies pursued by the Army targeted for implementation at FTIG and evaluate the impact of these changes on the current FTIG Range Surface Danger Zone safety buffers. Identify land required for expanded safety buffers. Establish coordination with the community to address compatibility concerns and issues.	On-Going							■	
SAF-2A	**General**	**Pursue Land Acquisition to Implement Changes in Safety Buffer Requirements.** Consider land acquisition strategies to acquire properties in affected areas to comply with Department of Army directives for range safety buffers to be contained within the installation. Consider revising the ACUB program to include properties within proposed expanded Range safety zones based on evaluation and need.	On-Going							■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
Vertical Obstruction (VO)											
VO-1	**ISSUE**	**Existing and Future Vertical Obstructions Impact FTIG Operations and Are Incompatible with Potential Expansions to FTIG's Mission.** The location of additional communication towers and transmission towers on mountainous terrain limits the potential for future mission changes at FTIG.									
VO-1A	**General**	**Optimize Use of Towers.** In order to reduce the number of towers needed in the future, providers should be encouraged to design new towers, structurally and electrically, to accommodate the applicant/licensee's antennas and comparable antennas for at least two additional users (minimum of three users for each tower structure), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.	On-Going	☐	■	■	☐				
VO-1B	**General**	**Include FTIG on Tower Siting and Approval Process.** Include FTIG representatives in review or comment on any proposed communications towers. Local jurisdictions should seek to leverage FTIG's modeling capabilities to identify proper locations of proposed towers. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.	Short	☐	■	■	☐				

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
VO-1C	**Vertical Safety MCA**	**Incorporate Vertical Safety MCA into Local Planning Documents.** Adopt and implement height and land use guidance within the Vertical Safety MCA that encompasses areas within existing Inner Horizontal Surfaces and Approach-Departure Clearance Surfaces for Muir Army Airfield's runway and an additional one half nautical mile beyond these boundaries. Establish height limitations for all proposed structures within the Vertical Safety MCA. Establish land use policies that increase awareness of uses that encourage bird and wildlife habitat and consider limitations on these uses.	Mid	■	■	■					
Vibration (VIB)											
VIB-1	**ISSUE**	**Concern about Vibrational Effects on Real Property.** Noticeable vibration from military activities, e.g., heavy / large vehicle maneuvers and, heavy weapons firing, is occurring off of FTIG, which is raising concerns by residents about potential property damage.									
VIB-1A	**General**	**Prepare Damage Claims Package.** Consider preparing a damage claims process that includes a package for homeowners to complete if damage from vibrations felt by military activities is believed to occur. The process should include instructions for completion of the claims forms, an overview of the inspection	Short						■	■	

ID	MCA Location	Strategy	Timeframe	Lebanon County	Union Township	East Hanover Township (LC)	Dauphin County	Tri-County Regional Planning Commission	Pennsylvania Department of Military and Veterans Affairs	Fort Indiantown Gap	Other
VIB-1A (cont'd)		process, procedures for FTIG review of potential damage, and potential courses of action.									

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