



**FORT
DRUM**
JOINT
LAND
USE
STUDY

JOINT LAND USE STUDY REPORT



FORT DRUM

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This study was prepared under contract with Development Authority of the North Country, New York, with financial support from the Office of Economic Adjustment, Department of Defense. The content does not necessarily reflect the views of the Office of Economic Adjustment.





Joint Land Use Study Report



Prepared for:
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Prepared by:
February 2018

How to Read the JLUS Documents

The Fort Drum Joint Land Use Study (JLUS) consists of four separate documents that provide different levels of information. These four documents are:

JLUS Supporting Information Document

The JLUS Supporting Information document provides a detailed technical background of existing conditions within the Fort Drum JLUS Study Area. It is separated out into five chapters. Chapter 1 provides an introduction and overview of the Fort Drum JLUS and why it was conducted. Chapter 2 introduces the communities that are within the JLUS Study Area and gives an overview of their history and current statistics, including population, housing characteristics, economic outlook, and past, present, and future trends of growth and development. Chapter 3 provides an overview of Fort Drum and its operational facilities, discusses the installation's mission and units, the strategic and local importance of Fort Drum, facility and training capabilities and operations, and potential future missions. It concludes with a discussion of the military footprints that go outside the installation boundaries. Chapter 4 provides an overview of relevant plans, programs, and studies that are tools to address compatibility issues in the JLUS Study Area. Chapter 5 presents the compatibility issues identified and a detailed assessment of each and how it impacts Fort Drum or the surrounding community.

JLUS Report

The JLUS Report is a condensed portfolio of the key issues and strategies identified through the Fort Drum JLUS process. The report includes a user-friendly reference of the JLUS that is accessible and easy-to-use for all stakeholders. This report provides a brief discussion on the purpose and objectives of a JLUS, describes the benefit of a JLUS, and provides an overview of the various JLUS partners that assisted in developing the Fort Drum JLUS to be a useful tool for all partner stakeholders. Finally, this document outlines the relevant compatibility issues accompanied by applicable strategies identified in the Implementation Plan and provides summaries of the strategies separated by stakeholder.

Executive Summary Brochure

The Executive Summary brochure provides a brief overview of the JLUS project and process and highlights the key recommended strategies to address the compatibility issues identified. It also includes Fort Drum Military Compatibility Area and Military Influence Area maps and descriptions of each.

Appendix

The Appendix contains supplemental information to support the issues identification, development of recommendations, and public input that occurred throughout the JLUS process, including all the comments that were received on the different iterations of the documents.

The Fort Drum JLUS was prepared under contract with the Development Authority of the North Country, New York, with financial support from the Office of Economic Adjustment, Department of Defense and New York State Senator Patricia Ritchie. The content was developed through a collaborative stakeholder process and do not necessarily reflect the views of the Office of Economic Adjustment.



The Fort Drum Joint Land Use Study (JLUS) was developed through a collaborative partnership of representatives from varied stakeholders including local communities, conservation groups, industrial wind energy developers, Fort Drum, and other regional entities. Two JLUS committees – the Steering Committee and the Technical Working Group – provided direction and technical oversight on the document and were composed of representatives from the stakeholder groups. Together, the group worked toward a consensus on the issues and recommendations, and participants provided comments at every stage of the drafting process. Individual working group participants do not necessarily agree with or endorse any part or the whole of the final document. The following pages identify the individuals that formally participated in the development of the Fort Drum JLUS.

Steering Committee

The Steering Committee (SC) served an active and important role in providing policy direction during the development of the Fort Drum JLUS. The SC was composed of the following individuals:

Scott Allen, *Town Supervisor*
Town of Pamelaia

Joel Bartlett, *Town Supervisor*
Town of Watertown

Joseph Butler, *Mayor*
City of Watertown

Michael Cappellino, *Town Supervisor*
Town of Fowler

Mary Corriveau, *Chair*
Fort Drum Regional Liaison Organization

Gary Eddy, *Town Supervisor*
Town of Rutland

Bruce Ferguson, *Town Supervisor*
Town of Champion

Julie Halpin, *Public Affairs Office*
Fort Drum

COL Kenneth “Dean” Harrison,
Garrison Commander
Fort Drum

Kurt Hauk, *Public Works*
Fort Drum

Cheryl Horton, *Town Supervisor*
Town of Philadelphia

Steve Hunt, *Regional Director, North Country*
Empire State Development

Stephen Jennings, *Former Councilman*
City of Watertown

COL Bryan Laske,
Former Garrison Commander
Fort Drum

David Parow, *Town Supervisor*
Town of Diana

Franz Phillipe,
Former Plans, Analysis, and Integration
Fort Drum

LTC Todd Polk,
Plans, Analysis, and Integration
Fort Drum

Robert Ritchie, *Town Supervisor*
Town of Gouverneur

John Shaw, *Town Supervisor*
Town of Antwerp

Paul H. Smith, *Town Supervisor*
Town of Wilna

Ron Taylor, *Town Supervisor*
Town of LeRay

Harry Turnbull, *Town Supervisor*
Town of Rossie

Eric Wagenaar,
Deputy to the Garrison Commander
Fort Drum



Technical Working Group

The Technical Working Group (TWG) served a key role in the development of the Fort Drum JLUS. They provided the overall technical support, review, and guidance of the study. The TWG was composed of the following individuals:

Brian Ashley, *Executive Director*

Fort Drum Regional Liaison Organization

Michael Bourcy, *Director of Planning*

Jefferson County

Jenny Briot,

Manager, Renewables Development-NY & NE
Avangrid Renewables

Linda Garrett, *Executive Director*

Tug Hill Tomorrow Land Trust

Jessica Jenack,

Community Development Coordinator
Town of LeRay

Kristopher Johnson,

Regional Network Infrastructure Division Chief
Fort Drum

Derek Kallen, *Air Traffic Manager*

Fort Drum

Dave Kalynycz,

LMR Administrator and Senior Engineer
Fort Drum

Peter Lister, *Maintenance Manager*

ReEnergy

Katie Malinowski, *Executive Director*

Tug Hill Commission

Jim Miller,

Public Work's Environmental Division Chief
Fort Drum

Peggy Murray, *Farm Business Management Educator*

Cornell Cooperative Extension

Andy Nevin, *Senior Planner*

Jefferson County

Mike Nuckols, *Environmental Compliance Branch Chief*

Fort Drum

Doug Osborne, *GIS Manager*

Fort Drum

Frank Pace, *Director of Planning*

Lewis County

Jason Pfothenauer, *Deputy Director of Planning*

St. Lawrence County

Bob Quinn, *Chairman*

Tug Hill Tomorrow Land Trust

Ed Quates, *Archaeologist*

Fort Drum

Carrie Tuttle, *Director of Engineering*

Development Authority of the North Country

Jennifer Voss, *Senior Planner*

City of Watertown

Jason Wagner, *Natural Resources Branch Chief*

Fort Drum

Jean Waterbury, *Senior Planner*

Tug Hill Commission

Development Authority of the North Country

The Development Authority of the North Country served as the overall JLUS project management agency and the administrator of the Office of Economic Adjustment grant that helped to fund the study.



James W. Wright, *Executive Director*

Michelle L. Capone, *Director of Regional Development*

Hartley Bonisteel Schweitzer, *Community Planner, Regional Development*

JLUS Consultant / Technical Advisors

Matrix Design Group, Inc. was the project consultant hired to conduct the JLUS project through coordination with and assistance from the Development Authority of the North Country, the SC, the TWG, the public, and other stakeholders.



Mike Hrapla, *Project Manager*

Bren Cox, AICP, *Lead Planner*

Celeste Werner, AICP, *Deputy Project Manager*

Kurt Waldier, *Planner*

Special Appreciation

The Development Authority of the North Country wishes to recognize and thank all the residents, property owners, community leaders, and other stakeholders for their participation in the workshops and public open houses. Three sets of public workshops / open houses were held throughout the JLUS process. Each set had a workshop / open house in Jefferson County and Lewis County. The following is a list of the workshops / open houses, with the number of attendees who signed in at each workshop / open house.

Public Workshop / Open House # 1

Lewis County – March 29, 2017
18 attendees

Jefferson County – March 28, 2017
33 attendees

Public Workshop / Open House # 2

Lewis County – October 10, 2017
22 attendees

Jefferson County – October 11, 2017
24 attendees

Public Workshop / Open House # 3

Lewis County – November 13, 2017
19 attendees

Jefferson County – November 14, 2017
23 attendees

Please see the next page.



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A

ACS American Community Survey
AGL above ground level
AP3 Army Power Projection Platform
APZs Accident Potential Zones

B

BAH Basic Allowance for Housing
BASH Bird / Wildlife Aircraft Strike Hazard Relevancy Area
BEA Bureau of Economic Analysis
BIO Biological Resources
BLS Bureau of Labor Statistics
BRAC Base Realignment and Closure
BWG BASH Working Group

C

COM Communication / Coordination
CR Cultural Resources
CZ Clear Zone

D

dB decibel
DoD Department of Defense
DOE US Department of Energy's
DSS Dust / Smoke / Steam

E

EA Environmental Assessment
ED Energy Development
EIS Environmental Impact Statement
EMS Environmental Management System
ESA Endangered Species Act

F

FAA Federal Aviation Administration
FONSI Finding of No Significant Impact

G

GIS geographic information system
GMD Ground-based Midcourse Defense

H

HA Housing Availability

I

ICRMP Integrated Cultural Resources Management Plan
ICUZ Installation Compatible Use Zone
IE Infrastructure Extensions
INRMP Integrated Natural Resources Management Plan
IR instrument route

J

JLUS Joint Land Use Study

K

km kilometer

L

LAS Land / Air / Sea Space Competition
LEG Legislative Initiatives
LG Light and Glare
LU Land Use

M

MDA	Missile Defense Agency
mm	millimeter
MOAs	Military Operating Areas
MPO	Metropolitan Planning Organization
MSA	metropolitan statistical area
MSL	mean sea level
MTRs	Military Training Routes
MW	megawatts

N

NEPA	National Environmental Policy Act
NGOs	Nongovernmental organizations
NMFS	NOAA Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Noise
NWS	National Weather Service
NYARNG	New York Army National Guard

O

OEA	Office of Economic Adjustment
ONMP	Operational Noise Management Plan

P

PS	Public Services
PT	Public Trespassing
PV	photovoltaic

R

RC	Roadway Capacity
REPI	Readiness and Environment Protection Integration
ROC	Radar Operations Center
ROD	Record of Decision

S

SA Safety
SC Steering Committee
SC JLUS Steering Committee
SUA Special Use Airspace

T

THTLT Tug Hill Tomorrow Land Trust
TWG Technical Working Group

U

UAV Unmanned Aerial Vehicles
US United States
USFWS US Fish and Wildlife Service

V

V Vibration
VO Vertical Obstructions
VR visual routes

W

WSAAF Wheeler-Sack Army Airfield



Military installations are critical to local economies, generating thousands of jobs and millions of dollars in economic activity and tax revenue annually. The growth of incompatible development around military installations, often referred to as encroachment, has been a leading factor in the loss of training operations at military installations across the country and has resulted in realignment of mission-critical components between military installations. Existing levels and types of encroachment are key factors that are evaluated by the Department of Defense and federal government when considering future missions and realignment of assets from one installation to another. To protect the missions of military facilities and the health of economies and industries that rely on them, encroachment must be addressed through collaboration and joint planning between installations and local communities. This Joint Land Use Study (JLUS) attempts to mitigate existing issues and prevent future issues while strengthening coordination between Fort Drum and the surrounding communities.

Fort Drum is situated in north-central New York, seven miles northeast of downtown Watertown and roughly 25 miles southeast of the Canadian border. The installation comprises 108,733 acres of land, primarily in northeast Jefferson County, with a small portion in northwest Lewis County. St. Lawrence County borders Fort Drum's northeastern edge.

The Fort Drum 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 multi-agency planning process.

What Is a Joint Land Use Study?

A JLUS is a planning process accomplished through the collaborative efforts of a comprehensive list of stakeholders in a defined study area. These stakeholders include local community, state, and federal officials, residents, and the military, who come together to identify compatible land uses and growth management recommendations within and adjacent to active military installations. The intent of the process is to establish and foster a relationship between the local communities, agencies, and Fort Drum.

JLUS Goal

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



JLUS Objectives

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

1. **Understanding.** Convene community and military representatives to identify, confirm, and understand the compatibility issues in an open forum, taking into consideration both community and Fort Drum perspectives and needs. This includes public awareness, education, and input as part of a cohesive outreach program.
2. **Collaboration.** Encourage cooperative land use and resource planning by Fort Drum and surrounding communities so that future community growth and development are compatible with the training and operational missions at Fort Drum, while at the same time seeking ways to reduce military operational impacts on adjacent and nearby lands in the JLUS Study Area.
3. **Actions.** Provide a set of mutually supported tools, activities, and strategies that local jurisdictions, agencies, and Fort Drum can implement to avoid and minimize compatibility issues. 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 actions will help decision makers resolve compatibility issues and prioritize projects within the annual budgeting process of their respective entity / jurisdiction.

Why Prepare a Joint Land Use Study?

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 industry of the communities before incompatibility becomes an issue. Recognizing the close relationship that should exist between installations and adjacent communities, the Department of Defense, Office of Economic Adjustment (OEA) implemented the JLUS program in an effort to mitigate existing and future conflicts and to enhance communication and coordination among all stakeholders. This program aims to protect property rights and control within the JLUS Study Area while also protecting current and future operational and training missions at Fort Drum.

A JLUS serves as an important tool to assist in protecting an installation's missions, both current and future. Fort Drum is an important asset not only for the Department of Defense, but also for the North Country. It provides jobs, economic benefit, and serves invaluable troop training functions. By protecting Fort Drum's mission capabilities through actions such as communication with regional neighbors and developing compatible land uses and limiting incompatible uses around the installation, Fort Drum has a better standing when decisions are made at the national level to consider installations for closure or reallocation of resources. This includes not only loss of mission components or troops, but also gaining new missions, and in turn, new personnel. It is unlikely that Fort Drum would be closed in the near future, but such decisions take into account many different factors. By having a community that is not only supportive through words, but also through actions, Fort Drum is more likely to continue its success with its current missions and may be determined to be an appropriate location for new missions in the future.

Economic Benefit to the Region

Fort Drum contributes positively to the surrounding region's economy both directly through employment, and indirectly through employee purchases at local businesses. In 2016, Fort Drum supported over 72,000 people, including military personnel and their families, retirees, and civilians, and generated a direct economic impact of nearly \$1.2 billion, with an additional \$387 million of indirect impact to the North Country. In lieu of direct jobs and traditional economic output data, the intensity of usage at the installation helps to characterize the economic

potential of Fort Drum on the local economies. In 2016, 23,500 National Guard and Reserve personnel, as well as federal, state, and local agencies were reported to have used Fort Drum for training.

JLUS Study Area

The Fort Drum JLUS Study Area is defined as the land, water, and air areas near Fort Drum that can have an impact on current or future military operations or be impacted by military operations. Detailed information about population, economics, and activities that occur in the Study Area is included in Chapter 2 (Community Profile) and Chapter 3 (Military Profile) of JLUS Supporting Information document. The JLUS Study Area encompasses land within a 30-mile radius around the Fort Drum Iraqi Freedom Gate, and extends to a distance of 60 miles to assess alternative energy development impacts. The 60-mile radius is to account for Wheeler-Sack Army Airfield's air traffic control radar operating area. The Study Area only includes land within the United States and does not extend into Canada. Figure 1 illustrates the Fort Drum JLUS 30-mile Study Area and Figure 2 illustrates the 60-mile Study Area.

Public and Stakeholder Outreach

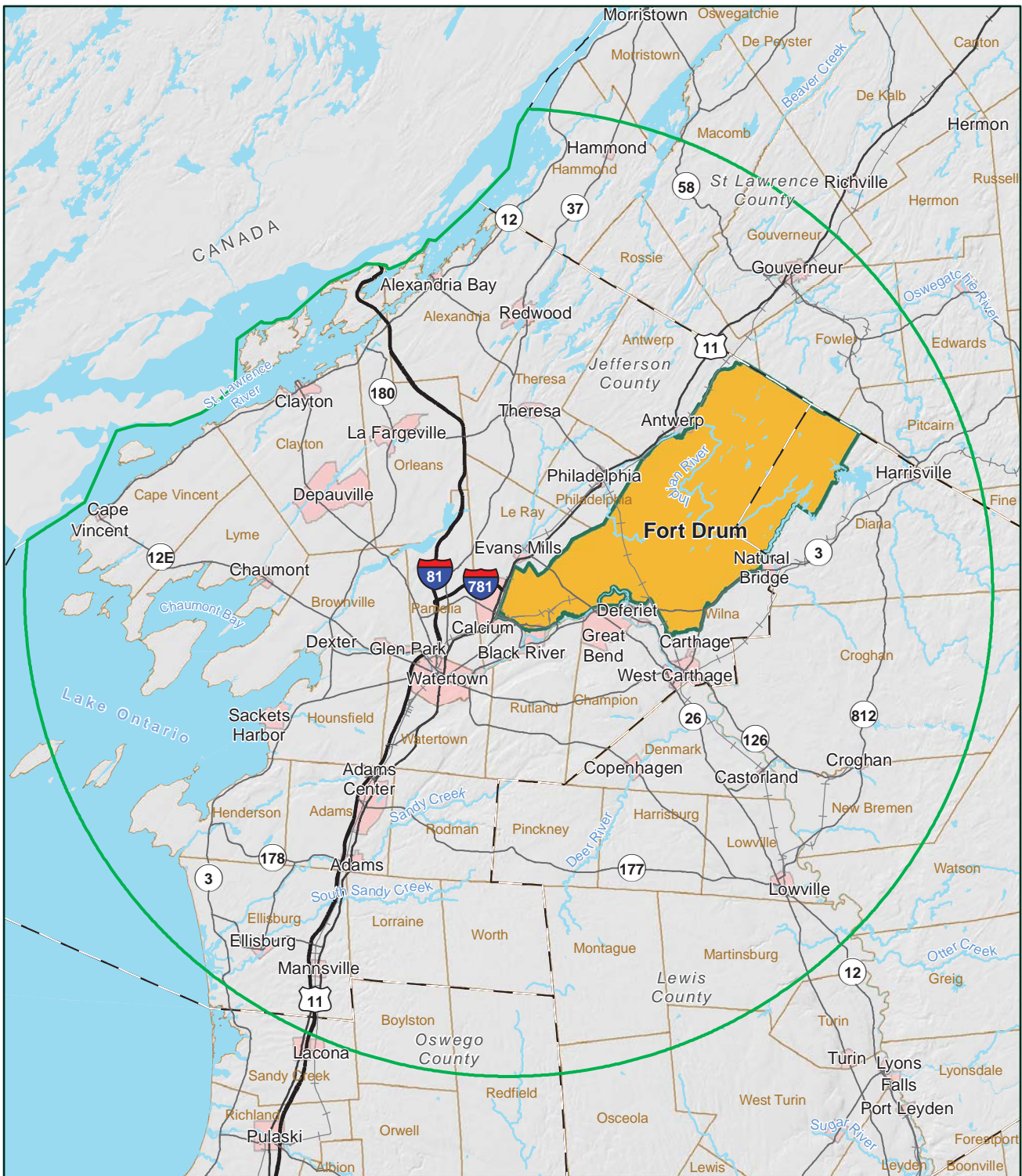
The JLUS process is designed to create a locally relevant document that builds consensus and obtains support from the various stakeholders involved. To achieve the JLUS goals and objectives, the process included a public outreach program with a variety of participation opportunities for interested and affected parties.

Stakeholders

An early step in any planning process is the identification of stakeholders. Informing or involving stakeholders early in the project is instrumental in the identification of their most important compatibility issues and to address and resolve them through the development of integrated strategies and measures. Stakeholders include individuals, groups, organizations, and governmental entities interested in, affected by, or affecting the outcome of the JLUS project. Stakeholders identified for the Fort Drum JLUS included, but were not limited to:

- Local jurisdictions (City, towns, villages and counties)
- DOD officials (including OEA and Army representatives) and Fort Drum personnel
- Local, regional, and state planning, regulatory, and land management agencies
- Federal landholding and regulatory agencies
- The public (including residents and landowners)
- Environmental advocacy organizations
- Nongovernmental organizations (NGOs)
- Other special interest groups

The term JLUS Partner means that the county, city, town, village, organization, agency, or other stakeholder participated in the development of the JLUS and a representative member on either the Steering Committee of the Technical Working Group. Partner communities are those that had membership on the JLUS committees.



Legend

- 30-mile Study Area
- Fort Drum
- County Boundary
- Town
- City / Village / Hamlet
- Interstate
- US Highway
- State Highway
- Railroad
- Water Body
- Stream / River

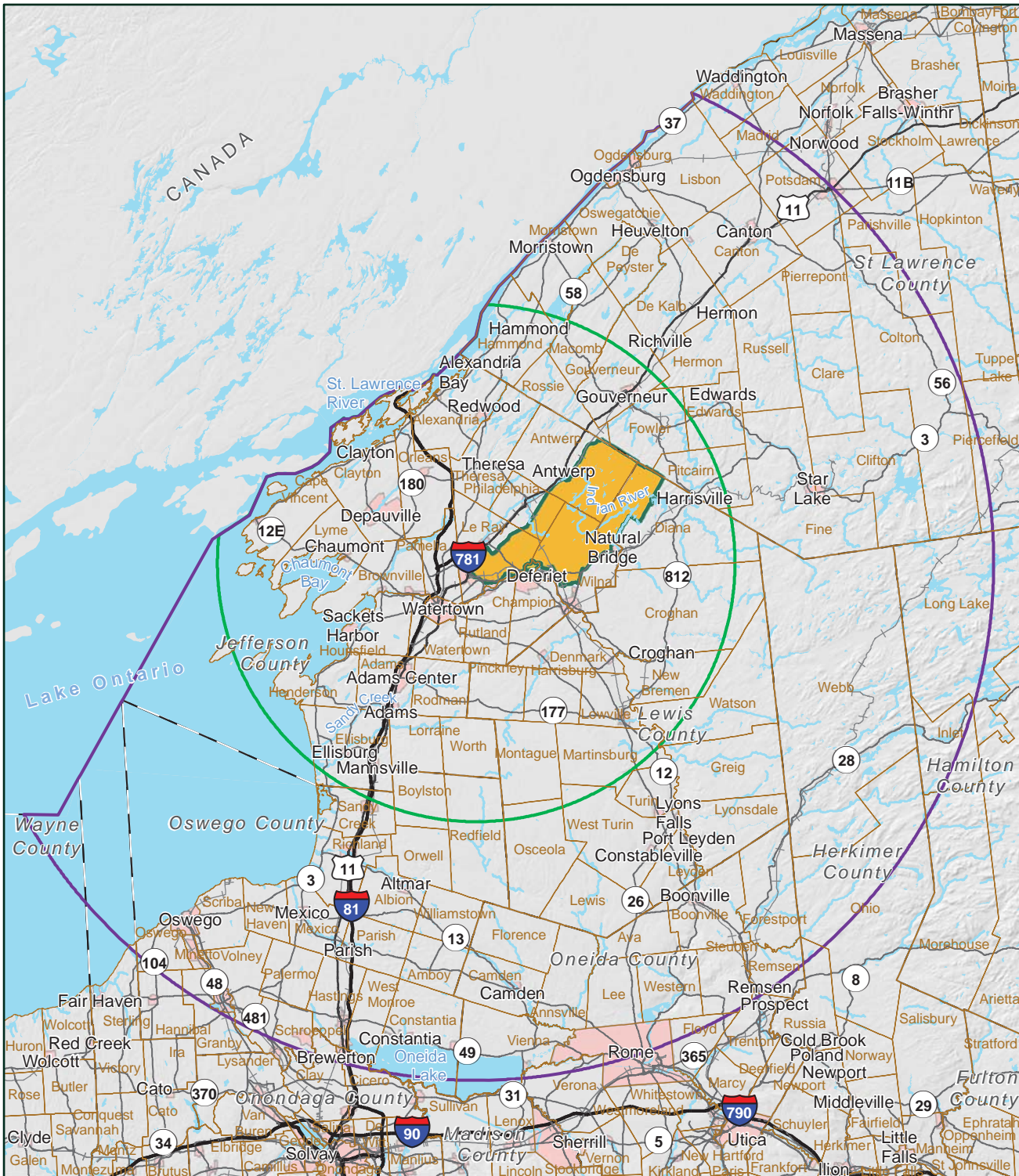


Source: Fort Drum, 2016. Matrix Design Group, 2016.



Figure 1

Fort Drum JLUS 30-mile Study Area



Legend

- 60-mile Study Area
- 30-mile Study Area
- Fort Drum
- County Boundary
- City / Village / Hamlet
- Interstate
- US Highway
- State Highway
- Railroad
- Water Body
- Stream / River

Source: Fort Drum, 2016. Matrix Design Group, 2016.

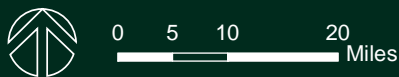


Figure 2
Fort Drum JLUS 60-mile Study Area

Steering Committee and Technical Working Group

The development of the Fort Drum JLUS was guided by two committees, comprising staff from local governments, Fort Drum, federal and state agencies, resource agencies, and other stakeholders. The two committees were the Steering Committee (SC) and the Technical Working Group (TWG).

JLUS Steering Committee. The SC consisted of elected officials and decision makers from participating jurisdictions, military installation leadership, and representatives from other interested and affected agencies. The SC was responsible for guiding the direction of the JLUS, accepting the study design, offering policy recommendations and accepting that the final draft of the document meets the requirements of the grant.

JLUS Technical Working Group. The TWG was responsible for identifying and studying technical issues. Membership included representatives from local jurisdictions, agencies, and Fort Drum with technical expertise in one or more of the compatibility factors listed in Chapter 5, Compatibility Assessment. The TWG identified and addressed technical issues, provided feedback on report development, and assisted in the development and evaluation of implementation strategies and tools.

The SC and TWG served as liaisons to their respective stakeholder groups. SC and TWG 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. SC 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 SC, and the TWG are identified in Tables 1, 2, and 3, respectively.

Table 1. JLUS Sponsor Responsibilities and Participants

Responsibilities	Participants
<ul style="list-style-type: none"> ■ Coordination ■ Accountability ■ Grant management ■ Financial contribution 	<ul style="list-style-type: none"> ■ Development Authority of the North Country ■ Office of Economic Adjustment

Table 2. JLUS Steering Committee (SC) Responsibilities and Participants

Responsibilities	Participants
<ul style="list-style-type: none"> ■ Policy direction ■ Study oversight ■ Monitoring ■ Report acceptance 	<ul style="list-style-type: none"> ■ City of Watertown ■ Empire State Development ■ Fort Drum ■ Fort Drum Regional Liaison Organization ■ Town of Antwerp ■ Town of Champion ■ Town of Diana ■ Town of Fowler ■ Town of Gouverneur ■ Town of LeRay ■ Town of Pamela ■ Town of Philadelphia ■ Town of Rossie ■ Town of Rutland ■ Town of Watertown ■ Town of Wilna

Table 3. JLUS Technical Working Group (TWG) Responsibilities and Participants

Responsibilities	Participants
<ul style="list-style-type: none"> ■ Identify issues ■ Provide expertise to address technical issues ■ Evaluate and recommend implementation options to the SC ■ Provide draft and final report recommendations to the SC 	<ul style="list-style-type: none"> ■ City of Watertown ■ Cornell Cooperative Extension of Lewis County ■ Fort Drum ■ Fort Drum Regional Liaison Organization ■ Avangrid Renewables ■ Jefferson County ■ Lewis County ■ ReEnergy ■ St. Lawrence County ■ Town of LeRay ■ Tug Hill Commission ■ Tug Hill Tomorrow Land Trust

Public Workshops

In addition to the SC and TWG meetings, a series of public workshops were held throughout the development of the JLUS. 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 received input on the identified issues and proposed strategies. Each workshop included an exercise providing a “hands on,” interactive opportunity for the public to participate in the development of the study. The results of the exercises that were conducted at the public workshops are included in the JLUS Appendix.

Public Outreach Materials

JLUS Overview Fact Sheet. At the beginning of the JLUS project, a JLUS Overview Fact Sheet was developed that describes the JLUS program, objectives, an overview of the 25 compatibility factors that were analyzed throughout the project, and the proposed Fort Drum JLUS Study Area. This Fact Sheet was made available at the public workshops, committee meetings, and posted on the project webpage for download.

Strategy Tools Brochure. The Strategy Tools Brochure was prepared for the second public workshop. 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 provides an overview of the strategy types that could be applied to address compatibility issues around Fort Drum.



FACT SHEET #1 OVERVIEW / FACTORS

What Are the Goal and Objectives of a JLUS?

The goal of a JLUS is to reduce potential conflicts between military installations and surrounding areas while accommodating new growth and economic development, sustaining economic vitality, protecting public health and safety, and protecting the operational missions of Fort Drum. JLUS programs have three core objectives:

Understanding. Increase communication between the military, local jurisdictions, and other stakeholders to promote an understanding of the strong economic and physical relationship between Fort Drum and its neighbors.

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

Actions. Develop and implement strategies for reducing the impacts of existing and future incompatible activities on the community and military operations.

Who Will Guide the JLUS Development?

Two committees (comprising representatives from local communities, 3 counties, military, and other stakeholders), together with the public, will guide the development of the JLUS. Each group has an important role to play.

Steering Committee (SC). This committee contains elected officials representing jurisdictions in the JLUS Study Area, federal and state agency officials, and military leadership. The SC is responsible for direction of the JLUS and monitoring the implementation and adoption of policies and strategies.

Technical Working Group (TWG). This committee contains representatives from local jurisdictions, agencies, and other stakeholders with expertise in one or more of the 25 compatibility factors identified on pages 2 and 3. The TWG identifies and addresses technical issues, provides feedback on report development, and assists in the development and evaluation of implementation strategies.

Public. The public will be involved in the development of the JLUS by providing input to the process, informing the representatives of the SC of their concerns and recommendations, submitting comments and feedback online at www.fortdrumjlus.com, and participating in the JLUS public workshops.

Why is it Important to Partner with Fort Drum?

Fort Drum is a strategic asset in the United States Army and is home to the 10th Mountain Division. It is also one of the most deployed active divisions of the US Army and serves as a Regional Collective Training Center for a wide number of units across the Army, Navy, and Air Force. According to the Economic Impact Statement for fiscal year 2015, Fort Drum has a population made up of military personnel and their dependents, and civilian personnel totaling over 35,000 people, plus an additional 2,857 retired military personnel residing within the local area. Fort Drum is the largest employer in Northern New York, totaling 19,314 jobs between soldiers and civilians. Based on payroll, contracts, and secondary job creation, the base's total annual economic impact on the region was over \$1.2 billion in 2015—totaling a 127% increase since 2008.

What is a Joint Land Use Study?

A Joint Land Use Study (JLUS) is a cooperative planning effort conducted as a joint venture between an active military installation, surrounding jurisdictions, state and federal agencies, and other affected stakeholders to address compatibility around military installations. The Fort Drum JLUS is funded by a grant from the Department of Defense Office of Economic Adjustments (OEA) and contributions by the JLUS sponsors, Development Authority of the North Country. The JLUS effort can directly benefit both Fort Drum and the surrounding region by:

- ◆ Protecting the health and safety of surrounding residents and workers;
- ◆ Preserving long-term land use compatibility between Fort Drum and the surrounding communities;
- ◆ Promoting community planning that addresses compatibility issues;
- ◆ Enhancing cooperation between Fort Drum and community officials; and
- ◆ Integrating surrounding local jurisdiction growth policy plans with the installation's plans



FACT SHEET #2 STRATEGY TOOLBOX

What are JLUS Strategies?

JLUS strategies constitute a variety of actions that local governments, military installations, agencies, and other stakeholders can take to promote compatible land use planning. When these strategies are implemented, existing and potential compatibility issues arising from the civilian / military interface can be removed or significantly reduced. As such, the recommended strategies function as the heart of the JLUS document and are the culmination of the planning process.

The strategy types presented within this brochure constitute a "toolbox" of the possible types of actions that can be taken to address the range of compatibility issues identified during the JLUS process. This document is intended to start the discussion to determine specific strategies that are useful for the JLUS Study Area. For each strategy type, a brief overview is provided to assist in communicating a general understanding of its intent. It will be up to each individual stakeholder to determine the best assortment of tools / strategies that are appropriate within their communities.

It is important to note that once the JLUS process is completed, the final document is not an adopted plan, but rather a set of recommended strategies which will require further actions by JLUS participants to be successful.



The Strategy "Toolbox"

- ◆ Acquisition
- ◆ Airport Master Plan / Airspace Study
- ◆ Avigation Easement
- ◆ Base Planning
- ◆ Building Codes / Construction Standards
- ◆ Capital Improvement Program
- ◆ Cluster Development
- ◆ Code Enforcement
- ◆ Communication and Coordination
- ◆ Comprehensive / General / Master Plans
- ◆ Habitat Conservation Tools
- ◆ Legislative Tools
- ◆ Memorandum of Understanding
- ◆ Military Influence Areas
- ◆ National Environmental Policy Act
- ◆ Partnership with Non-Governmental Organizations
- ◆ Real Estate Disclosures
- ◆ Zoning Ordinance / Subdivision Regulations

Project Webpage. A project webpage was developed and maintained by the Development Authority of the North Country to provide stakeholders, the public, and media representatives with access to project information. This webpage was maintained for the entire duration of the project to ensure information was easily accessible. Information on the webpage included program points of contact, documents, maps, public meeting information, and a list of SC and TWG members. The project webpage address that was used to provide information during the JLUS process was hosted by the Development Authority of the North Country at www.danc.org/fort-drum-joint-land-use-study.

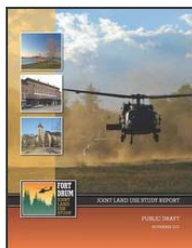
Development Authority OF THE NORTH COUNTRY

ABOUT
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Operations / Regional Development / Fort Drum Joint Land Use Study

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Fort Drum Joint Land Use Study



**Fort Drum JLUS Report - Public Review & Comment Period
November 6-27, 2017**

The Public Draft Fort Drum Joint Land Use Study (JLUS) and Background Report have been released for public review and comment. These documents are a result of the culmination of a year-long collaborative process among the Development Authority of the North Country, Jefferson, Lewis, and St. Lawrence counties, the communities surrounding Fort Drum, Fort Drum staff, and other agencies and organizations in the region. The documents provide an overview of the JLUS process, the Study Area and communities involved in the JLUS, Fort Drum missions and operations, a list of the compatibility issues identified through the process, and the Implementation Plan that includes the recommended strategies identified to address the compatibility issues.



This chapter provides information about the surrounding communities that participated in the Fort Drum Joint Land Use Study (JLUS). Capturing and describing certain demographic characteristics of these communities provides a baseline context from which informed decisions can be made when assessing compatibility strategies. The goal is to provide information that enables stakeholders to understand population and development trends that have the potential to affect Fort Drum’s future. This information is intended to be considered with other factors to help decision-makers generate coherent, informed planning policies and decisions about future development and economic growth of the communities they represent before compatibility issues arise.

Information presented in this chapter includes population trends and economic development within the region to better understand the impacts on and from Fort Drum.

This chapter is also intended to inform Fort Drum about the types of activities occurring “outside the fence” when considering future missions and operations.

Study Area Growth Trends

Due to a population growth that exceeded 50,000 people identified through the 2010 Census, the US Census Bureau declared the Watertown-Fort Drum region as an urbanized area in October 2012. Additionally, the White House Office of Management and Budget declared the Watertown-Fort Drum urbanized area as a metropolitan statistical area (MSA) in 2013. A MSA is a geographical region that centers on a relatively high population density and has close economic ties throughout its area. Through these designations, federal mandates require the creation of a Metropolitan Planning Organization (MPO), development of a regional transportation plan, and implementation of separate municipal storm sewer system permits to be eligible for certain federal funding programs. The Watertown-Jefferson County Area Transportation Council was established as the MPO and is responsible for developing and maintaining a Regional Transportation Plan and a Transportation Improvement Program. These two plans were being developed at the time this JLUS was written. The designations of urbanized area and MSA will also change the way federal funding is received, such as through the Community Development Block Grant program and federal housing funding. It is likely to have a positive impact for the area making it more attractive and enticing to businesses, manufacturers, and other economic sectors to consider locating in the region.

Population

While Lewis County and St. Lawrence County have seen little growth since 2000, Jefferson County’s population increased by 6.5 percent from 2000 to 2015. Jefferson County’s population initially decreased from 2000 to 2004, but started to increase between 2004 and 2015. This is due in large part to Fort Drum’s growth as it expanded its military and civilian workforce 27 percent between 2003 and 2015 according to the FY 2015 Fort Drum Economic Impact Statement. The towns of LeRay and Pamela have experienced the most growth between 2000 and 2015, due to their proximity to Fort Drum and the effects of increased construction and housing to support personnel working at the installation. The towns of Champion and Rutland also had moderate population growth, likely due to their proximity to additional gates located on the southern portion of Fort Drum.



Table 4 shows the 2000 and 2010 US Census population totals, and 2015 ACS population totals, plus each jurisdiction’s population change from 2000-2015.

Table 4. Population Change 2000-2015 for the Fort Drum JLUS Study Area

Jurisdiction	2000	2010	2015	Number Change 2000-2015	Percent Change 2000-2015
New York State	18,976,457	19,378,102	19,673,174	696,717	3.7%
Jefferson County	111,738	116,229	118,947	7,209	6.5%
City of Watertown	26,705	27,023	27,250	545	2.0%
Town of Antwerp	1,793	1,846	1,693	-100	-5.6%
Town of Champion	4,361	4,494	4,619	258	5.9%
Town of LeRay	19,836	21,782	22,385	2549	12.9%
Town of Pamelaia	2,897	3,160	3,194	297	10.3%
Town of Philadelphia	2,140	1,947	1,786	-354	-16.5%
Town of Rutland	2,959	3,060	3,156	197	6.7%
Town of Watertown	4,482	4,470	4,813	331	7.4%
Town of Wilna	6,235	6,427	6,477	242	3.9%
Lewis County	26,944	27,087	27,124	180	0.7%
Town of Diana	1,661	1,709	1,509	-152	-9.2%
St. Lawrence County	111,931	111,944	112,011	80	0.1%
Town of Fowler	2,180	2,202	2,206	26	1.2%
Town of Gouverneur	7,418	7,085	7,027	-391	-5.3%
Town of Pitcairn	783	846	733	-50	-6.4%
Town of Rossie	787	877	777	-10	-1.3%

Source: 2000 and 2010 US Census, 2015 American Community Survey

Note: The US Census is a survey conducted every 10 years to ENCOMPASS all americans to determine the number of Congressional appointees for each state. The American Community Survey (ACS) is a multi-year estimation that uses a sample of the population to make estimations. ACS information is used during the years inbetween the decennial census to provide an estimation of population, demographics, and other social information.

In addition to the population growth already experienced within Jefferson County between 2000 and 2015, the population is projected to continue increasing into the foreseeable future, approximately 500 people per year. This equates to a total growth of 12.8 percent in a 30-year span from 2010 to 2040, far greater than that of New York State as a whole. On the other hand, both Lewis County and St. Lawrence County are expected to decrease over 10 percent in population by the year 2040. These two counties combined are projected to decrease in population nearly as much as Jefferson County is expected to increase in population, roughly evening out the Fort Drum Study Area’s population gains and losses by the year 2040, resulting in a population close to what it is today.

These projected populations are not expected to be exact; however, they are estimated to help cities and counties develop land use priorities to reduce impacts of future growth challenges. Table 5 shows the population projections for New York State, Jefferson County, and St. Lawrence County.

Table 5. Future Population Projections

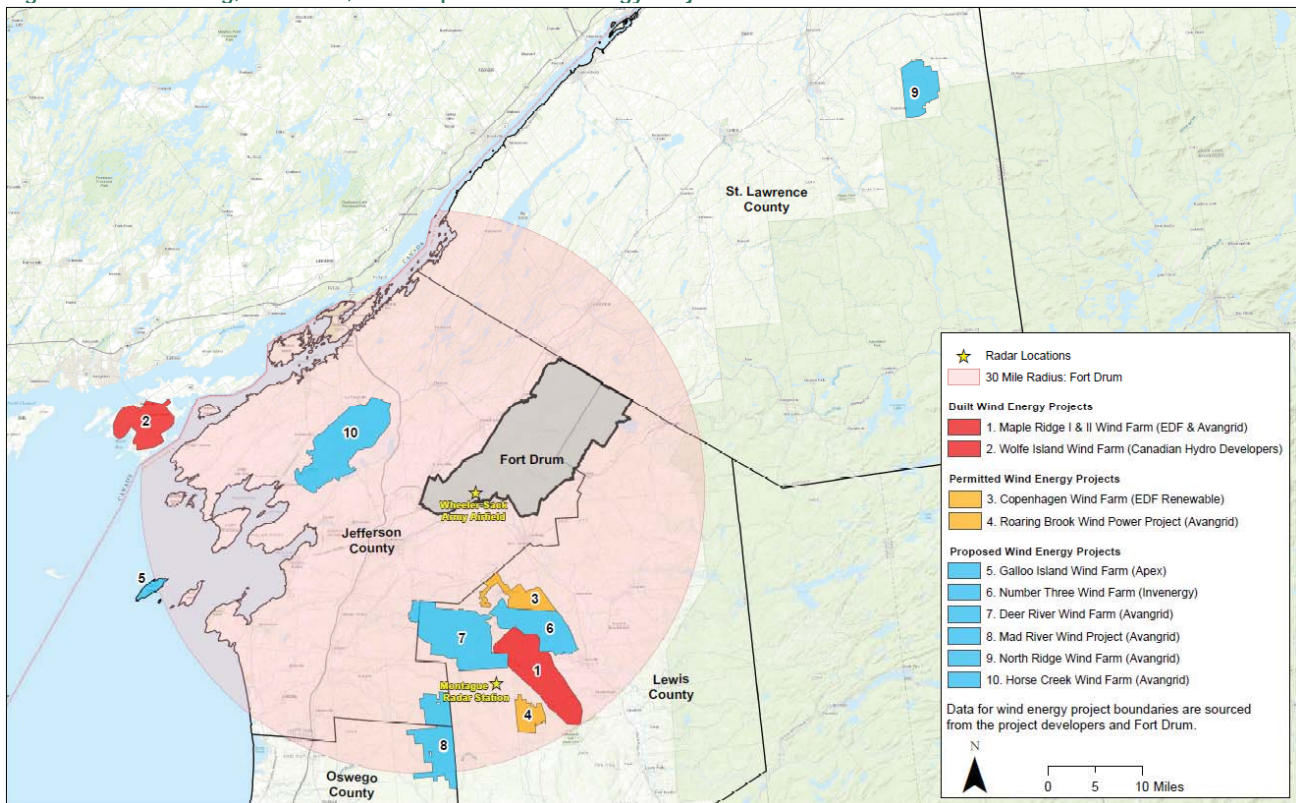
Jurisdiction	2010 Census	2040 Est.	Number Change Est.	Percent Change Est.
New York State	19,378,102	19,623,506	245,404	1.7%
Jefferson County	115,885	130,677	14,792	12.8%
Lewis County	26,944	23,148	-3,796	-14.1%
St. Lawrence County	111,931	99,887	-12,044	-10.8%

Source: Cornell University Program on Applied Demographics, September 8, 2011

Current Development Overview Around Fort Drum

Land uses throughout the JLUS Study Area range from forested open space and agriculture, to residential and urban population centers, such as the City of Watertown and villages of Antwerp, Carthage, Evans Mills, and Philadelphia. At the time this JLUS was prepared, there were two existing, two permitted, and five proposed industrial wind energy project developments within 30 miles of Fort Drum. These are illustrated on Figure 3.

Figure 3. Existing, Permitted, and Proposed Wind Energy Projects Near Fort Drum



Source: Fort Drum, January 2018

Economic Growth Trends

The economy in the three-county region surrounding Fort Drum has remained relatively consistent between 2006 and 2015 according to the US Bureau of Economic Analysis (BEA). State and local governments and the military account for the largest percentage of employment (based on number of employees) within this region over the past 10 years, with over 30 percent of the total employees. Fort Drum is by far the largest individual employer within the three-county region with 18,854 total employees in 2016—several thousand more than the next largest employer.

The retail trade industry is the largest non-governmental industry, with 12.4 percent of the total employment in 2015, followed by manufacturing as the next largest non-governmental industry with 5.2 percent. Total employment between 2006 and 2011 remained relatively consistent within the region, fluctuating between 130,000 and 132,000 employees. However, total employment decreased each year between 2011 and 2015 to a 10-year low of less than 127,000 in 2015. Similarly, data obtained from the US Bureau of Labor Statistics (BLS) show the unemployment rate has also fluctuated within this time period. There was a spike in unemployment rates following 2008, consistent with the national recession. However, these unemployment rates have been decreasing from 2012 to 2015. Compared to the State of New York, the three-county region has consistently been roughly one to 1.5 percent greater than the statewide unemployment average.

Although it is a rural region and a large portion of the land is dedicated to farming, agriculture currently only accounts for three percent of the region's employment; however, this may be misleading as it is often difficult to accurately capture and account for agricultural employment data. While agricultural land uses account for large amounts of land, the number of employees is often much smaller than other industries, with smaller footprints in terms of land size.

This chapter provides an overview of the military history and current operations at Fort Drum. Identifying and describing the various activities performed on the military installation provides valuable insight into the importance of Fort Drum as a strong community partner and national strategic asset. This information helps stakeholders to make informed decisions regarding the future development and economic growth of their communities, which may be influenced by installation activities due to their relative proximity to Fort Drum. These decisions potentially impact the continued existence and future role of the installation.

Economic Impact

Fort Drum is designated as a Regional Collective Training Center by the Department of the Army and provides training and base operations support to 11 states, as well as parts of Canada. An additional 23,500 Reserve and National Guard members and personnel from other federal, state, and local agencies use Fort Drum facilities for training annually. Regional law enforcement and fire department units also use Fort Drum facilities for training on a frequent basis.

In FY 2016, the total direct economic impact Fort Drum had upon its surrounding communities was \$1.2 billion, a decrease of nearly \$36 million from FY 2015 and the lowest it has been in over 10 years. However, the direct economic impact upon its community has increased by more than 120 percent from \$529 million since Fort Drum's expansion in 2003. This has helped support healthy and sustainable local economies throughout the JLUS Study Area.

Installation Setting

Fort Drum comprises 108,733 acres in northwestern New York State. The majority of the installation, including the cantonment area and airfield, is located in Jefferson County, while a small portion in the northeast of the base is located in Lewis County. St. Lawrence County forms the northern edge of the base. Fort Drum is situated approximately seven miles northeast of the City of Watertown's downtown, and is included in the Watertown-Fort Drum, New York Metropolitan Statistical Area.

Fort Drum is located within five different ecoregions: Eastern Ontario Plains, St. Lawrence Valley, Western Adirondack Transition, Indian River Transition, and Black River Valley. The Eastern Ontario Plains ecoregion covers most of Fort Drum's southern edge and is characterized by hillocks and small plains with sandy soils. The St. Lawrence Valley ecoregion is located along most of the installation's western edge, and spreads towards the center of the installation. This ecoregion is characterized by a unique silt composition with poor drainage. The Western Adirondack Transition ecoregion covers nearly the entire northern portion of Fort Drum. This ecoregion has a higher elevation than others within the installation, as well as vast forests and bedrock outcroppings with steep drop-offs. The Indian River Transition ecoregion includes a small portion along Fort Drum's northwestern border and is characterized by its clay-based soil. Lastly, the Black River Valley ecoregion covers only a small portion of Fort Drum's southern border. This ecoregion differs from the surrounding Eastern Ontario Plains ecoregion by its Galen and Arkport soils.

Source: Fort Drum Integrated Natural Resources Management Plan, 2011



Fort Drum has six general entry gates onto the installation. The main gate, LTG Paul Cerjan Gate, is located near the intersection of Interstate 781 and US Route 11 and is operational 24 hours a day. The Mt. Belvedere Gate on the south side of Fort Drum and the Oneida Gate (also known as the Gas Alley Gate) and Wheeler-Sack Army Airfield (which provides access to the airfield) Gate along State Route 26 are also open 24 hours a day. Fort Drum is working with the New York Department of Transportation to construct an overpass that will connect the cantonment area to Wheeler-Sack Army Airfield (WSAAF) over State Route 26 so that authorized personnel do not have to leave and re-enter through the gates and to alleviate some traffic caused by military and civilian interface. The Nash and 45th Infantry gates are operational on an as-needed basis. Entry through any of the gates requires proper credentials and authorization.

The 108,733 acres that comprise Fort Drum are divided into three main areas: the cantonment area, WSAAF, and the training area.

Cantonment Area

Except for WSAAF, most of the development on Fort Drum is contained within the cantonment area. Fort Drum's cantonment area is located in the southwestern portion of the base. It contains the installation's housing and lodging units and support facilities, including the Garrison headquarters, administrative buildings, vehicle maintenance facilities, barracks, classrooms and educational amenities, and recreational facilities. The cantonment area contains 10,434 acres of land, roughly 3,600 acres of which are local training areas. It contains 7,900 barracks rooms and 3,863 housing units.

Source: Fort Drum Integrated Natural Resources Management Plan, 2011

Wheeler-Sack Army Airfield

The Wheeler-Sack Army Airfield is an Army Power Projection Platform (AP3) and contains 1,930 acres of land immediately northeast of the cantonment area. The airfield was significantly expanded in 1997 after the Defense Base Realignment and Closure (BRAC) Commission recommended the deployment mission at Griffiss Air Force Base in Rome, New York be realigned to WSAAF at Fort Drum. The airfield, aviation ranges, and surrounding airspace are used by the Army, Air Force, Air National Guard, Marine Corps, and Navy for various training missions.

Source: Fort Drum Integrated Natural Resources Management Plan, 2011

This airfield currently has three fixed-wing runways, and several locations for rotary-wing aircraft. The three fixed-wing runways are 3/21, 15/33, and 8/26. Runway 3/21 is the longest runway at 10,000 feet in length by 150 feet wide and can support any aircraft in the Department of Defense (DOD) inventory. Runway 15/33 is 4,999 feet long and Runway 8/26 is 4,482 feet long. There is also a launch and recovery runway used by Tactical Unmanned Aerial Vehicles (UAV). The air traffic control tower operates 24 hours a day, seven days a week and utilizes Army Radar Approach Control for enhanced functionality. The airfield can support large-scale deployment activity with a 1,200-Soldier passenger terminal, all of the aerospace ground equipment required to support up to six wide-body aircraft (such as C-5, C-17, and B-747 aircraft) simultaneously, and can park at least nine large-frame-wide body aircraft at any given time without impacting the operations of the 10th Combat Aviation Brigade and other aviation operations. The airfield can operate in all weather conditions and supports a full range of aircraft services capabilities, including fueling, deicing, and transient alert functions.

Source: Fort Drum Installation Compatible Use Zone Study, April 2016; and Fort Drum Garrison Training and Airfield Operations Update, September 2015

Aircraft predominantly operating at WSAAF and in the Fort Drum airspace include:

- A-10 Warthog
- AH-64 Apache
- C-130 Hercules
- C-17 Globemaster
- C-5A Galaxy
- CH-47 Chinook
- F-16 Falcon
- UH-60 Blackhawk
- Unmanned Aerial Vehicles, including MQ-9 Reaper, MQ-1 Gray Eagle, RQ-7 Shadow, RQ-11 Raven, and RQ-20 Puma (WSAAF is the only US Army airfield that supports MQ-9 live-bomb training and contiguous air-to-ground bombing range supported by on-site Forward Operating Location)

Training Area

The training area comprises 78,077 acres of Fort Drum northeast of the cantonment area and Wheeler-Sack Army Airfield. The Impact Area covers an additional 20,222 acres and is surrounded by training area. There are a total of 70 training areas throughout Fort Drum, with the capability to support a multitude of training operations and missions for the US Army, US Air Force, and National Guard. The training area is dedicated to three primary training functions: ranges for weapon training; maneuver areas to train on varying terrain and landscapes; and built-up areas to train in an urban environment. Fort Drum has 47 ranges, 195 surveyed firing points, 40 small caliber weapons firing ranges, and one Impact Area. In addition, there is a First US Army Convoy Live Fire, Live Fire Shoothouse, several Military Operations Urban Terrain, Combined Arms Collective Training Facility, and a Home Station Trainer.

Source: *Fort Drum Installation Compatible Use Zone Study, 2016*

Military Operations

Fort Drum's primary mission statement is:

"Team Drum generates, rapidly deploys and sustains ready forces to meet national security requirements while caring for Soldiers, Families and Civilians."

Fort Drum is a Regional Collective Training Center (one of 27 such installations in the continental US) with an area of more than 108,000 acres and supports a wide variety of training and military operations. It serves both the Army and New York Army National Guard, as well as National Guard units from other states in the northeastern US, local law enforcement agencies, and other federal organizations. The purpose of a Regional Collective Training Capability is to enable the operating force to execute the emerging sustainable readiness model. Fort Drum hosts classroom and educational facilities, including digital and virtual training in flight simulators, air traffic control tower simulation, Aviation Combined Arms Tactical Trainer, Engagement Skills Trainer, Medical Simulation Training Center, fiber optic connectivity, and various other types of training.

Fort Drum's size and landscape support multifaceted training operations for both land and air, including troop and vehicle maneuver training, live and simulated weapons firing, aerial gunnery and bombing, brigade battle simulation exercises, and company / team / platoon situational training exercises, most of which occur in the 70 training areas on the installation, including Wheeler-Sack Army Airfield (WSAAF).

Future Missions

Missile Defense Agency

Fort Drum is currently under consideration by the Missile Defense Agency (MDA) for a new Ground-based Midcourse Defense (GMD) system. GMD systems track, intercept, and destroy enemy attack missiles en route to the US. The MDA has identified a 1,000-acre site on the east side of Fort Drum, which would require the closure of Route 3A.

There are two other sites where the MDA site may be developed—Camp Ravenna Joint Training Center in Ohio and Fort Custer Training Center in Michigan. The Pentagon will recommend one of the sites for Congressional approval before any development begins.

Source: NCP, 2016 and FDRLO "Missile Defense System Likely a Long-term Project"

Military Operations Footprints

Mission and training activities at Fort Drum generate a number of impacts that can affect the health, safety, and quality of life of the general public in surrounding communities. Examples of mission impacts include noise and vibration from demolition activities or airborne operations.

Conversely, the military mission is susceptible to impacts created by nearby civilian activities, land use development, and environmental constraints. Understanding the overlapping spatial patterns of these impacts around the installation and ranges is essential for promoting compatible and fully coordinated land use decisions.

These overlapping spatial patterns create the mission footprint, which serves as a compatibility tool for surrounding communities in making informed land use decisions.

Small Arms Noise Zones

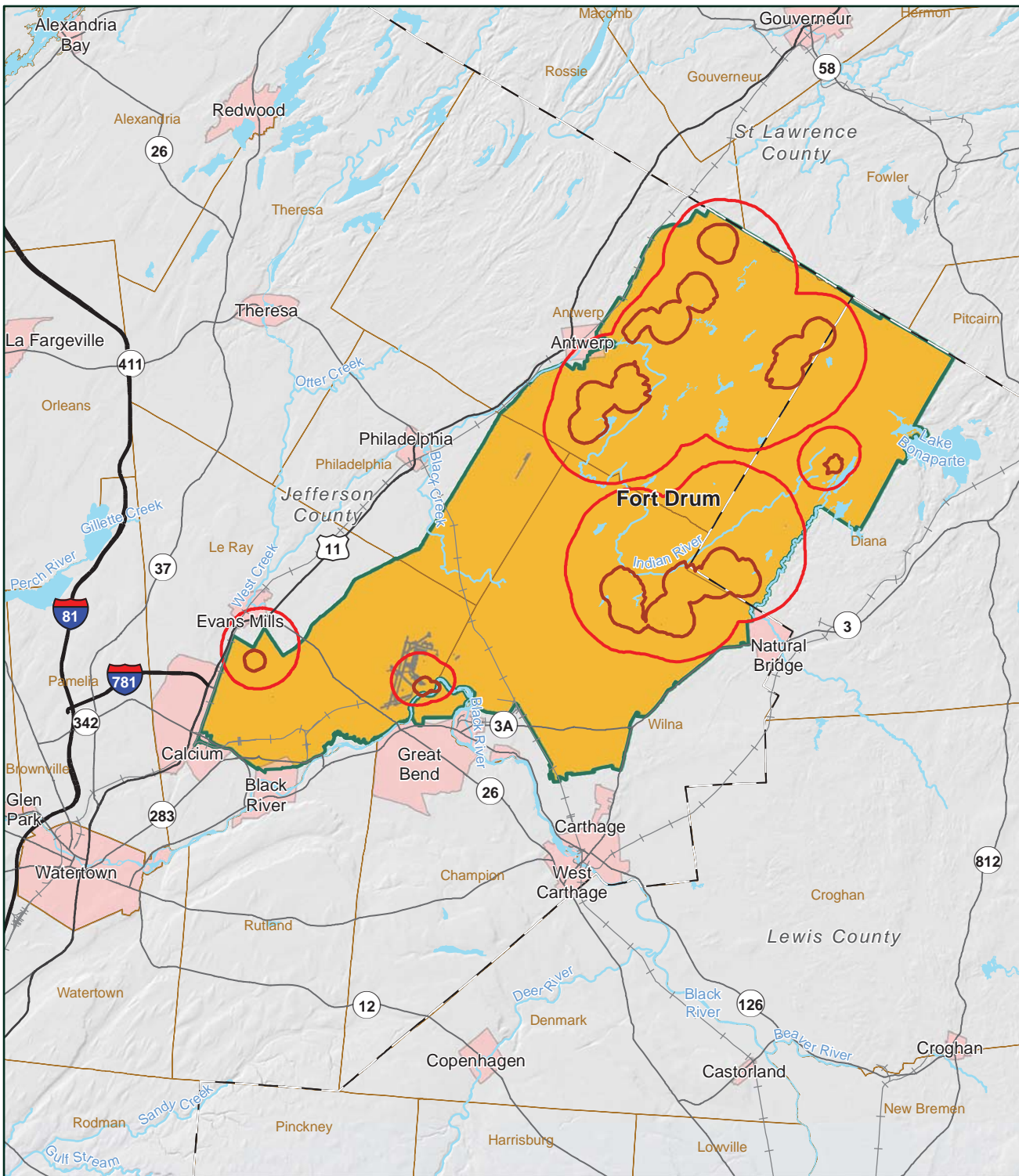
The primary sources of small arms noise at Fort Drum include small caliber weapons firing, particularly 5.56-millimeter (mm) rifles, 7.62 mm machine guns, 9 mm pistols, .45 caliber pistols, and .50 caliber machine guns. Small arms noise contours are illustrated on Figure 4.

Medium / Large Caliber Weapons and Demolition Noise Zones

The primary sources of medium / large caliber weapons and demolition noise at Fort Drum include ammunition firing that is larger than 20mm, particularly rockets, and weapons designed to penetrate vehicle, or structural armor, and may also include weapons that cause explosions. Medium / large caliber weapons and demolition noise contours are illustrated on Figure 5.

Airfield Noise

Noise contours are typically generated during the Installation Compatible Use Zone (ICUZ) Plan process. The primary sources of aircraft noise come from flight operations (overflight, take-offs, landings, touch-and-go operations) and engine maintenance run-ups. Airfield noise contours are illustrated on Figure 6.



Legend

Noise Zone

- Noise Zone III (> 104 dB Peak)
- Noise Zone II (87-104 dB Peak)

- Fort Drum
- County
- Boundary
- Town
- City / Village / Hamlet

- Interstate
- US Highway
- State Highway
- Railroad

- Water Body
- Stream / River



Source: Fort Drum Installation Compatible Use Zone Plan, April 2016.

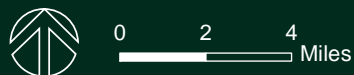
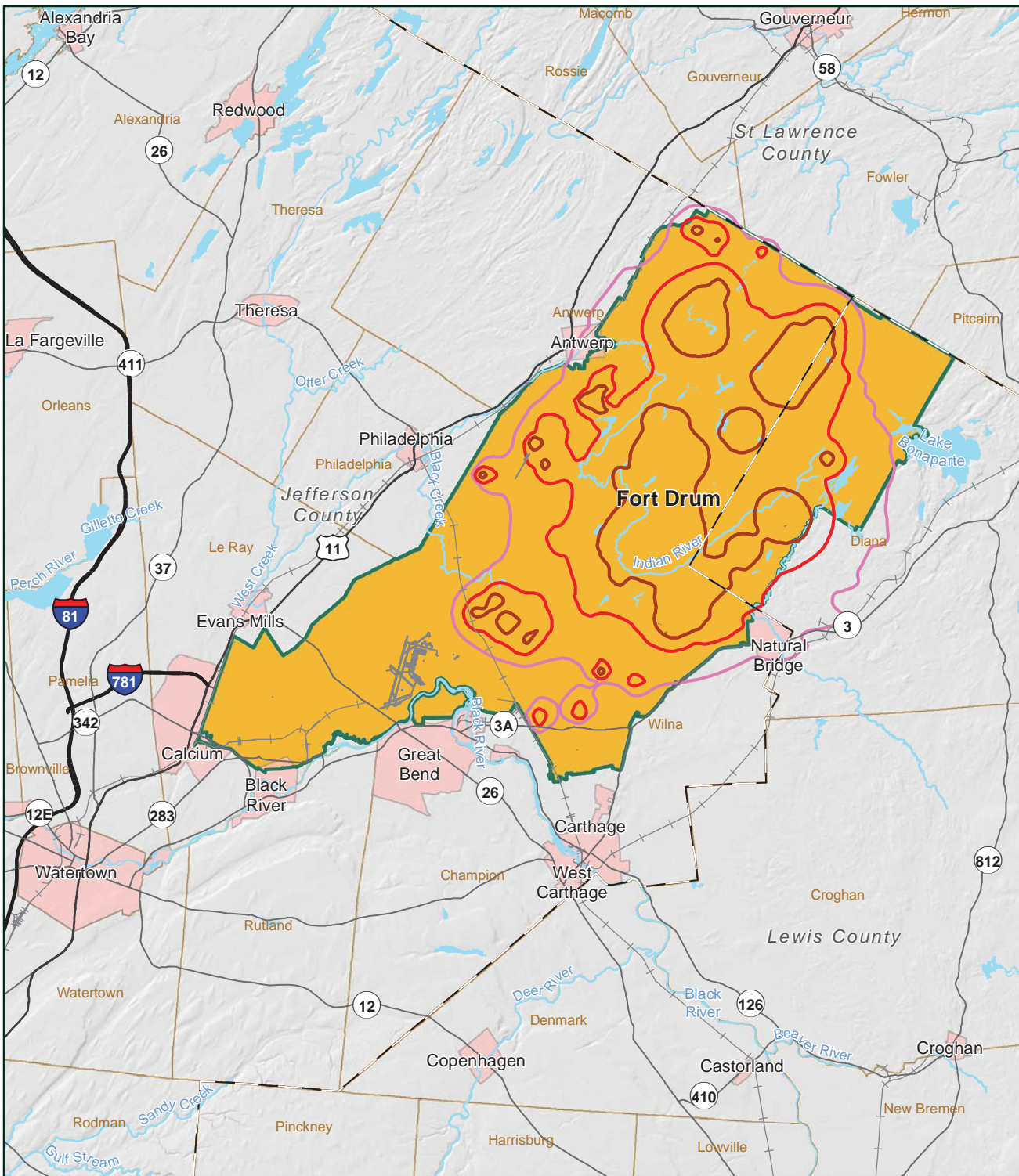


Figure 4

Small Caliber (Fixed Point) Noise Contours



Legend

Noise Zone

- Noise Zone III (> 70 CDNL dB)
- Noise Zone II (62-70 CDNL dB)
- LUPZ (57-62 CDNL dB)

Fort Drum

- County Boundary
- Town
- City / Village / Hamlet

- Interstate
- US Highway
- State Highway
- Railroad

- Water Body
- Stream / River
- Airfield / Runway



Source: Fort Drum Installation Compatible Use Zone Plan, April 2016.

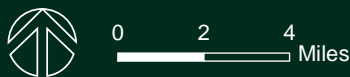
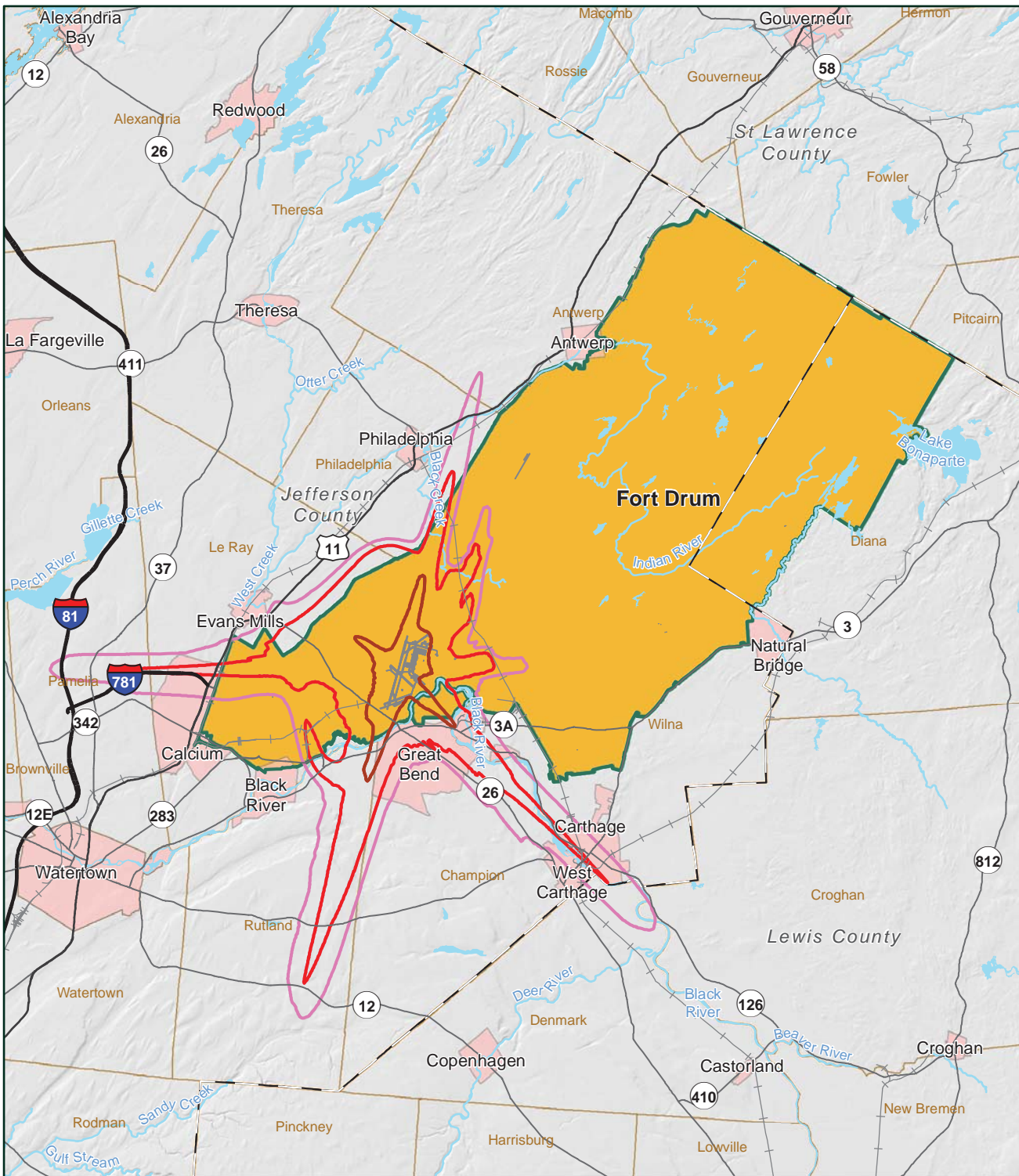


Figure 5
Medium / Large Caliber Weapons and Demolition Noise Zones



Legend

Noise Zone

- Noise Zone III (>75 ADNL dB)
- Noise Zone II (65-75 ADNL dB)
- LUPZ (60-65 ADNL dB)

- Fort Drum
- County Boundary
- Town Boundary
- City / Village / Hamlet

- Interstate
- US Highway
- State Highway
- Railroad

- Water Body
- Stream / River
- Airfield / Runway



Source: Fort Drum Installation Compatible Use Zone Plan, April 2016.

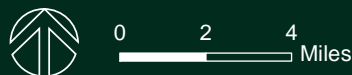


Figure 6

WSAAF Noise Zones

Airfield Safety Zones

Wheeler-Sack Army Airfield has safety zones associated with its runways to limit and guide development and protect the safety of the public and aircrews while simultaneously allowing for continued economic growth. Per DOD instruction, Accident Potential Zones (APZs) are developed to assist military and community planners in developing land uses that are compatible / recommended with airfield operations, thereby protecting health and safety. Within these zones, there are recommended types, densities, and intensities of land uses. While the likelihood of an aircraft mishap occurring is remote, the identified APZs provide the best practical solution for fostering public safety.

There are typically three safety zones that extend from the ends of runways: Clear Zone (CZ), APZ I, and APZ II. These three zones occur on each runway at Fort Drum as illustrated on Figure 7.

The **CZ** begins at each end of the runway. The CZ for the runway measures 3,000 feet wide by 3,000 feet long. This is the area that has the highest potential of an aircraft incident. It is recommended that no development occur in the CZ unless it is a use that is needed for safe operations of aircraft.

The **APZ I** is an area beginning at the end of each CZ at a width of 3,000 feet and a length of 5,000 feet. This area has a lower potential for accidents and therefore has less restrictive development restrictions recommended.

The **APZ II** is an area that begins at the end of each APZ I and is 3,000 feet wide by 7,000 feet long. The landing zone does not have an associated APZ II. Again, the accident potential in this area reduces further, and with this, some additional development types are compatible / recommended.

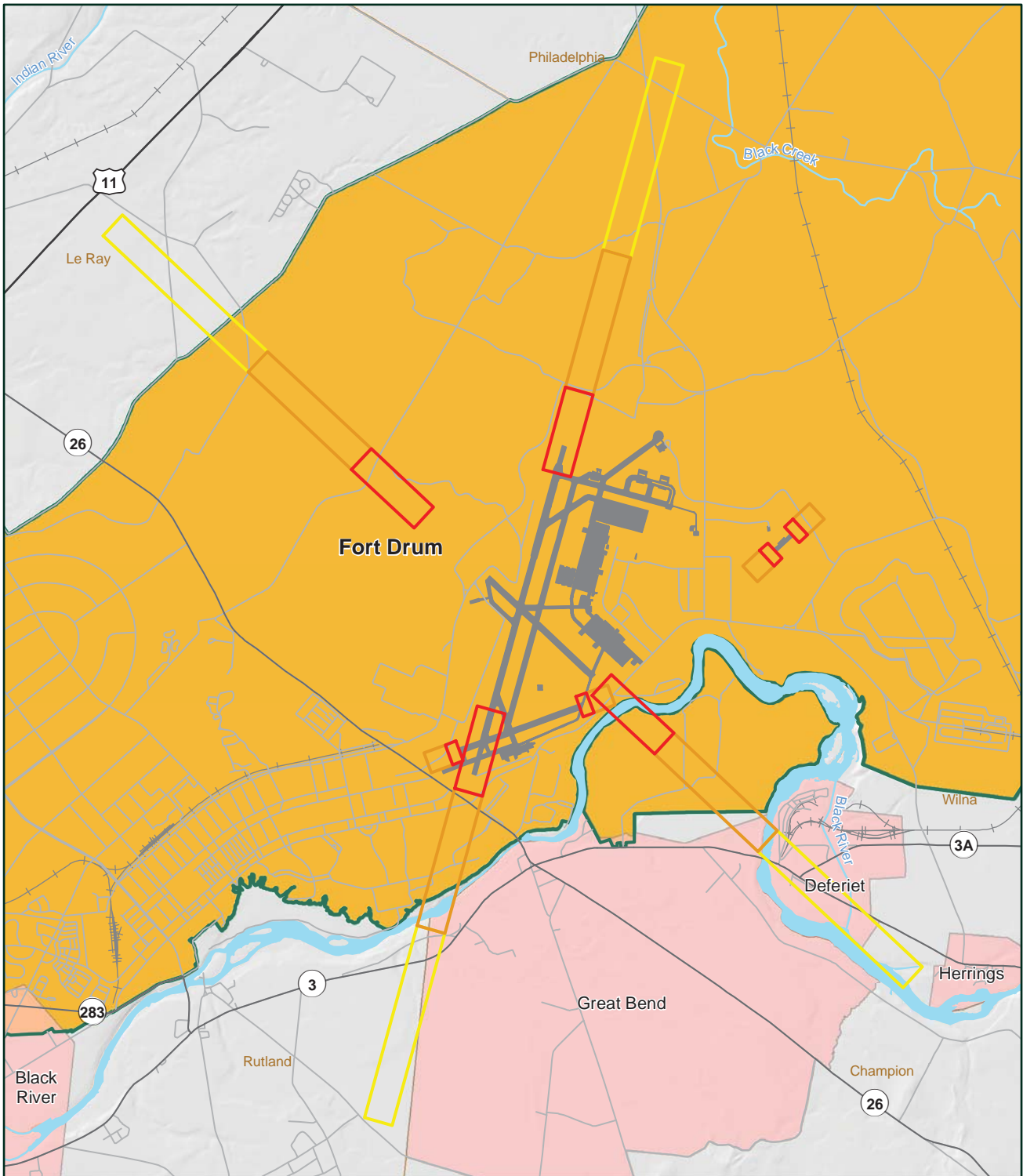
Flight Routes

There are two types of flight routes used by aircraft training at Fort Drum. The first is general flight routes that are used to access Range 48 and WSAAF. The flight routes to and from Range 48, where aerial gunnery and bombing occurs, enter and exit Fort Drum on the northern portion of the installation and include different looping routes based on the activity that is occurring. Since WSAAF has three runways, there are multiple ingress and egress points to the airfield, depending on which runway is being used. Runway use is determined by a variety of factors such as type of aircraft, wind / weather conditions, and operation of other aircraft near the airfield. Flight routes at WSAAF also include closed pattern routes, which are used for circling and touch-and-go operations. The flight routes for Range 48 and WSAAF are shown on Figure 8. The locations of these flight routes are approximate, as the precise flight track used may vary based on factors such as weather conditions, air traffic control, and decisions made by the pilot that vary slightly from the route shown on the figure.

Source: Fort Drum Installation Compatible Use Zone Study, April 2016

Military Training Routes

Military Training Routes (MTRs) allow the military to conduct low-level, high-speed training. The purpose of developing and charting MTRs on maps is to make non-participating aircraft aware of the presence of high speed military air traffic in the vicinity. An MTR is a defined volume of airspace designed for use by military aircraft. Aircraft in MTRs are authorized to and usually exceed airspeeds of 250 knots indicated airspeed. MTRs are broken out into segments and sometimes different segments of one MTR have different operational allowances, such as floor altitudes or different corridor widths. The floor altitudes of MTRs are identified either in mean sea level (MSL) or above ground level (AGL) altitudes.



Legend

- | | | |
|--------------------|-------------------------|-------------------|
| Safety Zone | Fort Drum | US Highway |
| Clear Zone | Town | State Highway |
| APZ I | City / Village / Hamlet | Road |
| APZ II | | Railroad |
| | | Stream / River |
| | | Airfield / Runway |

Source: Fort Drum 2017.

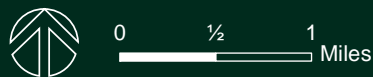
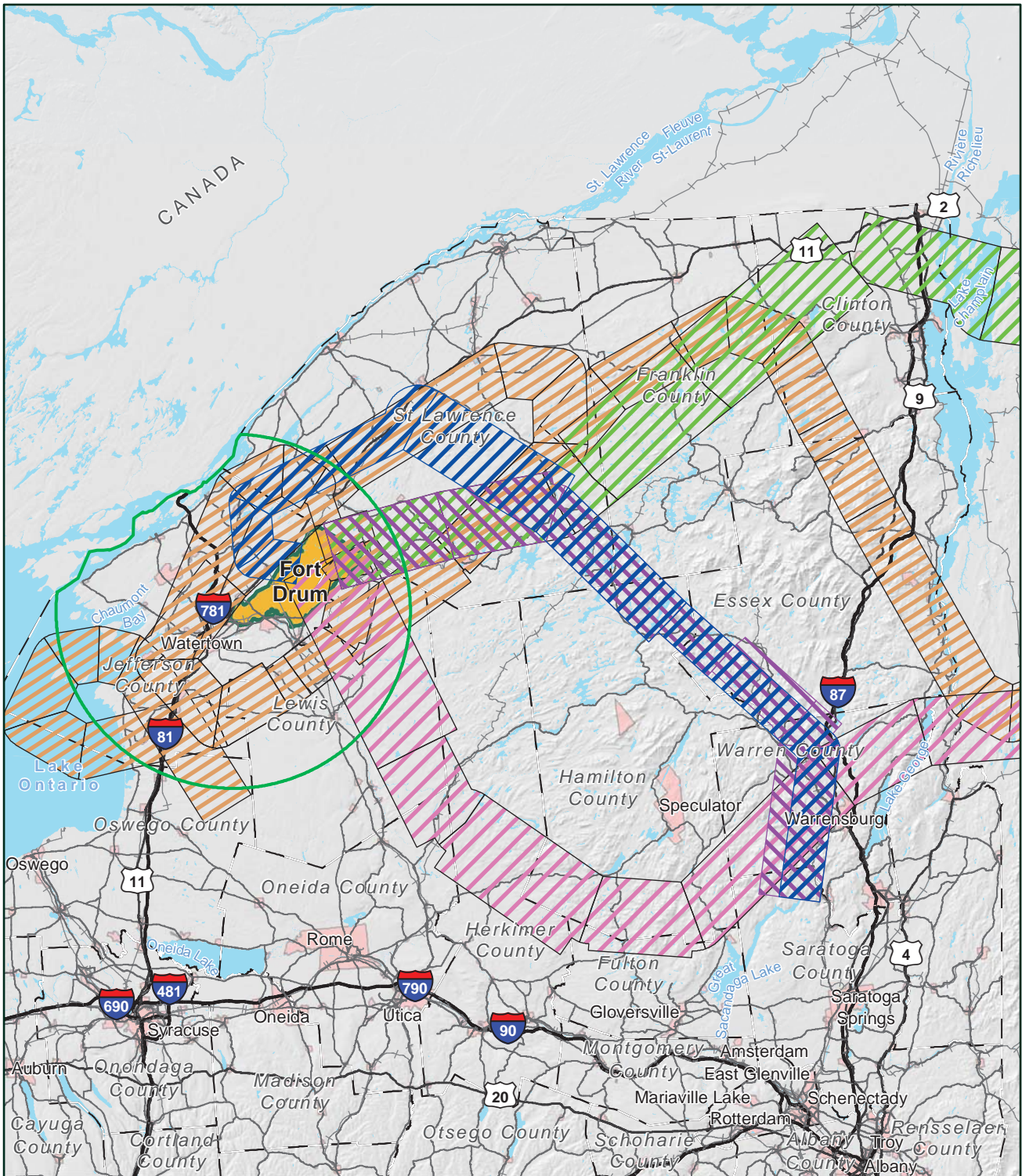


Figure 7

WSAAF Safety Zones



Legend

Aviation Route

- Visual Route (VR) 724 (Min Floor 100 AGL)
- Visual Route (VR) 725 (Min Floor 100 AGL)
- Visual Route (VR) 1800 (Min Floor 500 AGL)
- Visual Route (VR) 1801 (Min Floor 300 AGL)
- Instrument Route (IR) 801 (Floor Varies)

- 30-mile Study Area
- Fort Drum
- County Boundary
- City / Village / Hamlet

- Interstate
- US Highway
- State Highway
- Railroad
- Water Body



Note: See Table 3-2 in Background Report Chapter 3 for more information on Aviation Routes.

Source: National Geospatial-Intelligence Agency, Cycle 1601, 2016.



Figure 8

Aviation Routes

There are five MTRs around Fort Drum that are used by aircraft operating at or near the installation. Four of the MTRs are visual routes (VR) – VR 724, VR 725, VR 1800, and VR 1801; and one is an instrument route (IR) – IR 801. Figure 8 shows the MTRs and where they extend outside of the JLUS Study Area to provide a frame of reference for how far they extend. They extend further east than the figure shows as well. These MTRs connect to other airspace or installations outside of the JLUS Study Area.

Part 77 Vertical Obstruction Compliance

An important outcome of the Federal Aviation Act is Federal Aviation Regulation Title 14 Part 77 commonly known as Part 77, which provides the basis for evaluation of vertical obstruction compatibility / recommended land use. This regulation provides information to evaluate the potential for a vertical obstruction based on the elevation of the airfield, the height and resulting elevation of the new structure or facility, and the location of the structure or facility relative to the airfield in question. This regulation promulgates obstruction standards relative to their distance around a runway.

A height that is 200 feet AGL or above the established airport elevation, whichever is higher, and within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length is considered a vertical obstruction. 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.

Figure 9 illustrates the Part 77 rings around WSAAF. Obstruction height elevations are measured from the WSAAF elevation.

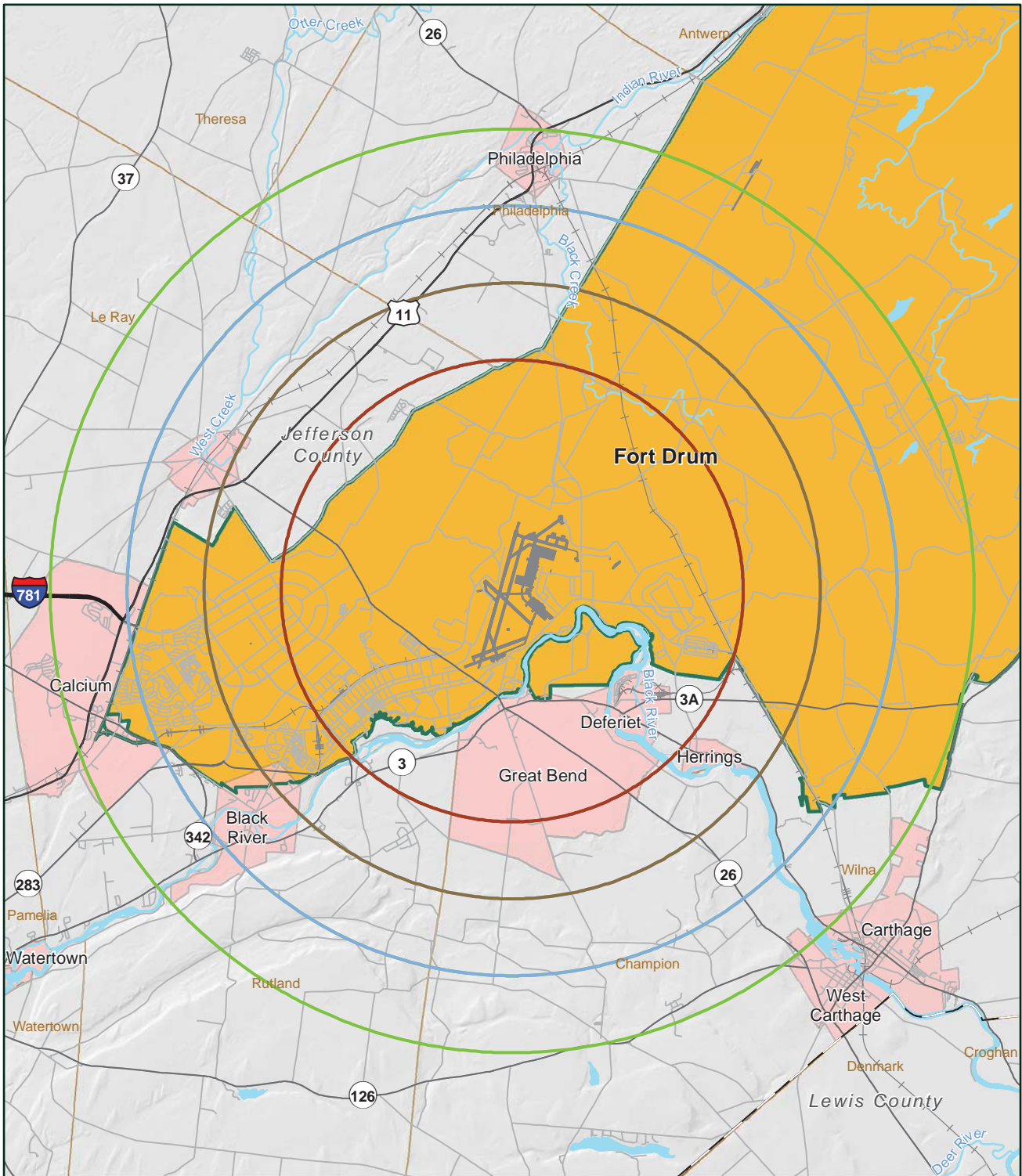
Bird / Wildlife Aircraft Strike Hazard Relevancy Area (BASH)

Birds and animals can present a significant hazard to military flight operations. While fatal accidents resulting from bird or wildlife strikes have been limited, impacts can be a safety concern and cause significant damage to aircraft. Bird or animal strikes in the US since 1980 have approached approximately 20,000 events that have resulted in 2 deaths, 25 aircraft destroyed and over \$300 million in damage.

Certain types of land uses attract birds and wildlife, such as open water areas, standing water, and other natural areas. The Cantonment Area has expanded to develop around WSAAF; however, the airfield is still partially surrounded by woodlands on three sides. Additionally, there are approximately 247 acres of early successional woodlands and shrub lands located within the WSAAF perimeter's west side, along with roughly 1,346 acres of grassland / rangeland areas. These natural areas surrounding WSAAF offer potential habitats for a variety of wildlife. Of important note is that the majority of Fort Drum is also classified as a Continental-Level Priority Important Bird Area by the Audubon Society, and supports grassland and shrub breeding bird populations of significant importance.

Source: Fort Drum Installation Natural Resource Management Plan

A BASH program has already been adopted by Fort Drum to reduce the impact of wildlife on aircraft operations. Figure 10 shows a five-mile radius around the WSAAF airfield operations area. Based on FAA statistical analysis, this is the primary area of concern for BASH incidents to occur, and the primary focus of compatibility planning for this issue.



Legend

FAA Part 77

- Up to 200' @ 3NM
- Up to 300' @ 4NM
- Up to 400' @ 5NM
- Up to 500' @ 6NM

- Airfield / Runway
- Fort Drum
- County Boundary
- Town
- + City / Village / Hamlet

- ≡ Interstate
- ≡ US Highway
- ≡ State Highway
- ≡ Road
- ≡ Railroad

- Water Body
- ~ Stream / River



Source: Fort Drum 2016, Matrix Design Group 2017.

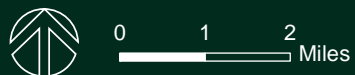
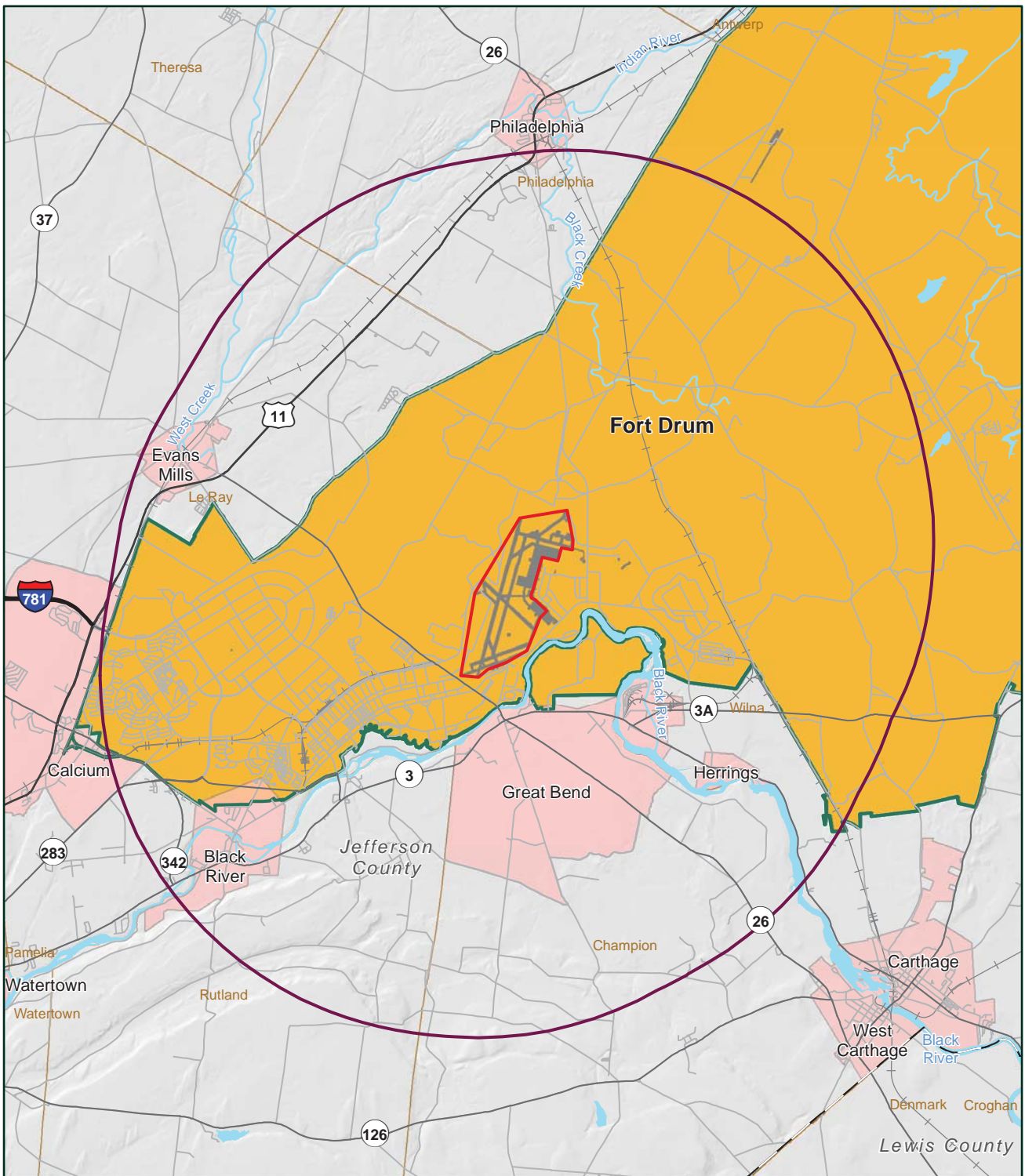


Figure 9

Part 77 Compliance Areas



Legend

- 5-mile BASH Relevancy Area
- Airfield Operations Area
- Airfield / Runway
- Fort Drum
- County Boundary
- Town
- + City / Village / Hamlet
- ~ Interstate
- ~ US Highway
- ~ State Highway
- Road
- +— Railroad
- ~ Water Body
- ~ Stream / River



Source: Fort Drum 2016, Matrix Design Group 2016.



Figure 10

BASH Relevancy Area

Special Use and Restricted Airspace

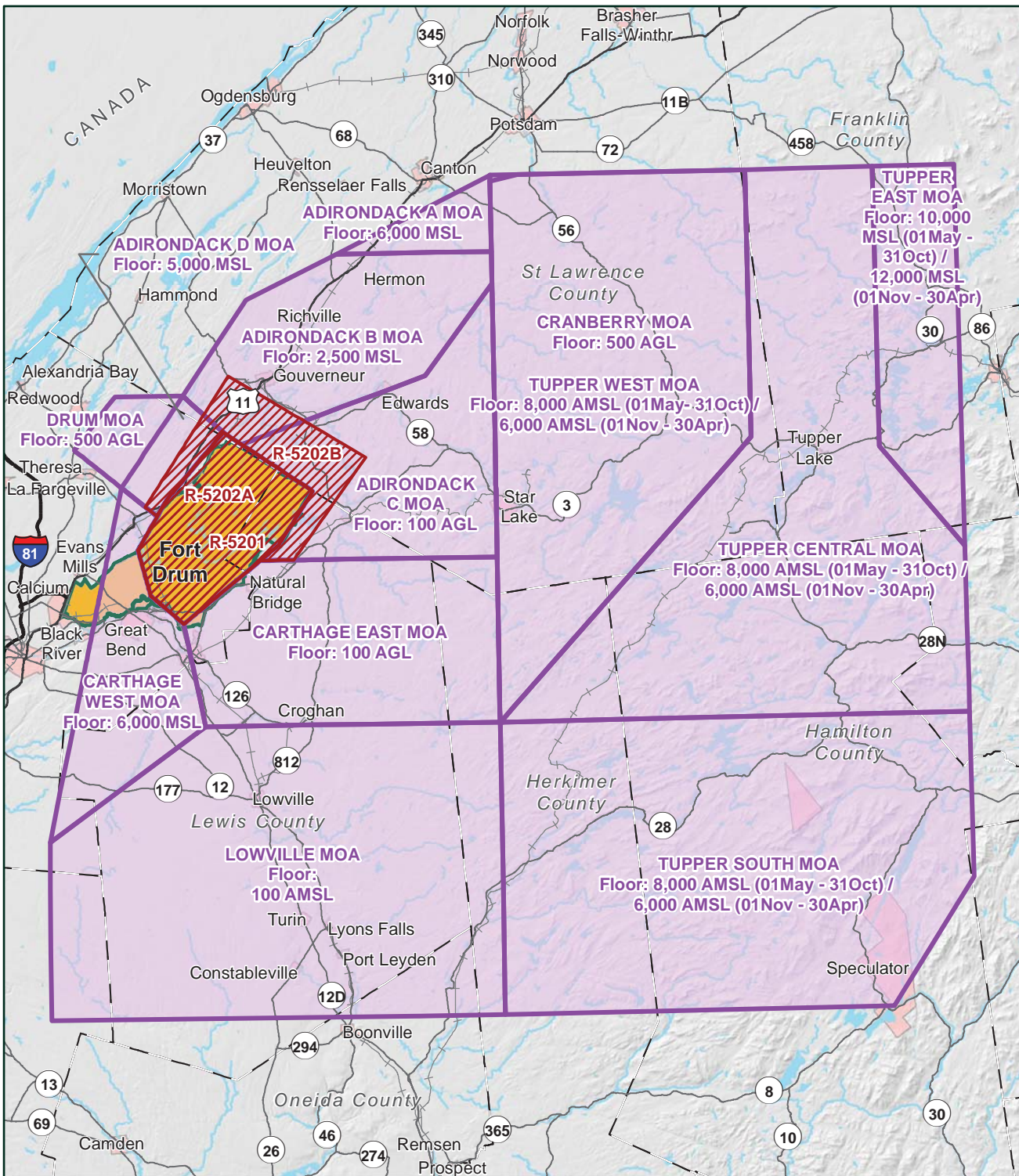
Special Use Airspace (SUA) is the airspace where military activity or unusual flight conditions may occur. The designation of SUA serves to alert non-participating aircraft (civilian or military) to the possible presence of these activities. Of the various SUA types, Military Operating Areas (MOAs) and Restricted Airspace are designated within the Fort Drum JLUS Study Area. The special use airspace around Fort Drum is shown on Figure 11.

Protecting Fort Drum’s “Relevance Tomorrow” demands predictive analysis of future airspace training requirements of joint customers utilizing Fort Drum’s air to ground integration ranges and main impact area. Training for the multi domain battlefield at Fort Drum requires replication of a peer to peer threat with fully integrated anti-access aerial denial combat environment to adequately prepare pilots and units employing fixed-wing, rotary-wing, and unmanned aerial systems (UAS), at the proper speeds, tactical dispersion, and utilizing the terrain during terminal approach to targets in the impact area, and Ranges 44, 48, 23, and 24 air corridors outside the restricted airspace and in the MOAs. See Figure 12 for a composite image of the various airspace and flight corridors used for training at Fort Drum.

Radar Viewshed

There are two types of radar that are operated at Fort Drum. One is operated by WSAAF to monitor and coordinate air traffic at Fort Drum and Watertown International Airport and in the airspace around the installation. The second is the National Weather Service radar that is operated by the Air Force’s 18th Weather Squadron, located off-installation in the Town of Montague, Lewis County. The two facilities have very different missions from each other, but both rely on having clear unobstructed viewsheds to operate properly, requiring clear lines-of-sight in all directions so that they can monitor aircraft, potential threats, and weather conditions. The equipment in each radar is very sophisticated and can experience operational interference by a variety of objects including terrain, tall structures and towers, and wind turbines, all based on elevations and topography differences between the location of the radar and the potential interference.

Fort Drum operates an Army Radar Approach Control (ARAC), which is one of only six ARACs in the continental US. The ARAC provides radar air traffic control within an approximately 40- to 60-mile radius around Fort Drum from ground level to an altitude of 10,000 feet mean sea level and provides advisories, sequencing, and separation to Instrument Flight Rules aircraft and Visual Flight Rules aircraft. It also allows for the integration of the National Airspace System, local military training airspace, and R-5201, including providing air traffic services to general aviation aircraft and commercial air carriers traversing through its area of operations. Figure 13 illustrates the ARAC’s operational area.



Legend

- Restricted Airspace
- Military Operating Areas
- Fort Drum
- County Boundary
- City / Village / Hamlet
- Interstate
- US Highway
- State Highway
- Railroad
- Water Body
- Stream / River



Note: See Table 3-3 in Background Report Chapter 3 for more information on Military Operating Areas.

Source: Fort Drum 2016.



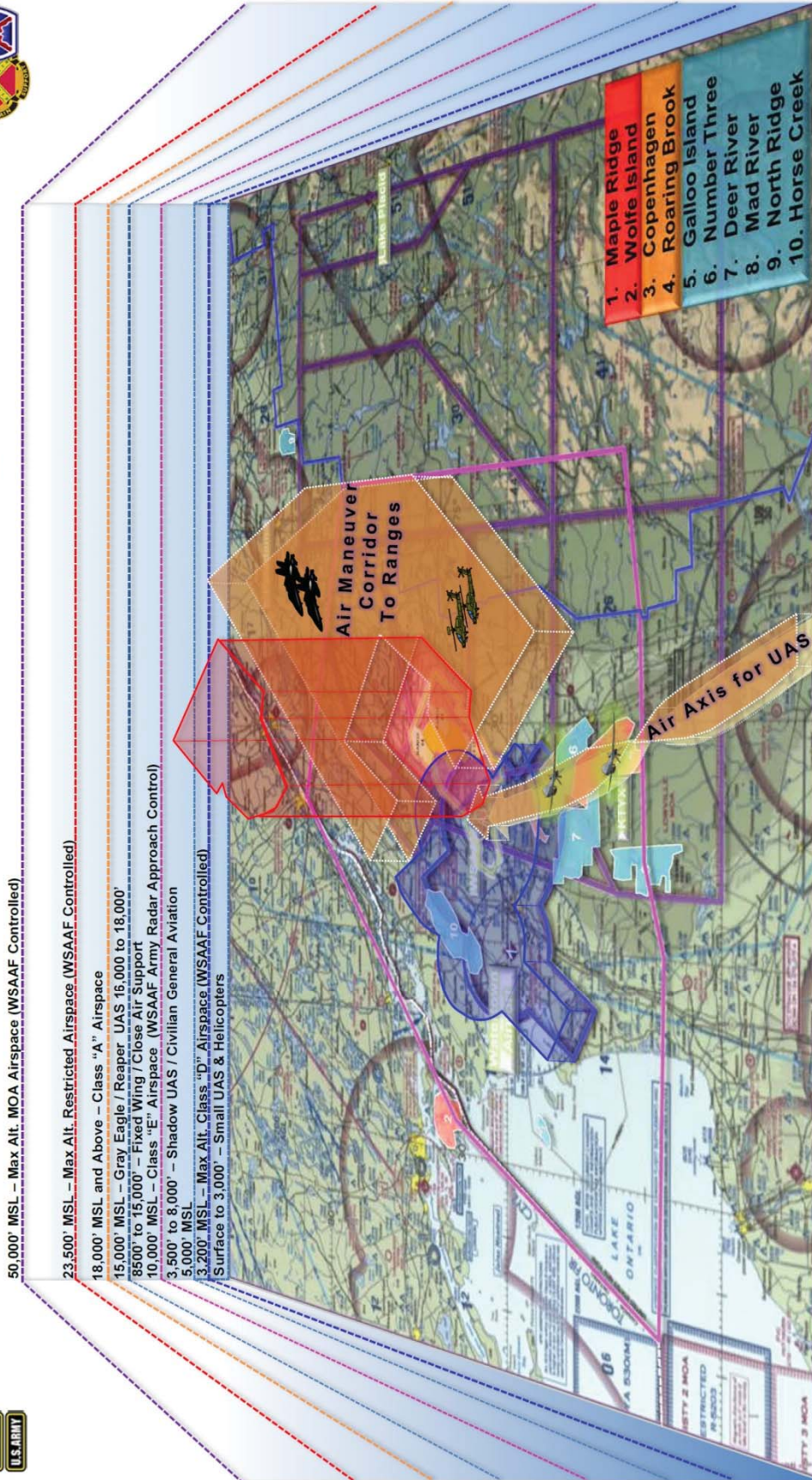
Figure 11

Special Use and Restricted Airspace



UNCLASSIFIED//FOUO

Potential Air Corridors to the Training Area



Legend

- Military Operational Airspace (MOA)
- Restricted Airspace
- WSAAF Class "D" controlled airspace
- Class "E" WSAAF ARAC Airspace
- FDNY Fence line boundary
- Air to Ground Integration Ranges
- Munitions Impact Area

Legend

- Templated Air Maneuver Corridor
100' AGL to 20,000' MSL
- Templated Air Axis/Route
18,000' MSL to 20,000' MSL

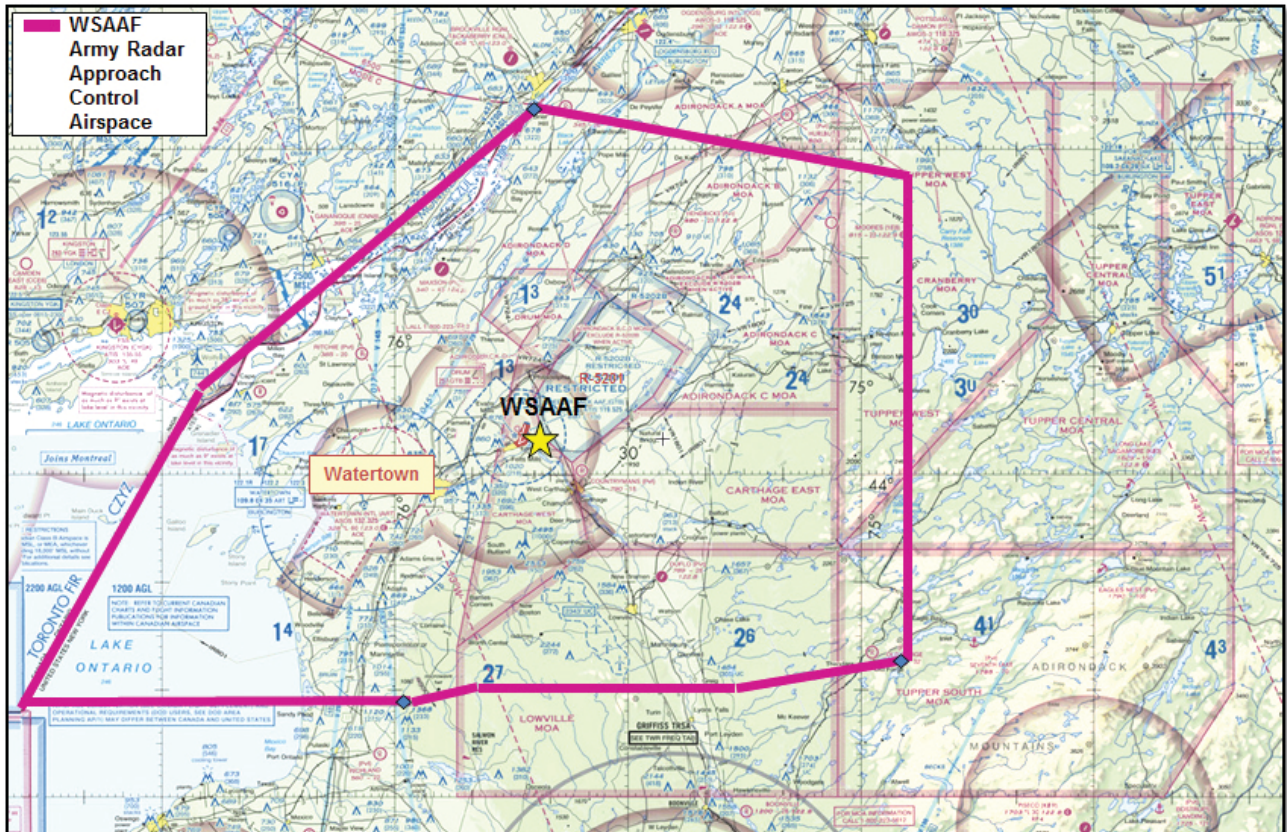
UNCLASSIFIED//FOUO

Legend

- ASR-11 Radar on WSAAF
- KTYX DoD Doppler Radar WSR-88D
- Adirondack Park "Blue Line"
- Built Wind Energy Development
- Permitted Wind Energy Development
- Proposed Wind Energy Development

Source: Fort Drum, January 2018

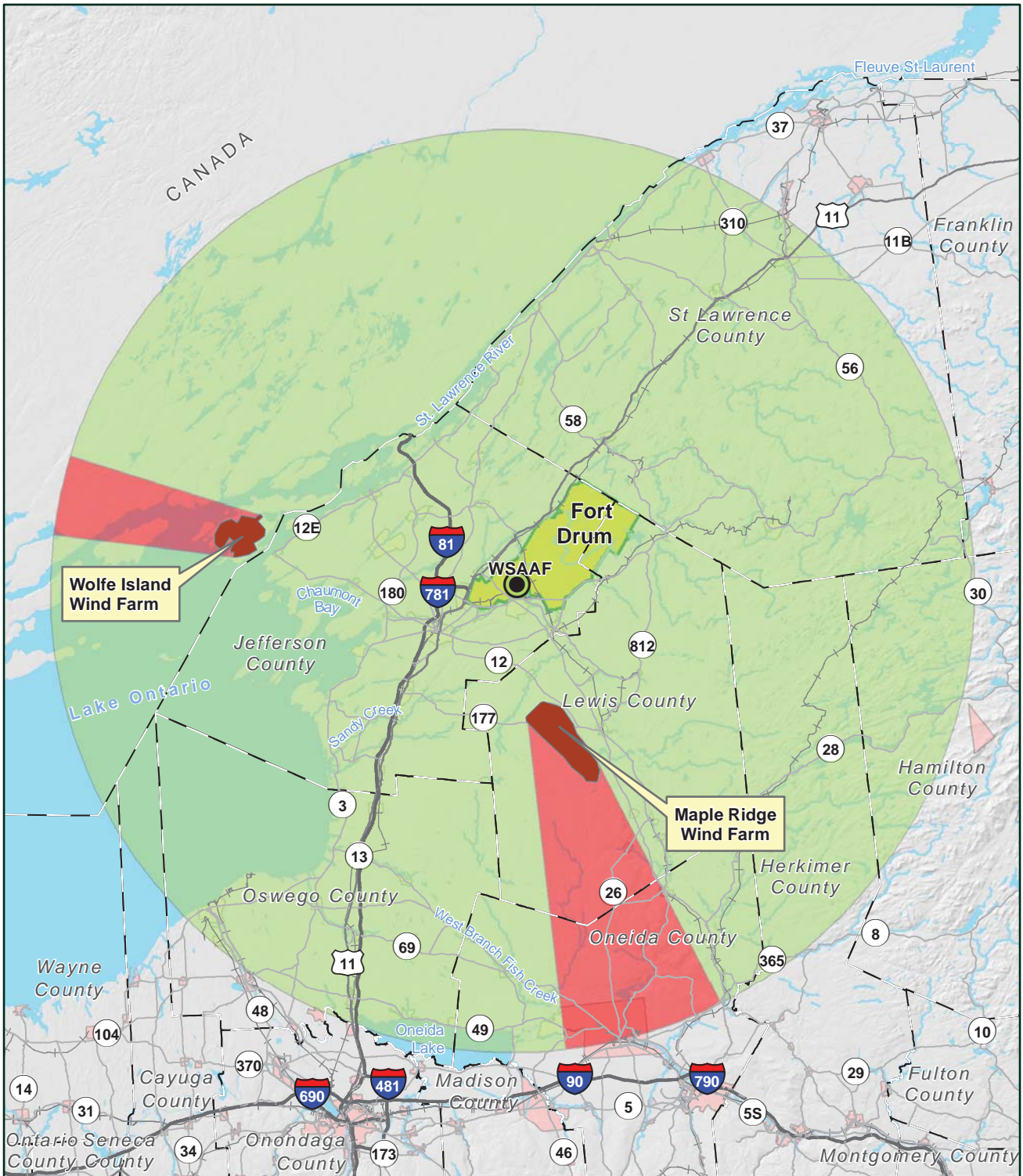
Figure 13. Wheeler-Sack Army Airfield's Army Radar Approach Control Operational Area



Source: Fort Drum, 2016

There are two existing industrial wind energy developments within a 60-mile radius of Fort Drum that have some impacts to the functionality of the ARAC. Figure 14 illustrates a general line-of-sight image of the areas where data may be corrupted resulting from these industrial wind energy projects. This figure is meant only for reference purposes to show the line-of-sight view of the radar and how existing industrial wind energy projects impede it. The figure is not meant to indicate that the radar cannot see anything within the red area, but simply that there is a higher chance for data corruption within the red area. See Issue ED-1 in Chapter 5 of the JLUS Supporting Information document for more information.

The radar located at Montague, NY is a Weather Service Radar 1988-Doppler (WSR-88D) that has been upgraded recently to a dual polarization radar. The single biggest difference between a doppler weather radar and a surveillance radar, like the ASR-11 located on Fort Drum, is that while they use the same Radio Frequency principles, they apply them in very different ways. The WSR-88D is a 3-D radar, where it uses multiple scans of the same area to render a 3-dimensional shape of the atmosphere. This is critical in determining weather phenomena associated with severe weather. The ASR-11 radar is a 2-D radar, where it is designed to track an object using range and azimuth. Functionally, the weather radar is designed to take in any and all things that move in the atmosphere and each set of scans begins an entirely new picture. The surveillance radar is designed to track reflecting objects as they move, enabling controllers to identify and track specific objects while ignoring the "clear air" background. Further, the dual polarization upgrade enables the weather radar data acquisition unit to detect additional details in the return signal like size and spin of rain drops. These new upgrades are even more sensitive to wind turbine interference because the turbines are constantly changing rotor speed, prop pitch, and turbine direction. This decreases the fidelity in the signals around and beyond the azimuth between the radar and turbine and all but



Legend

- | | | | |
|-------------------------|------------------------------|-------------------------|----------------|
| Radar 60 mile Radius | WSAAF DASR Radar Site | Fort Drum | Interstate |
| Clear | Existing Wind Energy Project | County Boundary | US Highway |
| Existing Corrupted Data | City / Village / Hamlet | Boundary | State Highway |
| | | City / Village / Hamlet | Railroad |
| | | | Water Body |
| | | | Stream / River |



Source: Fort Drum, 2018.

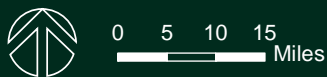


Figure 14
Air Surveillance Radar and Existing Wind Energy Projects

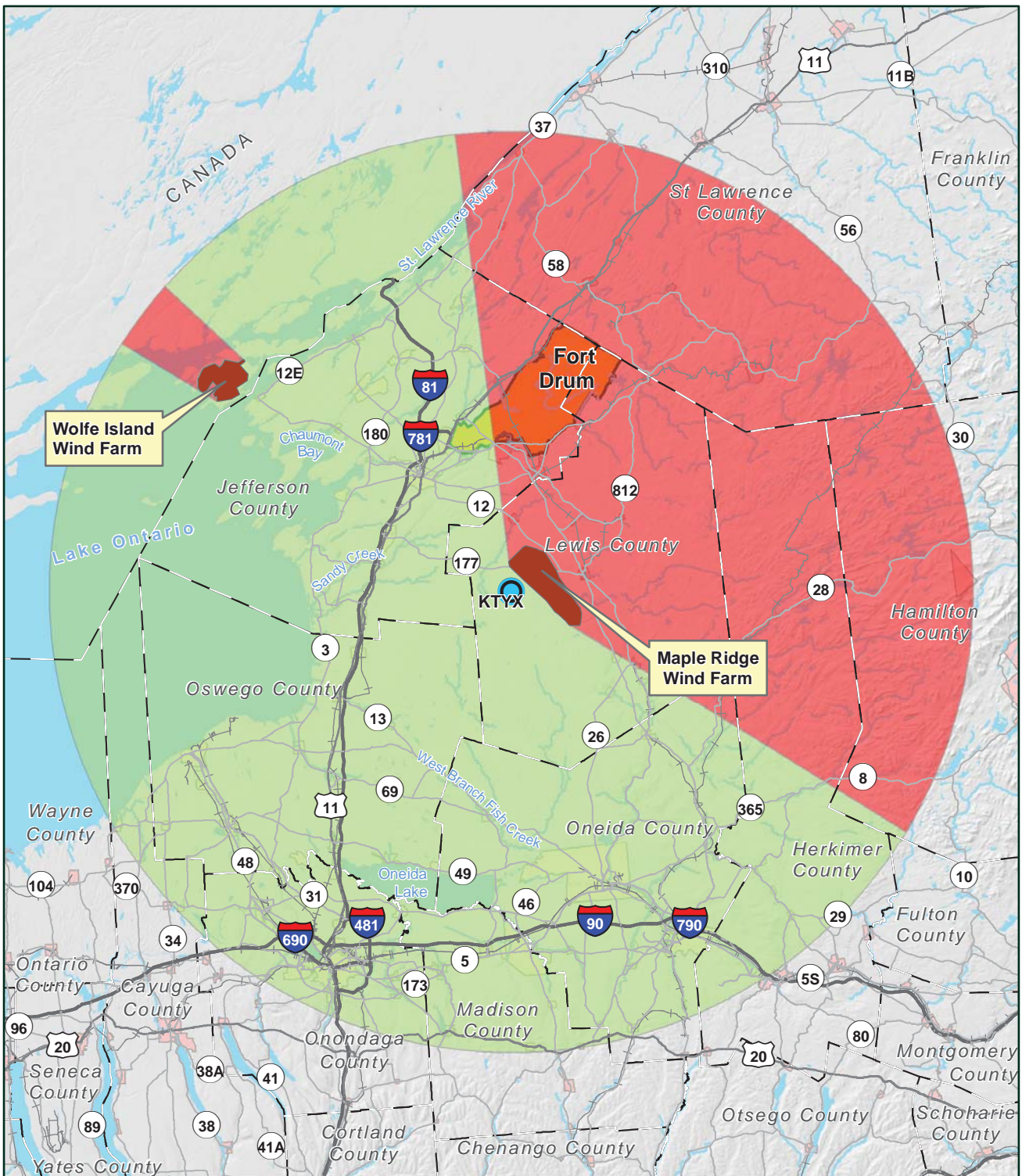
negate the ability for a highly effective software fix. Due to these reasons, the WSR-88D Dual Polarization is an especially sophisticated but highly sensitive piece of equipment that is strongly impacted by the presence of wind turbines.

Figure 15 illustrates a general line-of-site image of the areas where data may be corrupted resulting from the two existing industrial wind energy developments near the radar. See Issue ED-1 in Chapter 5 for more information. This figure is meant only for reference purposes to show the line-of-sight view of the radar and how existing industrial wind energy projects impede it. The figure is not meant to indicate that the radar cannot see anything within the red area, but simply that there is a higher chance for data corruption within the red area.

The National Weather Service Radar Operations Center (ROC) developed four “impact zones” around weather surveillance radars to communicate to wind energy project developers’ areas where certain considerations should be taken when siting turbines to minimize impacts to the radar. These zones vary for each individual weather radar and take terrain, distance, and the number of elevation angles impacted into account. The zones are not enforceable but are meant to provide information to wind developers on areas where the National Weather Service should be consulted when proposing wind energy development. The four zones are shown on Figure 16 and are as follows.

- **No-Build Zone.** The No-Build Zone is a four-kilometer (km) (2.5 miles) radius surrounding a weather radar, in which wind turbine development can cause mechanical damage to the radar and compromise the radar’s ability to accurately forecast hazardous weather. It may also pose radiation hazards for those constructing and maintaining the site. The ROC requests that developers do not build any turbines in this area.
- **Mitigation Zone.** The Mitigation Zone extends between four and 36 km (2.5 to 22.4 miles) from weather radar. Wind turbines in this zone could penetrate multiple elevation angles of the radar, which could cause deflection and interference that substantially reduces the precision and detection of hazardous weather events. The ROC will work with the developer to get detailed project information, do a thorough impact analysis, and discuss potential mitigation solutions. Significant impacts are likely in this area.
- **Consultation Zone.** The Consultation Zone extends up to 60 km (37.3 miles) from weather radar. Wind turbines that are built within this zone can potentially contaminate radar imagery. Due to the increased potential for impact to operations the ROC requests consultation with the developer to track the project and acquire additional information for a thorough impact analysis. Significant impacts are possible in this area.
- **Notification Zone.** The Notification Zone is between 36 and 60 km (22.4 to 37.3 miles) from weather radar. Wind Turbines built in this zone can be detected and have potential to interfere with the radar’s operation. The National Weather Service (NWS) Radar Operations Center requests notifications of wind energy development within this zone. Since impacts are typically minimal beyond 60 km and workarounds are available for penetration of only one elevation angle, the ROC recommends consultation optional; however, the National Oceanic Atmospheric Association would still like to know about the project. Significant impacts are not likely in this area.

Source: National Weather Service Radar Operations Center, <https://www.roc.noaa.gov/WSR88D/WindFarm/Analyses.aspx?wid=dev>



Legend

Radar 60 mile Radius

- Clear
- Existing Corrupted Data

KTYX Weather Radar Site

Existing Wind Energy Project

Fort Drum

County Boundary

City / Village / Hamlet

Interstate

US Highway

State Highway

Railroad

Water Body

Stream / River



Source: Fort Drum, 2018.

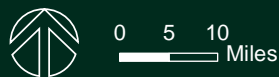
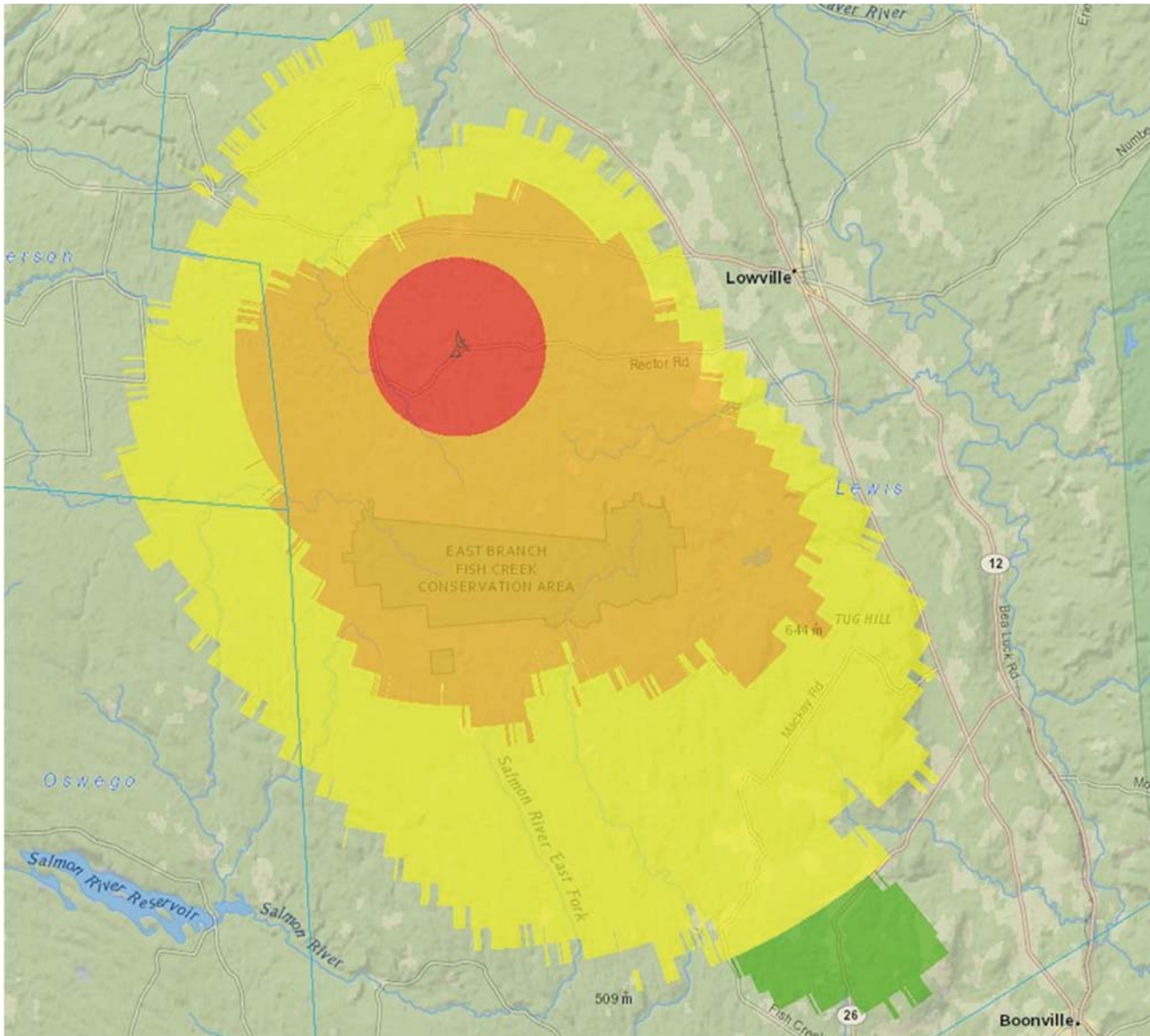


Figure 15
KTYX Weather Radar and Existing Wind Energy Projects

Figure 16. KTYX Weather Surveillance Radar Impact Zones



Source: National Oceanic Atmospheric Administration, <http://pikes.peaksptial.org/NOAA/Screening Tool>

Legend: Red = No-Build Zone, Orange = Mitigation Zone, Yellow = Consultation Zone, Green = Notification Zone

Please see the next page.

This section provides an overview of plans and programs that are currently used or applied in evaluating and addressing compatibility issues in the Fort Drum JLUS Study Area. Relative to compatibility planning, there are a number of existing plans and programs that are designed to address compatibility either directly or indirectly.

This is not meant as an exhaustive list of plans and programs that influence planning in this study area, but rather a highlight of the plans and programs for the Fort Drum JLUS. For an exhaustive list of plans and programs refer to Chapter 4 of the JLUS Supporting Information document.

Federal

Army Regulation 200-1, Environmental Protection and Enhancement

This regulation implements federal, state, and local environmental laws and DOD policies for preserving, conserving, and restoring the environment. This regulation should be used in conjunction with 32 Code of Federal Regulation Part 651, which provides Army policy on NEPA requirements and supplemental program guidance.

This regulation defines Army Environmental Management System (EMS) framework and the five interconnected EMS areas which are: policy, planning and implementation, program management and operation, checking and corrective action, and management review.

As a steward for regional endangered species, Fort Drum has created a Bat Conservation Area within the Cantonment Area to assist in the preservation of both the Indiana Bat and Northern Long-Eared Bat.

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, state and local governments, and conservation-based non-governmental organizations 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. This program could be used to assist in protecting land around Fort Drum to serve as a buffer to minimize future encroachment.

Department of Defense Siting Clearinghouse

Section 358 of the 2011 National Defense Authorization Act authorized the study of the effects of new construction and obstructions on military installations and operations. The Energy Siting Clearinghouse serves to coordinate the DOD review of existing applications for energy projects. Several key elements of Section 358 include designation of a senior official and lead organization to conduct the review of energy project applications, a specific timeframe for completion of a hazard assessment associated with an application (30 days), specific criteria for DOD objections to projects and a requirement to provide an annual status report to Congress. This legislation facilitates procedural certainty and a predictable process that promotes compatibility between energy independence and military capability.



Department of Defense Readiness and Environmental Protection Integration

The DOD established the Readiness and Environment Protection Integration (REPI) program to implement the authority provided by the DOD Conservation Partnering Initiative. This initiative enables the DOD to work with state and local governments, nongovernmental organizations, and willing landowners to limit encroachment and incompatible land use by preserving undeveloped land. This land preservation could allow for buffers around the installation to be established to help further the installation mission.

REPI funds are used to support a variety of DOD partnerships that promote compatible land use. By relieving encroachment pressures, the military is able to test and train in a more effective and efficient manner. By preserving the land surrounding military installations, habitats for plant and animal species are conserved and protected. Fort Drum has engaged REPI funding in conjunction with its army Compatible Use Buffer Program to preserve lands from incompatible development around Fort Drum.

Department of Energy Office of Energy Efficiency and Renewable Energy

The US Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy is responsible for developing and delivering market-driven solutions for energy-saving homes, buildings, and manufacturing; sustainable transportation; and renewable electricity generation.

The DOE's Wind Program funds research and development in wind power technology and evaluates market barriers such as environmental impacts, project siting, permitting processes, and the potential effects on US airspace and waterways. The program also assesses domestic wind energy potential, serves as a technical information resource, assists in the development of wind plant siting and permitting guidelines, and helps to develop testing centers for wind energy equipment.

The DOE's Solar Power Program funds research for developing and delivering innovative solar power technology that can compete with other sources of energy. Much of the research supports photovoltaic (PV) and solar thermal technologies that can be used to convert the sunlight into energy.

Projects supported by DOE work could affect Fort Drum. Wind and solar projects have the ability to produce height and glare issues respectively. This an encroachment concern since there are projects currently proposed within the Fort Drum JLUS Study Area.

Endangered Species Act

The Endangered Species Act (ESA) in 1973 established a program for the conservation of threatened and endangered plants and animals and their habitats. The US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) are the lead implementing agencies of the ESA. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NOAA Marine Fisheries Service (NMFS) are mainly marine wildlife. Under the ESA, species may be listed as either endangered or threatened.

"Endangered" means a species is in danger of extinction throughout all or a significant portion of its range.

"Threatened" means a species is likely to become endangered within the foreseeable future.

The ESA requires federal agencies, in consultation with the USFWS and/or the NMFS, to ensure that actions they "authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species." The Act also prohibits any action that results in a taking of any listed species of endangered plant, fish, or wildlife. The ESA provides a platform for the protection of critical habitat and species that may be at risk of extinction.

Federal Aviation Act

The Federal Aviation Act was enacted 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 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 Federal Aviation Administration (FAA) was created as a result of the Act and serves 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 in *Aaron v. United States*, and states that flights 500 feet or more above ground level (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 / recommended use based on the height of proposed structures or natural features relative 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 FAA Internet site at <http://www.faa.gov>.

The FAA has identified certain imaginary surfaces around runways to determine how structures and facilities are evaluated and identify if they pose a vertical obstruction relative 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. It 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 providing detailed information concerning significant environmental impacts to ecological and natural resources and the human environment, such as community character, public health and safety, and cultural resources.

All federal agencies, including the military and projects receiving federal funding, require NEPA compliance and documentation prior to receiving a permit, approval, or funding. For Fort Drum’s purposes, NEPA requires that the military review the potential impact of proposed actions on the environment, including surrounding civilian communities, and measures to reduce, avoid or mitigate identified adverse environmental impacts. Not all federal actions require a full Environmental Impact Statement (EIS). In cases where an action may not cause a significant impact, the agency would be allowed to produce a less detailed Environmental Assessment (EA) and make a Finding of No Significant Impact (FONSI).

A NEPA document can serve as a valuable planning tool for local planning officials. An EA 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. If the EA finds there will be no significant impacts, a Finding of No Significant Impact (FONSI) will be issued. If the EA finds the proposed changes to military actions and operations will create significant impacts, an EIS will be prepared to further detail and outline the impacts upon the environment to the public. An EIS will result in a Record of Decision (ROD) that explains the decision made based on the information presented in the EIS, describes the alternatives considered, and outlines mitigation and monitoring plans.

Operational Noise Management Program

The Operational Noise Management Program provides a methodology for assessing impacts of noise generated by military operations on surrounding communities. This program was established by the Department of the Army to assist installations and surrounding communities develop guidelines for land use planning to mitigate noise and other hazards to the general public while protecting the public investment in the installation. This program encourages compatibility measures for both the US Army and surrounding communities through the development of an Operational Noise Management Plan (ONMP). The Operational Noise Management Handbook, completed in November 2005, provides guidance for the development of an ONMP.

Fort Drum / New York Army National Guard

The Fort Drum / New York Army National Guard (NYARNG) plans and programs provide guidance for land uses and development activities specific to Fort Drum. These tools govern land use decisions that occur inside the fence line or within the boundary of the Fort Drum operational footprint in relation to the military missions.

These tools provide guidance and establish measures for standard operating procedures during certain events, such as weapons firing. There are various installation tools that are instrumental in assisting and guiding land use decisions as they relate to the military mission.

Army Compatible Use Buffer

The ACUB Program permits Army Installations to work with other organization partners (e.g., land trusts) to acquire land or development rights to establish buffer zones that can help protect habitats, sensitive areas, and military training areas without acquiring any new land for Army ownership. The Tug Hill Tomorrow Land Trust (THTLT) is a primary partner organization of the ACUB Program and tracks the progress of proposed ACUB lands for acquisition. As of August 2017, Fort Drum and its partners have preserved 7,600 acres of land around the installation within the priority areas identified through the ACUB program. The majority of this has been through partnership with the THTLT to preserve working farmland from future incompatible development.

Wheeler-Sack Army Airfield (WSAAF) is a high priority, mission critical asset to the United States Army, and protecting the airfield's accident potential zones and clear zones is the highest priority for Fort Drum's ACUB Program. Training operations can potentially produce excessive noise, making these areas unsuitable for residential development. The second highest priority for Fort Drum's ACUB Program is protecting the land closest to the installation's western border to minimize and limit incompatible residential development and protect training operations. Much of the residential development in the surrounding community is occurring along the Route 11 corridor west of Fort Drum's border. Environmental considerations are the third priority, and include acquiring areas to help protect the federally endangered Indiana Bat.

Integrated Cultural Resources Management Plan

The objective of the Integrated Cultural Resources Management Plan (ICRMP) is to balance the management of historic and cultural resources with mission readiness at Fort Drum. The ICRMP supports early identification of cultural and historic resources and defines necessary actions for managing agencies to ensure the protection of resources during military operations and non-military activities.

The ICRMP establishes compliance procedures to properly manage cultural and historical resources, establishing existing conditions and identifying the potential impacts of Fort Drum's mission on them. It also identifies impacts to mission readiness caused by preservation, maintenance, and repair of buildings and the continued use of historic buildings. In addition, the ICRMP establishes a coordination process between the installation and many state or regional agencies including the State Historic Preservation Office, the Advisory Council on Historic Preservation, the National Park Service, Native American groups, and the interested public. This process is subject to Section 106 of the NHPA, which establishes a process for working with federal agencies on historic preservation issues.

Integrated Natural Resources Management Plan

As required by the Sikes Act, an Integrated Natural Resources Management Plan (INRMP) provides the opportunity for the proper inventorying, cataloging, and management of natural resources found on US government DOD managed lands. The DOD must review or update INRMPs for each installation with identified natural resources every five years to update the needs of local natural resource management policies. These policies affect all aspects of an installation's physical environment, including water quality, biodiversity, ecosystem, habitat quality, and mineral resources. These plans create the opportunity for the DOD and local base commanders to work with other federal, state, and local agencies to properly manage significant local resources for the maximization of compatible mixed use.

The Fort Drum INRMP outlines the various natural resources and addresses other related topics including important habitat found on the installation, soil types, management of noxious weeds and wildland fire, wildlife and riparian management, water resources and water rights, inter-agency responsibilities, and coordination efforts. It also provides the overall management plan for natural resources on Fort Drum to ensure no loss of capability for military training exercises.

Bird / Animal Aircraft Strike Hazard (BASH)

Fort Drum's BASH Plan is integrated into the INRMP and is part of WSAAF's Standard Operating Procedures, with a focus on minimizing potential wildlife strikes to military aircraft operating at WSAAF. A BASH plan is designed to manage bird habitats and activity, alert aircrew and operations personnel, and provide increased levels of flight safety, especially during the critical phases of flight, take-off, and landing operations. Specifically, the plan is designed to:

- Designate a BASH Working Group (BWG) and outline the members' responsibilities.
- Establish procedures to identify high hazard situations and establish aircraft and airfield operating procedures to avoid these situations.
- Ensure that all permanent and transient aircrews are aware of bird hazards and the procedures for avoidance and reporting.
- Develop guidelines to decrease the attractiveness of the airfield to birds and disperse the number of birds on the airfield.

State of New York

The state tools provide further assistance and protection of lands in the State of New York. The tools authorize or mandate local counties and cities to provide for the protection of the state’s valuable industries including the DOD and agriculture. In addition, the state’s tools require communities and developers to protect and preserve the state’s natural resources, including land and water, through regulatory measures to protect them from over-consumptive practices.

Municipal Governance

The State of New York comprises counties, cities, towns, and villages. The way in which each of these municipalities is governed has impacts on compatibility issues outside Fort Drum’s fence line. New York is a Home Rule state. Article 9 in the New York State Constitution is the Municipal Home Rule Law, which grants municipalities authority to adopt and amend local laws, so long as they are not inconsistent with the New York State Constitution or any general law relating to its property, affairs, or government.

Comprehensive Planning Legislation

The State of New York provides legislative guidance for comprehensive planning at the county, town, city, and village level. However, the state does not require municipalities to adopt comprehensive plans. It is only encouraged by the legislature.

Zoning Law

The State of New York permits cities, towns, and villages to implement zoning laws and regulations to promote communities’ morals, health, safety, and general welfare. Such municipalities reserve the right to regulate and restrict percentage of lot coverage, location of structures on properties, size of yards, building heights and number of stories, density of population, and uses of the land for properties under their jurisdiction. Communities in New York are not required to adopt zoning regulations. While state laws suggest that communities should adopt zoning regulations in accordance with a comprehensive plan, court cases have determined this is not a requirement.

New York State Agricultural Districts Program

The New York Agricultural Districts law was enacted in 1971 to protect and promote farm land and farm activities throughout the state. According to the NYSDEC, the purpose of agricultural districts is to encourage agricultural activity and protect farm land. This law permits any land owner or owners that own at least 250 acres of land to submit an agricultural district to their respective county for county review, state certification, and county adoption. Upon creation of an agricultural district, local laws may not “unreasonably restrict or regulate farm operations,” unless public health or safety is threatened. Each certified agricultural district must go through a recertification process every eight years to ensure the majority of the land within the district is used for agricultural purposes. New properties may be added to an agricultural district once per year during an annual inclusion period.

New York State Energy Plan

Article 6 of the New York State Energy Law requires that, every four years, the State Energy Planning Board adopt a State Energy Plan that serves as a guide for public bodies throughout the State to make decisions consistent with statewide plans and policies related to energy. This influences many aspects of land use and planning throughout New York, including consideration of infrastructure needs and adequacy, energy efficiency in buildings, reduction of greenhouse gas emissions, and the development of energy generation and renewables. The most recent State Energy Plan, issued in 2015, provides goals and long-range planning objectives for the entire State. These goals, in

part, have been codified by the state's Clean Energy Standard, adopted by the New York State Public Service Commission in 2016. The Clean Energy Standard sets renewable energy targets and encourages the development of small- and large-scale renewable generation in New York, which explains the growth in wind energy development in the North Country.

New York State Legislation Article 10 of the Public Service Law

The State of New York passed the Power New York Act of 2011. This Act transfers the siting and permitting process for energy generating facilities (including renewable energy developments) for projects that have the capacity to generate 25 megawatts (MW) or more from local communities to the New York State Board on Electric Generation Siting and the Environment (Siting Board). The Siting Board is a seven-member board, consisting of:

- Department of Public Services Chair (also serves as the Siting Board chairperson)
- NYS Department of Environment Conservation Commissioner
- Health Department Commissioner
- NYS Energy Research & Development Chair
- Economic Development Commissioner
- Two "ad hoc" members that reside in the respective municipality the project is being proposed

The two appointed ad hoc members of the Siting Board are selected by the New York State Senate and the New York State Assembly from a list of candidates provided by the supervisor and chief executive officer representing the impacted communities.

Article 10 requires energy developers to provide, among other things, a thorough analysis of a proposed project's impacts on transportation, including air transport and airspace safety, as well as communications systems, such as radar. In particular, a wind project seeking certification under Article 10 must consult with—and in some cases, obtain formal recommendations from—the US Department of Defense and the Federal Aviation Administration to identify and assess potential impacts on military operations, airspace, and aircraft of all types, and then work with those entities to determine how to minimize, avoid, or mitigate those impacts to the extent practicable. This legislation also requires Article 10 applicants to provide intervenor funds and a series of 41 exhibits illustrating their due diligence on the surrounding community, including exhibits demonstrating the local communities land use controls, as well as impacts to military training routes and radars.

JLUS Partner Community Planning Tools

Many of the communities around Fort Drum have local planning tools such as zoning laws and comprehensive plans to guide future growth, but some of them have not been updated in 10 or more years. The majority of these tools do not have policies or regulations to address planning or growth in relation to Fort Drum and military operations associated with the installation. At the times the tools were developed, there was not much interface with Fort Drum to include these types of policies or regulations. Part of the JLUS process is to enhance coordination between Fort Drum and the communities and look at potential updates to these tools that will help address compatibility between Fort Drum and the communities into the future. It should be noted that some of the communities do not have their own planning documents, policies, or regulations. In some of these cases, the communities rely on planning guidance from the county level, or by regional planning entities such as the Tug Hill Commission, Development Authority of the North Country, and Adirondack Park Agency.

County Planning Departments and Planning Boards

Many of the rural communities within Jefferson, Lewis, and St. Lawrence counties do not have adequate resources to develop and manage their own land use planning tools and land development. The counties have planning departments and planning boards that not only provide planning and development guidance and oversight at the county level, but also provide technical assistance to the communities within them. County planning departments can assist with project development, review, and administration, assistance in developing comprehensive plans and zoning laws, grant writing, research and analysis services, geographic information system (GIS) mapping, and provide technical assistance and guidance on Fort Drum-related growth and development around the installation.

Jefferson County

Building Code

Jefferson County utilizes the New York State Building Standards and Codes Uniform Code Supplement, most recently updated in March, 2016 as its general building code. However, the building code does not currently address sound attenuation around Fort Drum within the noise zones. Jefferson County has land within Fort Drum's operational footprints for noise and certain types of development are incompatible in these noise zones unless they are constructed with sound attenuation measures to reduce the indoor noise levels. The County could revise its building code to require sound attenuation measures for certain types of development, such as residential, within the noise zones.

City of Watertown

Land Use Plan

The City of Watertown adopted a Land Use Plan in 1987 in response to the growth of Fort Drum associated with the reactivation of the 10th Mountain Division at Fort Drum in 1985. Watertown's Land Use Plan projected potential effects upon the City due to the growth of Fort Drum at the time it was developed, including a need for increased housing to support military personnel and families, and traffic congestion in some areas caused by personnel driving to Fort Drum. The Plan recognizes the importance and influence of Fort Drum on the City at the time, but it is now outdated.

Zoning

The City of Watertown's Zoning Law is Chapter 310 of the City Code and divides the city into 15 land use districts. It was most recently updated in 2013. Due to the City of Watertown's distance from Fort Drum, it is not within any of the military footprints associated with operations at the installation (see Chapter 3, Section 3.4 Mission Operations Footprints), so it is not necessary to adopt zoning laws for land within Fort Drum operational footprints, such as noise.

Towns of Champion and Wilna, and Villages of Carthage and West Carthage

Comprehensive Plan

The towns of Champion and Wilna and the villages of Carthage and West Carthage are all members of the River Area Council of Governments, and therefore each have their own individual comprehensive plans that are built off the same template, and as such are very similar in layout and text. All four comprehensive plans were adopted in 2009. These communities collaborated their land use planning efforts and used the same comprehensive template to address collective issues. It is clear each of these communities recognize Fort Drum as an important economic generator, and acknowledge in several instances throughout the comprehensive plans as

how the installation influences their population trends, schools, and economy. One of the issues identified is their proximity to Fort Drum and how they can protect the installation from incompatible land uses.

Each community identified a Fort Drum Land Use Planning Zone as a land use concept to address compatible land uses surrounding the installation. However, these are only a concept and do not have any implementing regulations attached to the zone. Furthermore, the communities' zoning codes do not include a Fort Drum Land Use Planning Zone, and none of the communities have officially implemented a Fort Drum Land Use Planning Zone as local law.

Also consistent in each comprehensive plan are the implementation recommendations for communication regarding appropriate development surrounding Fort Drum. However, while these policies help prompt discussions and facilitate communication lines between the communities and Fort Drum, they do not have the necessary regulatory backing. None of the communities have adopted land use controls addressing compatibility surrounding the installation as recommended in the comprehensive plans, and have not implemented zoning regulations specific to areas that may be affected by operations at Fort Drum to promote compatible development with the types of activities that occur in the military operational areas.

Zoning

The towns of Champion and Wilna and villages of Carthage and West Carthage have all adopted zoning laws. The zoning laws were most recently updated in 2013 (Champion), 1987 (Wilna), 2011 (Carthage), and 2005 (West Carthage). The towns of Champion, Carthage, and West Carthage have lighting standards in their zoning laws that require appropriate shielding to minimize glare and reflection, as well as limit the maximum apex angle of the cone of illumination to 150 degrees. This helps reduce nighttime lighting impacts on night training operations at Fort Drum.

Town of LeRay

Comprehensive Plan

The Town of LeRay Comprehensive Plan, adopted in 2009, is the policy document that guides the town's long-range development plans. Since Fort Drum's Cantonment Area and Wheeler-Sack Army Airfield are completely located within the Town of LeRay's boundaries, the community and Fort Drum are intimately related and dependent on each other for long-term growth and sustainability. Therefore, the guidelines outlined in LeRay's Comprehensive Plan are important because of their potential impacts on operations at Fort Drum. The Town of LeRay's Comprehensive Plan acknowledges Fort Drum's importance to LeRay's economy and the impacts the town and Fort Drum have on one another. This is particularly noted in Chapter Four – Town Character Areas: Fort Drum.

Following are several compatibility factors addressed by the Comprehensive Plan.

- Communication / Coordination
- Energy Development
- Housing Availability
- Land Use
- Noise
- Public Transportation
- Safety Zones

Zoning

LeRay's zoning map identifies the noise zones created by Fort Drum training operations that extend into its jurisdiction. However, these noise zones identified are not connected to nor mentioned in LeRay's zoning laws. The underlying areas within these noise zones have potential for incompatible development with Fort Drum's training, leaving the installation vulnerable to a potential increase of noise complaints if higher density development is constructed.

LeRay's zoning law does have a lighting requirement that helps protect Fort Drum's night training. Section 158-75 contains general lighting requirements for the Town of LeRay. One such ordinance in this section reads, "Fixtures shall be 'dark sky' compliant." This ordinance limits the amount of light that may trespass onto adjacent properties, and helps keep the night sky darker for enhanced night vision training.

Compatibility with Fort Drum is addressed in Section 158-142 Preliminary Site Plan Approval. This section permits the Planning Board to consult with the Fort Drum community planner prior to approving a site plan application, although this is not a requirement.

Town of Philadelphia

Zoning Code

The Town of Philadelphia's Zoning Code is adopted as a local law to protect the town's existing development, while controlling growth and promoting general welfare. This zoning code contains an ordinance for commercial outdoor lighting. Section 555 Commercial Outdoor Lighting reads,

In order to reduce the potential negative impact on training at Fort Drum by excessive outdoor lighting, the following commercial outdoor lighting regulations shall apply when reviewing special permit applications and conducting site plan reviews.

This lighting requirement imposed by the Town of Philadelphia minimizes the amount of ambient light being reflected into the sky, supporting Fort Drum's night vision training.

Town of Watertown

Comprehensive Plan

The current Town of Watertown Comprehensive Plan was adopted in 2014. The plan acknowledges that future growth in the town will be tied to growth at Fort Drum, among other factors. It identifies Fort Drum as both an opportunity for future growth and development in the town, and as a threat relating to the uncertainty of Fort Drum's future and the impact it could have on the town.

Zoning

The Town of Watertown's zoning code was most recently updated in 2012. It includes lighting standards that lighting shall comply with guidelines set forth by the International Dark Sky Association or equivalent and requires all lights to be shielded to restrict the maximum apex angle of the cone of illumination to 150 degrees. These regulations assist in reducing nighttime lighting impacts to night vision operations at Fort Drum.

Lewis County

Comprehensive Plan

Lewis County adopted a Comprehensive Plan in October, 2009. The Comprehensive Plan does acknowledge Fort Drum's importance and influence upon the county, and includes Fort Drum as a regional stakeholder identified as part of Policy Area 7: Regional Coordination; however, there are no specific policies to address Fort Drum's military operation areas.

Tug Hill Commission

The Tug Hill Commission is a non-regulatory state agency that was created by New York State in 1972. Its mission is to "enable local governments, private organizations, and individuals to shape the future of the Tug Hill region, to demonstrate and communicate ways that this can be done by other rural areas." The Tug Hill region encompasses 41 towns and 19 villages in parts of Jefferson, Lewis, Oneida, and Oswego counties, several of which participated in this JLUS. The commission is built upon empowering the citizens and communities within its area and assisting them with means to shape their communities to support their values for the future. This is done through efforts such as community programs, education, fund raising, and community improvement projects. The Commission also provides important services to local governments, economic development organizations, and other local groups, such as technical assistance, community development, geographic information systems (GIS) and other technology services, land use planning, natural resource management, and shared staff resources through a circuit rider program. These resources are very important for communities that don't have their own resources or staff capacity to perform these tasks on their own.

Development Authority of the North Country

The Development Authority of the North Country was created by the New York State legislature in 1985 to assist with coordination and communication between Fort Drum and the three counties that surround it (Jefferson, Lewis, and St. Lawrence) following the announcement of the reactivation of the 10th Mountain Division at Fort Drum. Since its inception, the Development Authority of the North Country has evolved to provide more services for the communities within the three counties, and it operates a solid waste management facility, water and wastewater facilities, an open access telecom network, and administers several business and housing loan programs available to the communities. The Development Authority of the North Country's mission is to "serve the common interests of Jefferson, Lewis, and St. Lawrence counties by providing technical services and infrastructure, which will enhance economic opportunities in the region and promote the health and well-being of its communities." This is accomplished through the provision of shared services, fee-based services, administration for communities, solid waste management, water quality management, engineering, telecommunications, and community development. Fort Drum is a vital focus for the Development Authority, which provides water, sewer and telecommunications infrastructure to the post, as well as land use planning support, and has partnered with the post on housing initiatives. The Development Authority of the North Country also has a dedicated community planner who serves as the liaison between Fort Drum and the communities in the three counties. This staff resource has proved invaluable during the development of this JLUS by coordinating the various community stakeholders to work towards a common goal of achieving improved communication between the military and its neighboring communities.

Please see the next page.

Compatibility Assessment

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

A number of factors assist in determining whether community and military plans, programs, and activities are compatible or in conflict with joint land uses such as community activities and military installations. For this Joint Land Use Study (JLUS), 25 compatibility factors were used to identify, determine, and establish a set of key JLUS compatibility issues. These compatibility factors are listed below.

Methodology and Evaluation

The methodology for the Fort Drum JLUS consisted of a comprehensive and inclusive discovery process to identify key stakeholder issues associated with the compatibility factors. At the initial Steering Committee (SC) and Technical Working Group (TWG) workshops and public meetings, as well as through stakeholder interviews with the communities surrounding Fort Drum and other regional organizations, stakeholders were asked to identify the location and type of issue in conjunction with compatibility factors they thought existed today or could occur in the future. As a part of the evaluation phase, the SC, TWG, and the public examined and prioritized the extent of existing and potential future compatibility issues that could impact land within or near the JLUS Study Area. This was conducted through a group exercise at a scheduled TWG meeting, and at the second public open house workshop. At the public workshop, attendees were given a set of stickers to identify the importance of each compatibility factor to them. The results of the public workshop issues importance exercise are included in the JLUS Appendix. Other factors and associated issues were analyzed based on available information and similarity with other community JLUS experiences around the country. The results of these prioritization efforts helped to guide the timeframe for when the recommended strategies in the JLUS Implementation Plan should be started to address issues that were of greater concern among stakeholders. The development of strategies to address compatibility is directly and indirectly affected by the evaluation of issues.

COMPATIBILITY FACTORS	
AQ Air Quality	LU Land Use
AT Anti-Terrorism / Force Protection	LEG Legislative Initiatives
BIO Biological Resources	LG Light and Glare
COM Coordination / Communication	MAR Marine Environments
CR Cultural Resources	NOI Noise
DSS Dust / Smoke / Steam	PS Public Services
ED Energy Development	PT Public Trespassing
FSC Frequency Spectrum Capacity	RC Roadway Capacity
FSI Frequency Spectrum Impedance / Interference	SA Safety Zones
HA Housing Availability	SNR Scarce Natural Resources
IE Infrastructure Extensions	VO Vertical Obstructions
LAS Land / Air / Sea Spaces	V Vibration
	WQQ Water Quality / Quantity



When reviewing the assessment information in this chapter, it is important to note the following:

- This chapter provides a technical background on the factors and issues discussed based on available information. The intent is to provide an adequate context for awareness, education, and development of JLUS recommendations. It is not designed or intended to be utilized as an exhaustive technical evaluation of existing or future conditions within the JLUS Study Area.
- Of the 25 compatibility factors considered, seven were determined to be inapplicable to this JLUS:
 - Air Quality
 - Anti-Terrorism / Force Protection
 - Frequency Spectrum Capacity
 - Frequency Spectrum Impedance / Interference (Note: Issues associated with wind turbine impacts to radar functionality are discussed under the Energy Development issues, and no additional frequency spectrum impedance / interference issues were identified through this JLUS process.)
 - Marine Environments
 - Scarce Natural Resources
 - Water Quality / Quantity

Organization of the Compatibility Issues Identified

Chapter 5 is organized into two main sections: Awareness Items and Compatibility Issues.

The Compatibility Issues section identifies the more important issues for the Fort Drum JLUS and as such is organized by compatibility factor.

A more detailed assessment and analysis of each of the Awareness Items and Compatibility Issues can be found in Chapter 5, Compatibility Assessment in the JLUS Supporting Information document.

Fort Drum JLUS Awareness Items

The Awareness Items are issues that were originally identified, but through assessment and further review by the JLUS Technical Working Group and Steering Committee, were determined to either no longer be issues, or are adequately managed through existing processes. However, these are items that should be monitored in the future to ensure they do not become issues down the road. These items are separated from the set of compatibility issues, and the Awareness Items do not have strategies associated with them in the JLUS Implementation Plan.

- **Jefferson County nonattainment for ozone standard**

Jefferson County was historically in nonattainment for the 8-hour Ozone air quality. As of the preparation of this JLUS, it is in attainment for the 2015 Ozone standard. Regional air quality nonattainment can impact the operations at Fort Drum by limiting types of activities that affect air quality, such as certain aircraft operations. Fort Drum and the surrounding communities often have little control over air quality as wind patterns over Lake Ontario may bring poorer quality air from the Midwest over the region.
- **Obtaining response from Fort Drum on development application review**

Communities send certain types of development applications to Fort Drum for review, but do not always receive a formal response from the installation on compatibility concerns with the proposed development potentially impacting or being impacted by Fort Drum operations.

- **Public users have different regulations that apply to on- and off-installation activities**

Users find rules for public activities and use of land, such as hunting and recreation, are different on-installation versus off-installation. This is due to external policies and requirements that dictate regulations on how the installation manages these Federal / DOD resources.
- **Management of Native American cultural sites on-installation**

There are numerous Native American cultural sites on Fort Drum that require coordination between Fort Drum and Native American community members for tribal members to access the sites.
- **Basic Allowance for Housing (BAH) rate causes fluctuation on local rental market**

There is public concern that some local rental markets may be affected by BAH rates, driving up housing rates and making it more expensive than lower income civilian residents can afford.
- **Difficulty for military personnel to sell homes**

The local community real estate market is cyclical. Rentals and homes can be easy and hard to find, during some cycles homes can be hard to sell. Soldiers who are stationed at Fort Drum and buy a home may have trouble selling it if / when they are stationed somewhere else due to the transient nature of their assignments, causing houses to remain vacant depending on the cycle.
- **Fort Drum operational lighting encroaching on Native American ceremonies**

Light pollution occurs from Fort Drum's runway lights on a nearby archeological site used for night sky rituals / ceremonies by Native Americans.
- **Low-level flights over rivers**

There are concerns that low-level aircraft flights over rivers and other sensitive areas may impact quality of life of residents or affect wildlife.
- **Trauma center services location from Fort Drum**

The closest Level I trauma center hospital to Fort Drum is in Syracuse, which is more than an hour's drive away. This can cause delay in getting needed medical support, especially during high-trauma events where time is of the essence.
- **Roadway congestion along Route 26**

Route 26 can back up during peak traffic, especially when it is shut down for Fort Drum convoys.
- **Emergency communication towers siting throughout Jefferson County**

Jefferson County is planning on installing 12 emergency communication towers for 911 calls throughout the county by 2019. Four of the antennas are planned to be taller than 199 feet above ground level. Depending on their locations, these could pose vertical obstructions for aircraft if siting is uncoordinated.
- **Military and civilian use of airspace in the region**

There are concerns that the competition for airspace may create limitations in the region between military and non-military aircraft. An increase in commercial and general aviation would need to be properly coordinated with military aircraft operations at Fort Drum and within its surrounding special use airspace, and an increase in military aircraft operations could impact aviation expansion opportunities at Watertown International Airport.
- **Fort Drum's use of frequency spectrum**

Fort Drum, like all DOD installations, has access to a specific range of the frequency spectrum for use in communications. Civilian use of these frequencies may experience interference.

Fort Drum JLUS Compatibility Issues by Factor

Compatibility issues are any action undertaken by either the military or community that minimizes, hinders or presents an obstacle to the action of the other. Following is a list of each compatibility issue identified in the Fort Drum JLUS grouped by the associated compatibility factor.

Biological Resources (BIO)

Biological resources include federal and state listed species (threatened and endangered species) and their habitats. These resources may also include areas such as wetlands and migratory corridors that are critical to the overall health and productivity of an ecosystem. The presence of sensitive biological resources may require special development considerations and should be included early in the planning process. The following Biological Resources issues were identified:

- **Presence of threatened and endangered species in the region**
There are currently two federally listed species (the endangered Indiana Bat and the threatened Northern Long-Eared Bat) that are found on or around Fort Drum. Their presence and requirements to preserve their habitat can impact operational capabilities of the installation. There is the potential that additional species in the region could become federally listed as threatened or endangered as well.
- **Public misperception of amount of wood required to produce energy at the biomass facility on Fort Drum**
There are concerns in the local community that the biomass facility located at Fort Drum requires excessive amounts of wood to produce energy, and it may create an incentive to cut down forests that would otherwise be uneconomical to harvest.



Indiana bats drinking from water condensation on a cave wall

Photo Credit: USFWS; Andrew King, Source: www.fws.gov/midwest/

Communication / Coordination (COM)

This discussion refers to the programs and plans that promote interagency communication and coordination. 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, such as comprehensive plans. The following Communication / Coordination issues were identified:

- **Formal channels of communication between Fort Drum and local communities**
Official established information sharing and communication between Fort Drum and local planning officials and municipal staff is limited.

Cultural Resources (CR)

Cultural resources are an aspect of past / current human activity that is valued by or significantly representative of a culture or contain significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as artifacts, records, districts, pre-contact archaeological sites, historic archaeological sites, buildings, structures, and objects. Historic properties are cultural resources that are eligible or listed on the National Register of Historic Places. Cultural resources may prevent development, require development constraints, or require special access by Native American tribal governments or other authorities. The following Cultural Resources issues were identified:

- **Opportunity for improved access for cemeteries on-installation**

There are historic cemeteries on Fort Drum that existed before the installation was established. These are important to the local communities and residents with ancestors buried there who sometimes want to visit the sites. Sometimes visiting the cemeteries can be difficult for off-installation visitors.



Image of Lewisburg Cemetery at Fort Drum

Source: *Digitizing the Historic Cemeteries of Fort Drum, NY*

Photo Credit: Michael Sprowles

Dust / Smoke / Steam (DSS)

Dust results from the suspension of particulate matter in the air. Dust and smoke can be created by fire (controlled or prescribed 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). The following Dust / Smoke / Steam issue was identified:

- **Smoke originating from Fort Drum may impact the community**

Smoke from range fires and forest fires on Fort Drum, particularly in summer months, sometimes drifts off-installation and impacts local communities. Factors such as wind and the fire burn time (e.g., when left to burn for prolonged times to reduce fire fuel) may increase the impact.

Energy Development (ED)

Development of energy sources, including alternative energy sources (such as solar, wind, geothermal, or biofuels) could pose compatibility issues related to glare (solar energy), or vertical obstruction and radar operations (wind generation). It is in both the installation’s interests as well as the community to support alternative energy development for both energy security and economic reasons respectively.

During the development of the Fort Drum JLUS, existing and potential future wind energy development impacts to Fort Drum’s Digital Airport Surveillance Radar at Wheeler-Sack Army Airfield and KTYX Weather Surveillance Radar in Montague were identified as the most important compatibility issues to assess and work to mitigate. At the time the JLUS was written, there were existing impacts from current wind energy development that have some mitigation options, but they are not 100% solutions. No 100% solutions have been identified to address existing issues. There are seven proposed industrial wind energy projects within 30 miles of the two radar sites that may cause additional impacts. Mission impacts from wind energy development should be evaluated both on a case-by-case basis and a cumulative basis.



Industrial wind turbines from the Maple Ridge Wind Farm

Source: EDP Renewables

The following Energy Development issues were identified:

- **Industrial wind energy development compatibility with Fort Drum mission**

There are existing wind turbines near Fort Drum that are currently managed to a degree, but not entirely mitigated, in terms of mission impacts. There are currently seven other proposed industrial wind energy development projects in the JLUS Study Area that have the potential to hinder existing and future mission capabilities at Fort Drum. Additional future industrial wind turbine development if not properly mitigated could have an adverse impact on military readiness, including flight operations, testing and evaluation, and training that is likely to impair or degrade the ability of units to perform their warfighting missions. Any additional wind energy development may potentially increase the existing impacts in a cumulative way.

- **Wind turbine development compatibility with weather radar**

Existing wind turbines in the line-of-sight of the 18th Weather Squadron Doppler radar impact the functionality of the equipment. Future wind development close to the radar could further impact the Weather Squadron's mission.

- **Future industrial solar development siting compatibility with military operations**

Some communities have plans of developing / approving fixed-panel solar energy development that could create glare for Fort Drum pilots. Future solar development in the region may also cause impacts depending on siting locations.

Housing Availability (HA)

Housing availability addresses the supply and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel, and the supply of military family housing provided by the installation. The following Housing Availability issues were identified:

- **Surplus multi-family housing**

There is public concern that there is a surplus of multi-family housing in the local communities that was originally built to support Fort Drum during a buildup in the number of personnel stationed there, and some of the housing is now vacant.

Infrastructure Extensions (IE)

Infrastructure extensions refers to public facilities and services such as sewers, water, electric, and roadways that are required to support development (existing and proposed).

Public facilities and services should be appropriate for the type of urban or rural development they serve, but also limited to the existing and planned needs and requirements of the area. For example, the provision of a safe transportation system, including all modes of transportation (automobile, mass transit, railway, highway, bicycle, pedestrian, air, water, etc.), is an important infrastructure component. Adequate transportation infrastructure contributes to local, regional, and state accessibility. The following Infrastructure Extensions issue was identified:

- **Desire for enhanced public transportation services to Fort Drum and surrounding communities**

There is a desire among Fort Drum personnel and members of the surrounding community to have enhanced public transportation services between Fort Drum and amenities outside the installation such as shopping, restaurants, entertainment, and businesses.

Land / Air / Sea Space Competition (LAS)

The military manages and 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 and civilian land, air, and sea operations can compete for limited land, air, and sea space, especially when the usage areas are in close proximity to each other. Use of these shared resources can impact future development and operations for all users. While this JLUS assesses land and airspace competition, due to Fort Drum's location, there is no sea space competition. The following Land / Air / Sea Space Competition issues were identified:

- **MQ-9 Reaper Hellfire ordnance training**
The weapon danger zone for MQ-9 Reaper Hellfire ordnance is too large to be contained within the boundaries of Fort Drum, requiring this type of weapon training to be conducted at other facilities.
- **Inadequate amount of maneuver space on the Fort Drum installation**
Fort Drum does not have adequate maneuver space capacity to accommodate the increased training to support the Army's new Sustainable Readiness Model. This is partially due to the requirement of maintaining wetlands on-installation, which reduces the amount of land available for certain activities such as grading, paving, and other activities that would impact wetlands.



The 174th Fighter Wing prepares an MQ-9 Reaper for takeoff at Wheeler-Sack Army Airfield

Source: US Air Force

Photo Credit: Staff Sgt. Ricky Best

Land Use (LU)

The basis of land use planning and regulation relates to the government's role in protecting the public's health, safety, and welfare. Local jurisdictions' general plans and zoning ordinances can be the most effective tools for preventing 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 adversely impact the use of another. For instance, industrial uses are often separated from residential uses to avoid impacts from noise, odors, and lighting. The following Land Use issues were identified:

- **Incompatible development encroachment around Fort Drum**
There is some existing development around Fort Drum that has caused encroachment concerns. There is a potential for future development to occur if appropriate land use regulations are not put in place by communities to limit growth around the installation in areas that may impact Fort Drum's ability to carry out its missions or put the installation at risk for future operations.
- **Limiting land uses would impact economic development in local communities**
Restricting certain land uses such as residential and commercial around Fort Drum could negatively impact economic development and residential character for neighboring communities.

- **Landowner concerns of ACUB designation impacting property values**

There are some landowners of parcels that have been identified as ACUB priority areas that are concerned about the ACUB process and how it will affect their property values. Some owners who do not wish to sell their development rights may misunderstand that the ACUB process only works with willing property owners.

- **Potential new missile mission assigned to Fort Drum**

There is a potential that Fort Drum could gain 60 missile silos as part of a new Missile Defense Agency mission. The community is concerned about impacts to nearby property values and the closure of Route 3A through Fort Drum.

Legislative Initiatives (LEG)

Legislative initiatives are proposed changes in relevant policies, laws, regulations or programs which could potentially have a significant impact on one or more substantive areas of concern to both the installation and to the stakeholder communities. The focus of this compatibility issue is on initiatives with general and broad implications. The following Legislative Initiatives issue was identified:

- **Power NY Act (Article 10) state legislation**

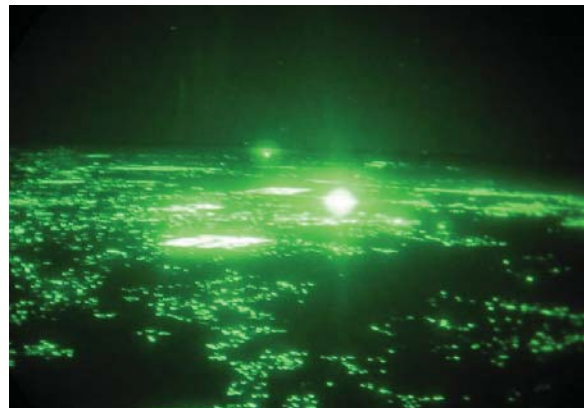
New York's Article 10 legislation changed the processes and procedures in New York for permitting energy generation facilities and requires a state-level Siting Board play a role along with municipalities in the development.

Light and Glare (LG)

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. The following Light and Glare issues were identified:

- **Light encroachment from regional development on Fort Drum training**

Large sources of light in the region, such as commercial lots like car dealerships, can produce a lot of ambient light that can impact night training at Fort Drum.



Example of light impacts to night vision training

Source: Fort Drum, Greater Fort Drum Region
Encroachment Prevention Tools PowerPoint Presentation

Noise (NOI)

Sound that reaches unwanted levels is referred to as noise. The central issue with 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. The decibel (dB) scale is used to quantify sound intensity. To help understand the relevance of decibels, a normal conversation often occurs at 60 dB, while an ambulance siren from 100 feet away is about 100 dB. Noise associated with military operations (arrival / departure of military aircraft, firing of weapons, etc.) may create noises in higher dB ranges. The following Noise issues were identified:



Small arms weapon firing training at Fort Drum

- **Noise encroachment on quality of life**

Military operations at Fort Drum, such as weapons firing, aircraft overflight, and ordnance detonations, cause noise that is heard off-installation in the local communities.

Public Services (PS)

Public services include the assurance that adequate services such as police, fire, emergency services, parks and recreation, and water / wastewater / stormwater infrastructure are of good quality and available for use by the installation and surrounding communities as the area develops. The supply and demand of these public services in the event of emergency situations is also considered. The following Public Services issues were identified:

- **Department of Motor Vehicles services relocated from Fort Drum**

Jefferson County used to operate a Department of Motor Vehicles (DMV) office on-installation for Fort Drum personnel, but it was closed due to low usage. It is harder for Fort Drum personnel to get time to leave the installation for DMV services.

Public Trespassing (PT)

This factor addresses public trespassing, either purposeful or unintentional, onto a military installation. The potential for trespassing increases when public use areas are in close proximity to an installation. The following Public Trespassing issue was identified:

- **Fort Drum personnel trespassing onto private property**

Soldiers training at Fort Drum occasionally trespass onto private property.

Roadway Capacity (RC)

Roadway capacity relates to the ability of existing freeways, highways, arterials, and other local roads to provide adequate mobility and access between military installations and their surrounding communities. The following Roadway Capacity issues were identified:

- **Maintenance of shared roads**

Two public roadways through and around Fort Drum are used by the military and civilians and are costly to maintain.

Safety (SA)

Safety zones are areas in which development should be more restrictive, regarding use and concentrations of people, due to the higher risks to public safety. Issues to consider include aircraft accident potential zones. The following Safety issues were identified:

- **Wheeler-Sack Army Airfield accident potential zones extend outside the installation boundary**
The accident potential zones associated with Wheeler-Sack Army Airfield extend beyond the boundaries of Fort Drum over neighboring communities. These pose safety concerns for the communities in the unlikely event that an aircraft mishap was to occur.
- **Fuel truck transport and incident response**
All fuel to Fort Drum is brought in by truck. If an accident were to occur, it could cause environmental damage or cause hazards to personnel or civilians.
- **Doppler weather radar no-build zone compatibility**
The 18th Weather Squadron Doppler radar has a four-kilometer (2.5 mile) radius no-build zone around it to protect the safety of personnel that work on the radar, but the no-build zone is not enforceable by NOAA or DOD.

Vertical Obstructions (VO)

Vertical obstructions are created by buildings, trees, structures, or other features that may encroach into the navigable airspace or impede line-of-sight radar signals used by the military. These obstructions can be a safety hazard to both the public and military personnel and potentially impact military readiness. The following Vertical Obstructions issues were identified:

- **Cell tower compatibility and future siting**
There are existing cell towers south of Wheeler-Sack Army Airfield that pose vertical obstructions for aircraft. Uncoordinated construction of future cell towers could cause additional impacts.
- **Wind turbines impacting flight paths**
Growth in the wind energy development industry in the region could cause vertical obstructions in low level military training routes. Six currently proposed industrial wind energy developments are in low-level flight training routes.
- **Lack of zoning height limits impacts to flight operations**
Some local communities around Fort Drum do not have height limits in their zoning codes. This may impact flight operations if future development results in obstructions.

Vibration (V)

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. The following Vibration issue was identified:

- **Vibration felt outside Fort Drum’s boundaries**
Helicopter flights and artillery firing at Fort Drum cause vibration impacts outside the installation. Some residents have stated that they have experienced structural damage to their property as a result of activities at Fort Drum.



500-pound Mark 82 bomb exploding at Range 48

Source: US Army.

Photo Credit: Mrs. Michelle Kennedy

Implementation Plan

This chapter identifies and organizes the recommended courses of action (strategies) that have been developed through a collaborative effort between representatives of local jurisdictions, property owners, Fort Drum, local organizations, the general public, and other stakeholders that own or manage land or resources in the region. Since the Fort Drum JLUS is the result of a collaborative planning process, the strategies 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 promote education, communication, compatible land use, and resource planning. Upon implementation, existing and potential compatibility issues arising from the civilian / military interface can be removed or significantly mitigated. The recommended strategies function as the heart of the JLUS document and are the culmination of the planning process.

It is important to note that the JLUS is not an enforceable plan, but rather a recommended set of strategies which should be implemented by the JLUS participants in order to address current and potential future compatibility issues.

Each of the JLUS strategies that are included in this chapter is meant to address the specific compatibility issues that are described in greater detail in Chapter 5 of the Fort Drum JLUS Supporting Information document. The issues are identified before each set of associated strategies as a point of reference to what the strategies are addressing. The issues correspond to the compatibility factors in Chapter 5 of the JLUS Supporting Information document for easy reference and can be used to read additional information on the specifics of the issues.

The key to the implementation of strategies is the establishment of a Fort Drum Compatibility Committee (see Strategy COM-1F) to oversee the execution of the JLUS. Through this committee, local jurisdictions, Fort Drum, developers, and other stakeholder parties can continue their collaboration to establish procedures, recommend or refine specific actions, and make adjustments to strategies over time to ensure the JLUS continues to resolve key compatibility issues into the future through realistic strategies and implementation. Appropriate local jurisdictions and local stakeholder groups, especially those engaged in a compatibility issue at the local level, will be formally invited to participate as committee members to ensure local input and social inclusion.



Implementation Plan Guidelines

The key to a successful Implementation Plan is balancing the different needs of all involved stakeholders. To produce a balanced plan, several guidelines were used as the basis for strategy development. These guidelines included:

- Recommended strategies must not result in a taking of property value, meaning they do not render the property undevelopable or unable to achieve economic gain by removing all development rights of the property, as defined by state law. The use of eminent domain, defined as a government entity taking private property, with compensation, for public use, is not included in any of the recommended strategies.
- In some cases, the recommended strategies can only be implemented with new enabling legislation.
- In order to minimize regulation, many of the strategies are only recommended within the specific geographic area for which the issue they address occurs (e.g., within the Fort Drum noise contours), instead of recommended for the whole JLUS Study Area.
- 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 percent buy-in from all stakeholders, it was determined that the solution / strategy may result in the creation of multiple strategies that address the same issue but tailored to individual circumstances.
- Since this JLUS is meant to be a “living document”, and state and federal regulations are subject to change, before implementing one of the suggested strategies included in the Implementation Plan, the implementing jurisdiction or party should ensure there is no conflict between the strategy and any existing local, state, or federal law.

Fort Drum Military Compatibility Areas and Military Influence Areas

For this JLUS, the terms Fort Drum Military Compatibility Area (MCA) and Military Influence Area (MIA) are used to identify geographic areas where Fort Drum operations may impact local communities, and conversely, where local activities may affect the installation’s ability to carry out its mission(s). The term MCA is used to identify locations within Fort Drum’s operational footprints (noise and airfield safety) identified in the 2016 Installation Compatible Use Zone (ICUZ) Report that have boundaries around the installation and where specific land uses are either compatible or incompatible with the type of operations. These are areas where certain land uses such as residential could experience negative impacts from Fort Drum operations.

The term MIA is used to identify broad areas around Fort Drum that are influenced by operations at the installation where certain types of land uses could impact Fort Drum’s operations, such as causing vertical obstructions or frequency interference with radar systems. The recommended strategies within the Fort Drum MCAs and MIAs are designed to accomplish the following:

- Promote an orderly transition between community and military land uses so that land uses remain compatible.
- Maintain operational capabilities of military installations and areas.
- Promote an awareness of the size and scope of military training areas to protect areas outside Fort Drum (e.g., critical air space) used for training purposes.

- Inform the local community of compatibility recommendations within the designated areas that are part of this JLUS.
- Protect public health, safety, and welfare.

The Fort Drum MCAs and MIAs are used to define the geographic areas where certain JLUS strategies are to be applied. This technique ensures the strategies are applied to the appropriate areas, and that locations deemed not subject to a specific compatibility issue are not adversely impacted by strategies inappropriate for their location or circumstance.

These Fort Drum MCAs and MIAs are recommended under Strategy LU-1F in Table 6 later in this chapter.

Fort Drum Safety MCA (Figure 17)

The Safety MCA would endorse compatible land use types and densities / intensities within the Clear Zones (CZs) and Accident Potential Zones (APZs) I and II of Wheeler-Sack Army Airfield's runway. Each area would be a subzone of the Safety MCA. The current location of each safety subzone is based on the airfield layout and air operations identified in Fort Drum's Installation Compatible Use Zone (ICUZ) Report. The Safety MCA is identified on Figure 17. It overlays portions of the communities of LeRay, Rutland, Great Bend, Champion, and Deferiet.

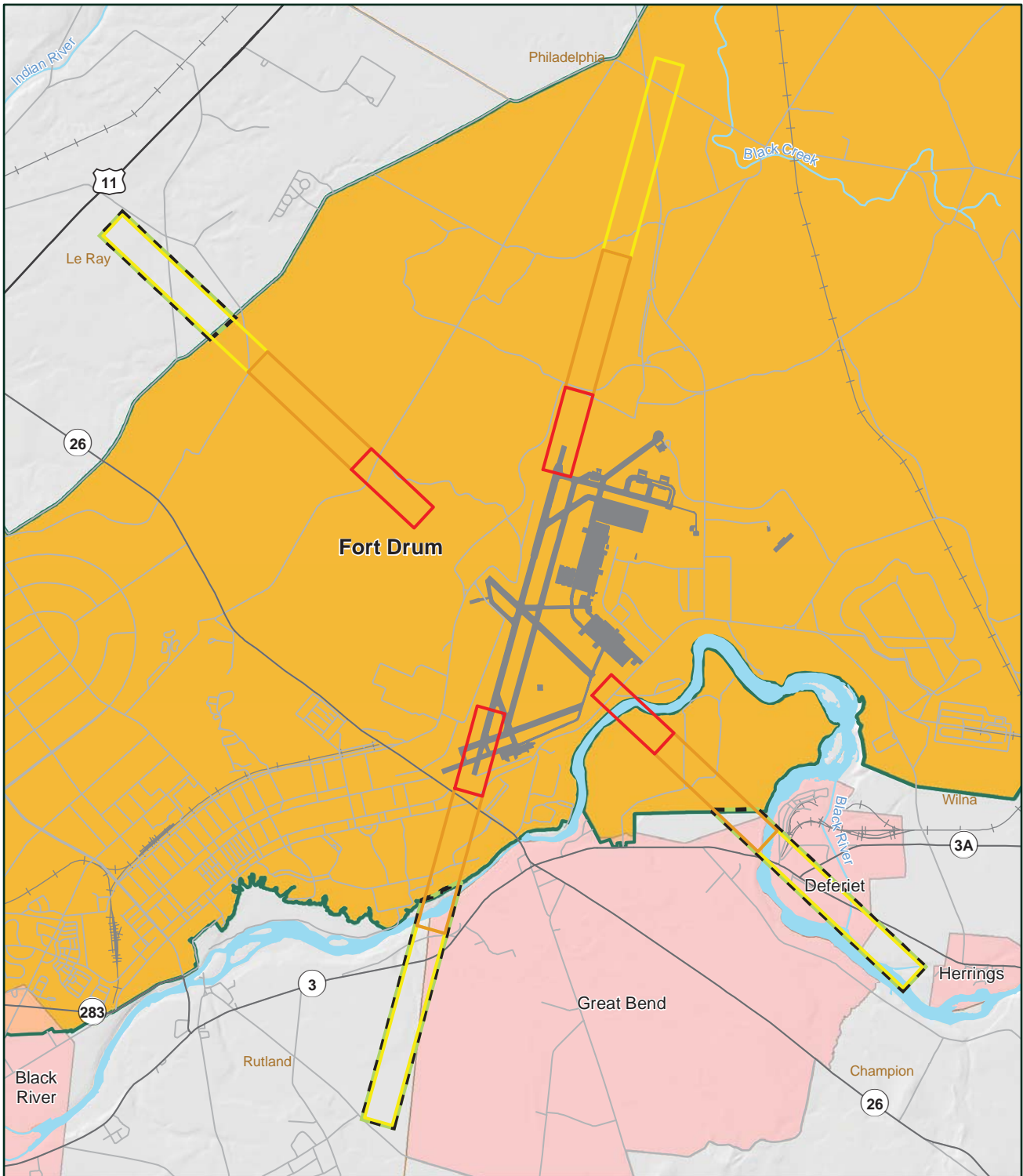
The Safety MCA is needed to prevent the development of incompatible land uses in areas with the greatest potential for an aircraft mishap. These safety zones were identified as a result of the military's guidance that defines APZs as areas where an aircraft mishap is most likely to occur (in the unlikely event that one was to occur). The APZs follow departure, arrival, and flight patterns and are based upon analysis of historical data.

Within the CZ, most types of land use 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, hospitals, churches, and schools) from being constructed within the APZs. While the likelihood of a mishap is low, the military recommends low density land uses within the APZs to ensure the maximum protection of public health and property.

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

Fort Drum Noise MCA (Figure 18)

The Noise MCA includes all land located off-installation within Fort Drum noise contours for small arms weapons, large arms and demolitions, and aircraft activity at Wheeler-Sack Army Airfield, as identified in the most recent Fort Drum ICUZ Report. The Noise MCA is illustrated on Figure 18. It overlays portions of the communities of Fowler, Antwerp, Philadelphia, LeRay, Evans Mills, Calcium, Rutland, Champion, Great Bend, Deferiet, West Carthage, Carthage, Wilna, Natural Bridge, and Diana. Residential developments and other noise-sensitive land uses within this MCA may be recommended to consider sound attenuation measures to reduce interior noise impacts and achieve a maximum interior noise level of 45 dB DNL.



Legend

- | | | |
|------------------------|-------------------------|---------------|
| Safety MCA | Fort Drum | US Highway |
| Safety Subzones | Airfield / Runway | State Highway |
| Clear Zone Subzone | Town | Road |
| APZ I Subzone | City / Village / Hamlet | Railroad |
| APZ II Subzone | Streams | |



Source: Fort Drum, 2017. Matrix Design Group, 2017.

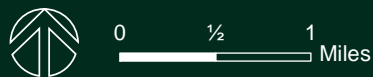
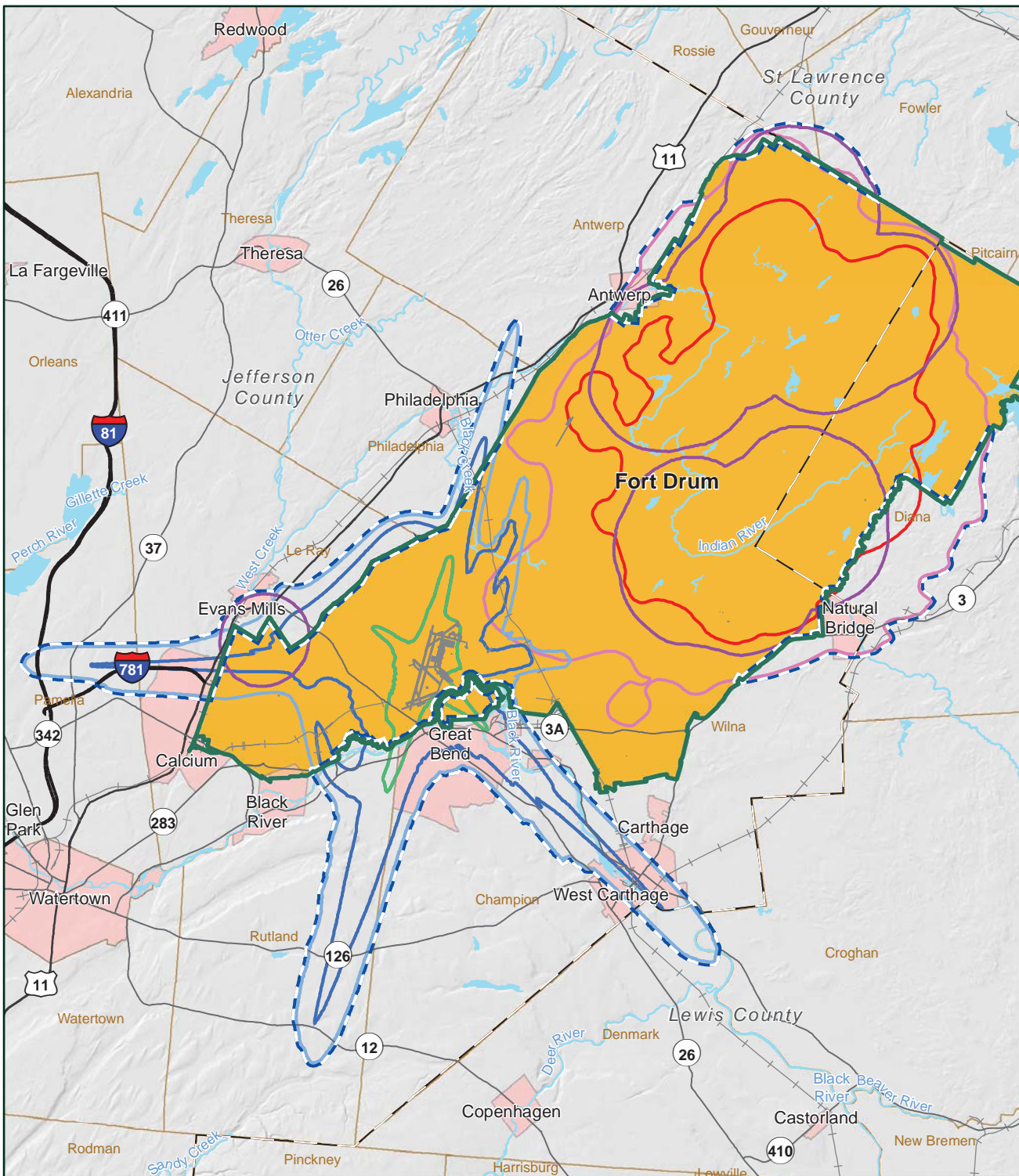


Figure 17

Fort Drum Safety Military Compatibility Area



Legend

- Noise MCA
- Weapons Noise Subzones**
- Small Arms Noise Subzone II (87-104 dB Peak)
- Large Arms Noise Subzone II (62-70 CDNL dB)
- Large Arms LUPZ Subzone (57-62 CDNL dB)
- Aircraft Noise Subzones**
- Noise Subzone III (>75 ADNL dB)
- Noise Subzone II (65-75 ADNL dB)
- LUPZ Subzone (60-65 ADNL dB)
- Fort Drum
- Airfield / Runway
- County Boundary
- Town
- City / Village / Hamlet
- Interstate
- US Highway
- State Highway
- Railroad
- Streams

Source: Fort Drum Installation Compatible Use Zone Plan, April 2016. Matrix Design Group, 2017.



Figure 18

Fort Drum Noise Military Compatibility Area

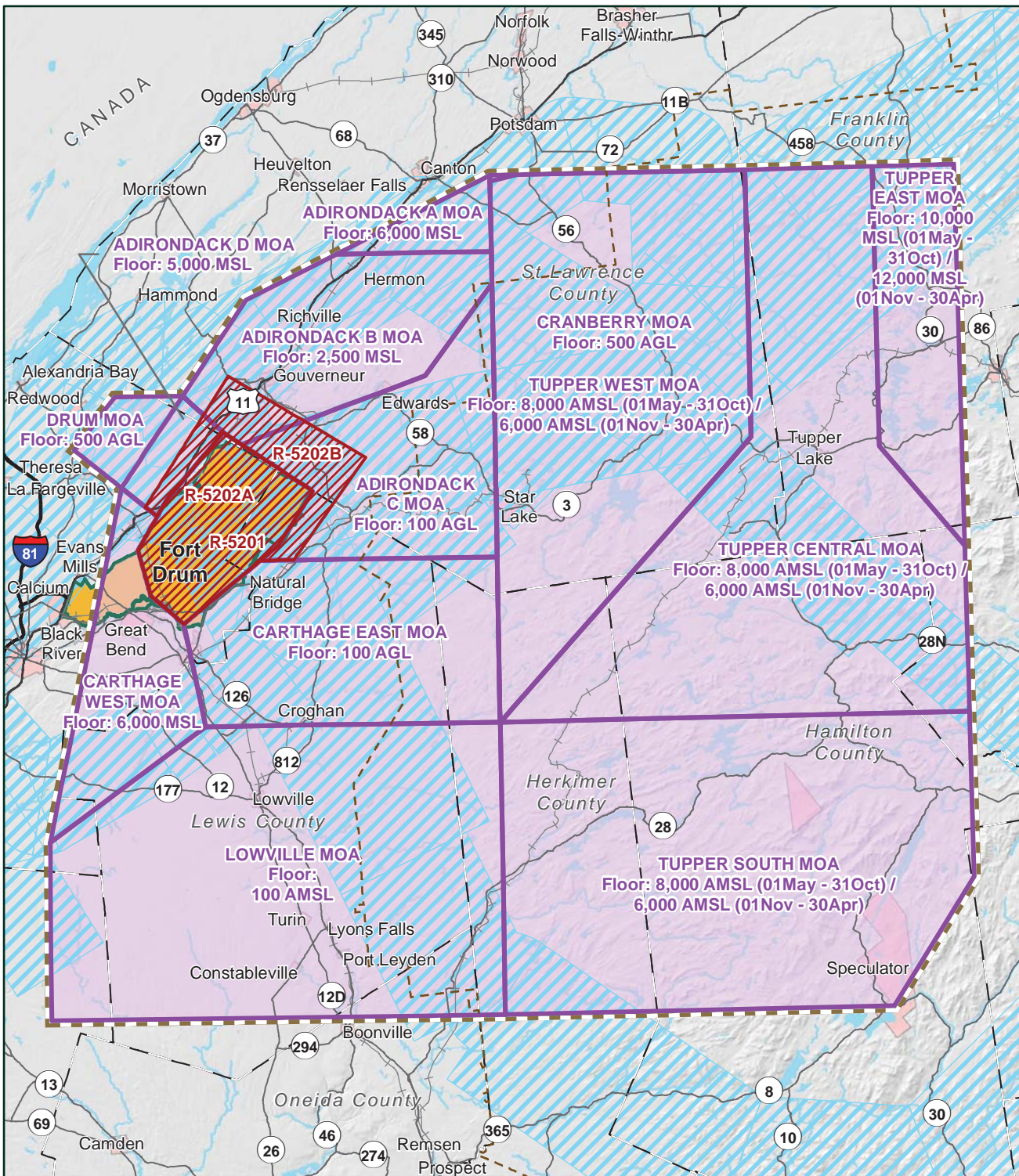
Without proper sound attenuation to reduce interior sound levels, certain uses such as residential, and other noise sensitive user groups, including schools, healthcare facilities, and churches, are considered incompatible within areas that experience noise levels of 65 dB DNL or greater. Uses that are compatible within airfield noise contours are office / retail and manufacturing / industrial when interior noise levels are less than 70 dB DNL. While regulated sound attenuation measures may not be necessary in the Noise MCA due to personal preferences of property owners, providing educational materials for existing and future property owners and residents can help to alert buyers on the potential for noise impacts in areas close to Fort Drum.

Fort Drum Airspace Military Influence Area (Figure 19)

The Fort Drum Airspace MIA is composed of the special use airspace, Military Operating Areas (MOAs), restricted airspace, and Military Training Routes (MTRs) around Fort Drum. An MOA is airspace designated to separate or segregate certain non-hazardous military activities from Instrument Flight Rules (IFR) traffic and to identify for Visual Flight Rules (VFR) traffic where military activities are conducted. Military Operating Areas consist of airspace of defined vertical and lateral limits established for the purpose of separating certain military training activities from IFR traffic. Military Training Routes (MTRs) allow the military to conduct low-level, high-speed training. The purpose of developing and charting MTRs on maps is to make non-participating aircraft aware of the presence of high speed military air traffic in the vicinity. An MTR is a defined volume of airspace designed for use by military aircraft. Aircraft in MTRs are authorized to and usually exceed airspeeds of 250 knots indicated airspeed. Restricted Airspace designates areas where ongoing or intermittent activities occur that create usual and often invisible hazards to aircraft. Restricted airspace is specifically designated in areas where flight or ground activities must be confined as they could be considered hazardous to non-participating aircraft. It is important to keep these areas clear of vertical obstructions and other hazards to ensure a safe operating environment for military pilots. The Fort Drum Airspace Military Influence Area is illustrated on Figure 19.

Fort Drum Radar Military Influence Area (Figure 20)

The Fort Drum Radar MIA is made up of a 30-mile radius around Fort Drum's Digital Airport Surveillance Radar (DASR) at Wheeler-Sack Army Airfield and the DOD-owned WSR-88D Doppler weather surveillance radar (KTYX). Each of these radar provide important operational capabilities for the missions at Fort Drum and can be impacted by various types of development such as tall structures and industrial wind energy development, depending on their location relative to the radar site. This MIA, illustrated on Figure 20, serves to provide awareness of areas where certain types of development may impact the radar facilities and where such type of development should be monitored and coordinated with Fort Drum to minimize impacts.



Legend

- Airspace MIA / Airspace Subzone
- Restricted Airspace
- Military Operating Areas
- Aviation Routes
- Fort Drum
- County Boundary
- City / Village / Hamlet
- Interstate
- US Highway
- State Highway
- Railroad
- Water Body
- Stream / River



Note: See Table 3-2 in Background Report Chapter 3 for more information on Aviation Routes, and Table 3-3 for more information on Military Operating Areas.

Source: National Geospatial-Intelligence Agency, Cycle 1601, 2016.

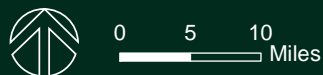
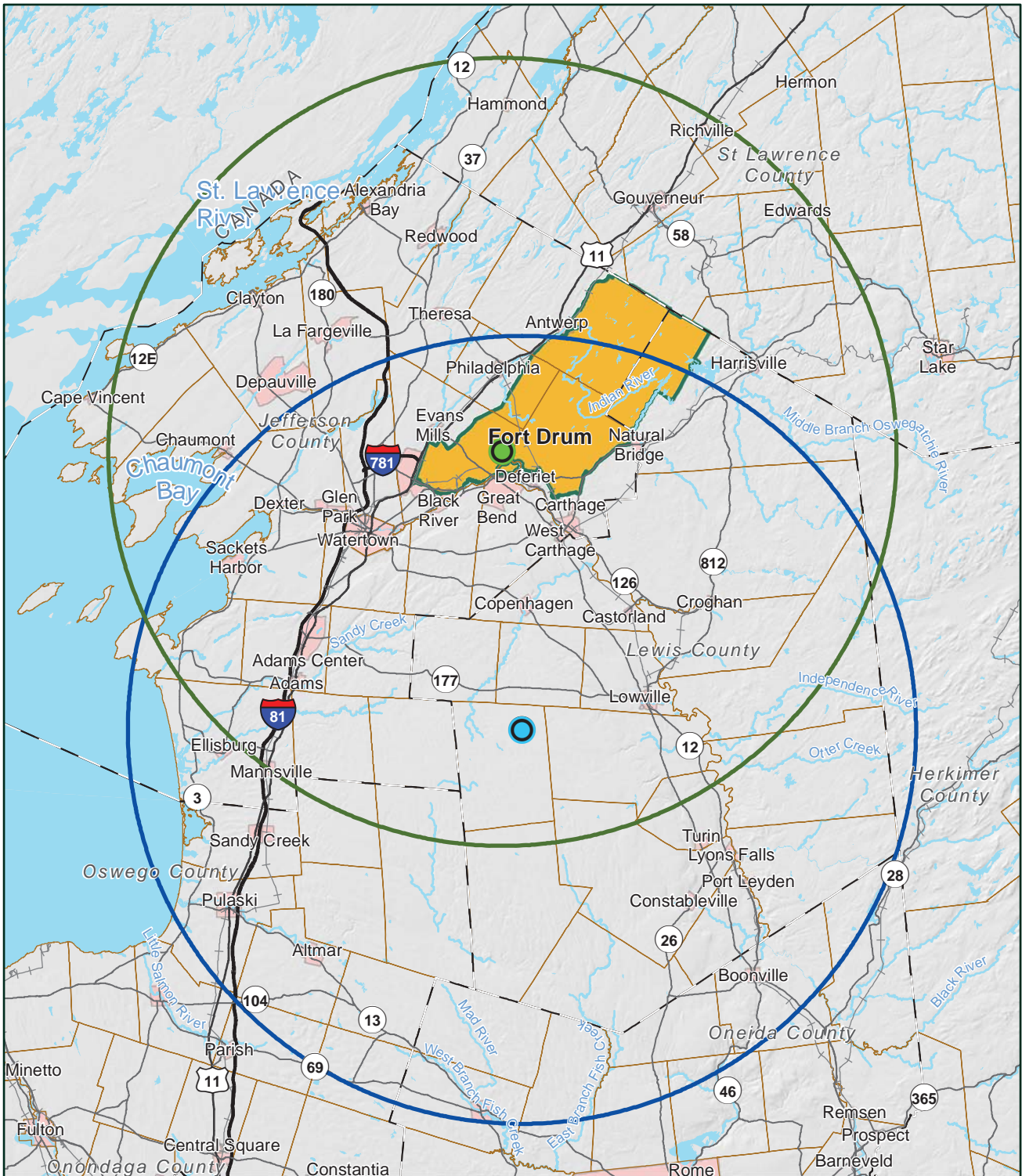


Figure 19

Fort Drum Airspace Military Influence Area



Legend

- WSAAF DASR Radar Site
- KTYX Weather Radar Site
- Fort Drum
- County Boundary
- Town
- City / Village / Hamlet
- Interstate
- US Highway
- State Highway
- Railroad
- Water Body
- Stream / River

Name

- 30-mile DASR Radar MIA
- 30-mile Weather Radar MIA

Source: Matrix Design Group, 2017

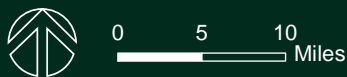


Figure 20
Fort Drum Radar Military Influence Area

How to Read the Implementation Plan

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

- eliminate or reduce existing compatibility issues where possible,
- avoid future actions, operations, or development that would cause a compatibility issue; and
- provide for enhanced and on-going communications and collaboration.




To make the strategies easier to use, they are presented in a table format that identifies the issue, documents the strategy and provides information on when and how that strategy will be implemented. The strategies are arranged to correspond with the applicable compatibility factor. The issue associated with each factor is presented first to provide a linkage between the strategy and the condition it is intended to resolve or minimize. The following paragraphs provide an overview of how to read the information presented for each strategy. Figure 21 illustrates how to read the strategies.

Issue or Strategy ID. The issue ID and strategy ID are unique alpha-numeric numbers that provide a reference for each specific issue and strategy. A strategy's reference number is composed of the Compatibility Issue number and this ID (e.g., COM-1A, COM-1B, etc.).

Strategy. The strategy title is documented in bold type and describes the strategy. This is followed by the complete strategy statement that describes the recommended action.

Type of Strategy. This indicates the type of strategy tool that is proposed to be utilized during implementation. These may range from simple communication or educational to regulatory or acquisition of land or development rights.

Current status "stamps". Some of the strategies include a stamp in the "Issue/Strategy" column. These stamps indicate that this strategy has either been completed during the JLUS process, is in progress of being implemented, or is already on-going. The following defines the status stamp types:

-  **Completed Stamp.** This stamp indicates this strategy was identified during the JLUS process and completed before the end of the process concluded.
-  **In Progress Stamp.** This stamp indicates this strategy has been initiated by the responsible parties indicated in the table.
-  **On-Going Stamp.** This stamp indicates this strategy is currently on-going by the responsible parties indicated in the table. In addition, this provides awareness that the responsible parties are already implementing the strategy.

Fort Drum MCA / MIA. This column indicates the applicable Fort Drum MCA or MIA in which the strategy should be applied, or if the strategy relates to the whole JLUS Study Area. The Fort Drum MCA and MIA geographies for the Fort Drum JLUS strategies are defined in Strategy LU-1F. Some of the strategies are designated as "N/A", meaning that they do not have a specific geography associated with them.

Figure 21. How to Read the Implementation Plan

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
COM-1F	<p>Establish a Fort Drum Compatibility Committee</p> <p>Following completion of the JLUS, a Fort Drum Compatibility Committee should be established to maintain efficient and effective coordination among the JLUS Partners and other affected stakeholders, oversee the implementation of JLUS recommendations, and enhance long-term coordination on military compatibility issues. The issues discussed and addressed by this committee will be oriented on land uses and future development within the JLUS Study Area. As a starting point, all members of the JLUS Steering Committee and Technical Working Group will be invited to the Compatibility Committee. The list of membership may evolve and new stakeholder groups may be invited to join as appropriate in the future. The Fort Drum Compatibility Committee should meet on a regular basis as agreed upon by the Committee.</p> <p>To continue the momentum produced through the JLUS process, it is recommended that the Development Authority of the North Country be the lead agency on developing and maintaining the Fort Drum Compatibility Committee.</p> <p>Other Partners: Other stakeholder groups as appropriate to address land use issues</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Entities included as "Other" are identified at the bottom of the strategy box.

Issue or Strategy ID Number: Alpha-numeric identifier used for reference.

Strategy: Description of the strategy.

Timeframe: Year in which each strategy should be initiated.

- Short-term (2018)
- Mid-term (2019 / 2022)
- Long-term (2023 and beyond)
- On-going

Fort Drum MCA / MIA: The geographic area in which each strategy applies.

Responsible Party: The primary and partner responsible agencies. For example, the denotes a primary agency who will take the lead in implementation. The denotes a partner agency who will assist the primary agency in implementation.

Timeframe. This column indicates the projected timeframe to begin implementation of each strategy. The timeframes describe the year in which a strategy will be initiated or if it is an on-going action.

Short-Term	Strategy proposed for initiation in 2018 (within a year of JLUS completion)
Mid-Term	Strategy proposed to be initiated in 2019 / 2022 (within 2-5 years of JLUS completion)
Long-Term	Strategy proposed to be initiated in 2023 or beyond (6 or more years from JLUS completion)

Responsible Party. On the right side of the table are a series of columns, one for each jurisdiction, Fort Drum, Fort Drum Partnership Committee, or other entity with responsibility for implementing 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 represents their role. A solid square (■) designates that the entity identified is 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 responsible parties are identified by their name or assigned acronym in the heading at the top of each page. There is also an “Other” column in the table. This column is for parties that are not primary JLUS Partners, but may play a role in the implementation of the respective strategy. Parties are identified as responsible or supporting in this column, and are specifically identified by name at the bottom of the Issue / Strategy column. The Implementation Plan is provided in Table 6, organized alphabetically by compatibility factor.

Table 6. Implementation Plan (Alphabetically by Compatibility Factor)

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
BIOLOGICAL RESOURCES (BIO)												
BIO-1	<p>Presence of threatened and endangered species in the region</p> <p>There are currently two federally listed species (the endangered Indiana Bat and the threatened Northern Long-Eared Bat) that are found on or near Fort Drum. Their presence and locations of their habitat have the potential to impact operational capabilities of the installation.</p>											
BIO-1A	<p>Utilize ACUB to acquire additional conservation land</p> <p>Fort Drum and its ACUB partners should look at options for conserving listed species habitat through the ACUB program. This may involve coordination with the US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries to identify opportunities for species habitat mitigation bank criteria. Fort Drum and its ACUB partners should also explore the Regulatory In-lieu Fee and Bank Information Tracking System for guidance on establishing appropriate mitigation and conservation banks for land outside of Fort Drum.</p> <p><i>Other Primary Partner: Tug Hill Tomorrow Land Trust (THTLT)</i></p> <p><i>Other Supporting Partners: USFWS, NOAA Fisheries</i></p>	Mid	N/A							■		■ <input type="checkbox"/>
BIO-1B	<p>Explore Readiness and Environmental Protection Integration (REPI) funding</p> <p>Fort Drum should work with the THTLT and willing landowners to apply for REPI funding to support the ACUB program in safeguarding mission capability and protect known or important habitat within areas adjacent to Fort Drum, particularly within accident potential zones.</p> <p><i>Other Partner: THTLT</i></p>	Short	N/A							■		■

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
BIO-1C	<p>Coordinate the protection and conservation of sensitive species</p> <p>The JLUS Partners, counties, communities and regional conservation groups should work with USFWS and the New York Department of Environmental Conservation (NYSDEC) regarding the management of natural resources and areas suitable for sensitive species to ensure that military training operations are unimpeded and safety is maintained. Emphasis should be placed on habitat loss among all communities at the regional level to ensure that Fort Drum is not unduly burdened with habitat protection efforts due to habitat destruction or fragmentation elsewhere in the region that may result in Fort Drum becoming a wildlife refuge island, leaving the military as the primary source of viable habitat.</p> <p><i>Other Primary Partners: THLT, Thousand Islands Land Trust, Ontario Bays Initiative, Inc., Audubon New York</i></p> <p><i>Other Supporting Partners: USFWS, NOAA Fisheries, NYSDEC</i></p>	Mid	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BIO-1D	<p>Incorporate green space and habitat protection requirements into local zoning laws</p> <p>The jurisdictions surrounding Fort Drum should update their zoning laws, as appropriate, to establish forest, field, wetland, or habitat preservation districts, and to require set aside land for forest, field, wetland, and habitat preservation of a certain size determined at the discretion of the jurisdiction. A conservation plan should be developed by the local jurisdictions working with the NYSDEC / Natural Resource organizations to guide the establishment of areas set aside by developers for conservation and species management.</p> <p><i>Other Partner: NYSDEC</i></p>	Mid	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
BIO-1E	<p>Incorporate green space and habitat protection policies into local planning documents</p> <p>The jurisdictions surrounding Fort Drum should update their comprehensive plans or other land use planning directives, as appropriate, to incorporate policies for the protection of natural green space and species habitat when considering future development. This should identify important habitat areas that are large enough to support species needs without being fragmented and could include policies requiring developers to set aside land for forest, field, wetland, and habitat preservation in their proposed development plans. Efforts should be made to ensure that land set aside is connected to prevent fragmentation of habitat. A conservation plan should be developed by the local jurisdictions working with the NYSDEC / Natural Resource organizations to guide the establishment of areas set aside by developers for conservation and species management.</p> <p><i>Other Partners: NYSDEC, Thousand Islands Land Trust, Audubon New York, Ontario Bays Initiative Inc., and Onondaga Audubon Society</i></p>	Mid	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
BIO-2	<p>Public misperception of amount of wood required to produce energy at the biomass facility on Fort Drum</p> <p>There are concerns in the local community that the biomass facility located at Fort Drum requires excessive amounts of wood to produce energy, and it may create an incentive to cut down forests that would otherwise be uneconomical to harvest.</p>											
BIO-2A	<p>Educational materials</p> <p>Fort Drum and ReEnergy should collaborate to develop educational materials such as a public brochure that identifies the process of receiving material for the biomass energy plant and the importance of working forests and how forest management can support the region and Fort Drum to assist in reducing negative impacts to open maneuver training and supporting endangered species habitat in the region.</p> <p><i>Other Partner: ReEnergy</i></p>	Short	N/A							<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
COORDINATION / COMMUNICATION (COM)												
COM-1	<p>Formal channels of communication between Fort Drum and local communities</p> <p>Official and established information sharing and communication between Fort Drum and local planning officials and municipal staff can be improved.</p>											
<p>COM-1A</p> <p>IN PROGRESS</p>	<p>Include local planning staff on Fort Drum Real Property Planning Board</p> <p>Fort Drum should include local planning staff members on their Real Property Planning Board to provide these community leaders with more insight regarding facility planning on-post, as well as any new or future plans, changes to their mission(s), or any issues that may impact the community. Likewise, this also provides an opportunity for community planners and leaders to inform Fort Drum of any issues or future plans that may impact the installation.</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
<p>COM-1B</p> <p>COMPLETED</p>	<p>Refine the Community Transition Program for new Commanders</p> <p>Fort Drum, in partnership with the local communities, should refine its existing Community Transition Program for new commanders to enhance and facilitate quicker integration process for relations with the surrounding communities, and help pick up where the previous commander left off. This has been accomplished through the establishment and appointment of a new Base Community Planner, serving as the Fort Drum Liaison, at the Development Authority of the North Country (DANC) at the beginning of the JLUS process.</p>	On-going	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
COM-1C	<p>Establish internal information liaisons</p> <p>Each JLUS Partner jurisdiction that participated in the development of the JLUS and Fort Drum should identify an internal liaison within their organization responsible for internally disseminating information from external organizations to ensure that appropriate people have a shared awareness of pertinent information.</p>	Mid	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
COM-1D	<p>Create an automatic notification system through text message or voicemail</p> <p>Fort Drum should create a notification system that automatically sends information regarding upcoming major events to a subscriber's phone, either through text message or voicemail (see Strategy COM 1-M).</p>	Short	N/A							■		
COM-1E	<p>Continue use of multi-media methods to disseminate information</p> <p>Fort Drum should continue to utilize a mix of media methods to disseminate information, including increased training missions that may produce atypical noise levels, other activities that have a community impact, and a point of contact for questions or concerns. This information should be made available on the Fort Drum website and through other jurisdiction's public service announcement and media outlet methods, both traditional media and social media. When possible, Fort Drum should prepare a weekly or monthly general schedule of any special or unusual activities or night operations that may be occurring that week / month to be published in local media, as long as the information does not conflict with Operations Security principles that could result in security concerns.</p>	On-going	N/A							■		

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
COM-1F	<p>Establish a Fort Drum Compatibility Committee</p> <p>Following completion of the JLUS, a Fort Drum Compatibility Committee should be established to maintain efficient and effective coordination among the JLUS Partners and other affected stakeholders, oversee the implementation of JLUS recommendations, and enhance long-term coordination on military compatibility issues. The issues discussed and addressed by this committee will be oriented on land uses and future development within the JLUS Study Area. As a starting point, all members of the JLUS Steering Committee and Technical Working Group will be invited to the Compatibility Committee. The list of membership may evolve and new stakeholder groups may be invited to join as appropriate in the future. The Fort Drum Compatibility Committee should meet on a regular basis as agreed upon by the Committee.</p> <p>To continue the momentum produced through the JLUS process, it is recommended that the Development Authority of the North Country be the lead agency on developing and maintaining the Fort Drum Compatibility Committee.</p> <p><i>Other Partners: Other stakeholder groups as appropriate to address land use issues</i></p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
COM-1G	<p>Develop a charter for the Fort Drum Compatibility Committee</p> <p>Members of the Fort Drum Compatibility Committee (see Strategy COM-1F) should develop a charter that delineates the roles and responsibilities. The charter should contain information such as:</p> <ul style="list-style-type: none"> ■ Purpose of the committee, ■ Members on the committee, ■ Point of contact and contact information for each organization / partner, ■ Role in addressing compatibility issues with the base, ■ Responsibility for addressing compatibility issues, ■ When the committee meets, and ■ Triggers for coordination and communication, e.g., infrastructure planning, water resources planning, economic development, mission changes at Fort Drum, etc. 	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COM-1H	<p>Develop and maintain a GIS web-based portal</p> <p>The Development Authority of the North Country in collaboration with the Fort Drum Compatibility Committee, local jurisdictions, Fort Drum, and relevant federal and state land management agencies should work collaboratively to develop a publicly accessible and interactive GIS web-based portal to share GIS data, e.g., military footprints, existing land use, zoning, areas of concern for industrial wind energy developers, and other pertinent JLUS-relevant GIS data, to promote enhanced, long-range, and coordinated compatibility planning. In addition, a protocol for accessing and updating the information should be developed to ensure accuracy and appropriate security measures are established to continuously enhance the portal and ensure the data is kept up-to-date. This recommendation has been occurring concurrent to the development of the JLUS and will be implemented as part of the JLUS process.</p>	Mid	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

IN PROGRESS

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
COM-1I <i>IN PROGRESS</i>	<p>Develop a Fort Drum community / military compatibility reference guide</p> <p>The JLUS Partners should develop a brief reference guide providing information about the various agencies in the JLUS Study Area and their respective missions, responsibilities, and geographic service areas. This guide should contain at a minimum:</p> <ul style="list-style-type: none"> ■ Map(s) identifying the important resources provided by each agency in the area, ■ Contact information for the agency representative that would be instrumental in cases of community-military compatibility, ■ Communication protocol for all levels of engagement, and ■ Other non-governmental organizations committed to compatibility planning. <p>This recommendation has been occurring concurrent to the development of the JLUS and will be implemented as part of the JLUS process.</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COM-1J	<p>Good Neighbor Program</p> <p>Fort Drum should conduct, on a bi-annual basis, a Good Neighbor Program where they notify adjacent property owners and community members inviting them to a Fort Drum Neighbor Town Hall meeting to provide a platform for two-way communications. The Installation would inform the attendees of any upcoming mission changes or operations and activities that may have an impact on the surrounding community and the community can provide input and feedback.</p>	On-going	N/A				<input type="checkbox"/>			<input checked="" type="checkbox"/>		

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
COM-1K <i>ON-GOING</i>	Fort Drum informational news briefs The Fort Drum Public Affairs Office should develop short (1-5 minutes in duration) promotional and informational news briefs that provide an overview of the general mission and operations at Fort Drum and some quick facts of recent or future base activities. These should be updated on quarterly, annually, or other time increment as necessary to present fresh and current information. These video spots would be used to provide information to the local communities and could be aired on local news stations, at movie theaters, on appropriate web sites, or other venues.	Short	N/A							■		
COM-1L	Links on websites Each of the JLUS communities should include a link to Fort Drum's website on their respective websites.	Short	N/A	■	■	■	■		■	□		
COM-1M	Fort Drum smartphone app Fort Drum should develop a free smartphone app that can be downloaded by anyone with a smartphone. This app should provide news alerts, general information for the public, and contact information if there are questions or concerns (see Strategy COM-1D).	Short	N/A					■		■		
COM-1N <i>ON-GOING</i>	Pre-approved entry for authorized jurisdiction / key stakeholder staff needed to attend meetings on Fort Drum Fort Drum should explore pre-approved entry passes for authorized jurisdiction and key stakeholder staff to assist in easy access onto Fort Drum for meetings (e.g., Vendor Pass, Friends of the North Country Annual Access Pass). This would allow frequent meeting attendees to be processed quickly through Fort Drum security to gain entry onto the installation to attend meetings.	Short	N/A							■		

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COM-10 <i>ON-GOING</i>	<p>Public Engagement Strategy</p> <p>Fort Drum's PAO should develop Public Engagement Strategy, based on local community feedback, on what types of activities they would like notifications about (examples:)</p> <ul style="list-style-type: none"> ■ Gate hour changes (openings/closings) ■ Road closure due to mission requirements ■ Noise related mission / hour changes ■ Traffic ■ Types of training activities ■ Convoy movements <p>Local community would assist by providing topics they are interested in receiving information and recommended methods of dissemination.</p>	Short	N/A				<input type="checkbox"/>			■		
COM-1P	<p>Explore Webinar Meetings</p> <p>Fort Drum should consider offering webinar meetings for jurisdictional staff and key stakeholders to remotely attend meetings held on the installation, which would not necessitate meeting attendees to access the installation. However, this should not eliminate the need for pre-approved access as mentioned in Strategy COM-1N.</p>	Short	N/A							■		
CULTURAL RESOURCES (CR)												
CR-1	<p>Opportunity for improved access for cemeteries on-installation</p> <p>There are historic cemeteries on Fort Drum that existed before the installation was established. These are important to the local communities and residents with ancestors buried there who sometimes want to visit the sites.</p>											
CR-1A <i>ON-GOING</i>	<p>Explore opportunities for escorted tours</p> <p>Fort Drum should explore opportunities to host community-led and / or escorted tours of cemeteries on-installation to provide a more personal experience for visitors who desire an alternate option from acquiring a Recreation Pass.</p>	Short	N/A							■		

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DUST / SMOKE / STEAM (DSS)												
DSS-1	<p>Smoke originating from Fort Drum may impact the community</p> <p>Smoke from range fires and forest fires on Fort Drum, particularly in summer months, sometimes drifts off-installation and impacts local communities. Factors such as wind and the fire burn time may increase the impact.</p>											
DSS-1A	<p>Mutual Aid Agreement between Directorate of Emergency Services, Fort Drum and Jefferson County Office of Fire and Emergency Management for Fire Protection and Hazardous Materials and Wastes Incident Response</p> <p>The Mutual Aid Agreement signed in 2013 describes normal fire protection and aircraft incidents but is silent on wildfire management. An example in the plan states "The Jefferson County Office of Fire & Emergency Management agrees to provide local hospitals with a copy of the Fort Drum Oil & Hazardous Substance Spill Contingency Plan and to extend and an invitation to hospital and local fire department officials within the jurisdiction to attend an open house event sponsored by Fort Drum to acquaint emergency response and medical treatment officials with the hazardous materials and hazardous waste present on Fort Drum." The Mutual Aid Agreement should be expanded to include other nearby jurisdictions, plans, and reference formalized training and or engagement between Fire and Emergency Services.</p>	On-going	N/A	■	■	■				■		

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ENERGY DEVELOPMENT (ED)												
ED-1	<p>Industrial wind energy development compatibility with Fort Drum mission</p> <p>There are existing wind turbines near Fort Drum that are currently managed to a degree, but not entirely mitigated, in terms of mission impacts. There are currently seven other proposed industrial wind energy development projects in the JLUS Study Area that have the potential to hinder existing and future mission capabilities at Fort Drum. Additional future industrial wind turbine development if not properly mitigated could have an adverse impact on military readiness, including flight operations, testing and evaluation, and training that is likely to impair or degrade the ability of units to perform their warfighting missions. Any additional wind energy development may potentially increase the existing impacts in a cumulative way.</p>											
ED-1A	<p>Recommend taxing jurisdictions to coordinate with Fort Drum prior to adopting a PILOT program</p> <p>Neighboring jurisdictions should coordinate with Fort Drum to identify potential operational impacts prior to granting Payment in Lieu of Taxes (PILOT) incentives. Communities can take advantage of Office of Economic Adjustment (OEA) grant for Alternative Energy Siting to develop a web based tool to make coordination and siting process easy to capture any requirements or concerns early in the development process (example is the State of Arizona web based tool).</p>	On-going	Radar	■	■	■	■			□		
ED-1B	<p>Become an "Interested Party" for the Siting Board</p> <p>Fort Drum should identify itself as an "Interested Party" for the New York Siting Board for any project that it believes could impact its operations to get updates on when industrial wind energy developments are proposed within the region.</p>	Short	N/A							■		

COMPLETED

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
ED-1C	<p>Identify and map locations of potential conflict between industrial wind energy development and Fort Drum operations</p> <p>Identify and publish locations where alternative energy development does not pose potential conflicts with Fort Drum's operations and mission profiles, including the Digital Airport Surveillance Radar at Wheeler-Sack Army Airfield and the Weather Surveillance Radar in Montague, and locations where potential impacts exist and further study is needed. Fort Drum should work with NOAA to develop a "Red, Yellow, Green" map that communicates and illustrates locations where specific types of wind energy development (including the potential impact of individual versus utility-scale developments) are compatible with Fort Drum's operations, where types of industrial wind energy development may be compatible depending on the project, and where types of industrial wind energy development should be discouraged to avoid incompatibility with Fort Drum's operations. This map would be non-regulatory in nature and would serve to provide a guide to potential industrial wind energy developers of locations where conflicts may arise, but potential impacts would need to be determined on a case-by-case basis.</p> <p><i>Other Partner: Wind Energy Industry Developers</i></p>	Short	Radar							■	□	■
ED-1D	<p>Explore jurisdictional economic benefits of the PILOT program</p> <p>By pursuing a PILOT program or passing an anti-PILOT resolution regarding wind energy, each jurisdiction should declare their intent, develop a strategy and assess the applicable tax rate that any business pays into the PILOT agreement. Best practices include Jefferson and Oswego counties who have addressed this issue. Regardless of the outcome, exploration of the potential for alternative energy in an open, transparent communication measure is needed.</p> <p><i>Other Partner: School Districts</i></p>	Short	Radar	■	■	■	■					■

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ED-1E	<p>Continue to engage the DOD Siting Clearinghouse in proactively identifying opportunities and constraints related to the wind energy siting process (both formally and informally)</p> <p>The DOD Siting Clearinghouse oversees both formal and informal project reviews. A formal review of a project application submitted for permitting through the Federal Aviation Administration's (FAA) Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) process. An informal review may be requested from a developer, a landowner, or any other Federal, State, or local government agencies or Indian tribes. Military Response Team (MRT) from the DOD Siting Clearinghouse can provide assistance in assessing impacts in areas not previously defined as having no impact. If changes to the DOD Siting Clearinghouse occur in the future through federal actions or regulations, these changes should be followed.</p> <p><i>Other Partner: DOD Siting Clearinghouse</i></p>	On-going	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
ED-1F	<p>Update comprehensive plans with policies for renewable energy development</p> <p>The JLUS Partner jurisdictions should consider updating their comprehensive plans to establish policies for future renewable energy development.</p>	Mid	Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
ED-1G	<p>Adopt renewable energy ordinances</p> <p>JLUS Partner jurisdictions should develop and adopt renewable energy development ordinances to provide regulations and requirements for future development of renewable energy facilities. These ordinances would provide renewable energy developers with a starting point when considering a new proposed development, and would assist in the Article 10 process.</p>	Mid	Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	


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ED-1H	<p>Consider alternative energy Federal Funding Opportunity for regional mapping</p> <p>Local jurisdictions should seek grant from OEA to address process to better inform permit seekers of military operations and potential incompatible development areas, and where the larger Fort Drum mission footprint would require advance coordination before expending resources in the permit process. This strategy should be implemented in accordance with Strategy COM-1H.</p>	On-going	Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ED-2	<p>Industrial wind energy development compatibility with weather radar</p> <p>Existing wind turbines in the line-of-sight of the 18th Weather Squadron Doppler radar have some impact on the functionality of the equipment. Future wind development close to the radar could further impact the Weather Squadron's mission.</p>											
ED-2A	<p>Proactively identify alternative energy development areas that would result in little to no impact on the weather radar station operations and forecasting</p> <p>Develop educational material to include a Planning Impact Map used when siting / permitting projects to communicate areas of potential impacts to weather radar with the recognized categories of No-Build, Mitigation Zone, Consultation Zone, and Notification Zone specific to the weather radar station. Website, map, brochure or model law protecting unsuitable areas could be adopted. This would be tied into the GIS Web Portal identified in Strategy COM-1H.</p> <p><i>Other Primary Partner: NOAA</i></p> <p><i>Other Supporting Partner: Wind Energy Industry Developers</i></p>	Short	Radar					<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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ED-2B	<p>Consider updating ACUB priority areas to include weather radar No Build Zone</p> <p>Fort Drum and its ACUB partners should consider updating the ACUB priority areas to include the four kilometer No Build Zone around the KTYX weather radar for potential future easements to protect from future incompatible development.</p> <p><i>Other Primary Partner: Tug Hill Tomorrow Land Trust</i></p>	Short	Radar							■		■
	<i>For related strategies that address this issue, please see Strategies SA-3A, and SA-3B.</i>											
ED-3	<p>Future industrial solar development siting compatibility with military operations</p> <p>Some communities have plans of developing / approving industrial fixed-panel solar energy development that could create glare issues for Fort Drum pilots. Future solar development in the region may also cause impacts depending on siting locations.</p>											
ED-3A	<p>Coordination on solar energy development</p> <p>Fort Drum should coordinate with jurisdictions to identify any impacts outside the installation including glint and glare, and how those impacts can be addressed.</p>	Short	Airspace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	■		

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ED-3B	<p>Identify and map locations suitable for industrial solar energy development</p> <p>Identify and publish locations that are suitable for alternative energy development that do not conflict with Fort Drum's operations and mission profiles. Fort Drum should develop a "Red, Yellow, Green" map that communicates and illustrates locations where specific types of solar energy development (including the potential impact of individual versus utility-scale developments) are compatible with Fort Drum's operations, where types of industrial solar energy development may be compatible depending on the project and type of materials used, and where types of industrial solar energy development should be discouraged to avoid incompatibility with Fort Drum operations. This map would be non-regulatory in nature and would serve to provide a guide to potential industrial solar energy developers of locations where conflicts may arise, but potential impacts would need to be determined on a case-by-case basis (see Strategy ED-1C).</p>	Short	Airspace							<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ED-3C	<p>Develop solar siting guidelines</p> <p>Develop guidelines for proper siting and use of appropriate solar technologies near airfields, flight corridors, and beneath military airspace that include:</p> <ul style="list-style-type: none"> ■ Updating zoning ordinances to specify non-reflective panels for non-residential applications and ■ Requiring timely review and coordination by the Army prior to permit approval. <p>There should be a differentiation in regulations between residential uses, small commercial installations for individual business use or net metering, community generation for distribution less than five megawatts, and utility-scale facilities, so as to not over-regulate individual residential and smaller scale solar projects.</p>	Mid	Airspace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>		

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HOUSING AVAILABILITY (HA)												
HA-1	<p>Surplus multi-family housing</p> <p>There is public concern that there is a surplus of multi-family housing in the local communities that was originally built to support Fort Drum during a buildup in the number of personnel stationed there, and some of the housing is now vacant.</p>											
HA-1A	<p>Advertise local housing options in the Fort Drum Area Apartment Information packet</p> <p>Fort Drum should invite local housing rental properties to market their housing opportunities in the Fort Drum Area Apartment Information packet that is given to new soldiers. Local community planners should also promote areas with an abundance of suitable vacant housing that may be made available to soldiers in the Fort Drum Area Apartment Information packet.</p> <p><i>Other Partners: Jefferson-Lewis Board of Realtors and St. Lawrence County Board of Realtors</i></p>	On-going	N/A							■		□
HA-1B	<p>Inform communities about Fort Drum housing services</p> <p>Fort Drum should work with the local communities to provide macro-level data on where Fort Drum personnel live off-post, and work to communicate housing needs and preferences of military personnel living off-post to promote housing in these local communities.</p>	On-going	N/A	□	□	□	□			■		

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
INFRASTRUCTURE EXTENSIONS (IE)												
IE-1	<p>Desire for enhanced public transportation services to Fort Drum and surrounding communities</p> <p>There is a desire among military personnel and members of the surrounding community to have enhanced public transportation services between Fort Drum and amenities outside the installation such as shopping, restaurants, entertainment, and businesses.</p>											
IE-1A	<div style="border: 1px solid green; padding: 2px; display: inline-block; color: green; font-weight: bold;">IN PROGRESS</div> <p>Jefferson County should explore future Federal Transit Administration Bus & Bus Facilities Infrastructure Investment Program to connect bus service from Watertown to Fort Drum</p> <p>In FY 17 the Federal Transit Administration (FTA) advertised a Notice of Funding Opportunity (NOFO) to solicit of Project Proposals for the 5339(b) Grants for Buses and Bus Facilities Infrastructure Investment Program (Bus and Bus Infrastructure Program). The FTA announced the availability of approximately \$226.5 million of Fiscal Year 2017 funds for buses, bus facilities, and bus equipment. Eligible Applicants: The Bus and Bus Infrastructure Program provides funds to designated recipients that allocate funds to fixed route bus operators, and to states, and local governmental authorities that operate fixed route bus service. The application period for the FY17 Buses and Bus Facilities Infrastructure Investment Program (5339(b)) closed on August 25, 2017, but this program or something similar may be available in FY18.</p> <p><i>Other Partner: Watertown Jefferson County Transportation Council</i></p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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IE-1B 	<p>Other regional communities can partner with the Metropolitan Planning Organization (MPO) and leverage Federal Transit Administration (FTA) Surface Transportation Block Grant Program (STBG) fund for transportation innovation funds for a more integrated regional network</p> <p>The FTA has a Congestion Mitigation and Air Quality Improvement Program (CMAQ) grant program. Projects eligible under the CMAQ program must demonstrate the three primary elements of eligibility: transportation identity, emissions reduction, and location in or benefitting a nonattainment or maintenance area. Considerable emphasis on selecting project types including electric and natural gas vehicle infrastructure and diesel retrofits. Projects must be included in a MPO transportation plan and transportation improvement program (TIP), or the current Statewide TIP in areas that are not part of an MPO. Eligible Activities Include: Transit investments, including transit vehicle acquisitions and construction of new facilities or improvements to facilities that increase transit capacity.</p> <p><i>Other Partner: Watertown Jefferson County Transportation Council</i></p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input checked="" type="checkbox"/>

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LAND / AIR / SEA SPACES (LAS)												
LAS-1	MQ-9 Reaper Hellfire ordnance training The weapon danger zone for MQ-9 Reaper Hellfire ordnance is too large to be contained within the boundaries of Fort Drum, requiring this type of weapon training to be conducted at other facilities.											
LAS-1A	Establish a memorandum of agreement (MOA) to expand awareness and support in the event of an incident outside of the Fort Drum safety footprint Fort Drum should establish MOAs with nearby land owners to expand off base awareness of the installation's safety footprint, particularly for those closest to the Impact Area. The MOA would be intended to inform landowners of the nature of training activities in the impact areas and resulting potential effects (noise, safety, etc.). MOAs would also address potential impacts and response in the event of an incident (e.g. aircraft mishap).	Mid	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			■		
LAS-2	Future inadequate amount of maneuver space on the Fort Drum installation Fort Drum does not have adequate maneuver space capacity to accommodate the increased training to support the Army's new Sustainable Readiness Model. Maximizing existing land is important to support future missions.											
LAS-2A	Explore partnering opportunities with New York State Department of Environmental Conservation to use state-owned property, parks, and forests for non-intensive training Fort Drum should explore opportunities to partner with the New York State Department of Environmental Conservation for use of nearby state-owned property, parks, and forests to conduct non-intensive training activities, freeing space on-post for more intensive training operations. <i>Other Partner: THLT, Thousand Island Land Trust</i>	Long	N/A							■		<input type="checkbox"/>

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
LAS-2B	<p>Develop a comprehensive approach to demonstrate need for expansion of ground maneuver space</p> <p>Fort Drum should outline a comprehensive approach to demonstrate the need for ground maneuver space expansion of Fort Drum. A product, such as a White Paper that includes potential implementing strategies, should describe the strategic importance for Fort Drum to prepare the Nation's forces for the future "knowns and known-unknowns" of modern warfare. Preparing Fort Drum units and Soldiers for future combined arms maneuver and wide area security combat operations abroad is a paradigm shift from the past 16 years of prolonged warfare where the US has dominated and maintained air superiority from the start of the conflicts. Live training of new and existing technology along with expanded formation sizes (dismounted, wheeled, tracked, rotary winged, fixed winged, and un-manned aerial vehicles) as will be employed against a peer nation state in full scale combat requires more maneuver space than is currently available at Fort Drum.</p>	Short	N/A							■		
LAS-2C	<p>Utilize ACUB lands for wetland mitigation credits or Indiana Bat habitat</p> <p>Fort Drum and its ACUB partners should look at options for developing wetland mitigation credits through the protection and restoration of poor quality wetlands off-post or preservation of Indiana Bat habitat to help free existing wetlands on-post for additional maneuver and training space. This may involve coordination with the US Army Corps of Engineers, the US Environmental Protection Agency, and the New York State Department of Environmental Conservation to identify wetland mitigation bank criteria, and the US Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries to identify species habitat mitigation bank criteria. Fort Drum and its ACUB partners should also explore the Regulatory In-lieu Fee and Bank Information Tracking System for guidance on establishing appropriate mitigation and conservation banks for land outside of Fort Drum.</p> <p><i>Other Partner: THTLT</i></p>	Mid	N/A							■		□

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LAS-2D	<p>Identify potential for both contiguous and non-contiguous areas nearby that Fort Drum can potentially expand</p> <p>Fort Drum should identify potential contiguous and non-contiguous areas within the region where property or property rights may be available for purchase to conduct training activities.</p> <p><i>Other Partner: THLT, Thousand Island Land Trust</i></p>	Mid	N/A							<input checked="" type="checkbox"/>		<input type="checkbox"/>
LAS-2E	<p>Leverage local and state legislators</p> <p>Fort Drum should leverage local and state legislators to advocate Fort Drum's needs for additional maneuver space.</p> <p><i>Other Partner: FDRLO</i></p>	On-going	N/A							<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LAND USE (LU)												
LU-1	<p>Incompatible development encroachment around Fort Drum</p> <p>There is some existing development around Fort Drum that has caused encroachment concerns. There is a potential for future development to occur if appropriate land use regulations are not put in place by communities to manage growth around the installation in areas that may impact Fort Drum's ability to carry out its missions or put the installation at risk for future operations.</p>											
<div style="border: 1px solid red; padding: 2px; display: inline-block; transform: rotate(-15deg);">COMPLETED</div>	<p>LU-1A Provide public version of the Fort Drum Installation Compatible Use Zone document</p> <p>Fort Drum should provide a public version of its Installation Compatible Use Zone (ICUZ) document on its website and through the interactive GIS web-based portal (see Strategy COM-1H) so that community planners and the public have a list of which land uses are compatible in the various Fort Drum noise zones and safety zones.</p>	Short	N/A					<input type="checkbox"/>		<input checked="" type="checkbox"/>		
LU-1B	<p>Add a Fort Drum element to comprehensive plans</p> <p>JLUS Partner jurisdictions should incorporate a Fort Drum element into their comprehensive plans that looks into compatibility and encroachment issues with the installation.</p>	Mid	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

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LU-1C	<p>Create a map identifying potential encroachment issues</p> <p>Fort Drum and community planners should work together to map current or potential encroachment issues to help inform and guide decision making. This would be tied into the GIS Web Portal identified in Strategy COM-1H.</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
LU-1D	<p>Coordinate approach to infrastructure planning</p> <p>Regional entities, counties, and local communities should coordinate approach to infrastructure planning with Fort Drum.</p>	On-going	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
LU-1E	<p>Add ICUZ safety zones and noise zones to community, county, Development Authority of the North Country, and FDRLO maps</p> <p>The JLUS communities and other entities should include ICUZ safety zones and noise zones on existing land use maps, future land use maps, services area maps, and / or websites for the purpose of providing information. The inclusion on maps would not necessarily mean land under the zones are regulated per the ICUZ, but would be meant as informational to viewers of the maps. This would be tied into the GIS Web Portal identified in Strategy COM-1H.</p> <p><i>Other Partners: THLT, Thousand Island Land Trust</i></p>	Short	Safety Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>
LU-1F	<p>Define and establish Fort Drum Military Compatibility Areas and Military Influence Areas</p> <p>Create Fort Drum Fort Drum Military Compatibility Areas (MCAs) and Military Influence Areas (MIAs) that reflect the types and intensity of compatibility issues, and are tied into the GIS Web Portal identified in Strategy COM-1H. The Fort Drum The Fort Drum MCAs and MIAs should be used by local jurisdictions to identify areas where specific compatibility issues are more likely to occur. These areas are meant to provide education for future land planning decisions based on the likely location of Fort Drum operational impacts, and are used to identify where certain recommendations from this JLUS will apply. Implementation of the Fort Drum MCAs and MIAs and associated strategies for these zones will:</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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	<ul style="list-style-type: none"> ■ Create a broader framework for making sound planning decisions around military installations ■ More accurately identify areas that can affect or be affected by military missions ■ Protect the public's health, safety, and welfare ■ Protect military missions ■ Identify a compatible mix of land uses for consideration ■ Promote an orderly transition and rational organization of land uses around military installations <p>The Fort Drum MCAs and MIAs are defined as follows:</p> <ul style="list-style-type: none"> ■ Fort Drum Safety MCA – Composed of the Accident Potential Zones (APZs) I and II that go outside the boundaries of Fort Drum ■ Fort Drum Noise MCA – Composed of the noise zones for small arms weapons, large arms and demolitions, and aircraft operations associated with Wheeler-Sack Army Airfield, as identified in the Fort Drum ICUZ Report, that go outside Fort Drum's boundaries ■ Fort Drum Airspace MIA – Composed of special use airspace, restricted airspace, Military Operating Areas, and Military Training Routes ■ Fort Drum Radar MIA – Composed of a 30-mile radius around Fort Drum's Digital Airport Surveillance Radar (DASR) at Wheeler-Sack Army Airfield and the DOD-owned WSR-88D Doppler weather surveillance radar (KTYX), and an additional 60-mile radius around each radar facility ■ N/A – This has no geographic area associated with it, but is included for general strategies 											

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LU-1G	Maintenance and update of Fort Drum MCAs and MIAs Fort Drum should provide updated information to the Fort Drum Compatibility Committee (see Strategy COM-1F) when changes in operations or circumstances result in the need to update or modify one of the Fort Drum MCA or MIA boundaries. The Fort Drum Compatibility Committee will be responsible for making a recommendation to its members to incorporate these changes into appropriate policies, plans and regulations. Any proposed changes will go through the normal public process for review and comment prior to the adoption of any final decisions. This would be tied into the GIS Web Portal identified in Strategy COM-1H.	On-going	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
LU-1H	Encourage natural resource preservation Local communities should encourage natural resource preservation through the establishment of parks, easements, recreational use areas, etc.	On-going	N/A				<input checked="" type="checkbox"/>					
LU-1I	Fort Drum Encroachment Working Group During the development of this JLUS, Fort Drum created an Encroachment Working Group made up of subject matter personnel from different organizations on the installation to collaborate in a group setting to discuss and address the various compatibility factors that were part of the JLUS, as well as propose solution sets for future mitigation.	Short	N/A							<input checked="" type="checkbox"/>		

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LU-1J	<p>Prepare and execute a formal MOU for development proposal review</p> <p>The JLUS Partner jurisdictions should establish MOUs with Fort Drum to formalize a process that provides Fort Drum with copies of certain types of development proposals, rezoning, and other land use or regulation changes for land located within the Fort Drum MCAs and MIAs (see Strategy LU-1F) for review and comment. Such review periods shall conform to existing community review periods and / or statutory requirements. This supports a proactive approach for identifying potential conflicts early in the proposed development review process.</p> <p>The process of formalizing Fort Drum review and comment should include:</p> <ul style="list-style-type: none"> ■ Definition of project types that require review ■ Definition of project types that require military participation at pre-application meetings ■ Identification of the points of contact for all coordination ■ Establishing a formal procedure for requesting and receiving comments ■ Establishing a standard timeline for responses, keeping in mind mandated review time periods as specified by state law and local procedures ■ Providing notice to Fort Drum on all public hearings regarding projects that require review ■ Procedures should be reviewed annually and updated as appropriate by the Fort Drum Compatibility Committee (see Strategy COM-1F). 	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

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LU-2	<p>Limiting land uses could impact economic development in local communities</p> <p>Restricting certain land uses such as residential and commercial around Fort Drum could negatively impact economic development and residential character for neighboring communities.</p>											
<p>LU-2A</p> <p>Collaborate on economic development marketing materials</p> <p><i>IN PROGRESS</i></p> <p>Fort Drum should work with organizations such as Jefferson County Economic Development, Lewis County Economic Development, St. Lawrence County Industrial Development Agency, Greater Watertown-North Country Chamber of Commerce, Drum Country Business, and other regional economic development organizations to identify the types of industries that are compatible with Fort Drum's missions and should be encouraged to expand in the region, and types of industries that are incompatible and should be discouraged in inappropriate areas that may be in conflict with Fort Drum's operations. This discussion should include geographic areas, such as within the Fort Drum noise zones or Wheeler-Sack Army Airfield safety zones, where certain types of industry are more or less compatible. Recommendations or materials developed through these discussions can be used by regional economic development agencies to market to and attract appropriate businesses and industries.</p> <p><i>Other Partners: Jefferson County Economic Development, Lewis County Economic Development, St. Lawrence County Industrial Development Agency, Greater Watertown-North Country Chamber of Commerce</i></p>	Mid	N/A	■	■	■		■		□		□	

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LU-3	<p>Landowner concerns of ACUB designation impacting property values</p> <p>There are some landowners of parcels that have been identified as ACUB priority areas that are concerned about the ACUB process and how it will affect their property values. Some owners who do not wish to sell their development rights may misunderstand that the ACUB process only works with willing property owners.</p>											
<div style="border: 1px solid black; padding: 2px; display: inline-block; transform: rotate(-15deg);">ON-GOING</div> LU-3A	<p>Continue to educate landowners within the ACUB Priority Areas</p> <p>Fort Drum and THTLT should continue to distribute informational brochures and related information describing the purpose and benefits of the ACUB program, and how landowner participation can help protect Fort Drum's mission.</p> <p><i>Other Partner: THTLT</i></p>	On-going	N/A						<input type="checkbox"/>		<input checked="" type="checkbox"/>	
LU-4	<p>Potential new missile mission assigned to Fort Drum</p> <p>There is a potential that Fort Drum could gain a new Missile Defense Agency mission. The community is concerned about impacts to nearby property values and the closure of Route 3A through Fort Drum.</p>											
<div style="border: 1px solid black; padding: 2px; display: inline-block; transform: rotate(-15deg);">COMPLETED</div> LU-4A	<p>Fort Drum should consider alternatives to closure of Route 3A during operations</p> <p>Fort Drum, in partnership with the New York State Department of Transportation and the Missile Defense Agency, should evaluate the possibility of alternative options to mitigate impacts to Route 3A around the potential MDA site if the new mission is to be sited and developed at Fort Drum.</p> <p><i>Other Partners: New York State Department of Transportation, Missile Defense Agency</i></p>	Mid	N/A						<input type="checkbox"/>		<input checked="" type="checkbox"/>	

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LEGISLATIVE INITIATIVES (LEG)												
LEG-1	<p>Power NY Act (Article 10) State legislation</p> <p>Local Municipalities do not retain zoning authority to permit any renewable or nonrenewable major electric generating facility over 25 megawatts, which must be approved by the New York State Board on Electric Generation Siting and the Environment under Article 10 of the New York Public Service Law. The Article 10 process is new for communities and is largely untested, causing concern among some communities regarding their role in the process.</p>											
LEG-1A	<p>Leverage local and state legislators</p> <p>Fort Drum should leverage local and state legislators, as well as the DOD Siting Clearinghouse, to voice Fort Drum's concerns on industrial wind energy development in a formal and comprehensive role to the New York State Board on Electric Generation Siting and the Environment.</p> <p><i>Other Primary Partners: local and state legislators, DOD Siting Clearinghouse</i></p> <p><i>Other Supporting Partner: FDRLO</i></p>	On-going	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<div style="border: 1px solid black; padding: 2px; display: inline-block; transform: rotate(-2deg);">ON-GOING</div>	<p>Promote existing public education material</p> <p>The JLUS partners, working through the proposed Fort Drum Compatibility Committee (see Strategy COM-1F), should work with Public Service Commission to develop a public and municipality education packet that provides unbiased, factual information about the Article 10 process, such as an overview of the stages of review, and instructions on how to participate in the process. This should include a discussion of available intervenor funding, the roles municipalities play as parties to a proceeding, the roles local organizations can play, opportunities for public comment and public review of project-related filings, and the appointment of local ad hoc members to the Siting Board. More information about the Article 10 process can be found on New York State Public Service Commission's Board on Electric Generation Siting and the Environment's website.</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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LIGHT AND GLARE (LG)												
LG-1	Light encroachment on Fort Drum training from regional development Large sources of light in the region, such as commercial lots like car dealerships, can produce a lot of ambient light that can impact night training at Fort Drum.											
LG-1A	Education on "Dark-Sky" standards JLUS partner communities should consider educating their constituents and in turn exploring implementation of "Dark-Sky" lighting standards for all fixtures, and adopt such lighting regulations in their zoning laws.	Mid	Airspace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>		
LG-1B	Coordinate lighting improvement projects with nearby industrial and commercial uses Fort Drum should reach out to nearby industrial and commercial entities (such as the Salmon Run Mall and surrounding commercial area) that may have the potential to impact night training activities as a result of their need to maintain a well-lit environment at night. Fort Drum 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. <i>Other Partner: Developers</i>	Short	Airspace							<input type="checkbox"/>		<input checked="" type="checkbox"/>

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NOISE (NOI)												
NOI-1	Noise encroachment on quality of life Military operations at Fort Drum, such as weapons firing, aircraft overflight, and ordnance detonations, cause noise that is heard off-installation in the local communities.											
NOI-1A	Signage alerting of Fort Drum location and operations The JLUS communities should work with Fort Drum to develop signage to install along key roads that alert drivers they are entering an area subject to impacts from Fort Drum and that military operations are present that may cause noise, vibrations, etc. Verbiage such as "Proud home of Fort Drum", "Warning: entering a noise area" should be included on the signage.	Mid	Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	
NOI-1B	Consider properties within Jefferson County's Agricultural Districts for ACUB priority areas Local communities, in partnership with THTLT, should consider designating land within Jefferson County's Agricultural District as part of the priority areas to purchase the development rights from willing land owners to preserve the land as agricultural and provide a buffer from future development that may be impacted by noise from Fort Drum. <i>Other Partner: THTLT</i>	On-going	Noise	<input type="checkbox"/>			<input checked="" type="checkbox"/>			<input type="checkbox"/>		<input checked="" type="checkbox"/>
NOI-1C	Apply for federal grants and funding, including REPI, to assist ACUB Program Fort Drum should apply annually for REPI funding to provide federal monies to support the ACUB Program. Community and non-governmental organizations and conservation group should continue to partner with Fort Drum and develop an enhanced communication plan to identify priorities for federal grant and funding opportunities to help provide funds for acquiring easements through the ACUB program. Some grants include: North American Wetland Conservation Act, Farm and Ranch Lands Protection Program, and Agricultural Conservation Easement Program. <i>Other Partner: THTLT</i>	On-going	N/A							<input checked="" type="checkbox"/>		<input type="checkbox"/>

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NOI-1D	<p>Incorporate sound attenuation and noise reduction measures in building codes</p> <p>Responsible entity for building codes should require new construction to incorporate sound attenuation and noise reduction measures in their building codes within noise-prone locations.</p>	Mid	Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>		
NOI-1E	<p>Create zoning regulations within noise zones</p> <p>Local communities should create and adopt zoning regulations within noise zones that extend off-post, depending on which noise zone that area is within. Fort Drum should assist by providing guidance on land use types that are compatible and incompatible within the various noise zones, as contained within the Installation Compatible Use Zones Study.</p>	Mid	Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>		
NOI-1F	<p>Real estate disclosures</p> <p>JLUS Partner jurisdictions that should coordinate with Jefferson-Lewis Board of Realtors and St. Lawrence County Board of Realtors to consider updating their requirements for providing real estate disclosure notifications when transacting property within Fort Drum's accident potential zones associated with Wheeler-Sack Army Airfield or within the noise zones associated with aircraft flight or weapons noise.</p> <p><i>Other Partners: Jefferson-Lewis Board of Realtors and St. Lawrence County Board of Realtors</i></p>	Mid	Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input checked="" type="checkbox"/>
NOI-1G	<p>Develop a Fort Drum awareness program</p> <p>Develop a Fort Drum awareness program targeted to the property owners and homeowners to ensure they are aware of the impacts of training operations in areas surrounding Fort Drum. This should be tailored for current and future property owners and land developers. A new brochure should be developed that includes information from the existing ICUZ, such as the installation's safety zones and noise zones, but also be redesigned to be more user-friendly</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input checked="" type="checkbox"/>		

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NOI-1H	<p>Voluntary notification to renters / leases of Fort Drum operations and impacts</p> <p>Landlords who rent property or homes within the Fort Drum safety zones and noise zones should be encouraged to voluntarily include as part of the rental / lease agreement that the property is located within an area that may be impacted by operations at Fort Drum.</p> <p><i>Other Partners: Rental Property Owners</i></p>	On-going	Noise								<input type="checkbox"/>	<input checked="" type="checkbox"/>
NOI-1I	<p>Consider developing a voluntary sound attenuation retrofit program for residential uses</p> <p>Consider developing a program that provides guidance on sound attenuation standards for retrofitting existing residential and commercial facilities. The program could include information on grant opportunities available to assist property owners in retrofitting structures in noise-sensitive areas. Other funding sources for retrofitting homes should be identified and provided within the program materials. The program would be voluntary and serve to assist willing property owners wishing to upgrade their homes with resources and guidance.</p> <p><i>Other Partners: Property Owners</i></p>	On-going	Noise								<input type="checkbox"/>	<input checked="" type="checkbox"/>
NOI-1J	<p>Apply for HUD funding for sound attenuation</p> <p>JLUS Partner jurisdictions that are affected by noise zones extending off Fort Drum should encourage property owners within the noise zones to apply for Property Improvement Loan Insurance (Title I) HUD funding to help in sound attenuation improvements.</p>	Mid	Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
NOI-1K	<p>Consider updating ACUB priority areas to include land in noise zones</p> <p>Fort Drum and its ACUB partners should consider updating the ACUB priority areas to include land within the large and small arms weapons noise zones identified in the most recent Fort Drum Installation Compatible Use Zone Report.</p> <p><i>Other Primary Partner: Tug Hill Tomorrow Land Trust</i></p>	Short	Radar							<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

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PUBLIC SERVICES (PS)												
PS-1	<p>Department of Motor Vehicles services relocated from Fort Drum</p> <p>Jefferson County used to operate a Department of Motor Vehicles (DMV) office on-installation for Fort Drum personnel, but had to close it due to funding. It is a quality of life issue for Fort Drum personnel to get time to leave the installation for DMV services.</p>											
PS-1A	<p>Encourage DMV to offer express lines or hours (early / late) for soldiers</p> <p>DMV should consider establishing express lines for soldiers or extended hours, so military members can get in and out quickly due to their limited time being off-post.</p> <p><i>Other Partner: DMV</i></p>	On-going	N/A	■	■	■				□		■
PS-1B	<p>Supplement DMV business hours with federal funding</p> <p>DMV services should seek federal funding to help supplement extended business hours to accommodate Fort Drum personnel who have difficulties getting off-post during their hours of operation.</p> <p><i>Other Partner: DMV</i></p>	Short	N/A	■	■	■						■
PS-1C	<p>Information on DMV options to Fort Drum personnel</p> <p>Fort Drum should provide as part of the new soldier welcome packet information on DMV options such as access to online resources and locations opened past normal business hours. The Jefferson County DMV is currently open late on Thursdays to accommodate patrons who cannot make it in during business hours.</p>	Short	N/A	■	■	■				■		

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PUBLIC TRESPASSING (PT)												
PT-1	Fort Drum personnel trespassing onto private property Surrounding landowners are concerned that soldiers training at Fort Drum occasionally trespass onto private property.											
PT-1A	Signage on Fort Drum for military personnel Fort Drum should install signage inside its boundary, along the fenceline in areas where the potential exists for personnel to leave the installation and enter private property, stating that the other side of the fence is private property and should not be entered without explicit written consent from the property owner.	Short	N/A							■		
ROADWAY CAPACITY (RC)												
RC-1	Maintenance of shared roads Two public roadways through and around Fort Drum are used by the military and civilians and are costly to maintain by the community.											
RC-1A	Explore funding options Fort Drum and the communities should partner with Watertown-Jefferson County Area Transportation Council and New York State Department of Transportation to explore the possibility of leveraging the Defense Access Roads (DAR) program, Fixing America's Surface Transportation Act or "FAST Act", or other funding options to repair or improve roads used by Fort Drum mission. <i>Other Partners: WJCTC, New York Department of Transportation</i>	Mid	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		■
RC-1B	Partner with Watertown-Jefferson County Area Transportation Council <i>IN PROGRESS</i> Fort Drum should work with the WJCTC to identify potential coordination or partnering opportunities to incorporate Fort Drum into the Regional Transportation Plan development to develop strategies to address roadway concerns. <i>Other Partner: WJCTC</i>	Mid	N/A							<input type="checkbox"/>		■

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SAFETY (SA)												
SA-1	<p>Wheeler-Sack Army Airfield accident potential zones extend outside the installation boundary</p> <p>Some of the aircraft accident potential zones associated with Wheeler-Sack Army Airfield extend beyond the boundaries of Fort Drum and over neighboring communities. These accident potential zones pose safety concerns for the communities with risk management and compatible uses.</p>											
SA-1A	<p>Create zoning for Wheeler-Sack Army Airfield's safety zones</p> <p>Communities south of Wheeler-Sack Army Airfield, as well as the Town of LeRay to the north should create and adopt zoning regulations for the airfield's accident potential zones that extend off-post. To assist with this, Fort Drum should provide guidance on land use types that are compatible and incompatible within the accident potential zones, as contained within the Installation Compatible Use Zones Study.</p>	Mid	Safety			■			□			
SA-1B	<p>Develop deed notifications for future land sales and exchanges</p> <p>All land divisions, building permits, and other proposed development actions located within an Accident Potential Zone should be required to file a deed notification that identifies the property's location within such zone as defined by the US Military. This notice should describe Fort Drum's mission and activities and the potential impacts associated with Fort Drum's operations.</p>	Mid	Safety	■	■	■	■					

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SA-2	Fuel truck transport and incident response All fuel to Fort Drum is brought in by truck. The community is concerned that if an accident were to occur, it could potentially cause environmental damage or cause hazards to personnel or civilians.											
SA-2A	Establish HAZMAT routes Jefferson County, Lewis County, and St. Lawrence County should collaborate with the New York State Department of Transportation to establish hazardous material routes that lead to Fort Drum's commercial gate. <i>Other Partner: New York State Department of Transportation</i>	Mid	N/A	■	■	■				□		■
SA-3	Doppler weather radar no-build zone compatibility The 18th Weather Squadron Doppler radar has a four-kilometer (2.5 mile) radius no-build zone around, but the no-build zone is not enforceable by NOAA or DOD.											
SA-3A	Consider easements for No-Build Zone The DOD and National Weather Service should consider working with landowners within the No-Build Zone to see if they would engage in a conservation easement for the land. <i>Other Partner: National Weather Service</i>	Short	Radar							□		■
SA-3B	Consider Zoning for NOAA No-Build Zone The DOD and National Weather Service should inform and educate the towns of Harrisburg, Martinsburg, and Montague about the No-Build Zone and the effects development may have on the KTYX Weather Radar. This information will help these jurisdictions make informed decisions about zoning regulations and future development within the No-Build Zone to help ensure land uses that are compatible within the zone. <i>Other Partners: National Weather Service, Towns of Harrisburg, Martinsburg, and Montague</i>	Mid	Radar							□		■

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VERTICAL OBSTRUCTIONS (VO)												
VO-1	Cell tower compatibility and future siting There are existing cell towers south of Wheeler-Sack Army Airfield that pose vertical obstructions for aircraft. Uncoordinated construction of future cell towers could cause additional impacts.											
VO-1A	Include Fort Drum on tower siting and review process JLUS Partner jurisdictions should include Fort Drum representatives in review or comment on any proposed communications towers. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.	On-going	Radar, Airspace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>		
VO-1B	Publicly accessible map of low level flight paths Fort Drum should create a publicly available document or map of the military low level flight paths including their elevations that communities can use to consider potential impacts from tall structures such telecommunication tower placement. The information could be used when considering comprehensive plan priorities and zoning amendments to confirm suitable or unsuitable areas. This would be incorporated into the GIS Web Portal identified in Strategy COM-1H.	Short	Radar, Airspace					<input type="checkbox"/>		<input checked="" type="checkbox"/>		

Strategy #	Issue / Strategy	Timeframe	Fort Drum MCA / MIA	Jefferson County	Lewis County	St. Lawrence County	Towns / Villages / Cities	Development Authority of the North Country	Tug Hill Commission	Fort Drum	Fort Drum Compatibility Committee	Other
VO-2	Industrial wind energy development potentially impacting flight paths Growth in the wind energy development industry in the region could cause vertical obstructions in low level military training routes. Six currently proposed industrial wind energy developments are in low-level flight training routes.											
VO-2A	Fort Drum airspace needs model Fort Drum should develop an airspace needs model that identifies where existing and proposed future flight activity occurs, at what elevation it occurs, and incorporates terrain information to assess at what height above ground level a structure at any given location may impact flight operations. This tool should be made available to the public to assist in future proposed industrial wind energy development projects and other projects that may result in tall structures. It could be incorporated into the GIS web-based portal identified under Strategy COM-1H.	Short	Airspace							■		
	<i>For related strategies that address this issue, please see Strategies ED-1A through ED-1H.</i>											
VO-3	Lack of zoning height limits impacts to flight operations Some local communities around Fort Drum do not have height limits in their zoning codes. This may impact flight operations if future development results in obstructions.											
VO-3A	Develop template zoning law language that local communities can incorporate The Fort Drum Compatibility Committee should develop template zoning law language that local communities can incorporate into their zoning requirements for height and FAA regulations.	Short	Radar, Airspace								■	
VO-3B	Solicit Fort Drum's input when siting tall structures Local communities, specifically those jurisdictions with ongoing industrial wind development projects, should solicit Fort Drum's input when siting tall structures to ensure they are compatible with the installation's aviation mission and training operations.	On-going	Radar, Airspace	☐	☐	☐	■			☐		

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VO-3C	<p>Develop modeled imaginary surfaces for Wheeler-Sack Army Airfield</p> <p>Fort Drum should identify and model imaginary surfaces for the runways at Wheeler-Sack Army Airfield and provide the information to local communities in GIS format so they can better understand what imaginary surfaces represent and incorporate them into their local zoning laws as appropriate.</p>	Short	Airspace							■		
VIBRATION (V)												
V-1	<p>Vibration felt outside Fort Drum's boundaries</p> <p>Helicopter flights and artillery firing at Fort Drum cause vibration impacts outside the installation. Some residents have stated that they have experienced structural damage to their property as a result of activities at Fort Drum.</p>											
V-1A	<p>Inform residents of the DOD claims process for reimbursing property damage from vibration</p> <p>Fort Drum and local community leaders should inform residents of the DOD claims process for reimbursing property damage due to vibration from training activities.</p>	Short	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			■		
V-1B	<p>Prepare a damage claims package</p> <p>Fort Drum should 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 completing the claims forms, an overview of the inspection process, procedures for Fort Drum review of potential damage, and potential courses of action.</p>	Mid	N/A							■		



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A logo for the Fort Drum Joint Land Use Study. It features a silhouette of a helicopter flying over a line of evergreen trees against a yellow and orange background. To the right of the graphic, the text reads:

**FORT
DRUM**
JOINT
LAND
USE
STUDY