FORT DRUM

GROWTH MANAGEMENT STRATEGY

JANUARY 30, 2009

Prepared for the Fort Drum Regional Liaison Organization

Prepared by Behan Planning and Design

with EDAW, Inc

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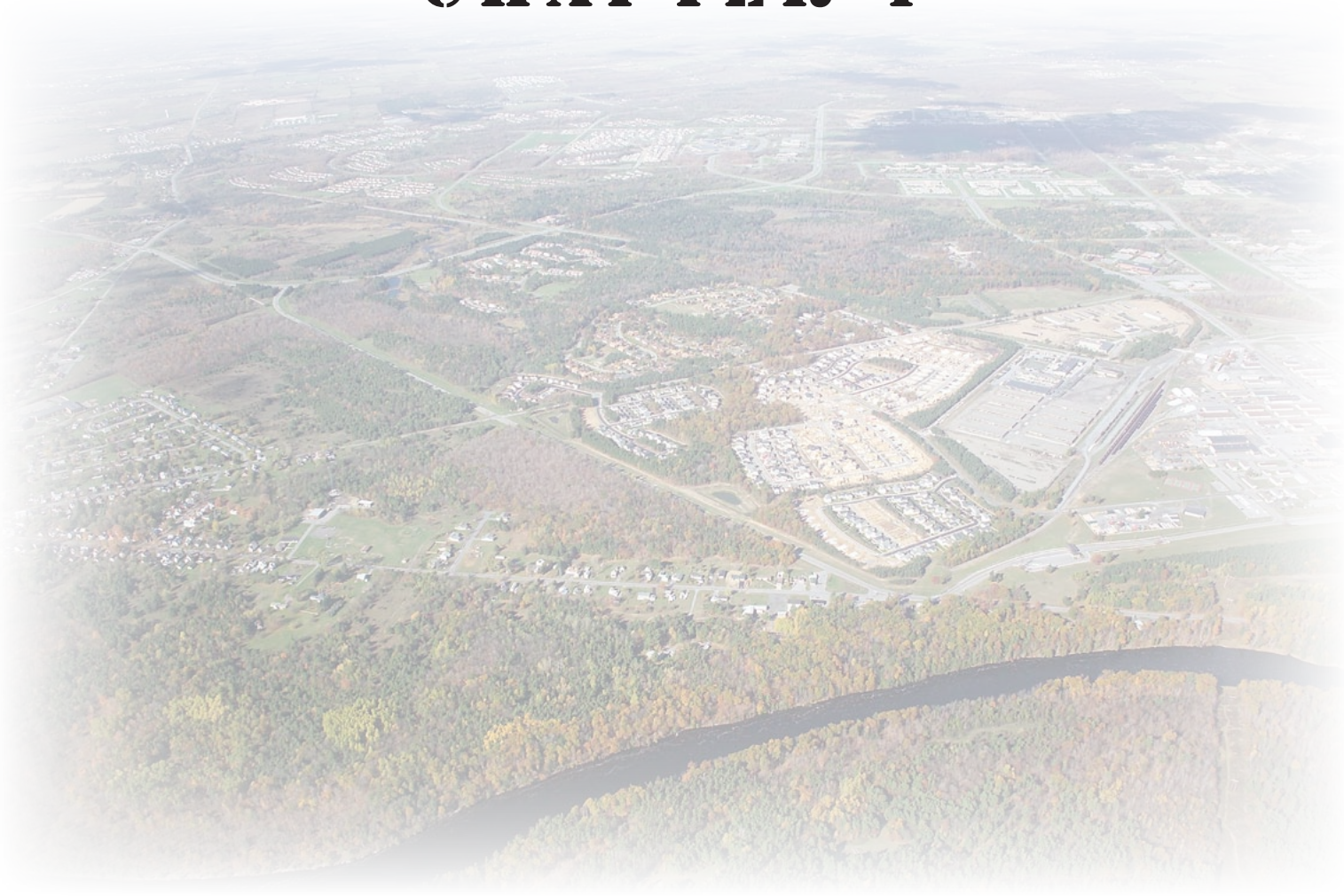
*Appendices are in electronic format and are included on CD at the end of this report and are available on the web at: http://www.behanplanning.com/bpafiles/DRUM.html

FORT DRUM GROWTH MANAGEMENT STRATEGY

CHAPTER 1



THE FORT DRUM STORY

FORT DRUM GROWTH MANAGEMENT STRATEGY

INTRODUCTION

The Fort Drum-Community Partnership

There is a long-standing, mutually-supportive relationship between Fort Drum and the North Country. The North Country communities respect the Fort's mission and the important role the Fort plays in national security.

Over the last 20+ years, Fort Drum has transformed into the employment and economic center of the North Country. With more than 17,000 soldiers assigned to the base, and more than 3,700 civilians employees, Fort Drum has brought more than $9 billion in total spending to the region since 1988, according to the 2007 Fort Drum Economic Impact Study.

Since the addition of a third Brigade Combat Team to the base in 2003, the number of soldiers assigned to the base has increased by 45 percent. In addition, more than $1 billion has been committed to construction projects on Fort Drum, creating opportunities for local companies to expand their scope of services.

As a result of growth on Fort Drum, the surrounding communities are experiencing many benefits. National and regional retail chains such as Dick's Sporting Goods, Home Depot, Target and Kohl's have opened stores in the Watertown area. Small businesses have been established by military spouses, family members and retired soldiers. Infrastructure has been put into place, allowing for state-of-the-art health care and telecommunications facilities. Housing stock in city and village centers has been renovated and employment opportunities have been added to the region. All of these factors contribute to the North Country's high quality of life.

However, this growth is also placing pressure on community infrastructure and services such as schools, roads and police and fire departments. It is placing pressure on the rural countryside, where farms are being converted to commercial and residential development. In particular, the municipalities near the entrances, or "gates," of Fort Drum are experiencing more commercial and residential development pressure. While there is room for growth in all of the region's communities, there is also a need to coordinate and manage the growth so that the region's character can be maintained and so the benefits of Fort Drum's growth are spread out across the region.

The goal of this project is to help communities coordinate planning in support of Fort Drum's operations, and its needs for growth and expansion. Growth in the communities can also influence operations at Fort Drum by encroaching near areas that are needed for military operations. By understanding the needs and operations of Fort Drum, as well as the needs of the surrounding communities, a mutual plan for

growth can be established that provides benefits to both Fort Drum and the surrounding North Country communities.

Planning for Fort Drum is not an easy task. The Fort's operations are constantly changing in order to respond to world events. Population levels in surrounding municipalities decline when troops are deployed for war, and population levels soar when troops return from war. These changes can affect communities immensely. As long as we continue to protect our national security, these dynamic relationships will continue at Fort Drum. Thus, it is important that planning efforts build in flexibility for the Fort and for the surrounding communities so that they are able to accommodate temporary and permanent contractions and expansions in growth and the results they have on the region's economy and quality of life.

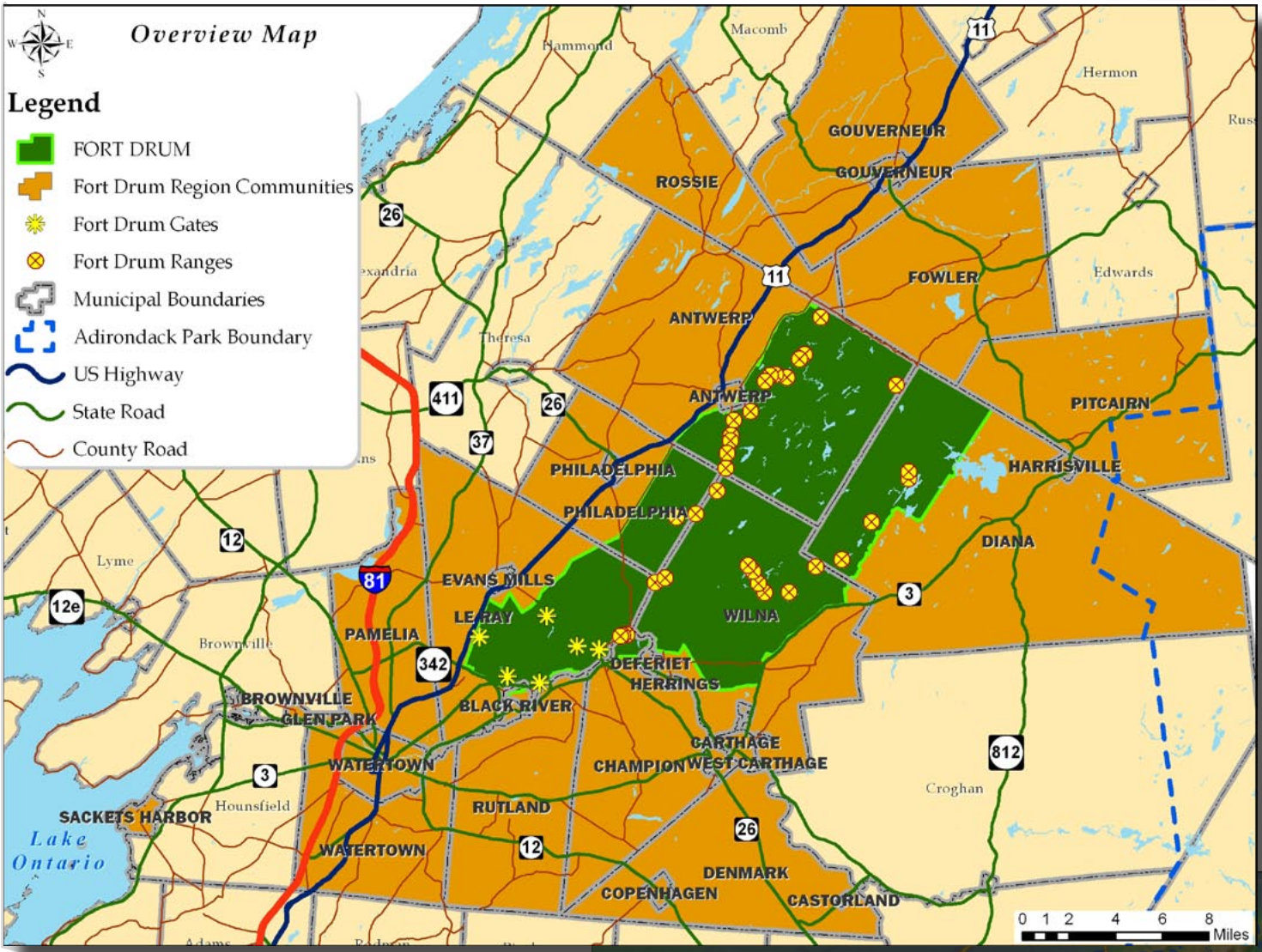
Project Initiation

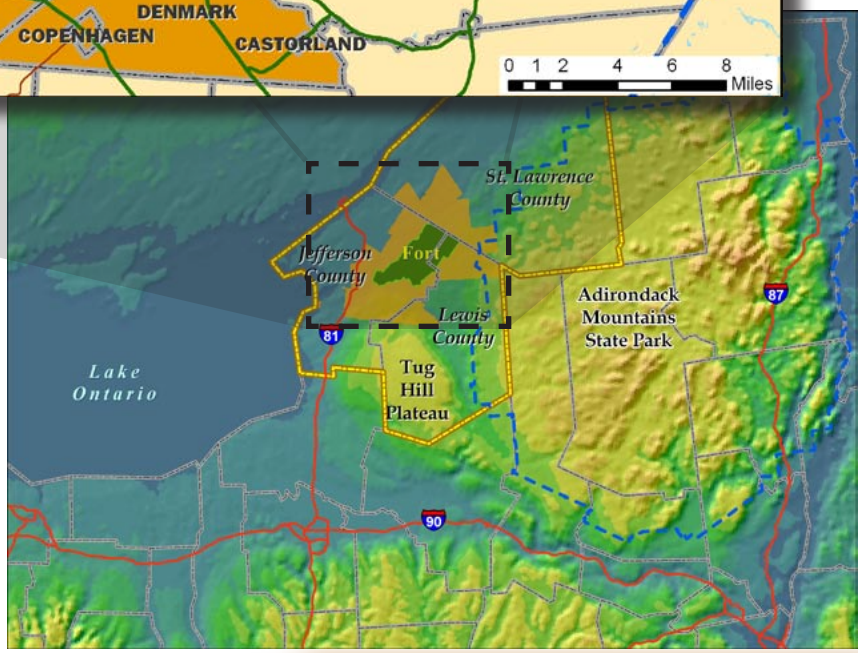
This project was initiated by the Fort Drum Regional Liaison Organization (FDRLO), a "regional membership organization that partners with many government and economic development entities at the Federal, State and local level. The purpose of FDRLO is to foster effective communication and cooperation between the military and civilian communities of the Fort Drum region. FDRLO has played a key role over the years in building strong ties between Fort Drum and the surrounding communities; promoting the Fort Drum Region to Army families as an attractive place to live; and leading efforts to support Fort Drum and keep it off from the Department of Defense's most recent Base Realignment and Closure (BRAC) list." As the primary contact between the military and civilian communities, FDRLO commissioned this study to help facilitate communication regarding planning and quality of life on Fort Drum and in the surrounding communities.

Introduction to the Fort Drum Region

Fort Drum is located at the junction of Lewis, Jefferson and St. Lawrence Counties. It is also located between three significant geographical features – Lake Ontario and the St. Lawrence Seaway, the Tug Hill Plateau and the Adirondack Mountains. The majority of Fort Drum's 107,265 acres are located in Jefferson County. Fort Drum includes portions of six towns.

THE FORT DRUM STORY





For the purposes of this report, the Fort Drum region is the area that is currently most affected by the operations and activities at Fort Drum. The Fort Drum region is depicted in orange on the maps on this page. It includes Fort Drum, as well as 14 towns, 15 villages and one city, for a total land and water area of 576,000 acres (900 square miles). Data depicted on these maps, and all other maps in this report, are based on the best available data at this time and are subject to change.

Communities in the Fort Drum Region

The municipalities in the Fort Drum region are influenced in different ways, based in a large part on their proximity to Fort Drum's ranges and gates. The communities are discussed below in three categories: gate communities, range communities and outlying communities.

Gate Communities

The gate communities are located at the entrances, or gates, to Fort Drum. All traffic entering the Fort must come through these entrances. The gate communities are located along major transportation corridors, such as Route 11 and Route 3. Many military personnel and their families locate in the gate communities due to their proximity to Fort Drum. The gate communities are experiencing commercial and residential growth pressure. They are also experiencing some of the impacts of rapid growth, such as the loss of farmlands and increased traffic along commercial corridors. The gate communities also experience some range-like impacts due to the presence of Wheeler-Sack Army Airfield (WSAAF) in this area.

Gate #3 - the North Gate is the public entrance to the Fort and is located in the Town of LeRay. The presence of this gate has spurred a significant amount of commercial growth along adjacent Route 11.

Gate Communities: Towns of LeRay, Champion, Rutland, Pamelia, Philadelphia and Watertown; Villages of Black River, Evans Mills, Deferiet, Herrings, Philadelphia, Carthage and West Carthage; and the City of Watertown.

Range Communities

The range communities are often described as the "business end" of the Fort as this is where the training activities take place. As a result, the range areas experience noise from the detonation of munitions, troop movements and aerial flight patterns. Because the areas around the range are important to military operations, the Fort is most concerned with encroachment in the range communities. This means that the Fort is concerned that dense populations or other land uses in the areas close to where military training takes place could make it hard for the Fort to conduct training activities essential to national security. At present, the range communities are largely undeveloped.

Forested range areas shown above provide compatible land use buffers for the Fort to conduct training activities. The boundary of the Fort is approximated in green in this image.

Range Communities: Towns of Philadelphia, Antwerp, Rossie, Fowler, Pitcairn, Diana and Wilna; Villages of Antwerp, Harrisville and Philadelphia.

Outlying Communities

There are other communities in the Fort Drum region that are not located near the "gates" or "ranges." These outlying communities are experiencing Fort Drum-influenced growth in different ways. Many serve as bedroom communities to military families. People who live in these communities may also work on the Fort in some capacity, such as private contracting. One important concern in several outlying communities is addressing the transition of the housing developments constructed under Section 801 of the Military Construction Authorization Act of 1984 to the private market. A secondary issue is the long distance between the outlying communities and the post, typically 20 to 30 miles one-way. Due to the increase in fuel prices over the last several years, the cost of commuting to Fort Drum has drastically increased, making these communities less desirable for soldiers and their families. It has also created challenges for local people who live in these communities and work on the Fort.

Outlying Communities: Towns of Denmark and Gouverneur, and the Villages of Glen Park, Brownville, Sackets Harbor, Gouverneur, Castorland, Copenhagen and Lowville.

Downtown Lowville - one of the many outlying communities in the Fort Drum Region.

Economic Benefits of Fort Drum: A Short Summary

Fort Drum is a prominent fiber within the fabric of New York's North Country region. As of September 30, 2007, 22,886 individuals are on the Fort Drum payroll. This includes 16,950 military personnel, 3,960 civilian personnel and 1,976 retirees collecting retirement income. Total payroll for these personnel and retirees equaled approximately $964 million in Fiscal Year 2007 (October 2006 through September of 2007).[1] In addition to the 22,886 individuals directly on the Fort Drum payroll, it is estimated that the presence of Fort Drum in the region accounted for approximately 7,900 "indirect" and "induced" jobs such as teachers, health care professionals and construction.[2] These jobs, which paid approximately $262 million in Fiscal Year 2007, would likely not exist without the presence of Fort Drum in the region. All told, total wages paid to those employed directly by Fort Drum and those whose jobs are indirectly attributable to Fort Drum, equaled approximately $1.22 billion in Fiscal Year 2007.[3] The total economic impact to the region of Fort Drum for Fiscal Year 2007, which includes both direct impacts (Fort Drum payroll and Fort Drum spending) and indirect impacts (indirect/induced payroll and economic activity), is estimated to be $2.04 billion.[4]

Fort Drum's impact has created the financial means for the region to continue to grow and expand; provided greater retail and service options to residents of Fort Drum region; and allowed more long-time residents to find local employment opportunities. This impact has also allowed an increasing number of soldiers the ability to stay in the region after separation or retirement from the military.

[1]Fort Drum Economic Impact Statement, Fiscal Year 2007
[2]Fort Drum Impact Estimator Version 2.0, prepared for the Fort Drum Regional Liaison Organization by the Economic Development Research Group, Inc., May 2008
[3]Ibid
[4]Ibid

FORT DRUM GROWTH MANAGEMENT STRATEGY

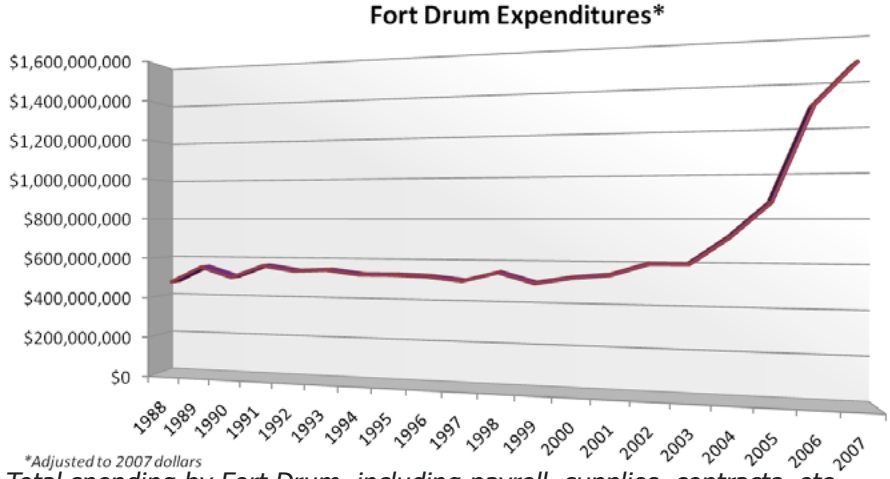
The Fort Drum region attracts and retains a high percentage of military retirees, at a minimum estimated by FDRLO to be between 20 to 25% of all retiring Fort Drum personnel. The high retention rate of retired military personnel is indicative of the highly desirable quality of life the region has to offer. Many military retirees have gone on to start their own businesses, such as the Thousand Islands Winery in Alexandria Bay[5] while other retirees make up much of the civic leadership of the region.

Several regional employers have been able to parlay work undertaken at Fort Drum into larger military contracts elsewhere in the United States. In Fiscal Year 2007, the post's Directorate of Contracting paid approximately $27.4 million dollars to local construction companies for work on the post. This represents 83% of all Directorate of Contracting-based construction dollars spent by the post. In addition, the US Army Corps of Engineers awarded construction contracts of $234.4 million for work done on Fort Drum. Service and supply contracts totaling over $16 million were awarded to local companies in 2007, a nearly 23% increase from 2006.[6] Many of these companies have leveraged their success at Fort Drum into opportunities for military and civilian work outside of New York State. These local companies help to provide direct employment to more workers who will spend their paychecks throughout the region.

Fort Drum accounts for 32,538 jobs in the Fort Drum Region, and 1-in-4 jobs in the three-county area.

The growth at Fort Drum has also benefited the region's medical infrastructure, which in turn has resulted in economic benefits for the region and its residents. In 2007, medical spending in the region attributed to Fort Drum totaled approximately $41.6 million, approximately $21.6 million of which was attributed to the purchase of supplies and equipment with the remainder attributed to payroll for civilian workers.[7]

The presence of Fort Drum in the region has proven to be beneficial for local governments, based on local and state tax impacts to the Fort Drum region. In 2007, Fort Drum related activities generated $11.6 million more in revenues for area governments, school districts, and fire districts than were spent for uses related to services needed by Fort Drum soldiers and their families in the region.[8] This has allowed local governments the ability to provide additional services for its residents or to improve and upgrade capital equipment and facilities that might not have otherwise occurred.



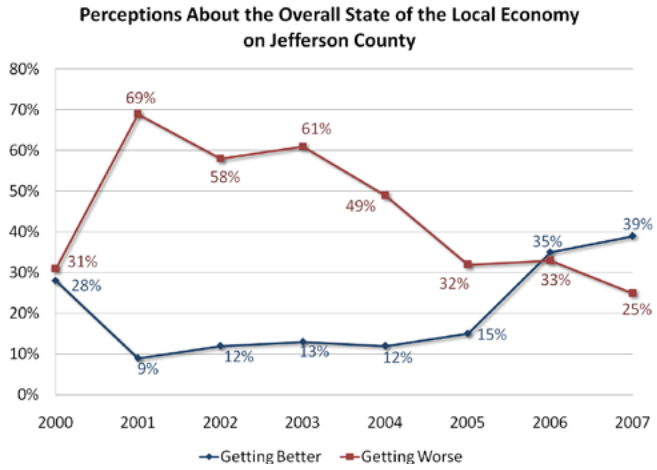
Total spending by Fort Drum, including payroll, supplies, contracts, etc.
Source: Fort Drum Economic Impact Statement, Fiscal Year 2007

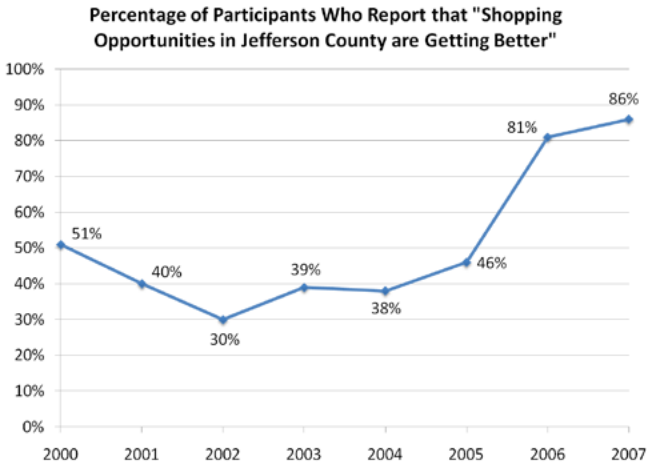
In 2006, Fort Drum military personnel made nearly $122 million in consumer expenditures in Jefferson County.[9]

[5]"About Us" Thousand Islands Winery Retrieved on July 28,2008 from http://www.thousandislandswinery.com/tiw_about.html
[6]Fort Drum Economic Impact Statement, Fiscal Year 2007, [7]Ibid
[8]Fort Drum Impact Estimator Version 2.0, prepared for the Fort Drum Regional Liaison Organization by the Economic Development Research Group, Inc., May 2008
[9]"A Study of the Fort Drum Consumer Market," prepared by The Center for Community Studies at Jefferson Community College, June 2007

This represented one out of every three dollars spent by consumers in the county.[10] This influx of consumer spending has brought a mix of new retailers to the region, both large national chains such as Target and Lowes, and new local shops and services, including several, such as the Black River Coffee Company in Watertown, opened by military members and their families. Many of the local stores have opened to serve needs created by the expansion of Fort Drum. This includes several pet related shops and services, the owners of which directly attribute the growth of Fort Drum to the success and viability of their businesses.[11]

Much of the retail growth associated with Fort Drum has been focused in two specific corridors, the Arsenal Street (NYS Route 3) corridor in the City and Town of Watertown and the Route 11 corridor in the Town of LeRay. Along Arsenal Street, several national branded hotels and restaurants have opened since 2003. In addition, several retail projects have been constructed or are proposed along the corridor, including the recently constructed Towne Center at Watertown and an expansion to the Salmon Run Mall. In LeRay, the amount of commercial square footage has substantially increased along US Route 11 in LeRay, from less than 3,500 square feet (approximately the size of a convenience store) in 1984 to over 335,000 square feet in 2007. This includes a Wal-Mart Supercenter, which opened in 2006. There are several additional projects proposed along the corridor that may be constructed in the coming years.





Sample results from the Eighth Annual Survey of the Community, June 2007, Jefferson Community College Center for Community Studies

Following the assignment of the 10th Mountain Division to Fort Drum in 1985 commercial square footage along Route 11 in the Town of LeRay increased by 10,000%

[10]U.S. Bureau of Labor Statistics Consumer Expenditure Surveys ,U.S. Census Bureau Population Demographics, 2000 Census
[11]Hanley, R. "Growing Drum Means More Pets" Watertown Daily Times, June 10, 2008

History of Fort Drum

Fort Drum is located in northwestern New York State in the picturesque North Country. Situated about 20 miles southeast of Canada and the St. Lawrence River, this area has held strategic importance throughout history. For Native Americans, it held key trading and hunting trails; for colonial European powers, the area was vital to control of the St. Lawrence River and Great Lakes; today, it is a major employment center in the North Country and a military training ground.

Early Beginnings

Fort Drum's role in U.S. military history began long before the initial land acquisition in 1908 by the U.S. War Department. The Army's presence in the North Country can be traced back to the early 1800s when, in 1809, a company of infantry soldiers was stationed at Sackets Harbor to control smuggling between northern New York and Canada. During the War of 1812, the North Country saw numerous battles, including the Battle of Sackets Harbor. Sackets Harbor became the center of Naval and military activity for the Upper St. Lawrence River Valley and Lake Ontario. After the war, the Army built Madison Barracks at the site to serve as an outpost and training center, producing many great soldiers, including General Ulysses S. Grant.[12]

In 1906, the Army needed a summer training area to supplement Madison Barracks and designated Pine Plains near Watertown for the task. Shortly afterward, Brigadier General Frederick Dent Grant, son of General Ulysses S. Grant, arrived at Pine Plains with 2,000 regulars and 8,000 militia. Finding Pine Plains to be an ideal place to train troops, the U.S. War Department purchased and named it Pine Camp.

Pine Camp and the surrounding North Country were thrust into the national spotlight when, in 1935, the U.S. held its largest peacetime maneuvers in history at the camp. Designed to simulate the motorized invasion of Canada, the exercise involved 36,500 soldiers from throughout the Northeast. For 36 hours, young men from offices, factories and farms marched, attacked and defended in tactical exercises on the 100 square miles the Army had leased for its war games. The maneuvers were judged to be most successful and the War Department purchased another 9,000 acres of land.[13]

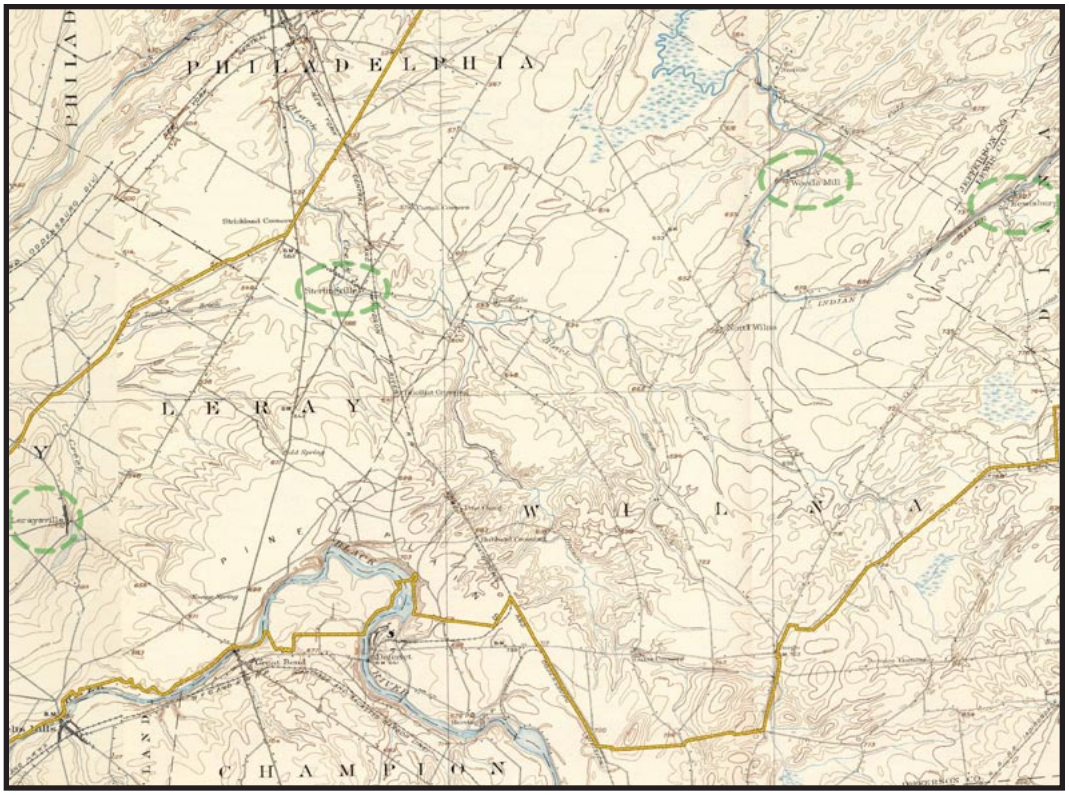
Bayonet charge at Pine Camp in 1935.

World War II

The most significant acreage increase for Pine Camp occurred in 1941, when 75,000 acres were purchased in preparation for World War II expansion. Five large hamlets and more than 500 farms were purchased and relocated. Beginning on Labor Day in 1941 and ending 10 months later, contractors constructed facilities to house the divisions scheduled to be trained at the fort. This major engineering

[12]http://www.armytimes.com/news/2007/04/ap_fortdrummuseum_070407/ as of Jan. 15, 2008
[13]http://www.glasnost.de/hist/usa/1935invasion.html as of Jan. 15, 2008

feat consisted of constructing more than 800 buildings, including: 240 barracks, 84 mess halls, 58 warehouses, 22 headquarters buildings, 99 recreational buildings and a new hospital. All of this development occurred during the coldest winter in North Country history.



As this 1911 USGS topographic map shows, the current location of Fort Drum (shown in the yellow and brown outline) overtook many large hamlets (circled in green) as well as several smaller hamlets and multiple individual homesteads.

Map Source: University of New Hampshire Library

Recent History

Pine Camp was renamed Camp Drum in 1951 after Lieutenant General Hugh A. Drum, who commanded the 1st Army during World War II. During his long military career, Lt. General Drum received the Silver Star, the Distinguished Service Medal and the Croix de Guerre. Camp Drum also solidified its post-World War II military prominence during and after the Korean Conflict when a number of units were stationed and trained to take advantage of the rigorous terrain and climate.

Lieutenant General Hugh A. Drum

Camp Drum was re-designated as Fort Drum in 1974 when a permanent garrison was assigned. On Sept. 11, 1984, Fort Drum was named the new home of the 10th Mountain Division Light Infantry (LI). The first division troops arrived at Fort Drum on Dec. 3, 1984, and the unit was officially activated on Feb. 13, 1985. Fort Drum is considered the most modern Army installation, with most of the facilities having been constructed between 1986 and 1992, at a cost of approximately $1.3 billion.

The heightened activity at Fort Drum during this period spurred the formation of two organizations, each to facilitate the region's needs: The Development Authority of the North Country (DANC) and the Fort Drum Steering Council. DANC is New York State's response to infrastructure, housing and community growth needs in the North Country. According to the enabling legislation, DANC was created to "institute a comprehensive, coordinated program of economic development activities in Jefferson, Lewis, and St. Lawrence Counties, which surround the United States Army base at Fort Drum, in order to provide the region with the capability to effectively plan and develop the infrastructure needs of the region required by the population increase due to the expansion at Fort Drum." Today, DANC operates multiple infrastructure systems, such as potable water systems and fiber optic cable networks, as well as administering community development programs, including small business and home improvement loans for area communities.

Simultaneous to the state's establishment of DANC, the local communities surrounding Fort Drum recognized the need to organize to collectively resolve issues that might arise between their communities and Fort Drum. Citizens of the Fort Drum Region formed the Fort Drum Steering Council to be the first point of contact between the military and civilian communities. After the sunset of the Steering Committee's five-year mandate in 1990, local leadership felt that an organization similar in scope to the Steering Committee was needed in the region. FDRLO was then formed to continue this much-needed coordination role in the community.

FDRLO continues to foster effective communication and mutual support by serving as the primary point of coordination between the military and civilian communities in the Fort Drum region. It consists of military and civilian representatives in order to offer a balanced and comprehensive view in addressing these complex and cross-jurisdictional issues. The organization has shepherded the local communities through many growth and deployment periods and maintained open communication with the 10th Mountain Division's Command Group and Fort Drum's Garrison Command. This frequent communication helps the local businesses and communities weather the economic ups and downs common around military installations.

Fort Drum Today

Today, Fort Drum's mission is to provide base operations support for forces training, mobilizing or deploying; to manage quality of life programs and provide a safe and secure environment; and to shape a first class installation capable of supporting mobilization.[14] Since its inception, Fort Drum's mission has been training soldiers for combat. In a typical year, almost 80,000 troops train annually[15] at the installation including 11,000 active duty personnel and more than 44,000 personnel from the U.S. Army Reserve, Army National Guard, Air National Guard, Marine Corps Reserve, Naval Reserve and the U.S. Air Force.[16]

Fort Drum's host unit is the 10th Mountain Division (LI). As a host unit, the 10th Mountain Division (LI) is responsible for providing basic infrastructure and support services, such as security, and other elements needed for day-to-day operations. The mission of the 10th Mountain Division (LI) is to deploy rapidly anywhere in the world and be prepared to fight and win upon arrival.

[14]US Army, *Programmatic Environmental Assessment for Fort Drum*, 2000
[15]"Fort Drum History" retrieved on July 28,2008 from http://www.drum.army.mil/sites/about/history.asp
[16]Final Environmental Assessment for the Residential Communities Initiative (2004)

THE FORT PERSPECTIVE

Introduction

Fort Drum's top priority is to carry out its mission to provide operations support for the training, mobilization and deployment of troops. Within the past few years, Fort Drum has undergone a major Transformation to respond to changed warfare tactics and global concerns. The ongoing process of the Army's Transformation has had major impacts on the Fort, its operations and future needs, as described in this section.

Quality growth and viable communities are important to the morale and welfare of Fort Drum's troops, and, therefore, key to the retention of the Fort's population of soldiers and families. It is Fort Drum's goal to have 65 percent of military families living off-post by 2012. This goal heightens the desire for the Fort to become a partner in quality of life issues in the surrounding communities. It is important that military personnel who live off-base feel safe and have good economic and social opportunities. For military families this quality of life can exhibit itself in many different ways; housing, transportation, educational opportunities, child care, medical care, employment, safety, recreation, dining and entertainment are all important aspects of quality of life.

The same components which contribute to a high quality of life for soldiers and their families are just as important to civilians. By working together to maintain and improve quality of life, the Fort and the surrounding communities, residents and business owners can all benefit.

Transformation of Fort Drum

Overview

After World War II and during the Cold War, the basis of the Army's organization was static with large divisions of about 15,000 soldiers each. Each division incorporated logistics, support and headquarter operations for fixed formations of permanently assigned units. Artillery, combat support and logistics support only resided at the divisional level. This system was appropriate at the time because the adversary was well known and predictable.

Soldiers from the 10th Mountain Division boarding a Chinook helicopter in Afghanistan on-route back to Fort Drum. - Photo by Spc. Gul A. Alisan

FORT DRUM GROWTH MANAGEMENT STRATEGY

Today, the Army must rapidly respond and be prepared to operate in a less predictable environment. The Army undertook its Transformation efforts to address these modern military needs by restructuring its organization, its training and deployment cycles; and updating its technology and facilities.

The recent Transformation of Fort Drum changes the organizational structure to accommodate smaller, self-sufficient brigades which are more agile and allow the soldiers to organize closer to how they may fight in battle. Transformation is important because it allows Fort Drum to assume a larger role in national security. This helps to ensure that Fort Drum remains a viable military operation. The most noticeable effects of Transformation on Fort Drum are the population increases that are associated with the addition of new brigades. The Transformation also includes changes in the deployment cycles which help to provide more predictability for military personnel and their dependents. Lastly, Transformation also results in new training facilities and more efficient equipment.

New barracks and motor pool area being constructed at Fort Drum in the Fall of 2007.

The effect of Transformation on-post is apparent. Construction projects are occurring on many areas of Fort Drum. New homes are being built and existing homes are being renovated. New barracks are being added to support unaccompanied soldiers. New equipment and training schedules are being employed.

Transforming the Military Operation

One effect of Transformation is that the operational structure of the army has been changed. Under the new structure, the smaller combat brigade team (approximately 3,000-4,000 soldiers) is the primary building-block unit of the Army. Each brigade will be modular by combining previously segregated capabilities once found only at the Division and Corps level into a self-contained combined arms formation. This means that each brigade combat team (BCT) can now fully implement a mission from beginning to end: scouting out the target, gathering intelligence, planning the attack, implementing the attack and supporting the mission. The goal of modularity is to have all BCTs structured in a standardized format so that they can be interchangeable throughout the Army, meeting the needs of each mission by rapidly assembling and deploying forces when needed.

The modular brigades utilize standard formations in both active and reserve components. These are Armored Brigade (Heavy), Infantry Brigade and Stryker Brigades. Support units also fall into five categories: Aviation, Fires, Battlefield Surveillance, Maneuver Enhancement and Sustainment (Support).

Because each modular brigade is self-contained, Division commands operate as plug-and-play units. Any combination of brigades can be assigned to Divisions for a particular mission. Therefore, the Division

level must also be modular. The new modular headquarters, now called the Unit of Employment X (UEx), contains its own security element, communications network capabilities and liaison functions, as well as the main command post, mobile command group and two tactical command posts. When not deployed, the division also has the responsibility for the training and readiness of its modular brigade units.

Training and Deployment Cycles

The Transformation process also included revamping the personnel training cycle to reduce personnel turbulence; provide more combat-ready units; and increase predictability for soldiers and their families. The Operational Deployment Cycle is approximately a 36-month cycle for active components, 60-month cycle for the reserve force, and 72-month cycle for the National Guard Force. Specifically the goal is:[17]

- ◇ one year deployed and two years at home station for Active Components;
- ◇ one year deployed and four years at home station for the Reserve Force;
- ◇ one year deployed and five years at home station for the National Guard Force

Under this new cycle soldiers arrive, train, deploy and depart together, improving unit cohesion and training effectiveness.

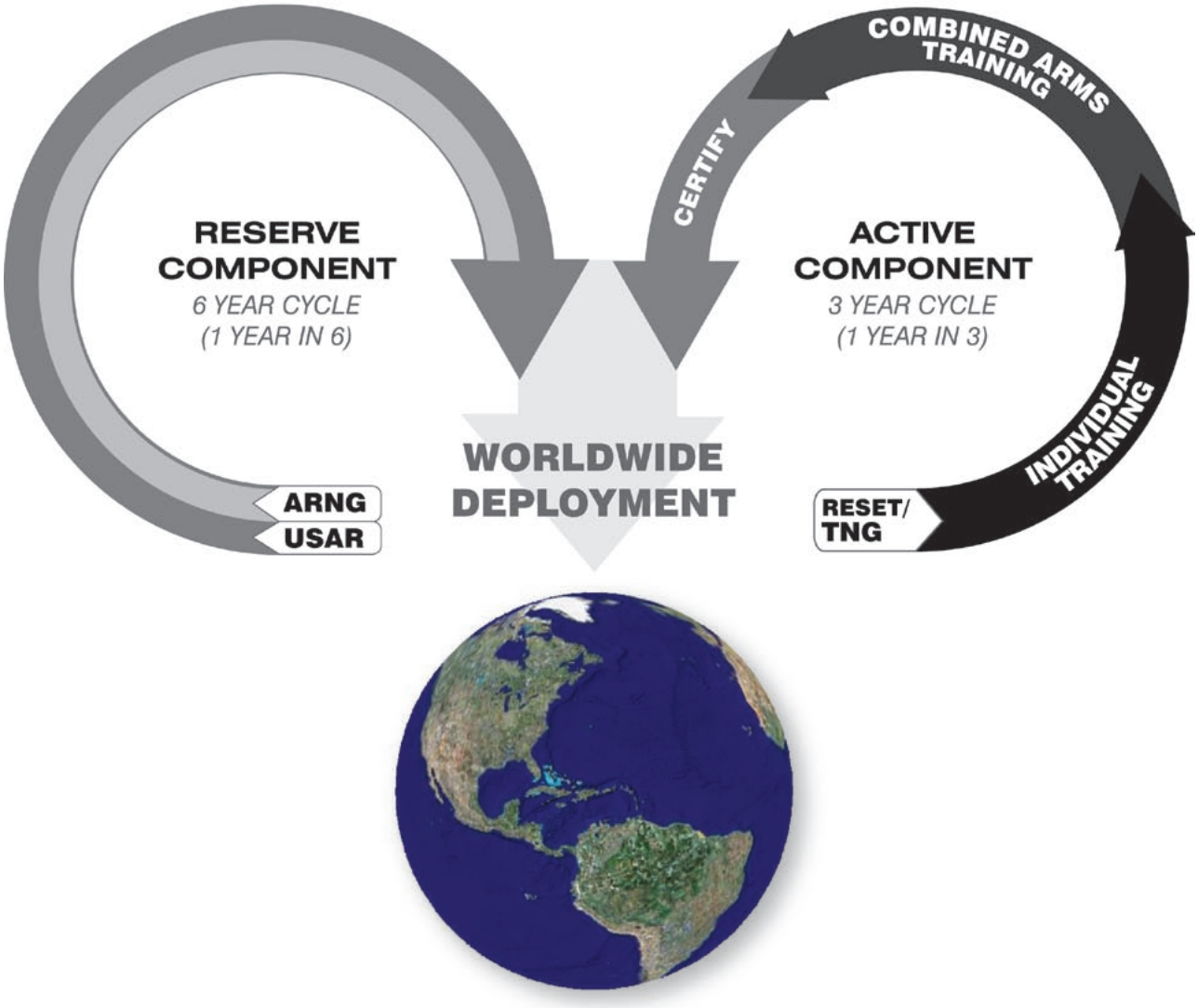
The Operational Deployment Cycle includes three main phases: Reset, Train and Ready. During the Reset phase, troops and equipment return from deployment. Damaged equipment is repaired or replaced, programmed personnel changes occur and incoming personnel are stabilized.

During the Training Phase, a full array of training occurs from individual training tasks through the full collective capabilities training. The Training Phase concludes with a validation and certification exercise, which transitions the unit to the Ready Phase. The Ready Phase is for the remaining period of the operational cycle. During this phase, the unit continues to improve its collective readiness and can be deployed when needed.

Training at Fort Drum's Range 21. - Photo by Staff Sgt. Raymond Drumsta

The Operational Deployment Cycle is the standard form that all units use, but at any given time each BCT will be at a different stage of the cycle. This ensures that the commanders always have at least 15 active-duty combat-ready units and four reserve brigades available for deployment each year. This regular rotation schedule for the brigades means that as some are being deployed, others are returning home for the Reset Phase.

[17]Congressional Research Service Report for Congress, U.S. Army's Modular Redesign: Issues for Congress, updated May 5, 2006



Cyclical nature of military training under Transformation. Based on graphic published by US Army, 2004 Army Transformation Roadmap.

Impacts of Transformation at Fort Drum

Fort Drum began its Transformation process in 2005 with the reorganization of three elements into the new modular format: the brigades into the BCT unit, the Division headquarters into the new UEx structure and upgrading the Aviation Brigade.[18] The restructuring of each element into the modular format extends beyond reorganization to include population changes, equipment changes, and in some cases, changes in training operations. For the most part, modularization for the 10th Mountain Division (LI) has resulted in population and equipment changes. Although minimal changes in the nature and location of the training activities on Fort Drum are anticipated, an increase in activity level when troops return from Iraq and Afghanistan will result in increased impact frequency.

[18]US Army, *Environmental Assessment for Army Transformation Implementation at Fort Drum*, 2005

The following sections explore the organizational changes of the Infantry Brigades, Division Headquarters and the Aviation Brigade.

Brigade Combat Teams

The 10th Mountain Division migrated to the new modular structure in 2005 and 2006 as a result of the Army's Transformation Initiative. As part of the Transformation, a third brigade was added to the 10th Mountain Division. The 10th Mountain Division now consists of six BCTs: four Infantry Brigades (one at Fort Polk), one Aviation Brigade and one Sustainment Brigade. In December 2007, the Army announced that by 2013 the 10th Division will also command an additional Maneuver Enhancement Brigade at Fort Drum.

Aviation Brigade

The final restructuring that occurred in the 10th Mountain Division was the migration into the new Multifunctional Aviation Brigade. The military-wide average population increase for each Aviation Brigade was 800 personnel. In addition to the population increase, the Aviation Brigade increased and changed the equipment assigned to Fort Drum. Table 1.1 below shows the changes in the on-post aircraft.

Table 1.1: Change in Rotary Wing Aircraft at Fort Drum

Rotary Aircraft	# of each in 2002	# of each after 2006
OH-58 Warriors	40	60
UH-60 Blackhawks	30	38
UH-1 Medical	6	0
CH-47 Chinooks	0	12
UH-60 MEDEVAC	0	12

There are more OH-58 Kiowa Warriors assigned to Fort Drum than any other rotary aircraft.

The restructuring of the Aviation Brigade into the new format resulted in a 60 percent increase in the number of rotary aircraft at Fort Drum, from 76 aircraft to 122, as of late 2007. This restructuring will result in a projected 46 percent increase in air traffic operations near Fort Drum, once all soldiers assigned to the post are present. Although the types of training activities are not expected to change, and flight patterns will remain the same, it is expected that some increase in noise on a daily basis will occur if the military returns to a peacetime environment similar to the 1990's, due to the increased frequency of flights. The peak amounts of noise heard by individuals off-post will not be louder, but it will be more frequent, thus potentially disturbing a greater number of residents in the region. In order to mitigate some of these

impacts, the post, in recent years, has taken steps to limit rotary wing training activities after 10 PM or before 7AM, lessening the potential for large-scale noise conflicts with area residents.[19]

Division Headquarters (UEx)

The Division headquarters migrated to the new modular structure (UEx) concurrently with the BCTs. As a result many Multifunctional Support Brigades have been added to the Fort Drum family, including an Integrated Theater Signal Battalion, the 63rd Ordnance Battalion (EOD), and an Engineering Battalion. The new modular headquarters, now called the UEx, contains its own security element, communications network capabilities and liaison functions, as well as the main command post, mobile command group and two tactical command posts. When not deployed, the division also has the responsibility for the training and readiness of its modular brigade units.

In addition to Transformation activities, the Fort Drum UEx will also support troop growth as part of the President's "Grow the Force" initiative (GTF): an Army Maneuver Enhancement Brigade (ME), the 7th Engineering Battalion and the 91st Military Police Battalion. The most recent announcement was in December 2007 with the ME Brigade. About half the size of a full brigade, each ME Brigade is uniquely tailored for its mission to provide protection for the brigade's supported force through various capabilities such as communications, engineering, air defense or civil affairs.

Actual population growth for the UEx included about 70 functional and administrative support personnel. The Multifunctional Support Brigades increased the post population by about 1,850 personnel. Most of this increase is from the recently announced ME Brigade. This brigade will most likely include 500 Soldiers and will be assigned by 2013. A few of the smaller support battalions have already been relocated to the installation and are currently on-post.

On-Post Training Activity

The expansion of Fort Drum has not had a significant effect on how on-post training activities affect areas away from the Fort boundaries. Since the most recent expansion of personnel at Fort Drum, the frequency of training activities on the installation has decreased, due to the deployment of troops for Operation Iraqi Freedom (OIF) in Iraq and Operation Enduring Freedom in Afghanistan. As of May 2008, more than 4,000 soldiers assigned to Fort Drum are deployed overseas.[20] While soldiers now overseas will return to Fort Drum as their rotation ends, it is anticipated that the number of soldiers deployed will increase to 6,500 troops in late 2008, as the UEx,

Practicing loading of a howitzer to a CH-47 Chinook.

[19]Operational Noise Consultation, No. 52-EN-06W7a-07, Fort Drum, Mar 07
[20]New York State Governor's Office "Governor Paterson Attends Sendoff for 10th Mountain Division Soldiers at Fort Drum", April 25, 2008

Aviation Brigade, and Sustainment Brigade will deploy to Iraq for a 12-month rotation.

Another major role for Fort Drum, and specifically WSAAF are the operations of the 174th Fighter Wing's Forward Operating Location (FOL). The FOL is tasked with arming and refueling aircraft from the 174th Fighter Wing as well as many other Air Force and Air National Guard (ANG) units from throughout the Northeast that train at Fort Drum. The operations at Fort Drum are unique in that aircraft can receive ordinance at the same facility that they are practicing their air-to-ground maneuvers. This allows for rapid turn around and therefore more time for practicing and less time flying between airfields and bombing ranges. Range 48 at the northern end of the base is used to coordinate these bombing and gunnery practice runs. 10th Mountain Division aviation training activities were discussed previously on page 15.

FOL personnel prepare a live MK82 (500 lb bomb) for an A-10 Warthog.

Summary of Population Changes

Transformation activities will result in population increases on-post. As noted above, most of these personnel changes have already occurred, with more than 5,500 positions reassigned to Fort Drum between 2004 and 2007.[21] As a result, Fort Drum's military population grew from more than 11,000 soldiers to slightly more than 17,000 soldiers. The community has not yet felt the full effects of the new soldiers in the region during this period, because most troops assigned to Fort Drum have been deployed at least once to Iraq and/or Afghanistan since the start of Transformation activities. At no period since Transformation have all troops assigned to Fort Drum been on-post at the same time. Table 2.1 summarizes the population associated with the installation. Post-Transformation population numbers are estimates based on current information and are subject to change based on Army needs.

Table 2.1: Fort Drum Associated Population[22]

Population Component	Current Population (2008)	Remaining Transformation Population Increases	Estimated Post-Transformation Population (2013)
Military	17,173	2,254	19,427
Civilian	1,918	182	2,100
Long-Term On-Post Contractors	2,098	none	2,097
Military Dependents	15,794	3,381‡	19,175
Total	36,983	5,635	42,799

Source: Current Military, Civilian, Long Term On-Post Contractors and Military Dependents Population GAR Associates, 2008

‡ A multiplier of 1.5 was used to derive this number based on remaining military population to be assigned to Fort Drum. This number is based on the 2005 Transformation EA, which assumed a 3,717 civilian increase from the 2,478 military increase, or a 1.5 multiplier.

[21]Economic Impact Forecast System Output (2007) FY04-FY05 Force Structure Actions, Fort Drum, NY

[22]Housing Analysis-Fort Drum and the Watertown Market, Watertown, Jefferson County, NY Spring 2008

As Fort Drum expands and military personnel and civilian workers relocate to the Fort Drum region, military dependents and other workers seeking economic opportunity created by the growth will also move to the region. Although most Transformation personnel changes have been initiated, many families and dependents have not relocated to the region yet because many of the reassigned military were already or immediately deployed. This has been verified both anecdotally by the community as well as by comparing the number of current dependents to other military communities and Army-wide calculations.

In the 2005 Transformation Environmental Analysis, planners assumed that for each soldier coming to the post, 1.5 dependents would also relocate with them. This is comparable to other installations such as Fort Riley in Kansas. However, when comparing currently assigned military personnel to the number of dependents receiving TRICARE (the military's health insurance program) in the region, this ratio is closer to 1.1. TRICARE enrollment is a good indicator of the presence of military families because almost all participate in the health care program. Therefore it appears many dependents associated with Fort Drum military have not yet relocated to the Fort Drum region.

The Army does not publish or announce deployment schedules for security reasons, and typically notifies soldiers of potential deployment about three to six months in advance. But as BCTs 'reset' and return to Fort Drum, it should be expected that many family members will also come to the region.

Fort Drum Facilities

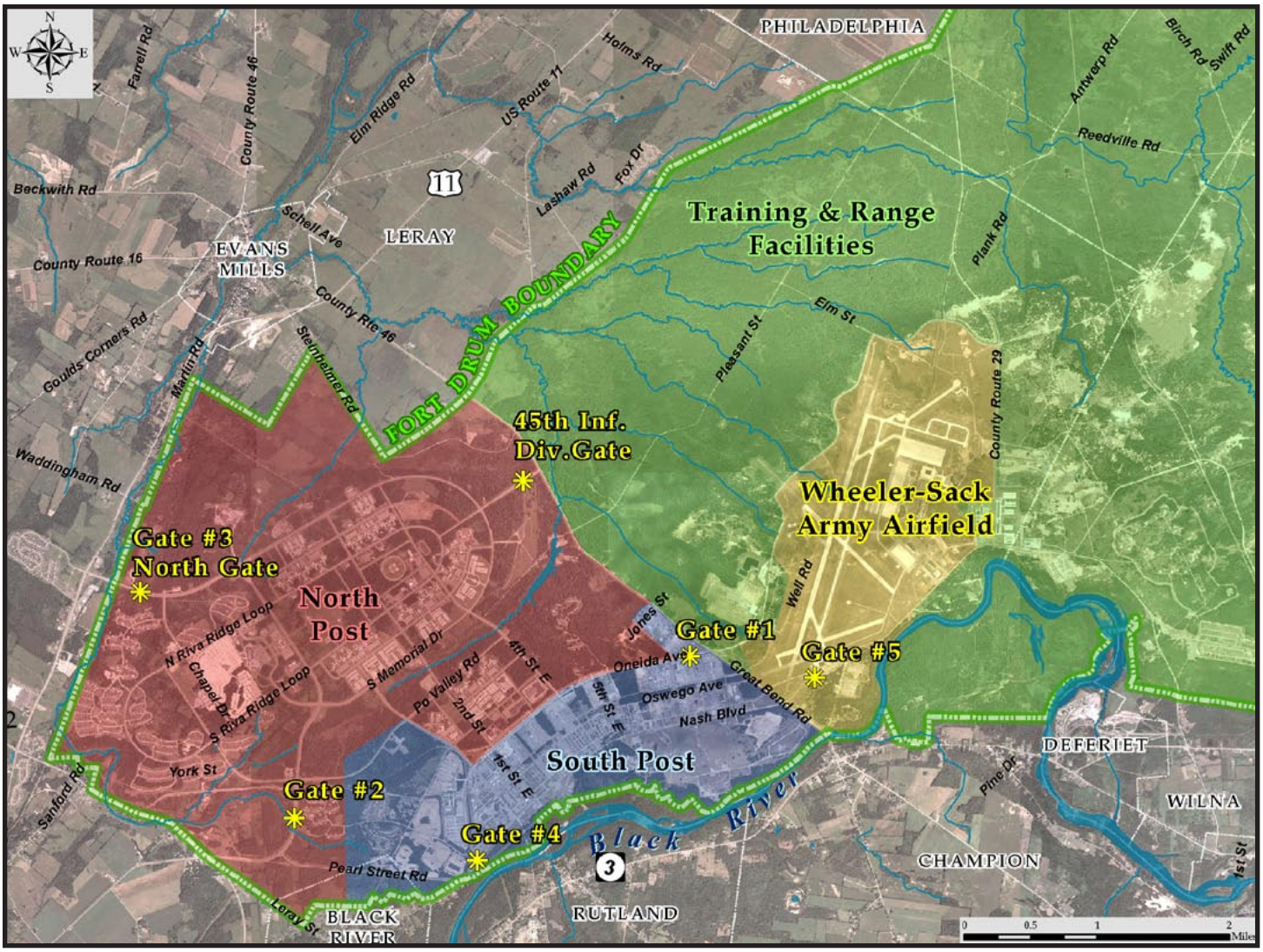
Existing Facilities

Fort Drum encompasses 107,265 contiguous acres (167.6 square miles). It is located in two major physiographic provinces: the southwestern two-thirds of the installation are in the Lake Erie-Ontario Lowlands and the remainder in the Adirondack Uplands. The Lowlands are characterized with a gently rolling terrain, small sand plains, drumlins, swamps and geographic patterns resulting from the most recent glaciation. The uplands are characterized by sand deposits from post-glacial lakes and have several lakes, rock outcrops and steep-sided hillocks.[23] The mosaic of these ecosystems found on Fort Drum provides the U.S. Armed Forces with a variety of realistic training scenarios. Forested areas are used for infantry training and as bivouac sites. Forest clearings serve as artillery firing points and helicopter landing zones. Open grass and shrublands provide space necessary for tracked and wheeled vehicle maneuvers and drop zones.

Fort Drum is divided into three areas: the cantonment area, the WSAAF area and the range areas. The cantonment area and WSAAF occupy nearly 11,300 acres in the southwestern corner of the installation. The cantonment area is largely developed and contains the majority of troop support facilities, including housing, administrative buildings, headquarters, vehicle and equipment maintenance and storage.

The cantonment area can be further subdivided into the North Post (sometimes referred to as Mountain View) and the South Post (sometimes referred to as Pine Plains). The South Post lies east and south of Oneida Avenue and primarily contains World War II-era structures that support tenant and Reserve Guard activities.[24]

[22]INRMP, 2001
[24]MPSEA, 2007 p12



Map 1.1 - Detail view of the cantonment area and Wheeler-Sack Army Airfield at the western extent of Fort Drum.

WSAAF has a large footprint of approximately 2,200 acres east of the cantonment area. WSAAF consists of two runways, one of which was recently expanded to a length of 10,000 feet and is used for deployment activities, eliminating the need to bus deploying soldiers to the former Griffiss Air Force Base in Rome which closed in 1995; and various aviation support facilities including aircraft storage and maintenance hangers, company headquarters, motor pool and barracks. The runways provide a variety of mission-related aviation services to units from Fort Drum as well as other military users. Approximately 122 aircraft are assigned to WSAAF; all aircraft are rotary wing (helicopters). As previously stated the Air Force and ANG operate several training missions out of WSAAF. On occasion, the Air Force also brings supplies to WSAAF in the very large C-5 Galaxy.

The range and training area of Fort Drum occupies almost 97,000 acres of the installation and lies northeast of WSAAF. The area where heavy artillery shells and bombs are detonated, known as the main

impact area, is 16,900 acres located in the center and northeast area of the installation. There are approximately 50 ranges on-post, with 39 ranges currently in use. No re-configuration of the ranges is expected in the near future. Range 48, located at the northeast corner of the installation, is regularly used to coordinate air-to-ground bombing and gunnery practice.

The land in and around Fort Drum is a mix of forests, scrub land, wetlands and sand plains allowing for a wide variety of training opportunities.

Ongoing Construction Projects

The signs of Transformation are readily apparent on Fort Drum, as the installation undertakes new and ongoing construction projects to house the new modular brigades. The major shift in on-post facilities occurred when division commander Maj. Gen. Benjamin Freakly envisioned the post to be organized around the BCT. Prior to Transformation, personnel and facilities were separated by function. This no longer made sense with the modularization process, and Fort Drum began realigning its facilities to match the needs of a BCT into a contiguous footprint.

For Fiscal Year 2007, ongoing construction projects totaled more than $336 million, according to the 2007 Fort Drum Economic Impact Statement. Projected 2008 - 2009 construction projects, including barracks, operational facilities and an Army Reserve Center total more than $463 million.[25] Details of all of the individual construction projects are available for review through the Environmental Analyses that were performed in years 2000, 2002, 2005, 2006 and 2007.

Barracks under construction at Fort Drum.

Housing

Fort Drum, like many Army installations, is providing some subsidized housing on-post, especially for families in the lowest income brackets. But this is not enough housing for all military personnel, particularly families. For instance, as shown in Table 3.1 on page 24, by 2012 it is estimated that more than 6,500 Fort Drum families – approximately two-thirds of all Fort Drum families, will be living off-post.

Not all of this housing will be necessary right away, and because of the uncertainties of the Global War on Terrorism and the effects of those uncertainties on deployments, the private sector is faced with uncertainty as to when this housing will be needed and what housing types will be most applicable to the

[25]Fort Drum Economic Impact Statement, FY 2007

developing marketplace. Deployment schedules will remain dynamic in the near-term and this means that the private sector will need to be flexible. Developers and property owners must be aware of inventory rates and vacancy rates, and will need to keep in touch with Fort Drum for potential deployments and resets. The development and maintenance of regional databases, as has been done in other military communities, can help provide accurate and timely information to the development and real estate communities. The Fort Drum Regional Liaison Organization (FDRLO) works with Fort Drum and the region's communities to help estimate housing needs. FDRLO has commissioned a number of housing studies to this end, including the most recently completed (Spring 2008) "Housing Analysis – Fort Drum & The Watertown Market," prepared by GAR Associates, Inc.

An overview of military housing needs and housing supply, for both on- and off-post housing, follows below.

On-post Family Housing

Residential Communities Initiative

The Residential Communities Initiative (RCI), allows installations to partner with the private development community to eliminate inadequate military family housing across the nation and replace it with quality on-base residential communities. This is done by leveraging existing Army assets with private capital and expertise to create comfortable housing appropriate for the families of the women and men who dedicate their lives to protecting our nation. Fort Drum's RCI partnership is with Actus Lend Lease and is known as Fort Drum Mountain Community Homes (FDMCH).

FDMCH is currently in the process of developing new housing and renovating existing housing on Fort Drum. Prior to RCI, the post had 2,272 family housing units. All of these units were turned over to FDMCH to renovate. In addition, FDMCH is constructing new family units in two phases. The housing program's goal is to be complete by 2010, although it may be closer to 2012.

Phase 1 of FDMCH's development calls for the construction of 845 new three-, four- and five-bedroom homes for families of all ranks in the two master planned communities of Crescent Woods and Rhicard Hills. Each housing community has its own community center, which includes a fitness center, club room, indoor playground and a number of multi-purpose spaces for hosting community meetings and events.

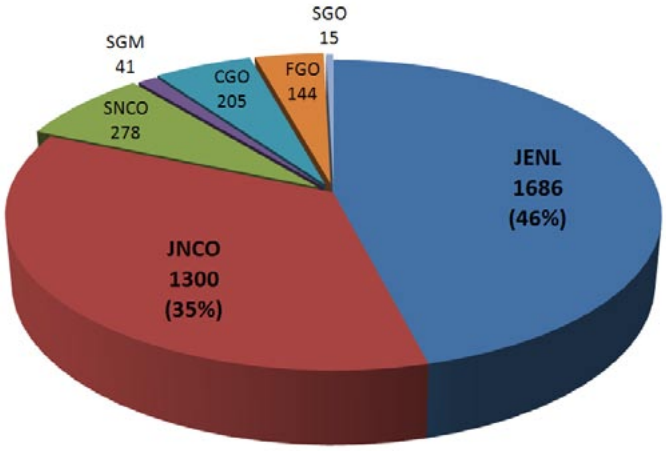
Examples of some of the more recently constructed on-post housing.
Left and center images courtesy of Fort Drum Mountain Community Homes, LLC

As of April 2008, 450 new homes have been completed, 80 percent of the existing homes have been renovated, and the community centers and trails have been constructed. In April 2008, it was announced that Phase 2 would consist of an additional 554 family housing units.

Prior to FDMCH ownership, there were no homes designated for Junior Enlisted Soldiers (JENL) and less than 1,000 homes for Junior Non Commissioned Officers (JNCO). When all the construction concludes at least 2,800 of the nearly 3,900 homes on Fort Drum will be set aside for married soldiers in pay grades E1 (Private) - E6 (Staff Sergeant). This provides more opportunities for those soldiers who have the lowest income and therefore have a harder time finding affordable housing in the private market.

The chart at right shows, more than 80 percent of the new housing will be targeted for these junior soldiers and their families. During the height of Transformation, waiting lists for on-post housing grew to include more than 2,200 requests. As the housing supply increases during construction, and the demand for housing has decreased due to immediate deployment, housing waiting lists have now stabilized to about 1,700 personnel. This is still a significant number of families waiting for on-post housing.

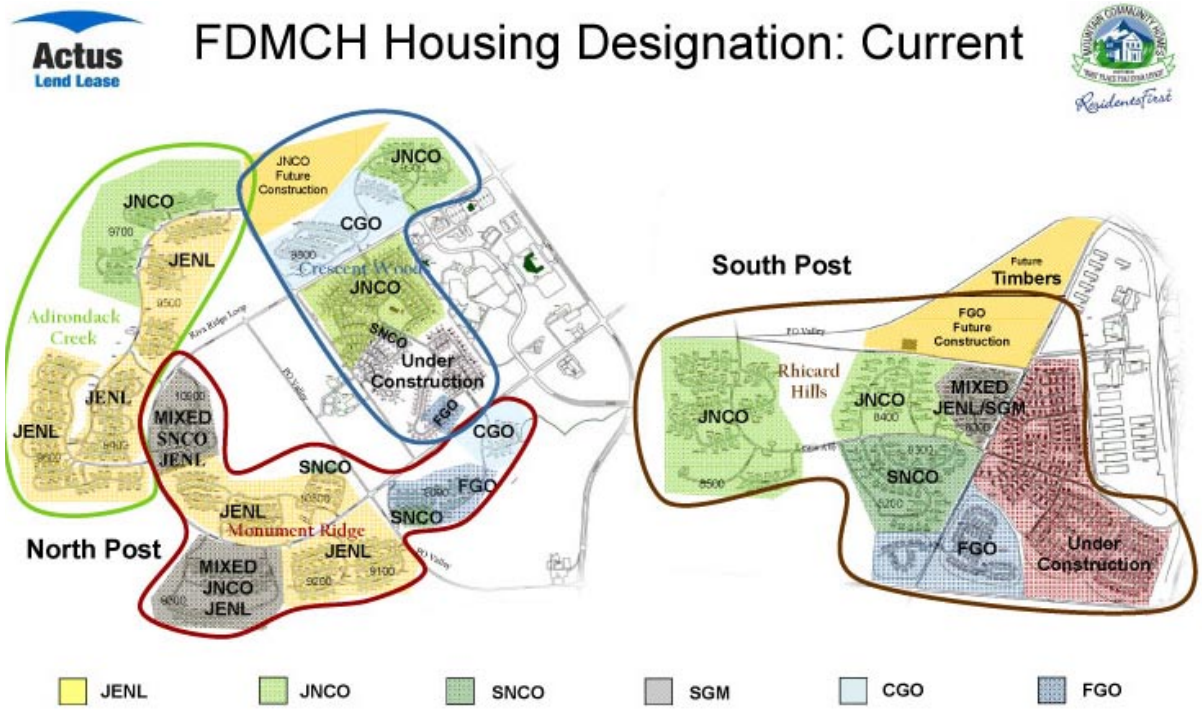
The integration of new on-post housing units for married junior enlisted soldiers and their families into the existing Form Drum on-post community is part of a larger reorganization of on-post housing. The maps on the opposite page illustrate the organization of the two master planned communities before and after the housing initiative.



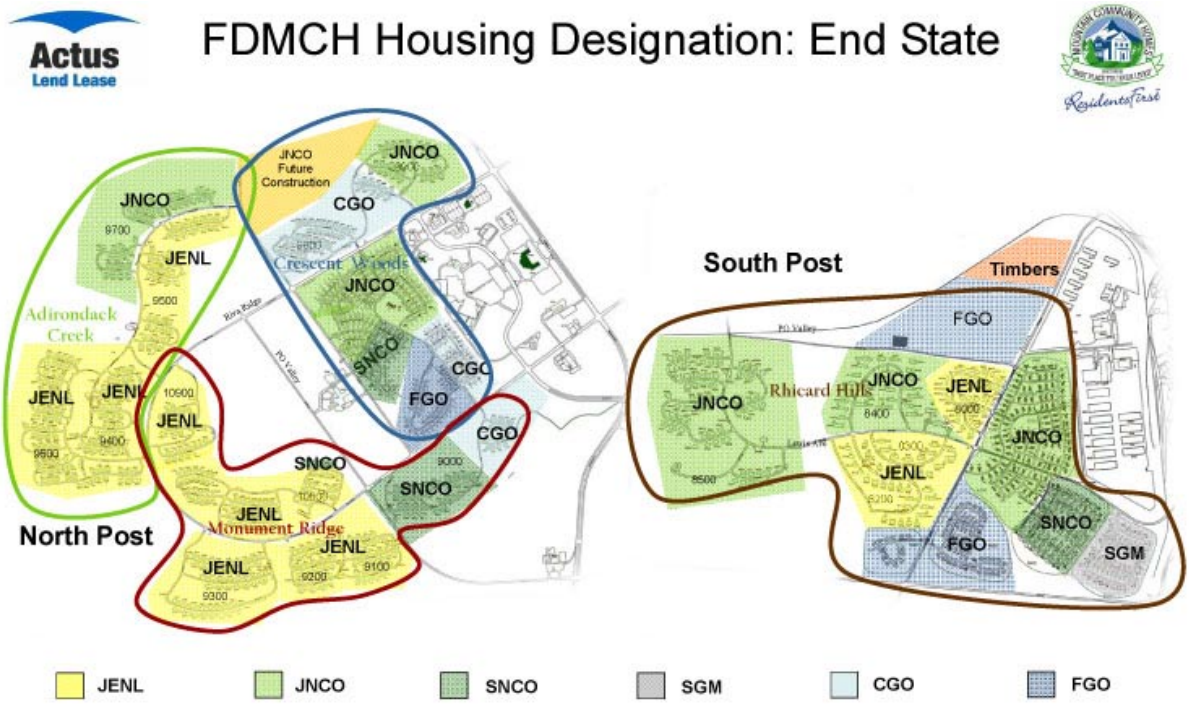
Future on-post housing, by rank, at Fort Drum (as of 3/08) Note: This does not include the additional 554 FDMCH (Phase II) units announced in April of 2008.

On- and Off-Post Family Housing Dynamics

The on-post housing initiative will not meet the projected needs of all the Fort Drum military families. In fact, by 2012, Fort Drum expects that it will be able to provide on-post housing for only 36 percent of its families. This means that more than 6,500 households will seek housing in the surrounding communities. Table 3.1 shows the housing needs for year 2009 and year 2012. These numbers do not include individual unaccompanied soldiers. It should be noted that as of December 2007, most or all of the needed housing has been planned or approved for development in the surrounding communities.



Housing designation for soldiers prior to Fort Drum's RCI partnership with FDMCH.



Housing designation for soldiers after Fort Drum's RCI partnership with FDMCH.

Table 3.1: On- and Off-Post Family Housing Dynamics: 2009, 2012

Personnel Type	2009 Fort Drum Families	2009 On-Post Family Housing Units	2009 Fort Drum Families Living Off-Post	2012 Fort Drum Families	2012 On-Post Family Housing Units	2012 Fort Drum Families Living Off-Post
Senior Grade Officers	19	15	4	23	15	8
Field Grade Officers	365	144	221	397	144	253
Company Grade Officers	1,006	205	801	1,097	205	892
Command Sergeant Majors / Sergeant Majors	69	41	28	76	41	35
Senior Non-Commissioned Officers	1,086	279	807	1,222	278	944
Junior Non Commissioned Officers	3,261	1,263	1,998	3,603	1,300	2,303
Junior Enlisted	3,470	1,489	1,981	3,786	1,686	2,100
Total	9,276	3,435	5,841	10,204	3,669	6,535

Source: Fort Drum Public Works, November 26, 2007.

On-post Unaccompanied Soldier Housing

Fort Drum is constructing most of the unaccompanied soldier housing needs on-post, especially for lower-grade personnel. Unaccompanied soldiers are those that do not have dependents; those that have dependents living elsewhere; or in some cases, are soldiers married to other soldiers who are assigned to a different post. More than 8,300 unaccompanied personnel within pay grades E1 through E5 will live on post, within the barracks facilities. In addition, almost 200 unaccompanied senior enlisted and officer grade personnel will be housed on-post by 2009 in The Timbers, a newly constructed 192 unit apartment complex on the base. Fort Drum will house all of the lower-grade personnel, but there will be a deficit of nearly 850 housing units for the higher pay grade personnel by 2012.

Eagle Ridge Village apartments, a recent off-post housing project, under construction in the Town of LeRay.

Off-post Housing

In the late 1980s, the Army entered into leases with private developers (under Section 801 of the Military Construction Authorization Act of 1984) to provide 2,000 housing units to soldiers and their families in 10 North Country communities in the Fort Drum region. Those 20-year leases have recently begun to expire.[26] Almost all of these

[26]Fort Drum Economic Impact Statement, FY 2006

properties have become market-rate, thus the renter may decide to live on-post (wait-listed) or continue renting at market rates in the same or different off-post locations. Due to a combination of regional and national trends, many of the older 801 units have been vacated as soldiers have preferred newer, more conveniently located housing close to Fort Drum. Due to the rise in fuel costs and the existing condition of some 801 units, some communities, such as Gouverneur and Lowville, are experiencing lower than expected occupancy rates as military personnel seek convenient housing that will not require long commutes to the post. In some of the outlying areas, while property owners of former 801 complexes have invested in renovations to their properties, occupancy has dropped below 20 percent. Property owners have resorted to dropping rental prices and are considering the reinstatement of shuttle service from their communities to Fort Drum in order to attempt to draw more soldiers and local residents to these complexes.[27]

An example of off-post apartments, located in the Town of LeRay.

Even with most soldiers deployed, growth on Fort Drum has affected the local housing market so that most other apartment complexes in the immediate Watertown area have 100 percent occupancy and waiting lists. The influx of military families has not taken place as initially expected, due in part to deployment schedules, leaving many apartment complexes originally conceived for families as homes for geobachelors (soldiers who live in a different geographic location than their spouses).

Several local developers are actively rehabilitating existing homes and buildings, adding needed housing to the region. An example of this is taking place in Carthage, N.Y., where a development team led by Michael Treanor is restoring the Buckley Building. The Buckley Building will add 13 residential units and ground floor retail to the region's housing base in a building that had been vacant since the mid-1980s.[28] Another example of rehabilitation is taking place in downtown Watertown, where a former manufacturing facility is being converted into 30 residential units with ground floor retail uses. Both of these projects have received Restore New York grants.[29]

The Buckley Building in Carthage is one of many urban buildings under renovation in response to Fort Drum growth.

In the outlying communities, some success has taken place in attracting new investment. In Gouverneur, a New York based developer with ties to the North Country purchased the empty Butternut Hill apartment complex and has successfully renovated and rented

[27]Hanley, R. "Former 801 housing faltering" Watertown Daily Times, April 3, 2008
[28]Interview with Village of Carthage Officials, Jan. 9, 2008
[29]Restore New York 2 Regional Projects

40 apartments.[30] Current and future pressure on the housing market should create more opportunities for infill and other adaptive reuse projects in existing urban and village areas in the region and new development in greenfield settings (vacant land, farmland, forest, etc.) close to Fort Drum. However, in outlying communities, it may be more difficult to realize this growth. The Fort Drum region communities have the opportunity to shape their growth by developing policies advocating smart growth and sustainable development patterns.

According to the Jefferson County Planning Department, more than 1,200 off-post apartment units are under construction or in planning phases within the county. All of these units are planned to be available for lease by the end of 2008. Additionally, there are several more apartment projects in the preliminary stages of development which could be available in the future.

There are also programs in place in the region that provide homeowners, both military and civilian, with opportunities to improve existing housing stock. Jefferson County is the lead county for the tri-county "North Country Home Consortium" (Jefferson, St. Lawrence and Lewis Counties), which receives federal funds through the HOME program for the rehabilitation of owner-occupied housing. The program also provides financial support for first-time home buyers. DANC assists Jefferson County to administer elements of the HOME program. For instance, DANC oversees the various non-profit housing groups in the region, such as Neighbors of Watertown, that are directly involved in program implementation and the provision of housing services to area homeowners.

Jefferson County also administers a separate Owner Occupied Rehab program for county homeowners. The county was awarded funding for this program through the Community Development Block Grant (CDBG) program in both 2007 and 2008.

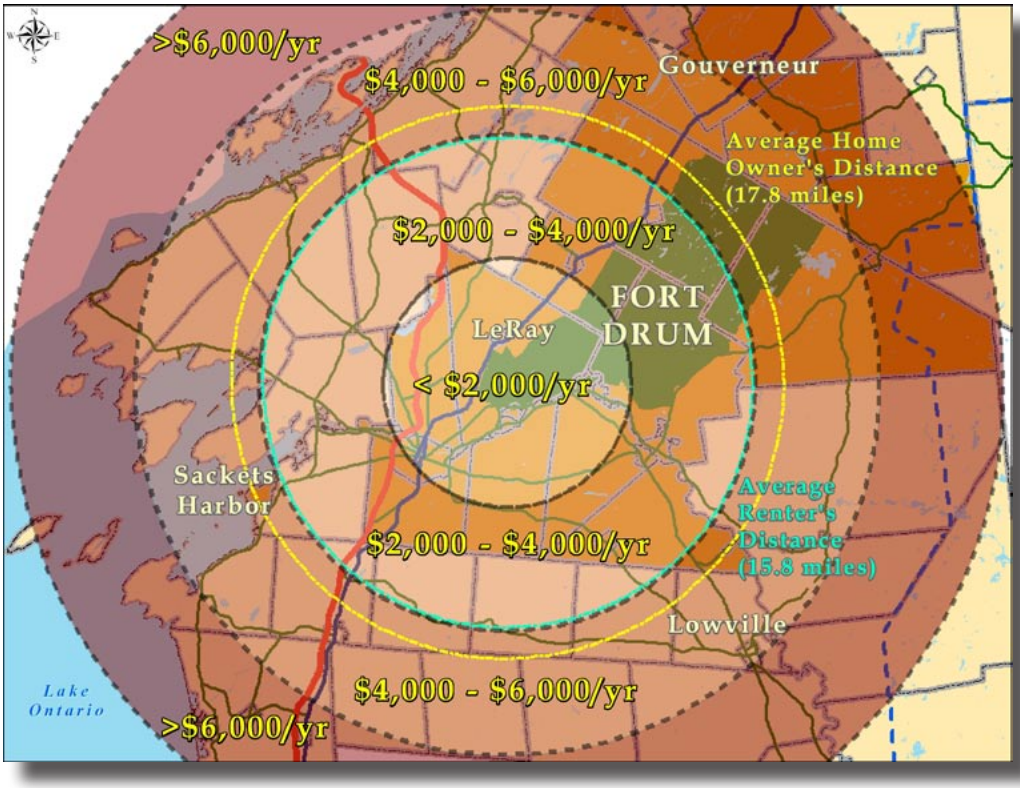
The Cost of Commuting

A typical, civilian homeowner considers a home a long-term investment and is therefore less quick to relocate within the local housing market in response to rising fuel and commuting costs. In contrast, military families are used to moving on a more regular basis, as military personnel are routinely reassigned to new posts and communities. Moreover, much of the recent in-migration of new residents in the region is attributable to Fort Drum personnel. In the Fort Drum housing market, therefore, rising fuel costs are likely to play a significant role in housing location preferences and choices, especially for Fort Drum personnel and their families.

Based on the federal government's reimbursement rate for mileage (50.5 cents per mile in 2008), while an individual will amass less than $2,000 in yearly driving and maintenance costs, or less than $170 per month per vehicle to commute from Watertown or the Town of LeRay to Fort Drum; in areas such as Lowville or Gouverneur, commuting costs to Fort Drum would be around $6,000 a year, or greater than $500 per month. In times of high fuel costs, therefore, commuting distances can have a direct and sizeable impact on household budgets. These costs are conceptually illustrated on the map on page 27 – a series of "cost rings" that increase with distance from the Fort Drum PX. Continued high fuel prices will likely encourage further concentration of development close to Fort Drum gates.

[30]Interview with St Lawrence County Staff, Jan. 8, 2008

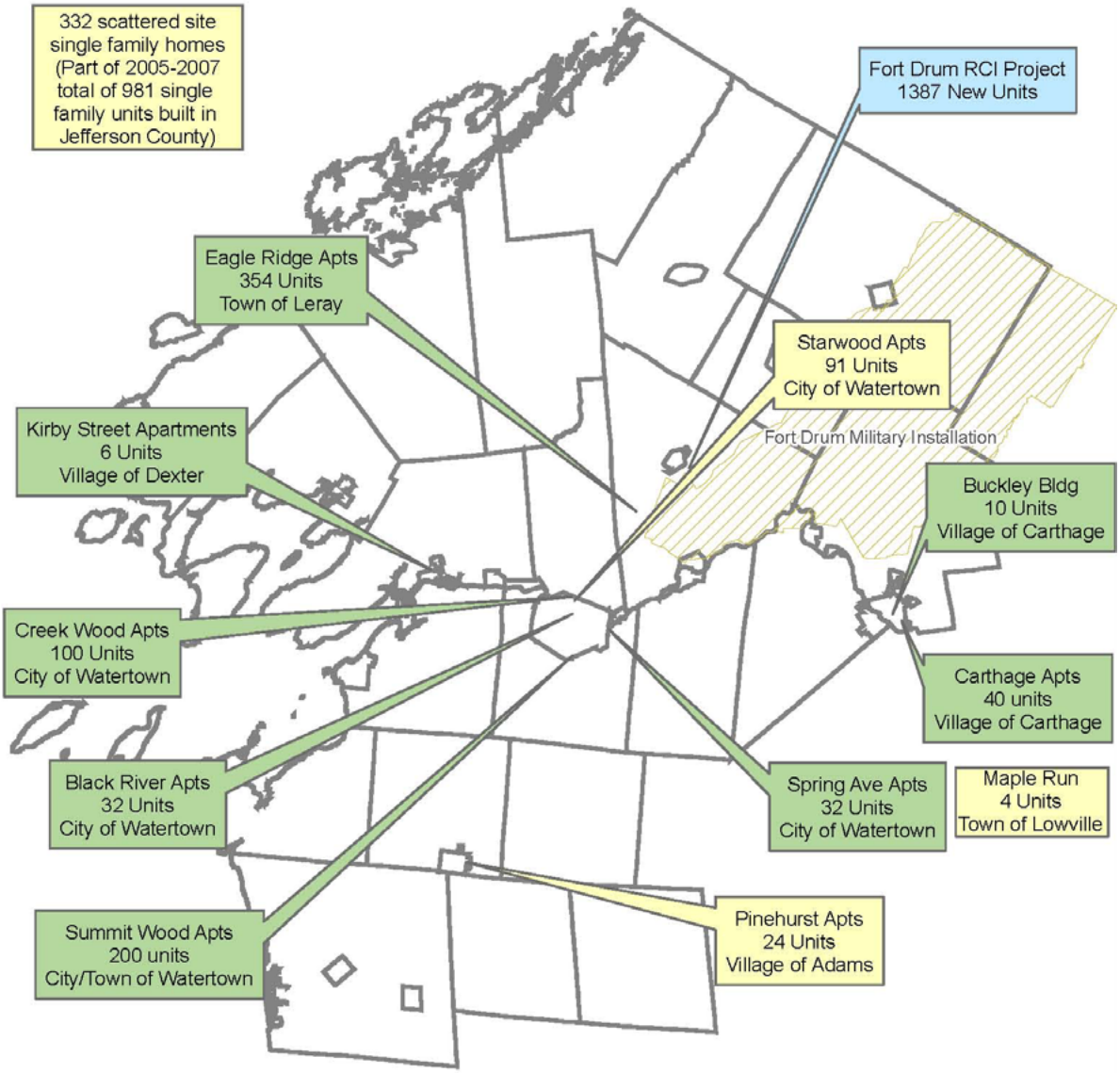
High fuel costs have also coincided with the expiration of the 20-year extended lease subsidies for Section 801 off-post housing. Between October 2007 and June 2008, 13 of the area's 14 Section 801 communities were converted to market-rate housing, with the remaining community (LeRay Heights) converting in 2010. As these units return to the market, soldiers have the choice to remain or seek comparable (or higher quality) market-rate housing elsewhere in the region. The high cost of commuting puts many of the former 801s that were located in outlying communities, at a distinct disadvantage (in addition to perceptions of the inferior quality of many of these housing units). The elimination of shuttle bus service between the former 801 communities and Fort Drum has exacerbated this issue.



Map 1.2 - Generalized per vehicle annual commuting costs from communities to Fort Drum PX based on the 50.5 cent per mile federal reimbursement rate.

A new residential "neighborhood" under construction on Fort Drum.

Eagle Ridge Village apartments under construction in the Town of LeRay.



* Start of Fort Drum Regional Liaison Organization Five Year Housing Strategy Planning Period

Proposed Development Schedule

- Available 2006-2009 (1387 Units)
- Available 2007 (451 Units)
- Available 2008 (774 units)

For more information contact FDRLO at (315) 836-1531

Jefferson County Planning Department, June 2007

Map 1.3 - Newly constructed and planned multi-family residential development in Jefferson County. The number of estimated units in individual complexes may have changed since this map was created.

THE COMMUNITY PERSPECTIVE

Introduction

Residents of the Fort Drum region value Fort Drum for a variety of reasons. For some, it is their source of employment or income, whether they are active or retired military, a military spouse or child, or a member of the local community employed as a vendor or as a civilian in a defense position. For others, Fort Drum represents the lifeblood that sustains their small business, be it a restaurant, shop, dry cleaner or barber. Fort Drum also is viewed as the catalyst for the expansion of the Watertown area into an economic hub for the North Country.

Fort Drum and the surrounding communities are interconnected in many ways, yet they are also independent entities, each with their own set of rules guiding land use and planning decisions. Many regional systems are shared between Fort Drum and the communities, including infrastructure, schools, and recreational assets. These systems have a profound effect on the growth and quality of life of the region. This section takes a deeper look at local and regional systems that help to support quality of life in the Fort Drum region.

Community History and Setting

Within the context of this plan, the "Fort Drum region" includes Fort Drum and the regional communities most directly affected by the operations and activities of the Fort. As shown on Page 3 of this plan, 14 towns, 15 villages and the City of Watertown are all located within the Fort Drum region, for a total land and water area of approximately 576,000 acres (900 square miles). The Fort Drum region includes portions of St. Lawrence, Jefferson and Lewis Counties.

Certainly, many communities beyond this established study area are also impacted and influenced by what occurs at the Fort. Much of the analysis that follows in this section, as well as the recommendations contained in this plan (Chapter 4), may be equally pertinent to such communities. Establishing a "Fort Drum region," within the context of this plan, simply permits a greater level of analysis to be undertaken within a defined geographic area.

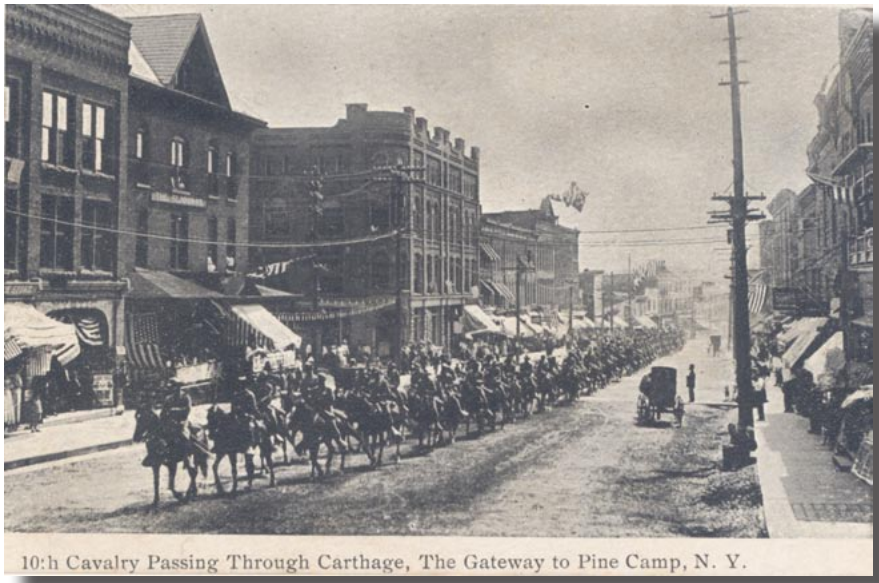
Municipalities within the Fort Drum region are further identified as "gate communities," "range communities," and "outlying communities" based on their location relative to Fort Drum. Gate, range and outlying communities within the region are discussed in more detail on Page 4 of this plan.

Settlement and Historic Growth Trends of the Fort Drum Region

The settlement of the region pre-dates the establishment of Fort Drum. However, the growth and expansion of Fort Drum over the years has been a significant factor in the way the region has developed and grown. Most recently, gate communities, such as the Towns of LeRay and Champion, are primarily experiencing the impacts from the increased growth of Fort Drum, such as new housing and commercial

development. In contrast, most range communities have seen less in the way of new development, but continue to experience the majority of noise and other impacts from Fort training activities. Housing for Fort Drum soldiers and families has primarily concentrated in gate communities, although some housing has also been built in range communities. More recent growth and development trends in the region are described throughout this report, but particularly on Pages 5 – 7 in the context of economic benefits.

Before the advancement of infrastructure (such as railroads and roads), the Fort Drum region was isolated and sparsely settled. Historically, the economy of the region was resource based. Early New England settlers removed much of the region's vast forestland to produce potash and to clear land for agriculture. Lumber and paper mills were a significant industry in the region; in fact, lumber mills, though fewer in number than in previous years, continue to operate as a significant sector of the economy of the North Country.



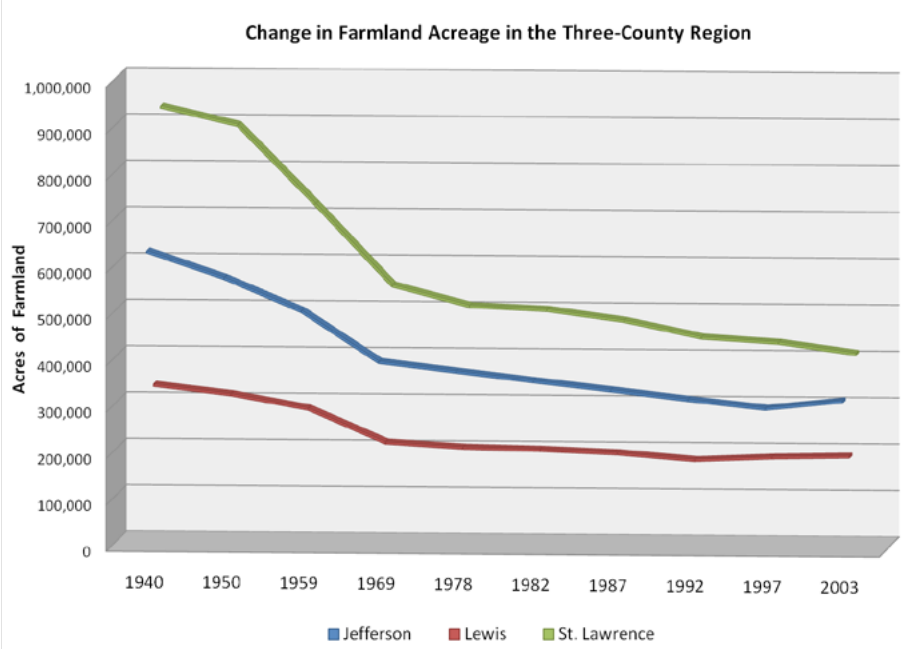
While the settlement of the region predates Fort Drum, the Fort and surrounding communities share a common history that spans many years.

Early population centers formed along waterways, which served as a means of transporting goods and people, and as a source of power for industry. The Black River, which flows along southern edge of Fort Drum, provided a source of water power for many industrial uses. The City of Watertown, and many small settlements, such as the Villages of Black River, Deferiet, Carthage and West Carthage, formed along the Black River to take advantage of its powerful waters. The Black River Canal connected the Erie Canal to the Black River and opened the region up to a broad system of transportation, vastly increasing economic opportunities for inhabitants. The canal, fully operational in 1855, had a major impact on the settlement of the region, as hotels, stores, taverns, warehouses and industry lined the canal in villages and hamlets. Likewise, railroads opened up the region to commerce and were important to the region's economy and settlement. The St. Lawrence Seaway, completed in 1959, also opened up the region to transportation between the Great Lakes and the Atlantic Ocean. The predominance of automobile-based transportation in the second half of the 20th century shifted settlement and economic patterns, which in the previous century were either canal or rail based.

In all three counties of the Fort Drum region, agriculture remains a predominant land use (note that agricultural statistics are tracked by county). Currently, the leading agricultural product in all three counties is dairy, representing 75%, 80% and 83% of the total sales of agricultural products respectively for Jefferson, St. Lawrence and Lewis Counties.[31] Cattle and calves follow as the second leading agricultural product for all three counties.[32]

[31]County Profiles for Jefferson, Lewis, and St Lawrence Counties; New York Agricultural Statistics Service, www.nass.usda.gov/ny, accessed online on August 8, 2008
[32]Ibid

Over the past century, all three counties have experienced a loss of farmlands, particularly in the post WW II decades. In the 1970s, the loss became more gradual, but the trend still continues today. For example, between 1950 and 1969, Jefferson County lost approximately 178,000 acres of farmland, which equates to more than 1,800 farms.[33]



Data Source: New York Agricultural Statistics Service, www.nass.usda.gov/ny, accessed online on August 8, 2008

While a large portion of the region's economy is still resource-based, there are other significant and growing sectors. Outdoor recreation and tourism is a major segment of the economy which also takes advantage of the region's natural resources, and attracts people to both visit and live in the region. The Adirondack Park, Great Lakes and Thousand Islands all attract people to the region, as well as many other smaller lakes and recreation areas. St. Lawrence County also has a strong educational presence in the North Country with four colleges and universities.

Fort Drum, of course, has been a major component of the regional economy, and has also had a major influence on the region's settlement patterns. Prior to the activation of the U.S. Army 10th Mountain Division at Fort Drum in the 1980s, probably the most significant single event resulting in a direct impact to regional settlement patterns occurred in 1941 when Fort Drum (known at the time as "Pine Camp") underwent a 75,000 acre expansion. This large expansion involved the removal and/or relocation of numerous hamlets and hundreds of farms, an event that residents still talk about today, a number of whom experienced this chapter in the region's history firsthand.

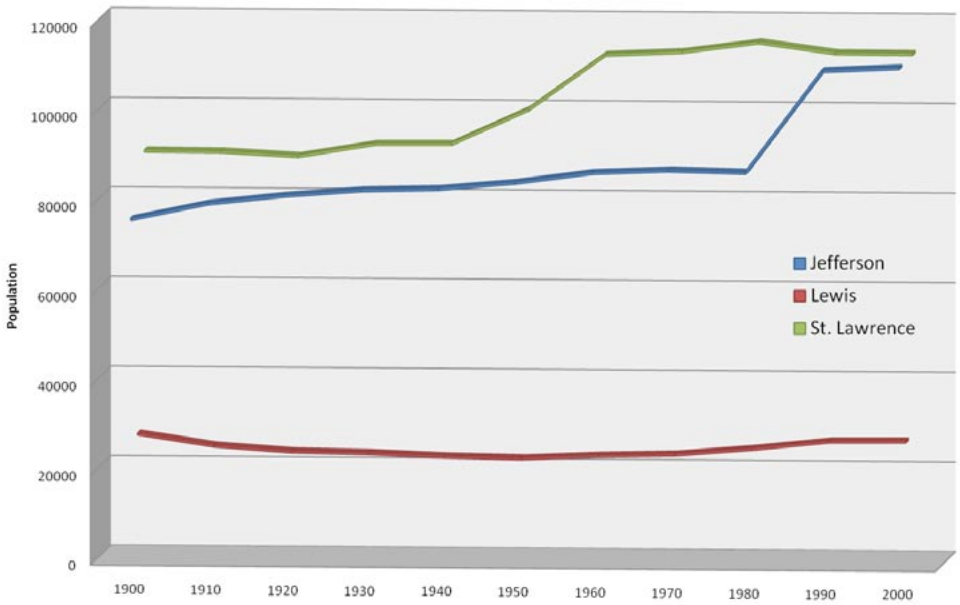
Throughout most of the twentieth century, with two major exceptions, the region's population was stagnant or even in decline, particularly with respect to Lewis County. The first exception is a period of significant growth in St. Lawrence County in the 1950s and 1960s, which correlates with the expansion of the SUNY schools as well as the opening of the St. Lawrence Seaway, which attracted several large employers to the area.

The second and more dramatic period of growth in the Fort Drum region began in the 1980s, corresponding with the activation of the U.S. Army 10th Mountain Division at Fort Drum. This boosted population growth in the region, particularly in Jefferson County, and to a lesser, but still significant, extent in Lewis County. St. Lawrence County, by contrast, lost population during this period.

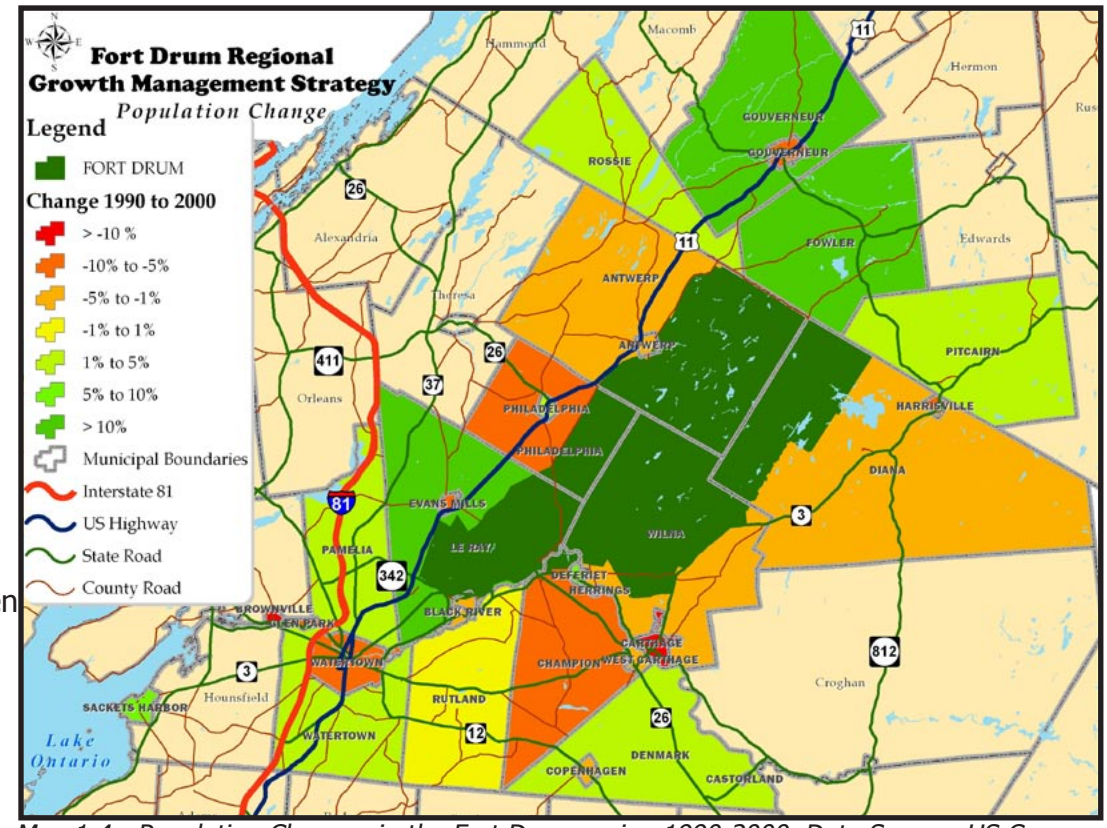
[33]County Profiles for Jefferson, Lewis, and St Lawrence Counties; New York Agricultural Statistics Service, www.nass.usda.gov/ny, accessed online on August 8, 2008

Current Growth Trends

While remaining positive, growth rates substantially leveled out for both Jefferson and Lewis County between 1990 and 2000. In the same period, the growth rate of St. Lawrence County moved from negative to zero. However, the county wide population trends only tell part of the story. As shown in Map 1.4 below, while county-wide growth rates were relatively flat between 1990 and 2000, significant positive growth occurred in a number of communities closest to the Fort Drum borders. For example, the Towns of LeRay, Gouverneur and Fowler all experienced substantial (greater than 10%) growth in this period. The latest 2007 census estimates[34] for St. Lawrence, Jefferson and Lewis Counties show that the rate of growth has picked up again in Jefferson County. Between 2000 and 2007 the Jefferson County population is estimated to have increased by five percent (see Table 4.1). By contrast, the latest census estimates for Lewis and St. Lawrence Counties indicate population losses between 2000 and 2007. As would be expected, and as shown on Map 1.5, between 2000 and 2006 (the latest year for which municipal-level census



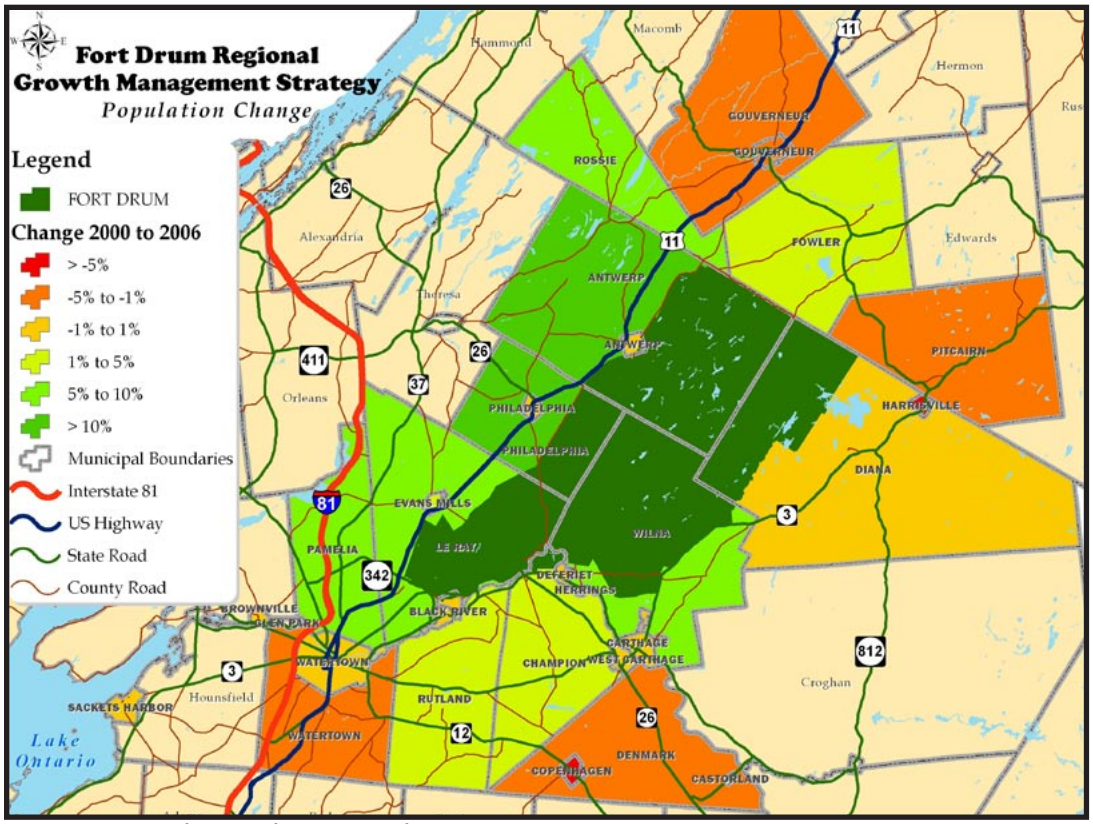
Population Change in Jefferson, Lewis and St. Lawrence Counties 1900-2000
Data Source: US Census



Map 1.4 - Population Changes in the Fort Drum region 1990-2000. Data Source: US Census

[34]Census estimates are used to illustrate trends between decennial censuses (1980, 1990, 2000, etc.). Methodology for arriving at estimates varies, depending on the geographic unit (county, town, city, etc.), but may include the use of housing data and demographic data such as births, deaths and net migration statistics. Jefferson County has successfully challenged the Census Bureau's estimates several times in recent years, largely to account for the unique population dynamics presented by Fort Drum. The 2010 census will provide a more solid understanding of the region's growth since 2000.

estimates are available), Fort Drum region towns located in Jefferson County, with the exception of the Town of Watertown, all exhibited positive growth rates. Four Jefferson County towns along the Route 11 corridor posted growth rates in excess of the Jefferson County average growth rate for the same period: Pamelia, Evans Mills, Philadelphia and Antwerp. Within St. Lawrence County, two Fort Drum region communities – the Towns of Rossie and Fowler – exhibited positive growth rates, despite an estimated population loss for the county as a whole. Estimated growth rates for Fort Drum region communities within Lewis County were flat to negative, consistent with the estimated drop in Lewis County population.

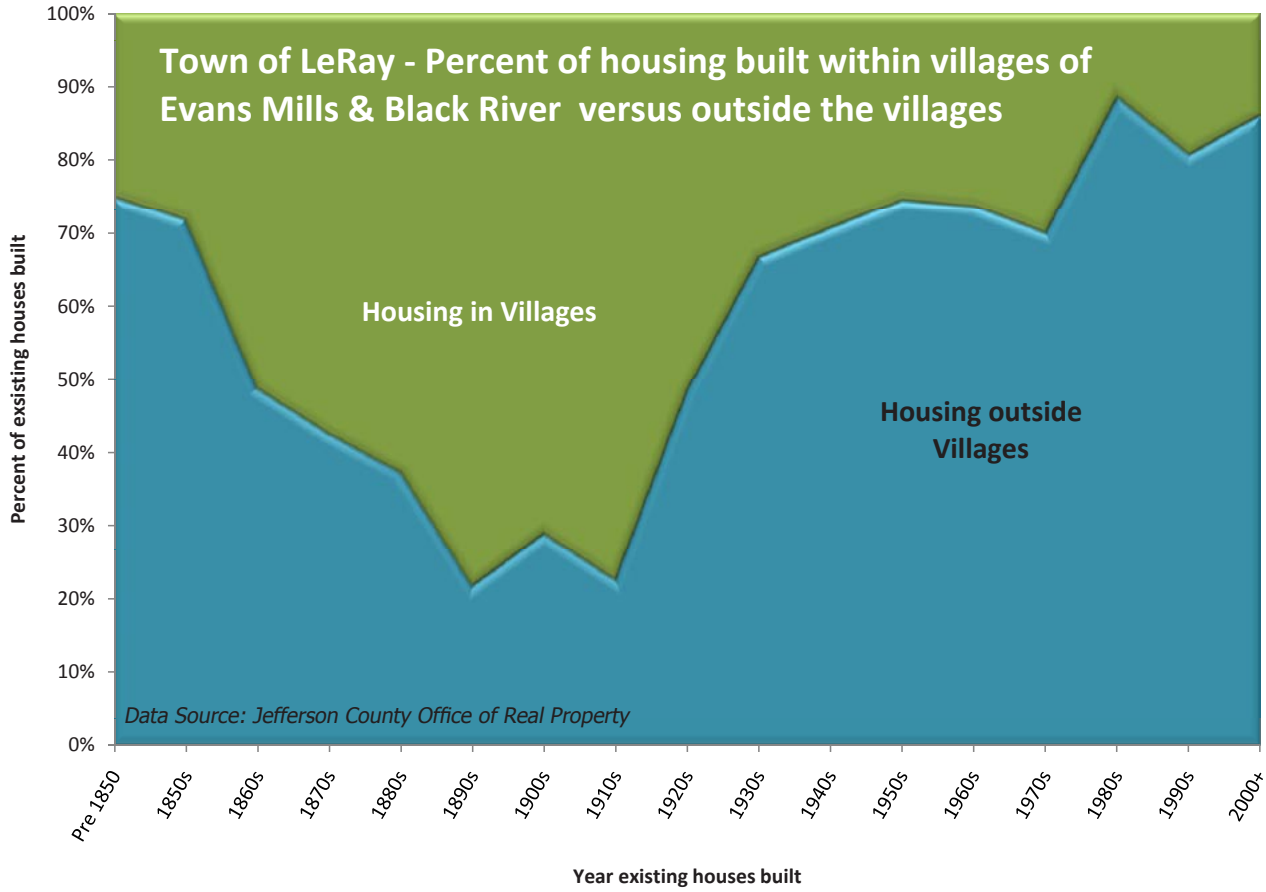


Map 1.5 - Population Changes in the Fort Drum region 2000-2006. Data Source: US Census

Table 4.1: Population Change in Jefferson, Lewis and St, Lawrence Counties 1900-2007

County	1900	1940	1980	1990	2000	2007
Jefferson	76,748	84,003	88,151	110,943	111,738	117,201
Lewis	27,427	22,815	25,035	26,796	26,944	26,472
St. Lawrence	89,083	91,098	114,254	111,974	111,931	109,809
Total	193,258	197,916	227,440	249,713	250,613	253,482
	1900	1900-1940	1940-1980	1980-1990	1990-2000	2000-2007
Total % change		2.41%	14.92%	9.79%	0.36%	1.14%
Jefferson		9.45%	4.94%	25.86%	0.72%	4.89%
Lewis		-16.82%	9.73%	7.03%	0.55%	-1.75%
St. Lawrence		2.26%	25.42%	-2.00%	-0.04%	-1.90%

Source: US Census - 2007 numbers reflected population estimates



Growth Trends for Historic Population Centers (City of Watertown, Villages)

The graph above, based on Town of LeRay data, illustrates an evolving pattern of settlement that is common not only to LeRay, but the entire study area and many regions of the United States. The chief characteristic of this settlement pattern consists of a long, continuous decline of established population centers that began in the 1910s. This trend coincides with the rise of the automobile.

As shown in the graph, early in LeRay's history, settlement occurred largely outside of established villages. Approximately 75% of existing residential structures in 1850 were outside of the town's two villages: Evans Mills and Black River. This is hardly surprising, because the majority of the earliest Town of LeRay settlers were farmers and exploiters of the area's natural resources; when they settled the town, they spread themselves out across the countryside on farmsteads. In 1850, for every 1 home located in a village, there were approximately 3 homes located in the surrounding countryside.

However, as shown in the above graph, by the turn of the 20th century, the balance had shifted. The Town of LeRay was becoming a village-oriented community. In 1910, for every 1 home located in the LeRay countryside, there were approximately 3 homes located in either the Village of Evans Mills or the Village of Black River. Thus, at this period of the town's history, the majority of town residents were living in the town's villages. However, the "village era" was relatively short lived: by the 1920s, the pattern

The Fort Drum region is dotted with historic villages, such as Antwerp (pictured here). With few exceptions, most of the region's villages have seen little in the way of new investment in recent years and have struggled to fill downtown storefronts.

began to reverse once again, in favor of development outside of villages.

Today in the Town of LeRay, the proportion of village homes to "rural" homes has returned to 1850 levels: for every 1 home located in the villages there are approximately 3 to 4 homes located outside the villages. However, there is a major difference between non-village homes of today and those of 1850. Today, many homes built outside the villages are utilized for strictly residential purposes, whereas in earlier times, most non-village homes were likely associated with farms.

The dynamics of this changing pattern of settlement in both LeRay and the larger study area is also shown in the series of maps on the Pages 36 - 37. A primary aim of this Fort Drum Growth Management Strategy is to look at ways that the region can shape and influence future growth and development patterns to yield long-term benefits for both Fort Drum and the communities that surround it. Future growth in the region, both in terms of scale and in terms of development patterns, have been modeled under a number of scenarios to help the region better understand what the future may hold. These conceptual growth models and their implications are discussed in detail in Chapter 3.

The Growth of the Fort Drum Region

The sequence of maps on the following pages illustrate the evolving pattern of settlement in the communities surrounding Fort Drum from 1850 to 2006. The dots on the maps represent the locations of residential structures. With each map and time-point in the series, new dots are added to represent the construction of new homes. As shown in the first map, the earliest settlers of the area were relatively few and scattered across the countryside, likely on individual farms. By 1900, in addition to continued settlement of the countryside, population had begun to concentrate in the City of Watertown and numerous villages. Between 1900 and 1940, population concentrated even more in the City of Watertown and the villages, while development remained relatively flat in the surrounding countryside. By 1985, however, the pattern had reversed: development and population - largely of a non-agricultural nature - picked up in the region's countryside, while established centers witnessed a leveling off of development and in many cases a decline in population. This pattern continued unabated between 1985 and 2006, and continues to this day.

Also of note, and as shown in the map series, are the five major hamlets that were absorbed by Fort Drum (then "Pine Camp") in the early 1940s, when the Fort underwent a 75,000-acre expansion.

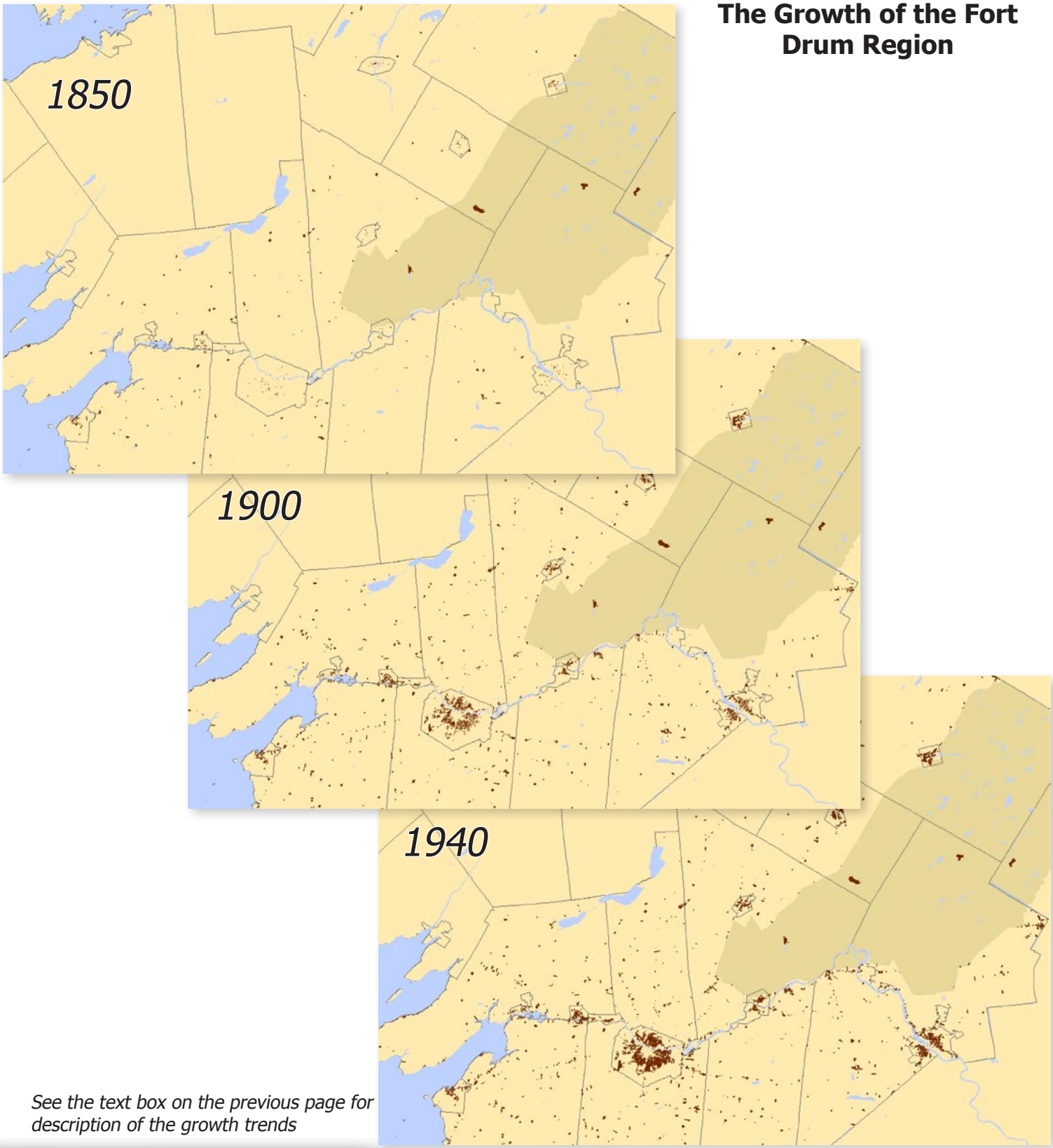
What will the future bring for the region? Current development trends, if continued, could pose problems, including but not limited to:

(1) increased pressure on the region's farms and agricultural landscapes;
(2) increased potential for land use conflicts between the Fort and the surrounding communities; and
(3) continued disinvestment and deterioration of the region's established population centers and downtown districts.

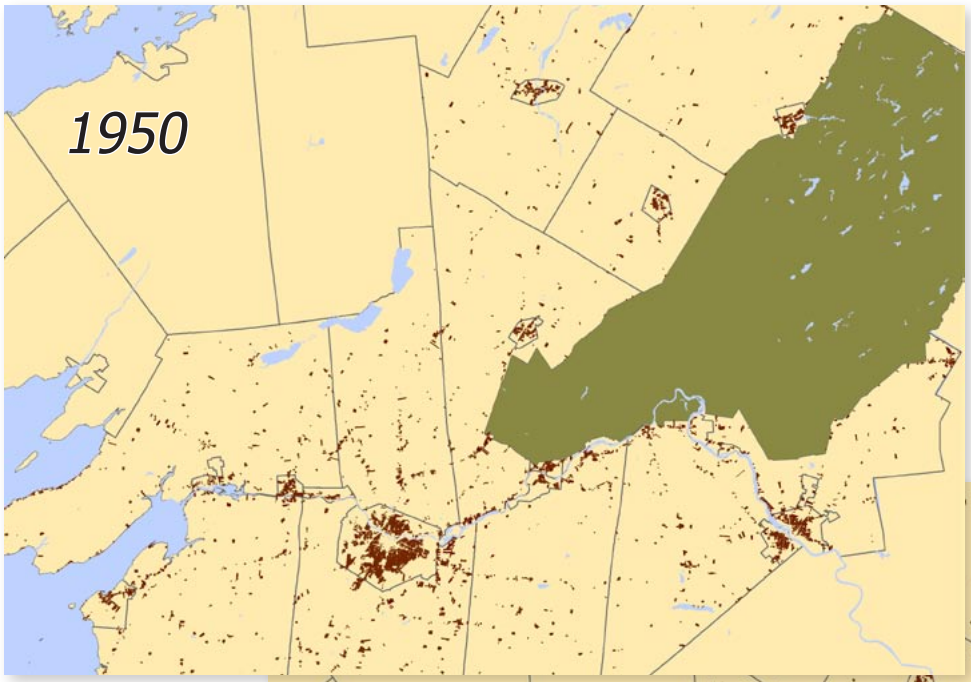
Future growth patterns for the region are explored further in Chapter 3.

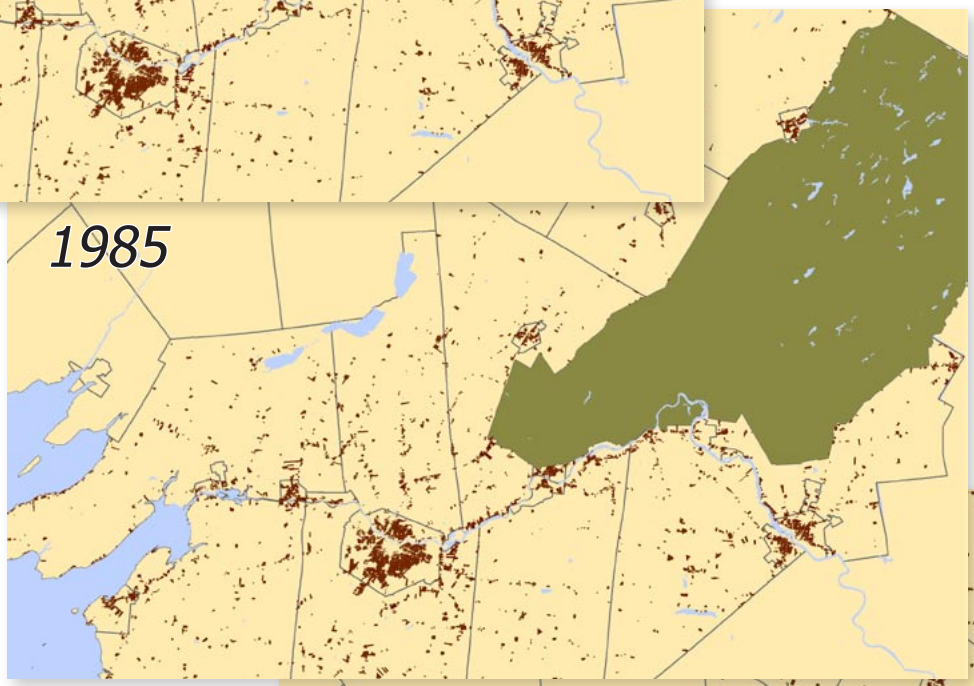
**Since the dots on the map are based on the year-built of existing structures the maps do not depict homes that are no longer standing, and therefore the homes built before the second half of the 20th century are likely under represented.*

The Growth of the Fort Drum Region



See the text box on the previous page for description of the growth trends


1950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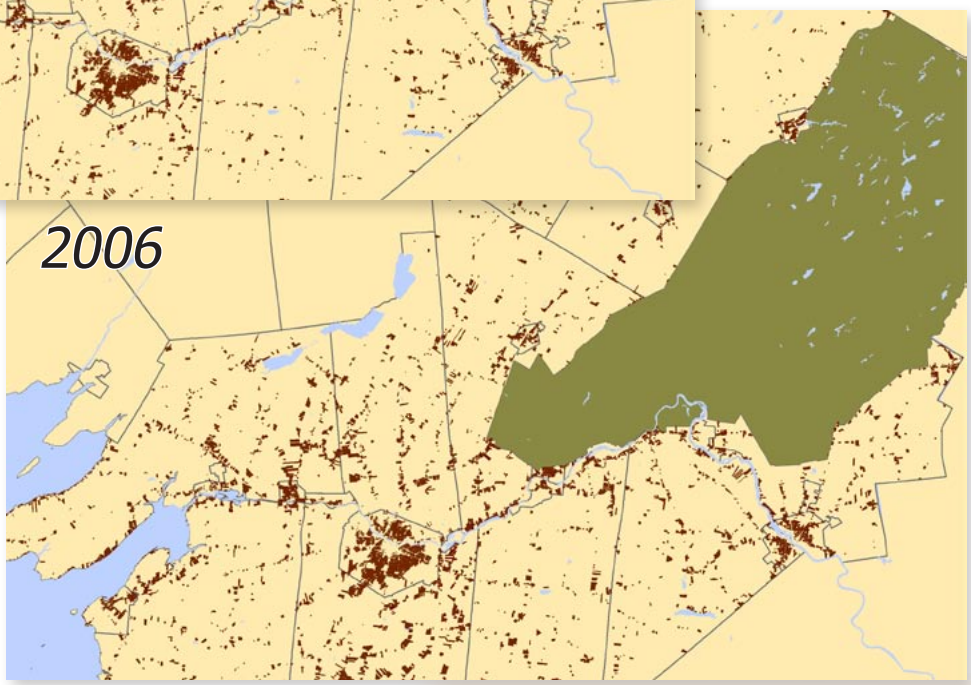

2006

Community and Regional Infrastructure

The state of infrastructure is a growing concern in most areas throughout the nation, including the Fort Drum region. Concerns include the condition of existing infrastructure, as well as the capacity to accommodate future growth. Major community infrastructure systems in the Fort Drum region include water and sewer networks, transportation networks (roads, bridges, etc.), utility networks, telecommunication networks and the education and health care systems.

Part of the Transformation process for the Army (discussed in more detail beginning on page 11) is to leverage private sector capabilities and capital to provide services so the Army can focus on its primary mission to protect the country. Many installations have already converted, or are in the process of turning over infrastructure to private sector providers. Fort Drum has partnered with several local organizations to address infrastructure needs for the installation. Fort Drum is somewhat unique to military installations, in that it has long depended on the surrounding communities for many of its community infrastructure needs, such as housing, education and health care. Invariably, when the Fort and communities partner together on infrastructure projects, each benefits more than they would have by working alone.

There are also a number of regional organizations that play a part in coordinating regional-scale infrastructure and community development projects. Perhaps the largest is the Development Authority of the North Country (DANC), which is involved in virtually every aspect of the region's infrastructure portfolio, including housing, communications, health care and water/sewer. In addition to DANC, there are a number of other larger organizations and many smaller organizations that focus on more narrowly defined infrastructure issues and community needs.

Power

National Grid supplies power to Fort Drum and most municipalities in the region. This power comes from a variety of facilities and sources, both locally and regionally. In the region, there are a number of generation facilities utilizing the rivers and wind of Northern New York. In Lewis County, the Maple Ridge Wind Farm, a facility consisting of nearly 200 turbines that generates enough energy to power over 100,000 homes, has been constructed along the Tug Hill Plateau west of Lowville. Energy from the wind farm is transmitted through the general power grid, and does not specifically power homes in the Fort Drum region.[35]

Maple Ridge Wind Farm, Lewis County.

There is an extensive history of utilizing the Black River and other water resources in the region for power generation. These rivers fueled many of the industrial facilities that created the initial population growth

[35] "Maple Ridge Wind Farm "Transmission Lines: Facilities" Retrieved on August 18, 2008 from http://www.mapleridgewind.com/profac.htm

in the Fort Drum region. Along the Black River in Jefferson County, there are several hydropower facilities owned by Brookfield Renewable Power. Power generated through these facilities are distributed through the general power grid network. The City of Watertown also owns a hydropower facility along the Black River. Power generated from the city's facility is used for several city-owned buildings, with excess power sold to National Grid for distribution on the general power grid. Opportunities exist for many communities in the region, as contracts with Brookfield, Maple Ridge, and other firms are renegotiated, to enable more of the power created by these facilities to remain in the region.

In conjunction with the energy developer Innovative Energy Systems, DANC is finalizing plans to begin construction on a Landfill Gas to Energy (LFGTE) power plant at DANC's existing regional solid waste facility in the Town of Rodman. Construction activities will include a power plant, gas pipeline, electrical transmission line and electrical substation. Approximately 25 new landfill gas extraction wells were drilled into the waste mass. These wells will be connected to the existing landfill gas piping network and direct the gas to the planned LFGTE power plant.

Communications Infrastructure

Time Warner Cable is the local cable television vendor for Fort Drum and the surrounding area. As stated in the January/February Public Works Digest, Time Warner Cable has "upgraded its infrastructure and installed cable in barracks and other facilities at no cost to the installation."

DANC also provides a regional carrier-class telecommunications network serving St. Lawrence, Jefferson and Lewis counties, connecting to facilities in Syracuse and eventually, Utica. One key benefit of this system, when fully completed, will be the access it gives the local health care system to specialists in larger metropolitan areas, particularly Syracuse. DANC is working with the Fort Drum Regional Health Planning Organization (FDRHPO) and Fort Drum, to create this "telemedicine network". The telemedicine network, supported by the telecommunications network, will improve access to care, and create electronic linkages between regional health care institutions.

Health Care

Health Care in the Fort Drum region is a partnership between the Fort and surrounding communities. The partnership solution to health care emerged during the Fort's major expansion in the 1980s. At that time, as part of the philosophy of community integration, it was decided that Fort Drum and its personnel should rely on the local health care system for many of their health care needs. This philosophy was particularly applicable to the Fort Drum region because local communities at that time had been losing population and, in general, area hospitals and health care facilities had excess capacity. By plugging into the local system, Fort Drum helped to reinvigorate the region's health care system. By pooling the health care needs of the military and civilian populations together, efficiencies of scale were created. Today, Fort personnel and employees have access to more specialized medical services (oncology, internal medicine, inpatient services, etc.) than typically provided in an on-post hospital. At the same time, the civilian community benefits from the creation of a larger and more sophisticated health care system. Medical services more directly related to the unique needs of Fort personnel continue to be provided on-post.

The Fort Drum Regional Health Planning Organization (FDRHPO) helps to oversee, plan and coordinate the provision of health care to the region and to bring together the many military and civilian stakeholders involved. FDRHPO's "health service area" consists of an area within a 40-mile circumference of Fort Drum. Within this health service area are 5 hospitals and numerous clinics and health care facilities.

FDRHPO is continually exploring ways to improve the delivery of health care services to the region. One such example is FDRHPO's study on how to improve the delivery of Emergency Medical Services (EMS) in Jefferson County, particularly with respect to response rates and times. Such services are currently provided via 42 separate response agencies across Jefferson County. By partnering with FDRHPO and cooperating at a regional level, Jefferson County communities and EMS providers can find ways to more efficiently and effectively provide EMS services to county.

The Samaritan Medical Center in the City of Watertown, one of the hospitals included in the FDRHPO consortium.

Sewer and Water Infrastructure

Public sewer and water infrastructure provides a solid foundation for economic activity and development. Without it, many uses and activities could not take place, particularly those uses highly dependent on a reliable, ample supply of water, and those uses that attract large numbers of the public. Sewer and water infrastructure can also help to protect the environment, since septic systems on individual properties are subject to failure, which in turn, particularly in highly sensitive areas, such as along the Black River, can lead to contamination of drinking water and limit the use of water for recreational activities.

Public sewer and water can also have a very large impact on how an area grows. Infrastructure decisions and policies directly influence where new growth will go and how much there will be. Infrastructure decisions and policies should therefore be made under the umbrella of a community's vision for how it wants to grow and look in the future. Without a plan or vision in place, improvements and expansions to water and sewer infrastructure can often have unexpected consequences.

The DANC Water & Wastewater Division operates and maintains approximately 45 miles of water and sewer pipelines that serve Fort Drum and western Jefferson County. In 2006, the Towns of Pamelia, LeRay Champion, Rutland, and the Village of Black River worked in coordination with DANC to extend sewer service along the Route 3 corridor into these communities. The sewer line will be comprised of 24 miles of gravity sewer lines and 9 miles of force mains. The estimated cost for the project is $25 million. A portion of the sewer extension has been funded by grants from the United States Department of Agriculture's Rural Development grant program.[36] Upon completion, the sewer line will eliminate the last known section of point source pollution along the Black River.[37]

DANC does not provide direct financial assistance to communities for infrastructure improvements. Since DANC is not allowed to levy taxes, they are not in a position to own sewer and water distribution services.

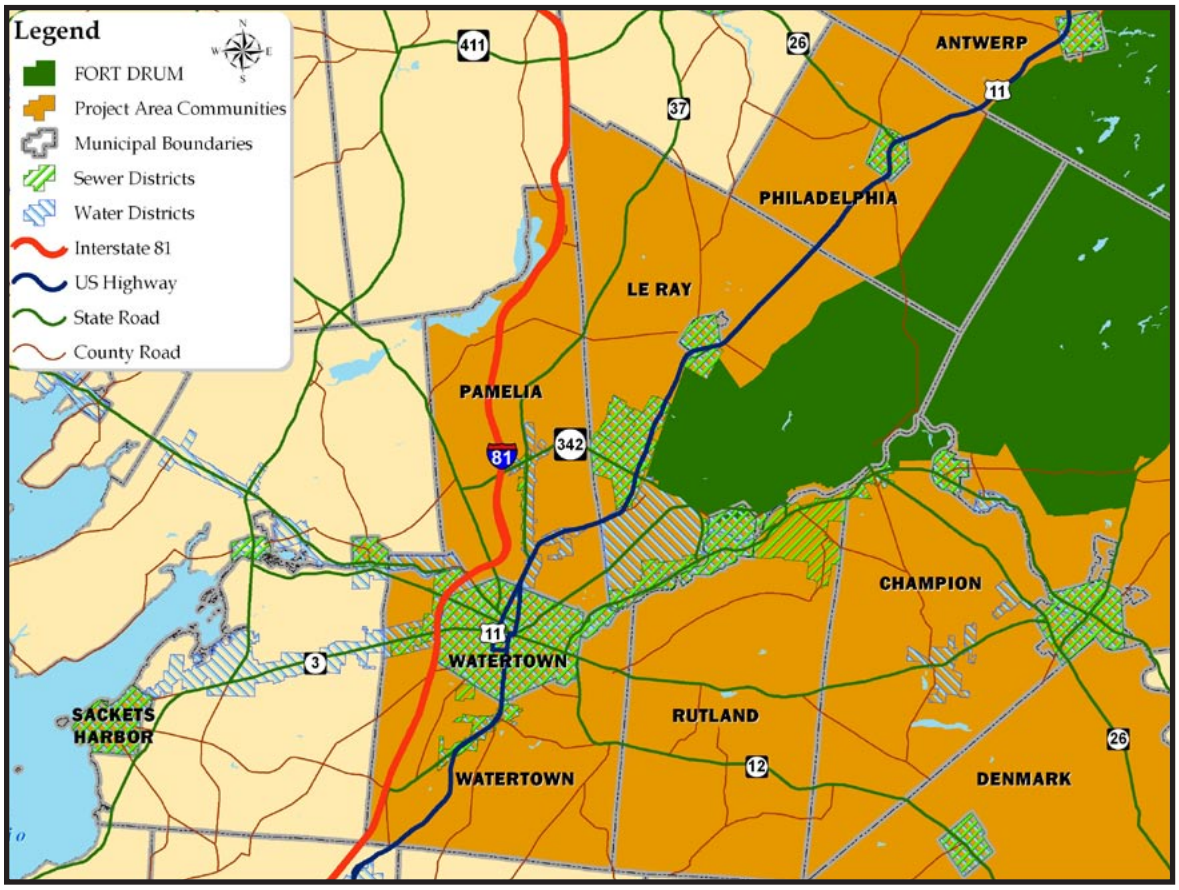
[36]"Route 3 Sewer Corridor" Retrieved on July 28, 2008 from http://www.rurdev.usda.gov/ny/toolbarpages/pressreleasepages/10.%2025%20Rte%203.htm

[37]Stearns and Wheler Project Profile "Sanitary Sewer System, Route 3, Town of Champion, Hamlet of Great Bend, New York, Route 3 Corridor Sewer System" Retrieved on July 24,2008 from http://www.stearnswheler.com

In addition, DANC is not funded to the extent where money would be available in a revolving fund for communities to borrow toward infrastructure improvements. In communities that are part of the DANC system, while DANC owns the trunk lines for sewer and water, each municipality is responsible for the billing and maintenance of feeder lines within its boundaries.

DANC does, however, provide technical and administrative assistance to communities in the region that are looking to provide infrastructure to their residents. This can take several forms, depending on the community. In some areas, DANC has aided communities in grant-writing efforts to help obtain funding from various state and federal sources. In other communities, DANC provides direct technical help, assessing the needs of the proposed system; looking at the design of the system; and providing monitoring assistance. In yet other communities, such as the Town of Gouverneur, DANC provides operating assistance by directly managing sewer and water plants and distribution systems on a contract basis through its Water and Wastewater division.

The location and extent of the DANC line and other nearby sewer and water infrastructure systems are depicted on Map 1.6 below.

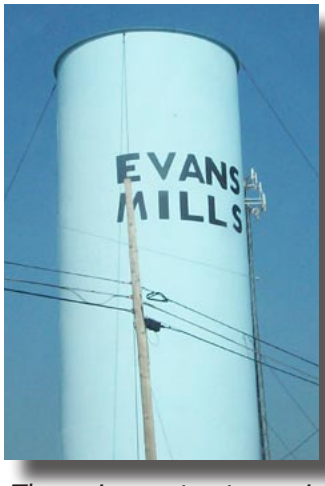


Map 1.6 - Water and Sewer Districts in the area of the Fort Drum Gate Communities

Based on information presented as part of the Residential Communities Initiative (RCI) program in 2004, it appears that there is available infrastructure capacity in the majority of communities for additional residential and commercial development, at least in Jefferson County. This is due, in part, to the efforts of DANC, Fort Drum, and area communities, particularly south of Fort Drum, working together to create a large-scale regional water and sewer system, tying into facilities owned by the City of Watertown and DANC. In many cases, the existing water filtration systems in both the region and in local areas, are operating at a fraction of their designed output, according to the "Sewer and Water Capacity Assessment, City of Watertown and Development Authority of the North Country," prepared in 2006 by Stearns & Wheler LLC.

However, there are some major concerns regarding the current capacity of regional infrastructure. Based on the information detailed in the Sewer and Water Capacity Assessment, and from conversations with several area communities, existing sewer outflows are exceeding the allowable peak hour limits for discharge into area rivers. This is due, in large part, to the intermingling of storm sewers with the sewer flows in several communities, which causes large amounts of wastewater to be processed by the waste treatment facilities in these areas during heavy rain events and large-scale thaws. By separating stormwater flows and letting these waters gradually dissipate into the ground via the construction of retention facilities, such as stormwater ponds or in individual rain gardens, the burden on municipal facilities can be lessened, and additional regional sewer capacity can be created. Additionally, the adoption of "green" techniques by municipalities and citizens, such as rain gardens, green roofs and the localized treatment and reuse of grey water (from sinks, washers and bathtubs) can also help reduce the facility's input.

In many of the study area's smaller villages and towns, existing sewer and/or water capacity is limited, and much of the existing infrastructure is nearing the end of its useful life. For example, in Evans Mills, further development of the village and the adjoining areas is restricted until the village is able to rebuild its water tower.[38] In addition, the village's sewer system is currently operating at capacity.[39] If expansion and improvement to the existing sewer systems does not take place in village areas, the ability of future development at Fort Drum to be absorbed in or adjacent to village areas would be limited. Villages and towns can seek funding for capacity expansions and reconstruction. Several communities, including Lowville[40] and Gouverneur[41] are in the process of addressing sewer issues through the renovation of their existing sewer facilities. The Village of Gouverneur, in late 2008 or early 2009, will commence a $2.4 million upgrade to its existing sewer plant.[42] These improvements will include providing aerators for the holding lagoons, and should provide a limited amount of increased capacity for the facility, due to increased efficiency at the plant. The Village of Lowville is in the process of relocating its sewage discharge point from Mill Creek, adjacent to the existing treatment facility to the Black River via the construction of a 1.3-mile discharge pipe. This will allow the village to increase its daily discharge limit to 1.8 million gallons of waste per day. This project will cost the village $900,000.[43]



The aging water tower in the Village of Evans Mills.

[38]Rivette, S. (2008) "Evans Mills townhome proposal still denied" Watertown Daily Times, June 25, 2008
[39]Interview with Robert Boucher, Mayor of Evans Mills, NY, January 9, 2008
[40]Virkler, S. (2008) "Lowville sewer project to cost far less than expected" Watertown Daily Times, April 29, 2008
[41]Ellen, M.(2008)"Village to upgrade its sewer system" Watertown Daily Times, May 20, 2008
[42]Ibid
[43]Virkler, S. (2008)

Contamination of water supplies has also been an issue in several communities, as well as Fort Drum. The Village of Copenhagen is relocating its water source as part of its water modernization project. Fort Drum has chosen to increase its reliance on water supplied by DANC and the City of Watertown. In Herrings, where an old dry-cleaning facility has contaminated its supply, the village is in the early stages with Deferiet to obtain water from the village via a pipeline along Route 3.

As part of this project, a survey of infrastructure capacity, condition and any planned and/or recently completed improvements, was conducted for the region's villages and the City of Watertown. Established population centers were examined in more detail, because many of these communities have existing, aging infrastructure. As previously discussed, without upgrades and improvements, new development and revitalization of such centers will be more difficult to achieve. This survey, provided in Appendix A is based on available data and interviews. It provides a baseline of infrastructure information for the communities surveyed.

Future growth in the region, both in terms of scale and in terms of development patterns, has been modeled to help illustrate potential future scenarios. These conceptual growth models and their implications for the region and its infrastructure - including sewer and water infrastructure - are discussed in detail in Chapter 3.

Transportation Infrastructure

A region's transportation network is its lifeblood. More than simply a means to get somewhere, the transportation network establishes the character of the community, since it is along this network that people live and work. All too often, transportation infrastructure is exclusively targeted to the automobile. While cars are certainly a primary means of transportation for the region, building a transportation network that incorporates alternative modes of transportation (pedestrians, bicyclists, public transit, etc.) enables the region to be more flexible and adaptable, as well as environmentally-friendly.

Major regional transportation improvements are discussed below. The discussion includes projects that are planned, underway, or recently completed.

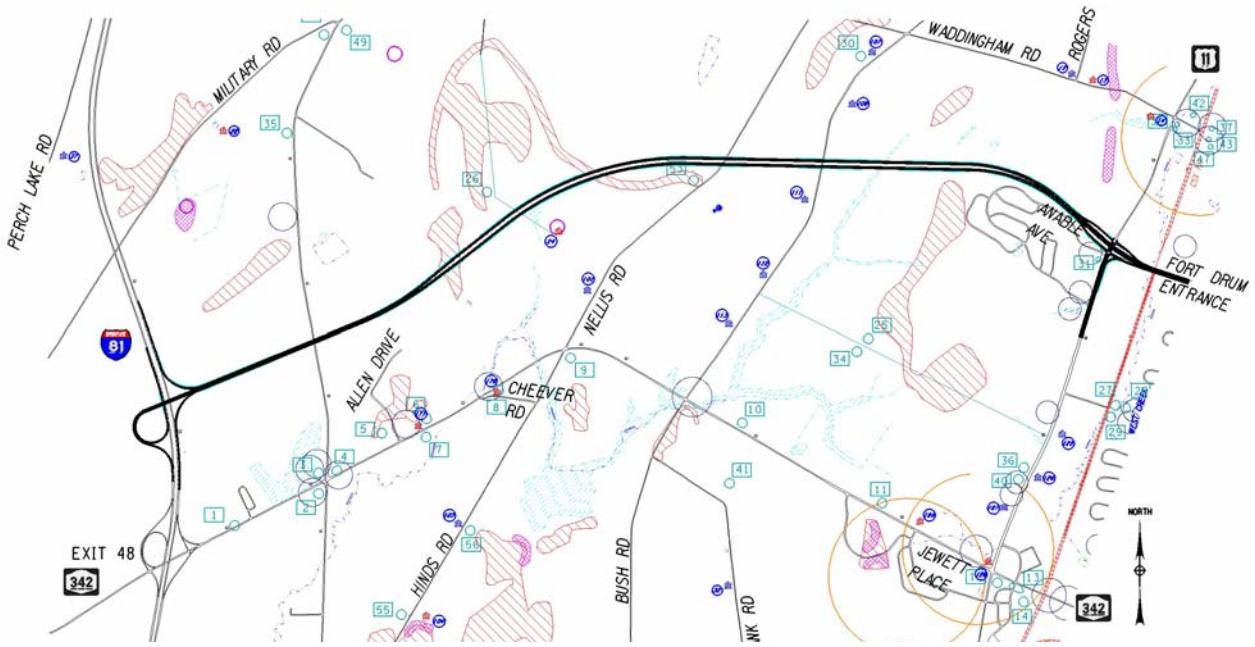
Route 11 Improvements

Route 11 in the Town of LeRay was recently reconfigured to improve safety and capacity along this growing commercial corridor. A major component of the rebuild included restrictions on turning movements via new traffic lights, turning lanes and a divided highway.

Fort Drum Connector

The Fort Drum Connector, identified as a priority project by the New York State Department of Transportation (NYSDOT) in its 2009-2014 multi-modal program, will serve as a direct connection from Fort Drum to Interstate 81 via a four-lane interstate standard highway. The highway, which is expected to cost $84 million and be completed in 2012, will include an exit at Route 11 adjacent to the Operation Iraqi Freedom Drive gate (aka North Gate or Gate #3). The Town of LeRay is currently studying the potential

land use impacts of a planned Route 11 interchange with the connector. The town is also providing input to NYSDOT to ensure that the interchange design will allow for pedestrian access along Route 11 and that the overpass structure is designed in an aesthetically pleasing manner.



The Northern Alternative (and most likely alternative) for the Fort Drum Connector. Source: Draft Design Report/Draft Environmental Impact Statement, NYSDOT, May 2007

Northern Tier Expressway

The proposed Northern Tier Expressway would provide a four-lane route across the North Country from Watertown to the Village of Champlain in Clinton County, as well as important spurs to areas such as Lowville, Odgensburg and Plattsburgh. The expressway would involve upgrades to the existing Route 11 corridor. While portions of the roadway, particularly those near the Watertown area and near the US-Canada border near Champlain may be built in the next twenty years, it is unlikely that the complete construction of the expressway would take place before 2050, if ever.

Local Transportation Projects and Improvements

Within the City and Town of Watertown, several projects are planned or underway that will enhance transportation access near the commercial corridors adjacent to Interstate 81. The first project involves the reconstruction of Arsenal Street (NYS Route 3) at the intersection of Interstate 81. The project also includes the reconstruction of the Arsenal Street/Interstate 81 interchange, the addition of sidewalks to sections of Arsenal Street, and limiting access to Arsenal Street from adjacent properties. Construction is expected to be complete in the fall of 2008.[44] In the City of Watertown, the construction of Western Boulevard would serve as a connector route between Arsenal Street and Coffeen Street, east of Interstate 81.[55]

[44]NYSDOT presentation to Arsenal St. merchants, March 23,2006
[45]Roadway Purchase Hits New Pothole" Watertown Daily Times, Feb. 29, 2008

When completed, Western Boulevard will provide a connection between Arsenal and Coffeen Streets in the City of Watertown.

Finally, Jefferson County is in the process of constructing County Route 202 in the Town of Watertown. This will be a four-lane road extending from Coffeen Street to Arsenal Street west of Salmon Run Mall. These improvements will enhance traffic flow and access in one of the more congested areas of the Fort Drum region.

The City of Watertown is currently implementing a downtown streetscape enhancement project. The project includes road and sidewalk improvements in concert with improvements to infrastructure such as water, sewer and utility lines. It will enhance pedestrian access and beautify the downtown area with street trees, signs, lighting and landscaping.[46] This is an important regional project, as Watertown serves as a major economic, civic and employment center in the region, and is expected to be completed in late 2008.

Rail

Improvements also have been made to the Fort Drum rail siding (a segment of rail track where freight cars can be stored allowing other trains to pass), which greatly increases the amount of cars that can be loaded, as well as reducing the loading time, and thus improving deployment capacity.

There is currently no passenger rail service in the study area. The closest Amtrak passenger train station is located in Syracuse, NY, and the nearest Canadian ViaRail station is in Gananoque, Ontario, approximately 30 miles north of Fort Drum.

Downtown Watertown Public Square under renovation in June 2008.

Airline Service

Beginning in September, 2008, Cape Air is reinstituting service between Albany and the Watertown International Airport, located in the Town of Hounsfield. This will occur under the provisions of the

[46] "Streetscapes in the City of Watertown" from watertown-ny.gov/planning/streetscape.html

Essential Air Service (EAS) program, which provides subsidized service to airports and communities in order to retain a connection to the national air network when the communities are greater than 70 miles from the nearest airport.[47]

Public Transportation

Public transit is limited in the Fort Drum region. The only regular fixed route transit system is in the City of Watertown, where Citibus runs several routes that extend through the city and into sections of the adjacent Town of Watertown along Arsenal Street.

As part of the transfer of Section 801 housing to the private market, bus transportation between the 801 communities and Fort Drum was suspended. Several of the owners of outlying former Section 801 communities have been looking to reinstitute a shuttle service to Fort Drum in order to attract soldiers to live in their communities. Without transportation services, the time and costs of commute may be a hindrance for some soldiers and families.

Fort Drum leadership is also currently exploring transit options, including a new daytime on-post shuttle that runs during the workweek.

Fort-Community Gates

Prior to September 11, 2001, Fort Drum was an open post. Anyone could access the post by driving, walking, or riding through a gate. All gates were open 24 hours a day, seven days a week, with many of the secondary gates onto the post being unmanned. This was similar to the situation at other military posts. Following September 11th, there has been a significant increase in security concerns on military posts, with access to Fort Drum, as well as most other military installations, much more restricted. Secured area access is much more limited and general access to the Fort is controlled more rigorously at designated gate entrances.

Fort Drum gates are important seams between the Fort and the surrounding community. Because many Fort personnel live off-post, conveniently located and fully operational gates make commuting on- and off-post less of a hassle. Moreover, Fort personnel that live on-post frequently leave the post for a variety of reasons. Proximity to Fort Drum gates is a selling point highlighted in many local real estate ads. Therefore, changes to the hours of operation of a gate, or closure of a gate, can have direct implications for both Fort personnel and civilians.

[47] "What is Essential Air Service?" Office of Aviation Analysis, U. S. DOT, May 1998

As of August 2008, the following represent the current open gates in the Cantonment area and the operating hours for these access points (the locations of the gates are depicted on Map 1.1 on page 19 of the plan):

- ◇ Gate 1- Gasoline Alley (Route 26 at Oneida St) - Open 24 hours a day, seven days a week.
- ◇ Gate 2- Mount Belvedere Boulevard (Route 283) - Open 24 hours a day, seven days a week.
- ◇ Gate 3- North Gate (Route 11 and Operation Iraqi Freedom Blvd) - Open 24 hours a day.
- ◇ Gate 4- Nash Boulevard/ Maple Street - Open Monday through Friday from 6 AM to 6 PM.
- ◇ Gate 5- Wheeler Sack AAF- (Route 26) - Open 24 hours a day seven days a week.
- ◇ 45th Infantry Division Drive Gate - Open Monday through Friday from 6 AM to 8 AM.

Gate 2 (left) and Gate 4 (right) are the two primary entrances to Fort Drum on the south side of the post.

Range areas

Access to the Fort's range areas is granted for a variety of uses. Since most of the Fort's training exercises occur in the range areas, safety is a primary concern. Non-military residents and DoD ID holders can also hunt on-post, but must obtain a Fort Drum Recreation Permit and Access Pass. Hunters must check in daily with Range Control by calling the Sportsman's Hotline (772-7153) before heading into the range areas. Residents may also obtain firewood from on-post areas with a firewood permit. Other passes can be obtained from DPTMS for access to training areas for construction, research, to visit cemeteries, and for other purposes.

The Village of Philadelphia water supply is on-post and village staff frequently access the area to monitor water supply for the village.

Deferiet Gate

The "Deferiet Gate", accessed from Route 3A via County Roads 37 and 29, has been closed since September of 2001 due to security and safety concerns associated with the explosive safety zone for the

Fort's Ammunition Supply Point (ASP). The gate cannot be reopened without major changes at the ASP storage bunkers.

According to some local residents, the closure of the gate has led to several concerns. Village of Deferiet residents have observed an increase in traffic through the center of the village. Formerly, when the gate was open, traffic headed to Fort Drum from points approximately south and east of the Village of Deferiet could access the Fort without traveling through the village. With the closure of the gate, the same traffic must now pass through the village to reach the next nearest gates off of Route 26. A subsequent increase of posted speed limit from 35 to 45 mph by NYSDOT, has, according to some village residents, exacerbated the negative impacts of increased traffic.

Closer to the Hamlet of Great Bend, the limited turn lane space and signal timing at the intersection of NYS Routes 3 and 26 has been reported to have led to frequent traffic jams in the morning and afternoon rush hours. Between 2005 and 2007, there have been 6 reported accidents at this intersection, according to NYSDOT records.[48] It is perceived by some local residents that the closure of the gate has directly led to more congestion in this area, as well as an increase in traffic accidents.

Village of Black River

Access to Fort Drum from the Village of Black River has decreased in recent years. At one point, village residents were also able to gain access to the post via an access point along Main Street, just north of the village limits. Since the events of September 2001, this access point has been closed for general use. The access point is currently used as an entrance for construction vehicles working on Fort Drum, as well as an emergency entrance to the post. In recent years, as the construction of RCI housing has taken place inside the post along the village's boundaries, community leaders have identified the reopening of access point as a component to the revitalization of Black River's village center. There are, however, no plans to reopen this access point on a permanent basis due to budget constraints.

To the east of Gate 4, at one time, a gate was open from the Hamlet of Felts Mills onto the post at 1st Street West. This gate has been closed to general use since September 2001. It is also used as a construction entrance and emergency entrance to the post. There are no plans to reopen this access point on a permanent basis.

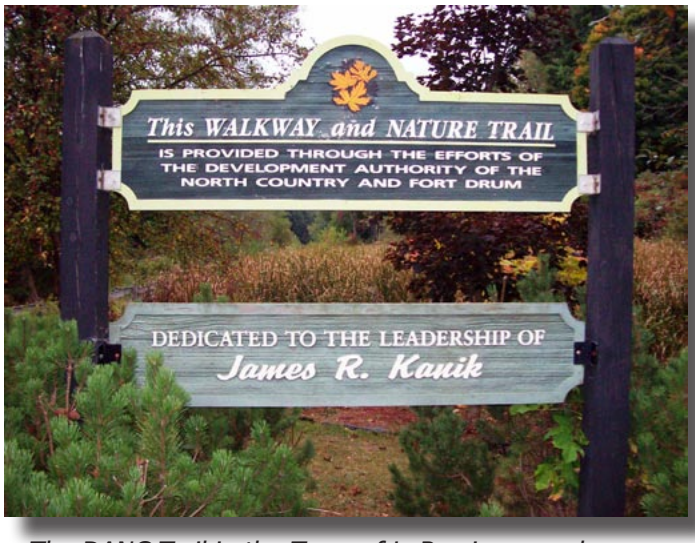
Trails and Sidewalks

The three-county region is crisscrossed by numerous recreational and seasonal trails that accommodate skiers, ATVs, snowmobiles, bicyclists and hikers. Non-automobile systems for getting from place to place for more routine, non-recreational trips in the study area are limited for the most part to sidewalks in the City of Watertown and numerous villages. The Town of LeRay is currently looking at providing pedestrian and/or bicycle path along portions of the Route 11 corridor, where retail, services and housing has been concentrating in recent years. The town is also providing input to NYSDOT to ensure that the design of the I-81 connector allows for continuous pedestrian linkages on either side of the proposed interchange with Route 11. LeRay is also proposing to incorporate trails, sidewalks and bicycle paths into areas where

[48]NYS Safety Information Management System, Accident Verbal Description Report, Routes 26 and 3, Great Bend, NY

new residential development is concentrating, such as at the intersection of Route 11 and Route 342. The City of Watertown is also looking at providing bicycle paths, and connecting existing, separated paths into one continuous system that can ultimately serve as both a recreational and commuting pathway.[49] The city is also seeking a state grant to create additional recreational bike paths in Thompson Park.[50]

The Black River Trail, roughly between Watertown and the Village of Black River is a popular trail in the study area. Plans call for extending this trail in either direction for many miles – west to Sackets Harbor and south and east to Oneida County – as part of the proposed Black River Blueway Trail. The Villages of Carthage and West Carthage are currently exploring plans to provide another link in the Blueway Trail.[51]



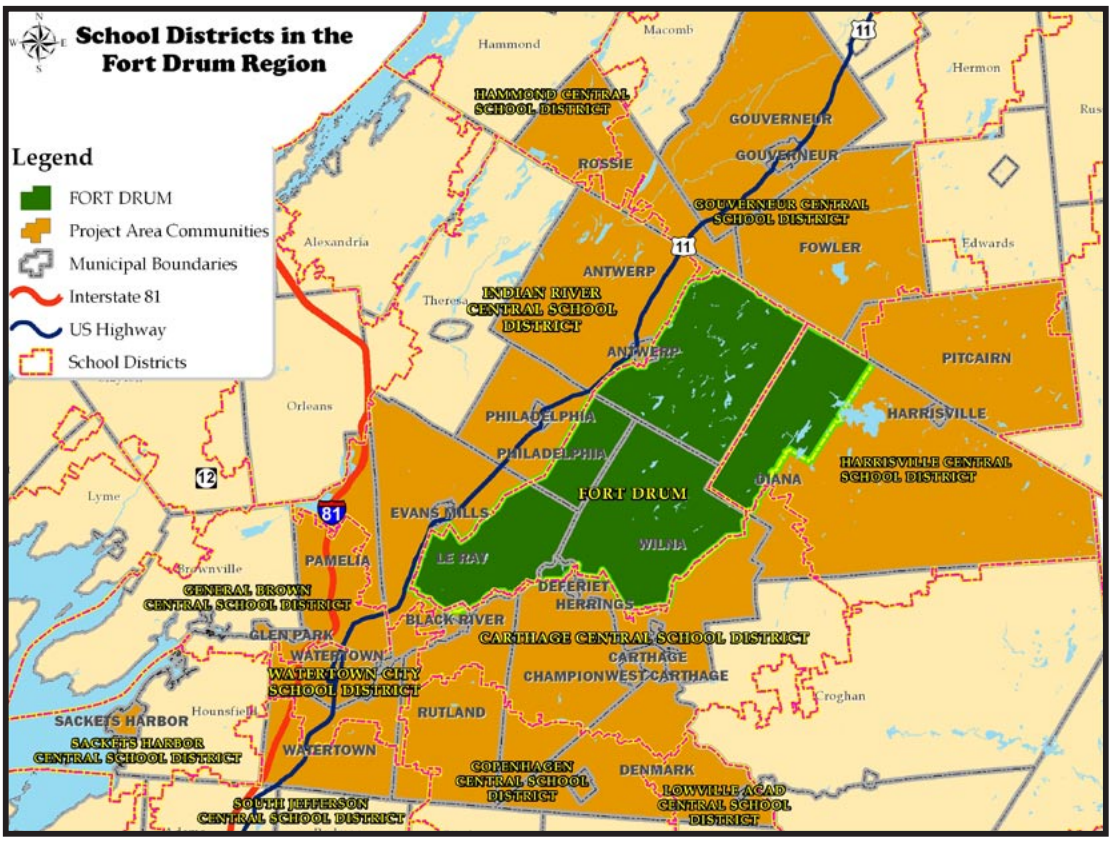
The DANC Trail in the Town of LeRay is a popular recreational amenity for town residents, as well as those living on-post.

Education

Primary and Secondary Education

Fort Drum, unlike most other military installations, does not provide on-post educational facilities. Rather, the Fort relies on the public school districts in the surrounding communities to provide educations to the children of its personnel. There are 11 public school districts within the study area, as shown on Map 1.7.

Because Fort Drum children live primarily on-post or in nearby off-post communities, the three school districts servicing these areas – Indian River



Map 1.7 - School Districts in the Fort Drum Region

[49] "City puts bigger focus on recreational trails for bicycle enthusiasts," Watertown Daily Times, June 5, 2008
[50] Ibid
[51] "Villages Pursue Riverside Projects," Watertown Daily Times, August 1, 2008

Central School District, Watertown City School District and Carthage Central School District– are the most heavily influenced by Fort Drum.[52] However, while the bulk of Fort Drum affiliated students attend these three districts, every school district in the study area almost certainly receives at least some students affiliated with Fort Drum.

Fort Drum's influence on the region's schools has many positive aspects, not the least of which are the children themselves, who, having lived in different regions of the country and the world, bring new experiences and perspectives to the educational community. The Fort's presence has also enabled school districts to expand and increase their offerings in a manner that likely would not otherwise have been possible. Fort Drum affiliated students have also filled up excess capacity in school districts. In the Watertown district, for example, higher student enrollments have recently led to the reopening of the Starbuck Elementary School in the City of Watertown.

In the many interviews, roundtable discussions and other public outreach efforts conducted for this plan, residents - both longtime and newcomers - invariably praised the high quality of public school education in the region. The praise for the local school districts is all the more significant in that many Fort families new to the area have had a chance to "sample" school districts and quality-of-education in many other regions and settings across the country before coming to the Fort Drum region.

Funding

The federal government contributes money to school districts whose boundaries extend onto military installations. This federal funding began in 1950 under President Harry Truman and is known as Federal Impact Aid.[53] Federal Impact Aid is meant to offset the taxes lost on account of a federal presence or activity. Fort Drum does not pay property taxes, nor do the majority of soldiers and dependants that live on post. The amount of funds provided to a given school district is related to the number of Fort-related children it serves. However, overall funding levels per-child are subject to change from year to year based on a variety of factors. In recent years some regional school districts have utilized New York State funds to make up the gap when Federal funds were reduced. Ensuring that school districts are adequately funded by the federal government to provide the high quality of education that residents have come to expect, is key.

Overview of Indian River, Watertown and Carthage Districts

Because the majority of Fort Drum children attend the Indian River, Watertown and Carthage school districts, current capacities and recent and planned improvements for these particular districts were looked at in more detail.

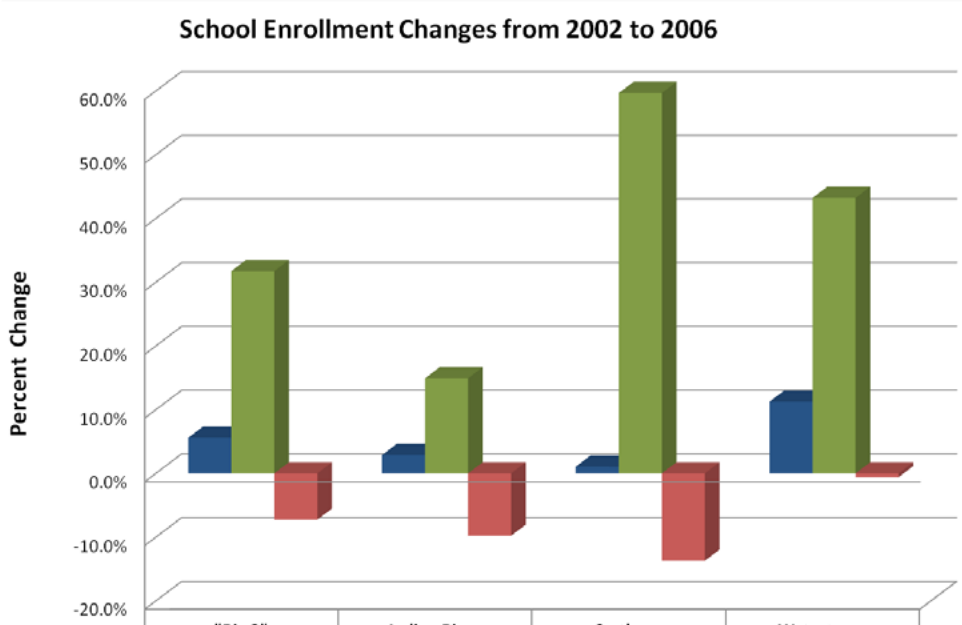
The three school districts together (Watertown, Carthage, and Indian River) have seen an overall increase in total K-12 student enrollment since the addition of a BCT to Fort Drum took place in 2003. The entirety of this increase is related to the addition of the BCT and their families in the Fort Drum region, since the school age populations not affiliated with Fort Drum enrolled in these same districts shrank in this same period. While the overall enrollment in the three school districts increased by 5.6% between 2002 and 2006, according to data obtained by FDRLO, the number of students in the school districts that

[52]Fort Drum Regional Liaison Organization (2007) "Data on School Enrollment and Impact Aid From Local Educational Agencies and the Army"
[53]US Department of Education "About Impact Aid" Retrieved on August 14, 2008 from http://www.ed.gov/about/offices/list/oese/impactaid/whatisia.html

were not children of soldiers or civilians working on the Fort decreased by 7.3%. This drop off is most striking in the Carthage School District, where the number of non-Fort Drum affiliated students dropped by 13.7% between 2002 and 2006, even as the total number of students in the district increased by 1%. The district also encountered the largest percentage increase in military children, approximately 60%. By comparison, the Watertown School District enrollment increased by 11.3% overall, with only a 0.6% decrease in non-military children.[54] These numbers do not include other Fort-related children, such as those of DoD contractors, since accurate reporting of these populations was not available for all the districts prior to 2005. If DoD children were identified as "military children", then the number of non-military children would be even smaller. For instance, in the Carthage school district in 2006, DoD related children accounted for 10% of the total enrollment.[55] In previous years, these children would have been identified as non-military.

The most likely reason for this apparent drop in non-Fort Drum related students is movement of families out of the area. According to Jefferson County census population estimates the population in the Fort Drum region increased by approximately 1,800 people from 2002 to 2006, while the population of military personnel increased by approximately 4,000 people. Therefore there is a net loss of approximately 2,200 non-Fort people in the region, a third of which were likely school-aged children.

Public schools are not the only educational institutions affected by population changes in the region. Two Catholic elementary schools in Watertown closed in 2004, and attendance at schools in the Ogdensburg Diocese, which encompasses the entire North Country extending from the Watertown area to Plattsburgh, has decreased by nearly half between 1998 and 2008.[56] In Watertown, parochial school attendance has stabilized since the school closings in 2004, according to Diocese officials cited in a May, 2008 Watertown Daily Times article, due to the increase in Fort Drum related students in the area.[57] According to Indian River Central Schools, the percentage of students residing in the district that are enrolled at private schools or are home schooled has held steady at roughly 5% of total school-age students in the district.[58]



Percent Change 2002 to 2006	"Big 3"	Indian River	Carthage	Watertown
All Students	5.6%	2.9%	1.0%	11.3%
Military Students	31.7%	14.9%	59.7%	43.2%
Non-military students	-7.3%	-9.8%	-13.7%	-0.6%

Source: Fort Drum Regional Liaison Organization (2007) "Data on School Enrollment and Impact Aid From Local Educational Agencies and the Army"

[54]"Fort Drum Regional Liaison Organization (2007) "Data on School Enrollment and Impact Aid From Local Educational Agencies and the Army"
[55]Ibid
[56]Winters, D. (2008) "Catholic Schools Losing Students" Watertown Daily Times, May 22, 2008
[57]Ibid
[58]Interview with Indian River Central Schools, June 3, 2008

Between 2007 and 2012, the projected number of students that are expected to enroll in schools in the three school districts is expected to increase by 22%, approximately half of which would be from Fort Drum-related students. Nearly half of this projected increase is expected to take place in the Indian River Central School District alone.[59]

In order to meet the demands of the projected increase in enrollment, each of the three area school districts have proposed or currently have under construction additional classroom space. These plans are described for each district below:

Carthage Central Schools

As of the summer of 2008, construction of a new wing was currently underway at the Carthage Middle School. The new wing will result in the movement of the district's 5th grade students to the middle school site, opening up additional classroom space in the district's three elementary schools for over 300 additional students that are expected in the coming years. Also, a future 400-seat expansion of elementary school capacity is proposed in the Carthage district between 2007 and 2012. Finally, 150 additional seats are proposed to be added at Carthage High School by September of 2010.[60] This timetable could change depending on future bonding and budgeting for the school district.

Indian River Central Schools

In the Indian River school district, a bond issue was passed in October of 2007 to fund the construction of an additional 38 classrooms, including 19 additional classrooms and a new gymnasium at the Calcium Primary School.[61] This additional classroom space will be filled by children residing in newly constructed housing on-post and immediately off-post in LeRay. A concern, however, is that students from the Fort will continue to be transported great distances to attend some of the schools within the district. An example of this is the transportation of an estimated 70 students, ranging from Kindergarten to 3rd grade, from Fort Drum housing to the Antwerp Elementary School, some 17 miles from the Fort. While this is a great distance for students to travel, the time spent traveling to the school (roughly 45 minutes one-way)

An Example of the close relationship between Fort Drum and the Indian River School District

September 11, 2001 was an "interesting" day. "Normal" simply ended. Cellular phone towers were jammed and unusable and phone lines into and out of post were extremely limited. Fort Drum locked down while school was in session. District offices took prudent security precautions that day and the days in the immediate aftermath, but the issue of having over 1,000 children on the "wrong" side of the fence, with the gates secured, was vexing. The District's strong relationship with critical key personnel on Fort Drum enabled us to provide nearly normal bus service home that afternoon. Within two hours arrangements were made for buses to be segregated and searched by Military Police and security forces. District personnel were at the gates to provide positive identification of personnel for the guards. In a similar fashion, buses transited the gates in the days following 9-11 fairly normally.

The success of our experience in 2001 was based in a solid communications network developed over many years. We continue to exercise that communications network through our membership in the Fort Drum Regional Liaison Organization, the Association of the United States Army, and the Fort Drum Educational Liaison Committee. Our partnership with Drum keeps education and educationally related issues on the table and in view. When exercises or real world events will disrupt normal activities, we have an established channel of communications through while we can work out the details and make things work out, even if it is only on an ad hoc basis.

-Jim Koch, Business Manager, Indian River School District

[59]Fort Drum Regional Liaison Organization (2007) "Data on School Enrollment and Impact Aid From Local Educational Agencies and the Army"
[60]Ibid
[61]Interview with Indian River Central Schools, June 3, 2008

is similar to that of other off-post students in outlying areas of the district.[62] Additional classroom space will also be provided at the Indian River Intermediate School and at Indian River High School. These additions are slated to be completed in the 2010-2011 school year.[63]

Watertown City Schools

In the Watertown school district, the increase in the number of students resulting from increases in Fort Drum personnel has led to the reopening of the Starbuck Elementary School in 2006. It is anticipated that additional capacity for 230 elementary students, 165 middle school students, and 200 high school students will be made available by 2012.[64]

Watertown Central High School.

Schools as Community Building Blocks

School facilities serve not just as educational centers for young minds, but as meeting places and social settings for the community. In the Indian River School District, for example, community members are able to use the Indian River Theater in Philadelphia, a 1,400 seat facility attached to Indian River High School, for a variety of uses. Community members also have access to athletic, meeting, and classroom facilities at various district schools on evenings and weekends, including Indian River's olympic-sized swimming pool in Philadelphia. At the Evans Mills Primary School, the Indian River School Board opted to place the playground at the front of the school property in order to make the playground available for community use and to enhance the school's ties to Evans Mills. By recognizing the role of schools as meeting places for the community, residents will continue to feel connected to the schools in the area, even after their children have graduated from school.

Locating schools close to where people live helps them to more fully realize their potential to be community building blocks. However, new "greenfield" sites, often isolated from residential areas, typically have more land and space to provide the amenities of a modern educational campus. State and national standards for minimum acreage further favor such building sites over the more constrained sites typically found in established, built-up areas. However, consideration should still be given to locating schools in proximity to existing and proposed neighborhoods. Better integration of schools and neighborhoods cuts down on long bus rides and allows students and parents to more fully participate in the school experience. Shorter bus rides also translate to lower fuel and transportation costs. In short, school proximity to residential areas helps to improve student performance, cement ties between the school and the surrounding neighborhoods, and encourage parental participation.

It is also important to acknowledge the stabilizing force schools can provide to families and children, particularly those directly impacted by military deployments. Children of deployed parents, in particular,

[62]Interview with Indian River Central Schools, June 3, 2008
[63]Fort Drum Regional Liaison Organization (2007) "Data on School Enrollment and Impact Aid From Local Educational Agencies and the Army"
[64]Ibid

benefit from the nurturing and supportive environment that has been actively cultivated in many of the region's school districts to deal with the unique challenges of educating in a community with a large military presence.

While much has changed in education since the days of the one-room schoolhouse, schools continue to serve as focal points for community life.

Higher Education

Jefferson Community College (JCC) is the sole institution of higher learning based within the immediate study area. While there are a limited number of upper-level college courses taught at Fort Drum and at other locations in the region, the nearest fully accredited 4-year institutions of higher learning are the cluster of institutions in St. Lawrence County (SUNY Potsdam, SUNY Canton, St. Lawrence University and Clarkson University). These institutions are an hour-plus drive from where the majority of the study area's population lives and works, thus making it hard for area residents, particularly Fort Drum active duty personnel, to fully avail themselves of these educational resources. Difficult winter driving conditions make commuting to these institutions even less desirable.

At JCC, 30% of the total student population is comprised of either military personnel or family members of military personnel. JCC also has the largest percentage of veterans of all of the schools in the SUNY system. In addition, over 80% of all active duty soldiers attending college in the SUNY system are at JCC. As such, JCC offers classes not just at their location in Watertown, but also on-post at Fort Drum. On-post classes, while open to the general public, are designed to be flexible to the schedules and rhythms of military life. In some cases, JCC has been able to work with unit commanders to create "special unit courses", uniquely tailored to unit training schedules and needs. Examples of this are EMT-Basic and EMT-Advanced classes that have been offered to units before deployment.[65]
JCC uses several methods to raise awareness of the college to soldiers and their families. First, during soldier in-processing, there is an education seminar describing what JCC and other schools in the region

[65]Interview with JCC, January 24, 2008

have to offer to soldiers and their families. Second, JCC constantly provides information published in the Blizzard and on the on-post Drum TV channel about the college and its educational offerings to the Fort Drum population.[66]

The Global War on Terrorism has had an influence on the JCC. First and foremost, constant deployments have limited the ability of soldiers to take courses at the college. Also, when spouses are deployed, the parent remaining in the community is less likely to attend JCC because of the need to often both work and be a parent. In recent years, this trend has served to lower the number of classes that have been offered on post, due to the lack of students available to take courses.[67]

Despite challenges, the presence of Fort Drum has enriched and expanded the educational experience at JCC at many levels. For example, there is a large criminal justice program at JCC that is significantly utilized by Fort Drum soldiers. Without the presence of Fort Drum, it is doubtful that such a program would exist. The Fort also brings diversity to JCC, a core value of education. JCC has also benefited from the enlarged, educated spouse population that the Fort brings to the region and has tapped into this educated pool to find experienced and qualified instructors for a number of classes over the years.[68]

Higher Education Extension Campus

JCC interacts with other state schools in the region through the on-post "SUNY in the North Country" program, which allows JCC to tap into the degree programs offered at other institutions, including Empire State College, and SUNY Potsdam, Canton, Oswego, and Plattsburgh. In recent years the number of students enrolled in these programs and the number of programs has dropped, due in great part to the changing military mission over the last several years. This change has also made on-post access for the general public more difficult and has resulted in longer deployments for soldiers.

Recently, JCC has been examining the idea of creating an extension center either on the JCC campus or elsewhere in the region that would involve more schools than the on-post SUNY in the North Country program and Columbia College. Offerings would fill a current gap in upper division and masters level classes and programs in the region.[69]

Planning for Education

Fort Drum relies on the school districts in the surrounding communities to educate the children of its personnel, as well as the JCC for higher education needs of its personnel and their adult family members. The local school districts and JCC, in turn, rely on the Fort for funding and for the latest available information on Fort plans and Fort population. World events and political developments directly effect Fort deployments, as well as existing and planned levels of personnel. Planning in this environment requires all parties involved to be flexible and adaptable to sudden changes. The Fort and local school districts maintain lines of communication to ensure that there is a match between Fort operations and population dynamics, and the school capacity to accommodate the educational needs of the region.

Future growth in the region, both in terms of scale and in terms of development patterns, have been modeled under a number of scenarios to help the region better understand what the future may hold.

[66]Interview with JCC, January 24, 2008
[67]Ibid
[68]Ibid
[69]Ibid

These conceptual growth models and their implications for the region and its infrastructure - including schools - are discussed in detail in Chapter 3.

Regional Planning Efforts

A number of planning efforts have been recently completed or are underway in the Fort Drum region. These projects range from large-scale comprehensive plans and county-wide economic development strategies to downtown and waterfront redevelopment programs within cities and villages.

In response to the growth in the Fort Drum region, several municipalities have developed and implemented comprehensive plans as means of providing a vision for future land use and community services. Comprehensive plans also help to identify grant opportunities and other funding opportunities to complete projects. One of these efforts currently is underway in the Town of LeRay, where the town, in collaboration with its residents, is in the process of creating a comprehensive plan that seeks to address, in part, issues of compatibility between Fort Drum and the town, as well as to channel growth in a desirable manner. Lewis County is also in the process of developing a county-wide comprehensive plan, which is expected to be complete in 2009.

Residents discuss the future of LeRay during a public workshop for the town's comprehensive plan.

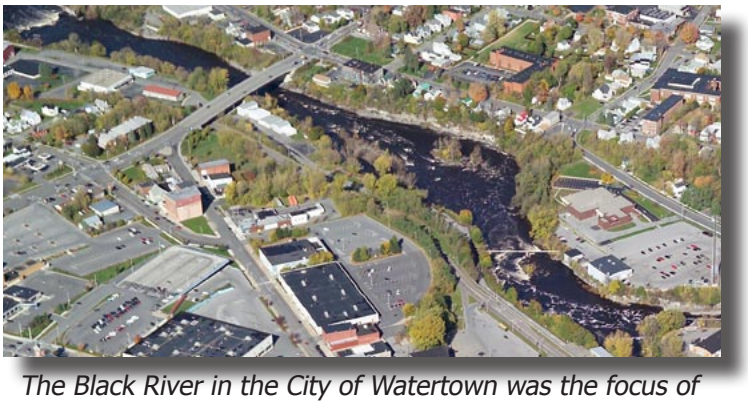
Additionally, each of the counties in the region is in the process of reassessing economic development goals. In 2006, Lewis and Jefferson Counties completed their Comprehensive Economic Development Strategies (CEDS), outlining the key items that the respective counties are looking to focus on in the coming years to diversify and expand their economic bases. The process of creating a Comprehensive Economic Development Strategy is ongoing in St. Lawrence County. These processes have also tied into several projects undertaken by FDRLO, including the regional gap analysis looking at potential opportunities for economic development that build upon the existing human skill sets, natural resources and locational advantages in the region.

Many of the communities in the region also are seeking to improve their waterfront areas as part of a revitalization effort of their respective towns and villages. The City of Watertown is in the process of implementing a Local Waterfront Revitalization Program by improving access to various areas along the Black River. The city's LWRP redefines the waterfront areas that once served as industrial centers for the region as areas that will encompass a mixture of uses; including the reuse of existing buildings for residential and commercial uses and developing the Black River as a recreational center for kayakers.[70] A similar effort has taken place in the Village of Sackets Harbor.

Another regional effort is the *Black River Blueway Trail Plan*, completed in 2007, which identifies opportunities for increasing public access and promoting the Black River as a recreational resource. A complementary effort currently underway is a corridor management plan for the Black River Scenic Byway from Rome to Dexter, which is expected to be complete in late 2008. While the *Black River Blueway Trail*

[70]City of Watertown Local Waterfront Revitalization Program (Draft, 2005)

Plan focuses on development and promotion of the Black River as a recreational and tourism resource, the corridor management plan for the scenic byway focuses on the experience for byway travelers.



The Black River in the City of Watertown was the focus of a recent LWRP.

County-wide farmland protection plans have been developed for Jefferson, St. Lawrence and Lewis Counties. Each of the counties is implementing their plans to address regional needs, such as agricultural economic development and farmland protection. The Jefferson County Agriculture and Farmland Protection Board is currently in the process of implementing the countywide farmland protection plan by developing a county purchase of development rights program. Purchase of development rights is discussed further in Chapter 2.

Finally, there have been several regional-scale projects that have been undertaken which look at larger picture issues, such as transportation and infrastructure planning. In 2002, DANC commissioned a North Country Transportation Study (NCTS) that looked at ways for the North Country to enhance its existing transportation system in order to increase economic opportunities and reduce costs for local residents and businesses. A key recommendation of this process was the construction of a "Northern Tier Expressway" along the U.S. Route 11 corridor between Watertown and the Village of Champlain, with spur routes to border crossing areas and the City of Plattsburgh. This project is currently under study, with several technical memos that have been made available to the public on the DANC Web site (www.danc.org).

Community Concerns

While Fort Drum's expansion has been a great benefit to the region from a quality of life standpoint, there have been several concerns that have arisen, mostly in Jefferson County, since the most recent Fort realignment and expansion. In regard to the Fort, concerns above and beyond the housing issues discussed previously include an increase in crime; increases in traffic along some local roadways; on-post military-subsidized commercial competition with local businesses; and the loss of agricultural lands in the region. These concerns are discussed below.

Increase in Crime

In recent years, some residents of the region have expressed a concern about increasing crime. There was a temporary spike in crime in Jefferson County at the time of the most recent expansion of Fort Drum, between 2004 and 2006, according to data obtained from the New York State Department of Criminal Justice Services. However, crime rates in the Fort Drum region, for the most part, have been stable over the last 10 years.[71]

According to the most recent Jefferson County Survey of the Community, however, residents are feeling more secure about policing and crime control in the county than at any time in the last nine years.

[71]New York State Department of Criminal Justice Services 1996-2006 and 2007 County Index Crime Counts. (www.criminaljustice.state.nys.us)

According to the survey, nearly 44 percent of area residents feel that policing and the prevention of crime are improving in the county.[72] Similarly, according to the 2007 JCC Survey of the Community report for Lewis County, nearly 70 percent of residents feel that crime prevention and policing are good or excellent.[73] While some of the increase in crime may be attributable to the growth of Fort Drum, efforts by local police and Fort Drum military police have lowered crime incidences over the last year. This has allowed the Fort Drum region to maintain its status as a safer than normal area in relation to the rest of New York.

Increases in Traffic Along Area Roadways

Over the last several years, residents have noted the increase of traffic on area roadways due to Fort Drum-related traffic. While there are certain areas in the region where increased traffic has become a concern, overall the region's road infrastructure is able to handle the current volumes and levels of traffic. According to data provided by the New York State Department of Transportation, increased traffic is mainly a concern in areas adjacent to Fort Drum and along Arsenal Street in Watertown. For example, between 1999 and 2006, traffic along Route 11 between Route 342 and the North Gate entrance to Fort Drum has increased by 22 percent, according to New York State Department of Transportation counts.[74] This growth has led NYSDOT and local governments to fund several existing or proposed projects that will address these issues. These projects were discussed in previous sections. A summary of traffic counts along major state roadway segments in the region is included in Appendix B.

Military-Subsidized Commercial Competition

There is anecdotal evidence that the increase in the scope of goods and services available at Fort Drum through the Department of Defense controlled Army/Air Force Exchange Services (AAFES) has caused some concern among local business owners. Recently, AAFES has broadened its scope into such fields as auto sales, self-storage and furniture sales.[75] The ongoing expansion of the Post Exchange (PX) and Commissary facilities at Fort Drum, combined with the desire of AAFES to open self-storage facilities at Fort Drum has created concern for some area businesses, most notably locally owned self-storage facility providers.[76] These concerns were raised during interviews conducted as part of the planning process for this project, and would need to be further substantiated.

The Fort Drum PX/Commissary facility. This facility is currently undergoing a major renovation that will increase the number and variety of goods offered to soldiers on-post.

Increased commercial competition between local businesses and AAFES and their vendors could conceivably threaten the livelihood of existing local businesses located outside of the Fort Drum gates. The AAFES facilities have

[72]Jefferson Community College (2008) Ninth Annual Jefferson County Survey of the Community
[73]Jefferson Community College (2008) First Annual Lewis County Survey of the Community
[74]New York State Department of Transportation (2008) Traffic Data Report for New York
[75]O'Kane, S. (2007) "The biggest retailer you've never heard of."
[76]"US Army aims at Fort Drum self storage once again" What's in Store!, Vol. X No. 1, Jan. 2006

a locational advantage for soldiers and their families who live or spend time on post. Additionally, the combination of higher volume purchasing (similar to other national chain stores) and lack of sales taxes allows AAFES advantages over locally owned retailers. This advantage will only increase as the higher prices of gasoline and the lack of existing public transit from Fort Drum to other areas in the region limit the abilities of soldiers and their families to leave the Fort Drum area to venture into Watertown and other commercial districts in the region.

Loss of Agricultural Land

Due to the pressures that commercial development has caused in the area, particularly along the Route 11 corridor, the assessed value of many properties has increased substantially over the last several years. This increase has caused some long-time residents to reevaluate the viability of agriculture in the area. To date, few farms have been lost in the area, but the possibility for this to occur increases as lands surrounding the Fort transform from rural uses to residential and commercial uses.

Many programs are in place to help preserve and maintain agriculture in the region. All three counties in the Fort Drum region have emphasized the right of county residents to farm as part of existing regulations in each town within the county. Each of the counties in the region, in coordination with the New York State Department of Agriculture and Markets, have implemented agricultural district programs that provide further protection for agricultural activities in the region and educational programs in coordination with Cornell Cooperative Extension, that will help farm owners to maximize their output. Finally, Jefferson County is in final steps of the PDR Program Feasibility and Program Design study in partnership with the American Farmland Trust. This project is a part of the implementation of the county's Farmland Protection Plan. A goal of the study is to create a system that will identify key farmlands suitable for a countywide purchase of development rights (PDR) program. The program will allow privately owned land currently utilized for agricultural uses to continue in this manner while allowing landowners to obtain the financial gains that development of the property may have created.

Commercial development, like this scene along Route 11 in LeRay, has increased significantly in the last 20 years and often occurs at the expense of farmland.

Like the Town of LeRay, municipalities can also address farmland preservation locally as part of their Comprehensive Plan. It is important that local plans identify the importance of agriculture and ensure that zoning and land use regulations are supportive of the needs of farmers and related agricultural support businesses such as veterinarians, tractor sales, and feed sales. Without adequate support lands and businesses, farming is a difficult endeavor.

Community Support

Providing healthy, safe and inviting communities in which soldiers and their families can thrive is vital to the military's mission. It is important for the Army and local communities to work together to continue improving the quality of life for soldiers; to maintain recruiting and retention rates for the military; and to continue to welcome guests to the communities in which the military locates post facilities.

Educational systems are central to families' well being, and provide a stable environment during periods of deployment. Many school districts in the Fort Drum region are seeing a growth in enrollment numbers. As mentioned previously, Starbuck Elementary School in Watertown re-opened in large part to serve Fort-related growth. This is not uncommon, especially in communities that were losing population prior to military growth. Growth at Fort Riley in Kansas, for example, resulted in once-closed schools in the Manhattan-Fort Riley area re-opening their doors. Another result of the continuing growth of education in the region is the growth of Jefferson Community College (JCC), both on post, and at their main campus in Watertown.

Military spouses and family members may look to a community for economic opportunities. Some may join the labor market as teachers, doctors or in other needed positions. For example, several military spouses have taught courses at JCC, including a military spouse that was the head of the Social Sciences Department at the college.[77] Others may pursue small business opportunities. One such entrepreneur is the spouse of a Fort Drum soldier who started her own coffee roasting business, the Black River Coffee Company in Paddock Arcade in Watertown. This community support has also led the Fort Drum region to be one of the leading areas for military retirement over the last several years. Retired soldiers have contributed their time and knowledge to benefit the community, whether it be by volunteering for local organizations, starting small businesses such as the Thousand Islands Winery, or by providing their knowledge to advance the skills of the North Country's children through the Troops to Teachers program, in which retiring or separating soldiers transition into the role of school teachers.[78] Local investment buoys the Fort Drum region economy and enriches quality of life.

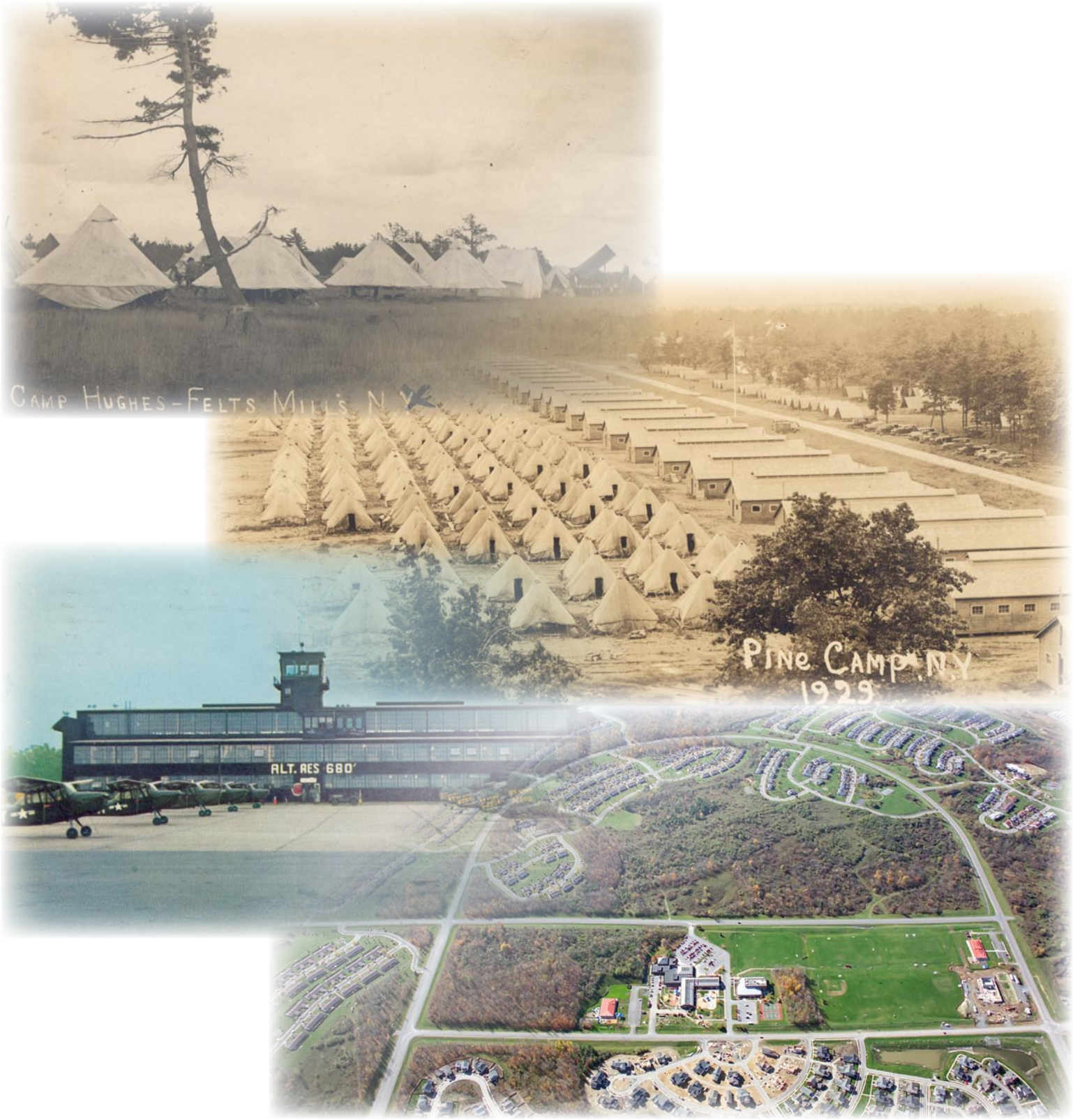
The Black River Coffee Company in Watertown was started by the spouse of a Fort Drum soldier.

Fort Drum's Public Affairs Office (PAO) helps facilitate community interaction and outreach. On a regular basis the Fort receives requests from local schools and organizations for color guards and special topic

[77]Interview with Dr. Carole McCoy and Don Johnson, Jefferson Comm. College, Jan. 27, 2008
[78]Troops to Teachers Retrieved on April 11, 2008, from http://www.dantes.doded.mil/dantes_Web/troopstoteachers/index.asp

speakers. The PAO currently handles approximately 200 requests per year for Fort Drum soldiers to meet with community groups and organizations and provide these services in the region. In addition, the Fort hosts a community day in June, called Mountainfest, in which the community is invited to visit and experience the Fort. Mountainfest is the largest community event on-post and includes activities, band concerts and fireworks.

As this 2006 image shows, community borders are merely lines on a map, when they are removed the commonality between the communities makes it nearly impossible to distinguish one town or one county from the next. Image Source: USDA NRCS


CAMP HUGHES-FELTS MILLS N.Y.
PINE CAMP, N.Y.
1929
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CONCLUSION

While boundaries may officially divide Fort Drum and the surrounding communities in the region from one another, in reality the strong ties that have been forged over the years, and the common interests and goals they share for the future, unite them. For instance, Fort Drum depends on the surrounding communities to house many of its personnel and educate its school-age children. The region's excellent schools and overall high quality of life play an enormous role in maintaining the morale of its personnel and their families. And with the Army's "Force Stabilization" policy, Fort personnel will be assigned to Fort Drum for longer periods of time – 5 to 7 years – allowing personnel and their families to become more invested in the communities in which they live.

The relationship goes both ways – just as Fort Drum benefits from and needs the communities that surround it, so to do the communities benefit from Fort Drum. The Fort has brought economic activity to the region that has manifested itself in a number of ways, including new jobs and shopping and retail choices. This increase in economic activity has provided more opportunities for the region's young people to stay and build lives and careers in the places that they have grown up in. In fact, it is hard to imagine the region without Fort Drum, so pervasive is its influence and so intertwined is it in the daily lives of residents.

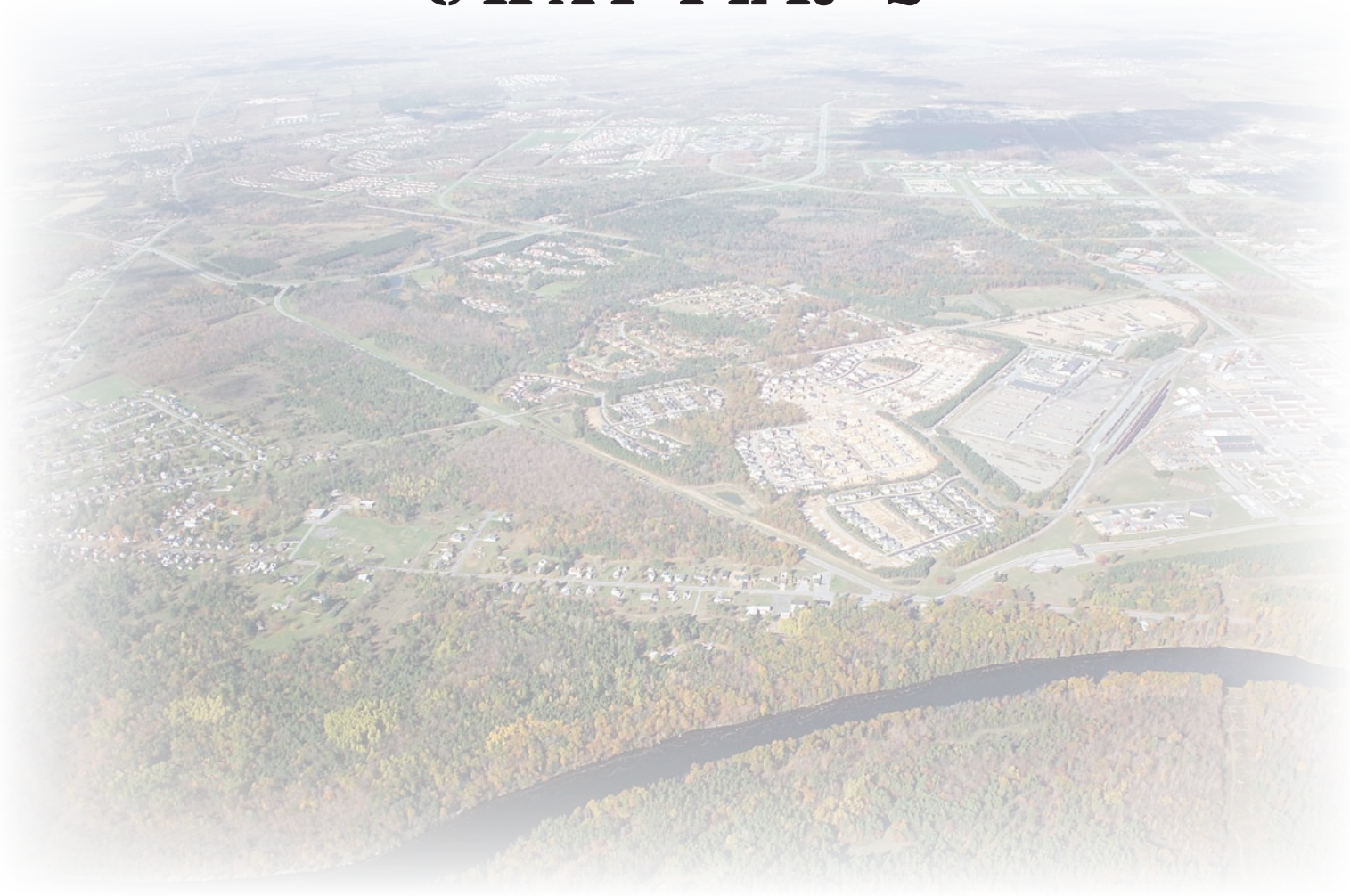
This project is about ensuring the continued success of Fort Drum and its surrounding communities. For Fort Drum, the most important element of "success" is to maintain its ability to train personnel so that they are prepared to carry out their missions. Good land use decisions and practices in the communities surrounding the Fort can help to ensure that the Fort will continue to be a premier training facility for many years to come. The communities, working together cooperatively and thinking in regional terms, can also position themselves to take full advantage of the opportunities that Fort expansion and growth presents.

By its very nature, planning in a "Fort environment" poses challenges. Fort activities are directly related to political and world events and military technology and practices are constantly evolving. Clear, on-going communication between Fort Drum and the communities that surround it is perhaps the most important key to success in this dynamic environment. Flexibility and a long-term, regional perspective will help to ensure that the decisions made today will stand the test of time and yield results that all can be proud of tomorrow.

FORT DRUM GROWTH MANAGEMENT STRATEGY

FORT DRUM GROWTH MANAGEMENT STRATEGY

CHAPTER 2



ENCROACHMENT AND LAND USE PLANNING

Welcome to
WHEELER-SACK
ARMY AIRFIELD
MOUNTAIN
U.S. ARMY
FORT DRUM
VISITORS WELCOME

WHAT IS ENCROACHMENT?

Fort Drum serves as the premier Army training facility in the Northeast. Training activities at Fort Drum are essential to the installation's mission, and to our national security. However, training activities may also result in some undesirable by-products such as noise, dust and safety concerns. These by-products can impact adjacent businesses and residents who live near the Fort.

"Encroachment" is a term used to describe the impact of operational by-products on surrounding communities. Conversely, encroachment also describes the effects of a community's growth or land uses on military operations. In particular, civilian land uses such as higher density housing or public gathering places, that concentrate people near the Fort's operational areas, can threaten military operations. Ongoing complaints about training noise and night flights can place pressure on Fort Drum to modify current operating procedures, thus reducing realistic training capabilities and compromising the Fort's ability to fulfill its mission and role in protecting the country. Ultimately, encroachment issues can put a military installation at risk of closure.

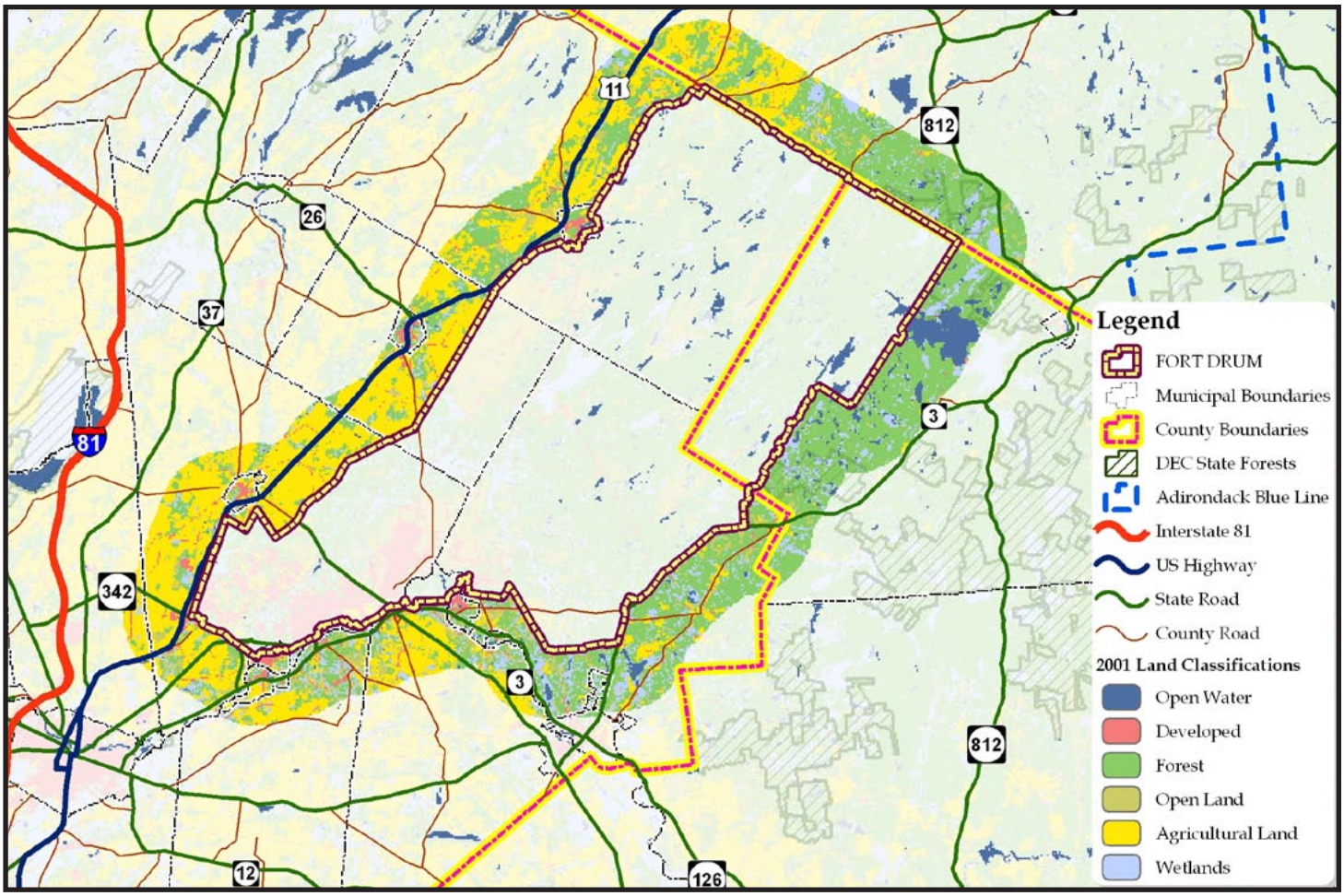
Incompatible growth and development around the Fort's borders can also become a burden to communities. Local governments and staff often find themselves on the receiving end of noise complaints from residents and landowners in Fort border areas. New landowners and residents, in particular, may hold their local government responsible for resolving such complaints, despite the fact that the local government is rarely in a position to do so and that the noise in question most likely predates the new development and residents.

While Lake Bonaparte is an idyllic setting for cottages and vacation homes, the area is periodically subjected to high noise levels associated with training at Fort Drum.

Planning Boards and Town Boards can also be brought into unnecessary conflict with applicants when incompatible development projects, often permitted under current zoning regulations, come before them for review and approval. Since Fort Drum can only play an advisory role in a local municipality's development review process, the final decision on whether to permit an incompatible use rests with the local municipality. Local development regulations that identify compatible uses around the Fort borders from the "get-go," help to ensure that such situations do not arise.

Today, the Fort has relatively few encroachment issues. Land use surrounding the installation is largely rural in nature, with small concentrations of residential, commercial and industrial uses, largely in established village and hamlet areas and several commercial corridors. As depicted on Map 2.1, within a two-mile envelope surrounding Fort Drum, nearly 74 percent of the surrounding area is either agricultural or forest land, according to USGS data on land cover.[79] Thus, Fort Drum and surrounding municipalities are ideally situated to work together today to avoid encroachment problems tomorrow. The following section provides information on the nature and location of potential encroachment around Fort Drum, which can serve as a foundation for taking steps to avoid such problems in the future.

[79]USGS National Land Cover Database 2001, produced by the Multi-resolution Land Characteristics Consortium



Map 2.1 - Today, the Fort has relatively few encroachment issues. Land use surrounding the installation is rural, with small concentrations of residential, commercial and industrial uses in the village areas. Within a two-mile envelope surrounding Fort Drum, nearly 74% of the surrounding area is either agricultural or forest land.[80]

Encroachment Concerns at Fort Drum

The encroachment concerns at Fort Drum primarily relate to activities that are happening either on the ground or in the air. Encroachment of land uses in range and training areas can be a concern primarily due to noise. With respect to the Wheeler-Sack Army Airfield (WSAAF), encroachment concerns pertain to both noise and safety. Other encroachment issues for the Fort include air space intrusion by tall structures and light impacts to night training activities. Encroachment is discussed in more detail below.

Land Use Conflicts with Training Exercises in the Range Areas

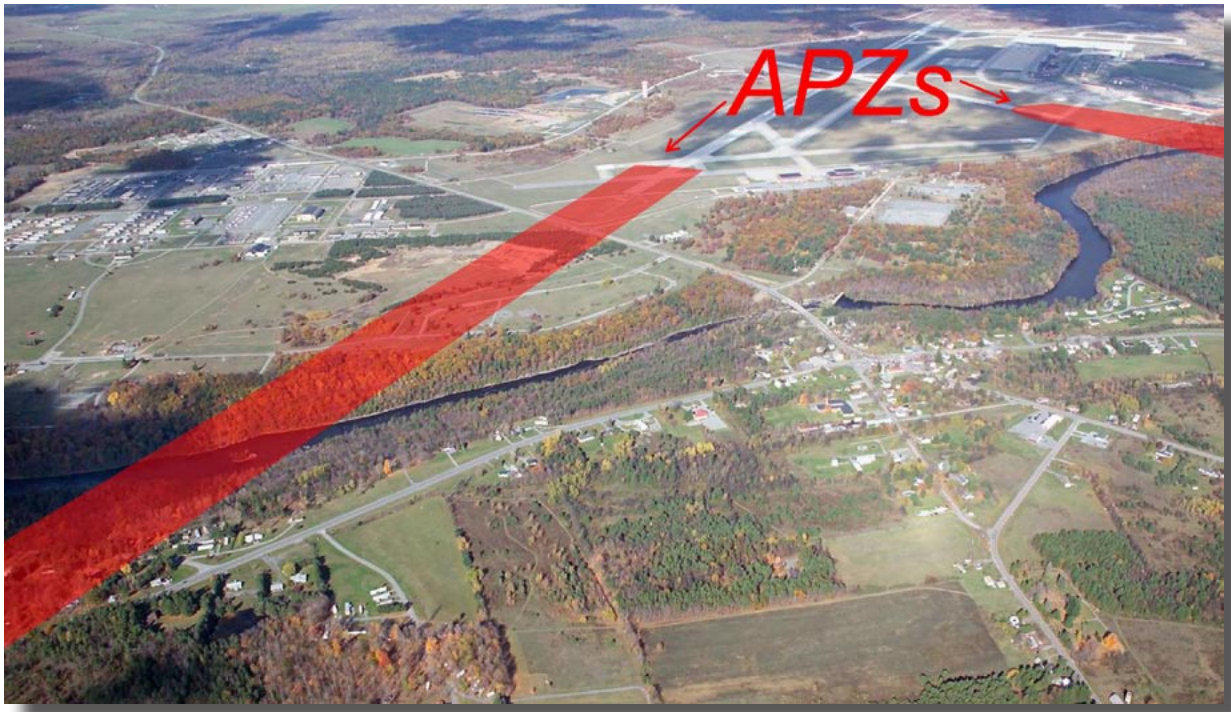
The range and training area occupies almost 97,000 acres of the eastern portion of Fort Drum, northeast of WSAAF. A smaller area of about 16,900 acres is known as the "main impact area," where heavy artillery shells and bombs are detonated. Range 48, located at the northeast corner of the installation, is regularly

[80]USGS National Land Cover Database 2001, produced by the Multi-resolution Land Characteristics Consortium

used to coordinate air-to-ground bombing and gunnery practice. In several areas around the periphery of Fort Drum, these activities produce off-post noise levels that are high enough to cause potential conflicts with land uses in the surrounding communities. These potential conflict areas are examined in more detail, both at a Fort scale and on a case-by-case basis later in this chapter.

Land Use Conflicts with WSAAF Operations

WSAAF's 2,200-acre footprint includes two runways, which are used by the Air Force and Air National Guard for training missions, as well as for routine Fort Drum operations, including delivery of supplies. Aircraft landing and taking off from WSAAF can produce noise, which can be a problem in areas with higher-density development, particularly near the Hamlets of Great Bend and Felts Mills and the Village of Deferiet. Also of concern with WSAAF is the increased potential, while highly unlikely, for aircraft accidents. These areas of concern are represented by "Accident Potential Zones (APZs)" – the areas surrounding the airfield runway where an aircraft accident would most likely occur. The Accident Potential Zones associated with the WSAAF runways extend into the communities south of the Fort, the most notable of which extends for over a mile along the Rutland-Champion town line. Potential conflict areas with respect to Noise and Accident Potential Zones are described in more detail beginning on Page 80.



One potential conflict around Fort Drum is development within Accident Potential Zones (APZs) such as seen here near the Hamlet of Great Bend.

Light Pollution

Night missions provide the modern Army with a tactical advantage, especially in the Global War on Terrorism. Night vision flight training, in which aviators use night vision goggles or other types of night vision systems, is essential to the missions of the modern military. Night vision systems are designed to

operate away from civilization and electric lighting. Exposure to stray light can cause the vision screen to white-out, temporarily robbing the user of vision. In some cases, light pollution can hinder night training to such an extent that training facilities and operations must be relocated or discontinued altogether.

Outdoor lighting systems associated with buildings and development often allow significant light to travel upward into an otherwise darkened sky. The resulting "light pollution" can obscure pilot vision or interfere with the use of night-vision training devices. Reducing light pollution is not only good for the Fort, but good for the environment. For instance, high levels of light are believed to interfere with the behavior patterns of a number of species, particularly those that are active at night, such as lightning bugs. Darker skies also make it easier for people to sleep at night and view the stars.

Two typically large contributors to light pollution are interstate interchanges and exterior security lighting associated with large buildings. Light pollution, however, can be created by the cumulative impact of light from both large and small sources.

Airspace Encroachment (tall structures)

Cell towers and wind turbines can physically intrude into active air space, particularly for aircraft participating in low altitude operations. Communications towers may also be a source of electromagnetic "noise," which may affect military avionics and radio frequency dependent weapons systems and communications. Adequate radio frequency spectrum is essential to almost all aviation and military operations. Civilian radio frequency devices (e.g., radios, radars, keyless entry devices) can sometimes transmit in military assigned frequencies, affecting electronic systems and communications equipment. Large radio spectrum users like radio stations can significantly affect military operations and should be coordinated with the Fort prior to approval.

MAPPING ENCROACHMENT

Avoiding encroachment conflicts starts with knowing where such conflicts are most likely to arise. Representing potential conflict areas visually on maps is an effective way to communicate the location of potential problem areas. Ultimately, a clearer understanding of the locations of potential conflict areas serves as a solid foundation for both the communities and Fort Drum to take the appropriate actions to minimize conflicts and encroachment in the future. A common set of maps that is shared between the Fort and the communities, also ensures that both parties are working with the same data. The following section analyzes and geographically depicts the potential conflict areas with respect to noise associated with Fort Drum training and operations, and with respect to noise and safety concerns associated with the landing and take-off of aircraft at WSAAF.

Noise Zones

In a world of constant natural and man-made sounds, those sounds perceived as noise, which can be construed as unwanted sound, vary among people in the community. Noise generated at Fort Drum emanates from many sources, including small arms firing, mortar, tank gun and artillery firing and impacts, pyrotechnic devices, aircraft and heavy-tracked vehicles. The following section describes the measuring and mapping of such noises and their implications for land use planning in the communities surrounding Fort Drum and for Fort decisions about training and operations activities.

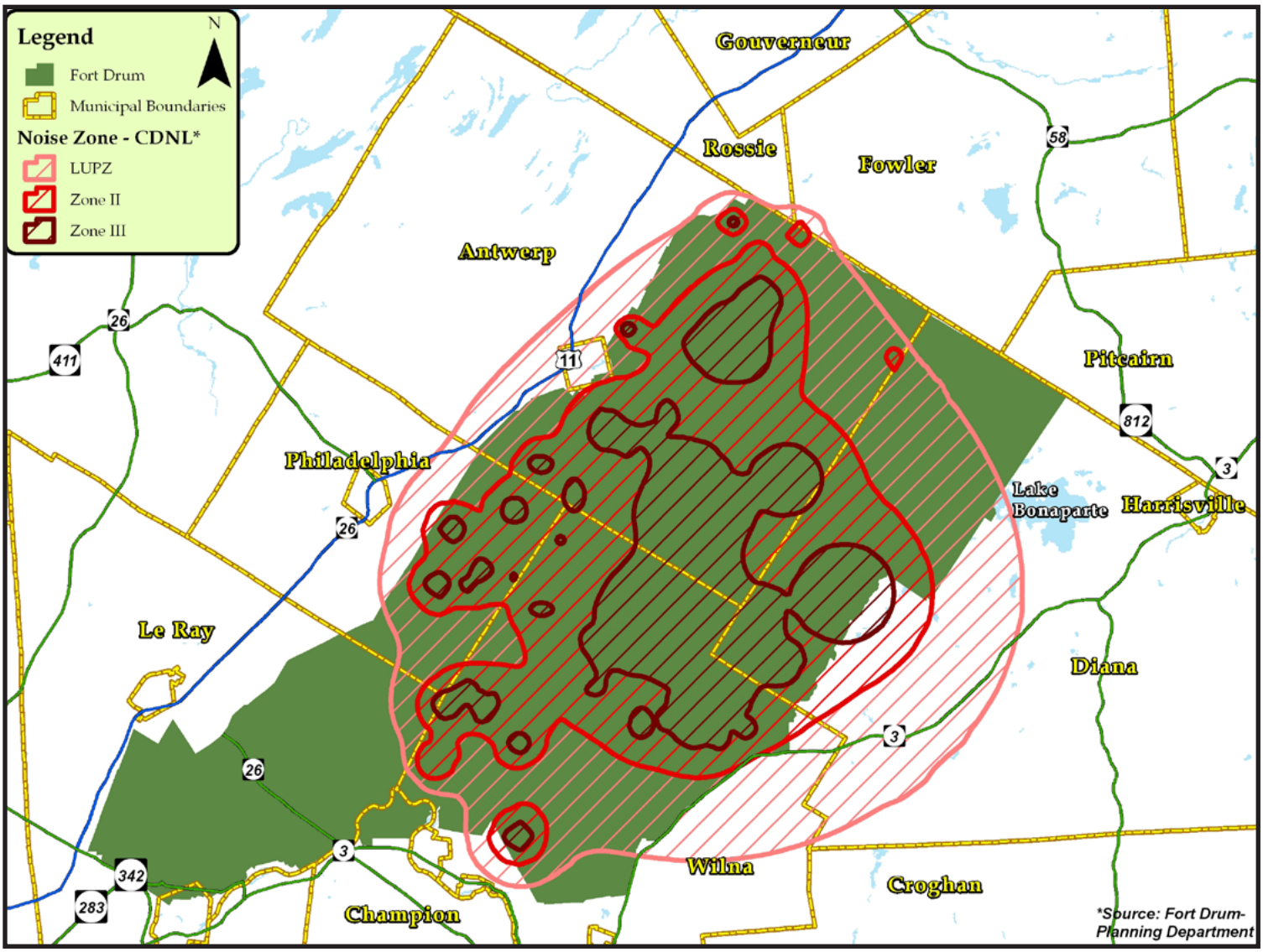
To measure environmental noise, the Department of Defense uses a widely accepted evaluator, the day-night sound level (DNL). The day-night sound level describes the average daily acoustic energy over the period of one year - meaning it averages moments of quiet with moments where loud noises can be heard. A computer program takes the DNL value at various points on and around the Fort and creates noise contours that the communities and Fort can use to predict where the most significant noise conflicts will occur most frequently.

Bombing practice from aircraft such as this A-10 Warthog create very loud, but infrequent noise that extends well beyond the Fort's borders.

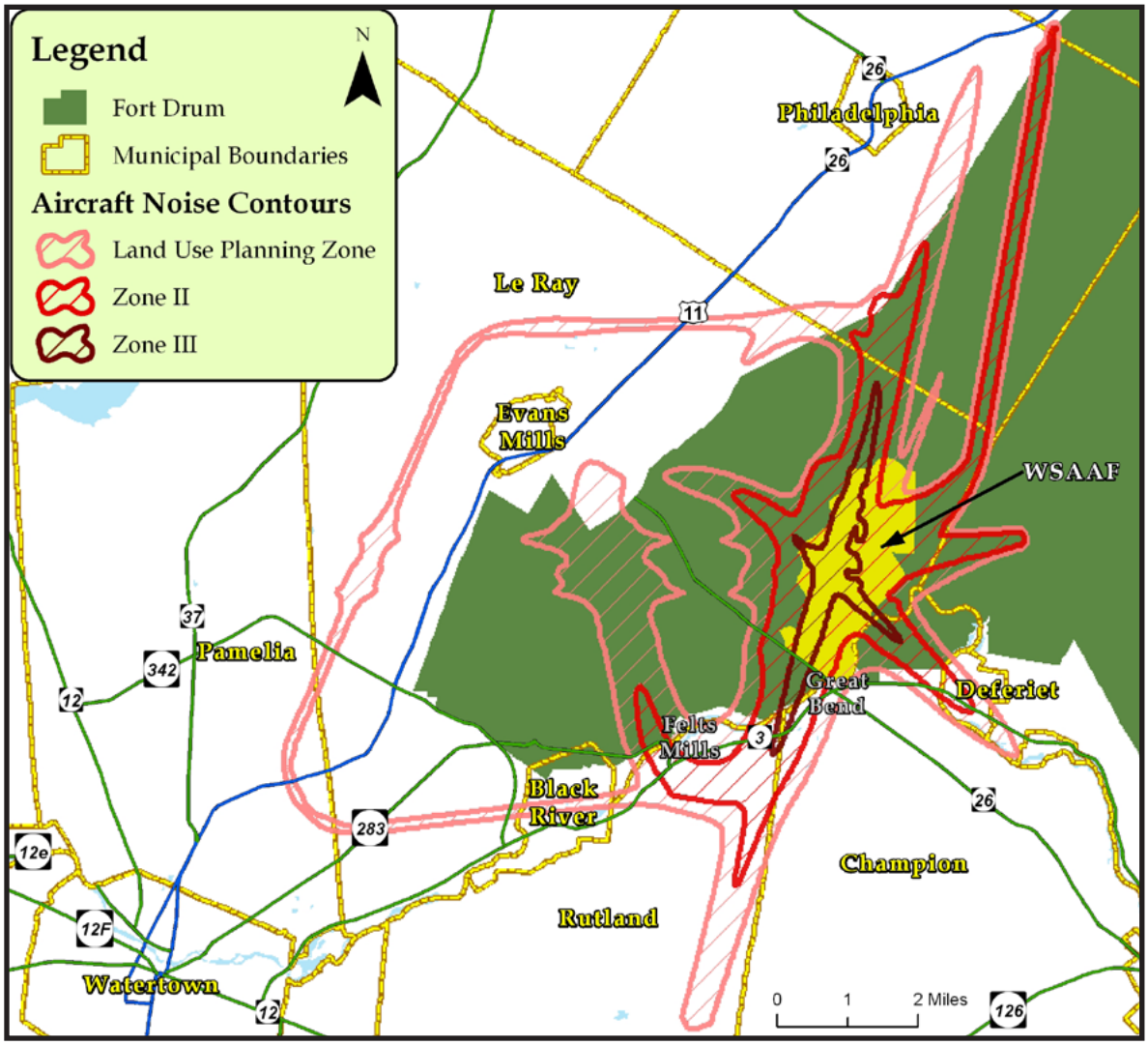
There are two types of noise in the DNL measurements: (1) noise that people hear and (2) noise that people feel. Noise that people hear is "A-weighted" and is measured in A-weighted decibels (dBA). Appendix C contains a chart of commonly heard sounds and their associated dBA levels. "C-weighted" noise, in contrast to A-weighted noise, is "felt" rather than heard. Noise that is felt can cause more potential conflicts because of the vibrations that it produces. For example, 75 decibels dBA (A-weighted), approximately the sound of a dishwasher, is not perceived as a loud noise to most listeners; however 75 dBC (C-weighted) noise, which is felt rather than heard, could be problematic as people

are more sensitive to lower frequency, felt noise. Some studies have shown increased stress levels when people are constantly subjected to low frequency noise as low as 40 dB.

To assist the surrounding communities in land use decisions, Fort Drum separates potentially disruptive noise into the following three "Noise Zones," which represent increasingly severe levels of noise: Land Use Planning Zone (LUPZ), Noise Zone II and Noise Zone III. Map 2.2 depicts the locations of these Noise Zones at a Fort-wide scale with respect to training activities in the Fort's range area. Map 2.3 depicts these same Noise Zones with respect to aircraft taking-off and landing from WSAAF. As shown on both maps, in certain areas along the Fort-community border, high noise levels "spill over" into the surrounding communities. Each of these "spill-over" areas are discussed and described individually in more detail beginning on Page 80.



Map 2.2 - Demolition and Large Caliber Operational Noise Contours with associated land use classifications depicted which are located within the noise zones.



Map 2.3 - Wheeler-Sack Army Airfield Operational Noise Contours.

The potential for conflicts between Fort Drum activities and land uses in the surrounding communities is highest in Noise Zone III, but is also of concern in Noise Zone II and the Land Use Planning Zone. The decibel level range and the land use implications for each of the Noise Zones are set forth below:

Land Use Planning Zone (LUPZ) - This is an area around a noise source which is between 60 and 65 dBA or between 57 and 62 dBC and acts as a buffer where the noise could reach Noise Zone II levels during periods of increasing operations. The LUPZ is intended to provide the Fort and communities with an adequate buffer for land use planning. Specific planning and zoning policies in the LUPZ can help to reduce conflicts between installation noise-producing activities and the civilian community, particularly during periods of increased operations. In general, low-density, compatible land uses, such as agriculture should be encouraged in the LUPZ. The expansion of services should be avoided in the LUPZ, as this would encourage higher-density growth. Other tools such as real estate disclosure can also be used decrease conflicts associated with Fort operations. To ensure that encroachment is avoided to the

maximum extent practicable, some communities may wish to treat the LUPZ as Noise Zone II, limiting the same types of land uses in the LUPZ that are considered incompatible in Noise Zone II.

Noise Zone II - This area is considered to have significant noise exposure and is normally unacceptable for noise sensitive land uses such as schools, churches and high-density housing, where high-densities of people are living or congregating near the area exposed to noise. It consists of an area in which the DNL is between 65 and 75 dBA or between 62 and 70 dBC. Noise Zone II is primarily within the boundaries of Fort Drum, although there are some areas where Zone II spills out into adjacent communities such as the Towns of Wilna, Diana, Champion and Rutland. Guidelines for compatible and incompatible land uses within Noise Zone II are set forth in Table 2.1.

Noise Zone III - This is an area around the source of noise in which the DNL is greater than 75 dBA or 70 dBC. This zone is considered an area of severe noise exposure and is unacceptable for noise sensitive activities. There are two areas within the region where Noise Zone III extends beyond the boundaries of Fort Drum. The first area is associated with WSAAF and includes portions of the Towns of Rutland and Champion. The second area is associated with Fort Drum training activities and includes a portion of the Town of Diana. Guidelines for compatible and incompatible land uses in Noise Zone III are set forth in Table 2.1.

Table 2.1: Land Use Compatibility Guidelines for DNL Noise

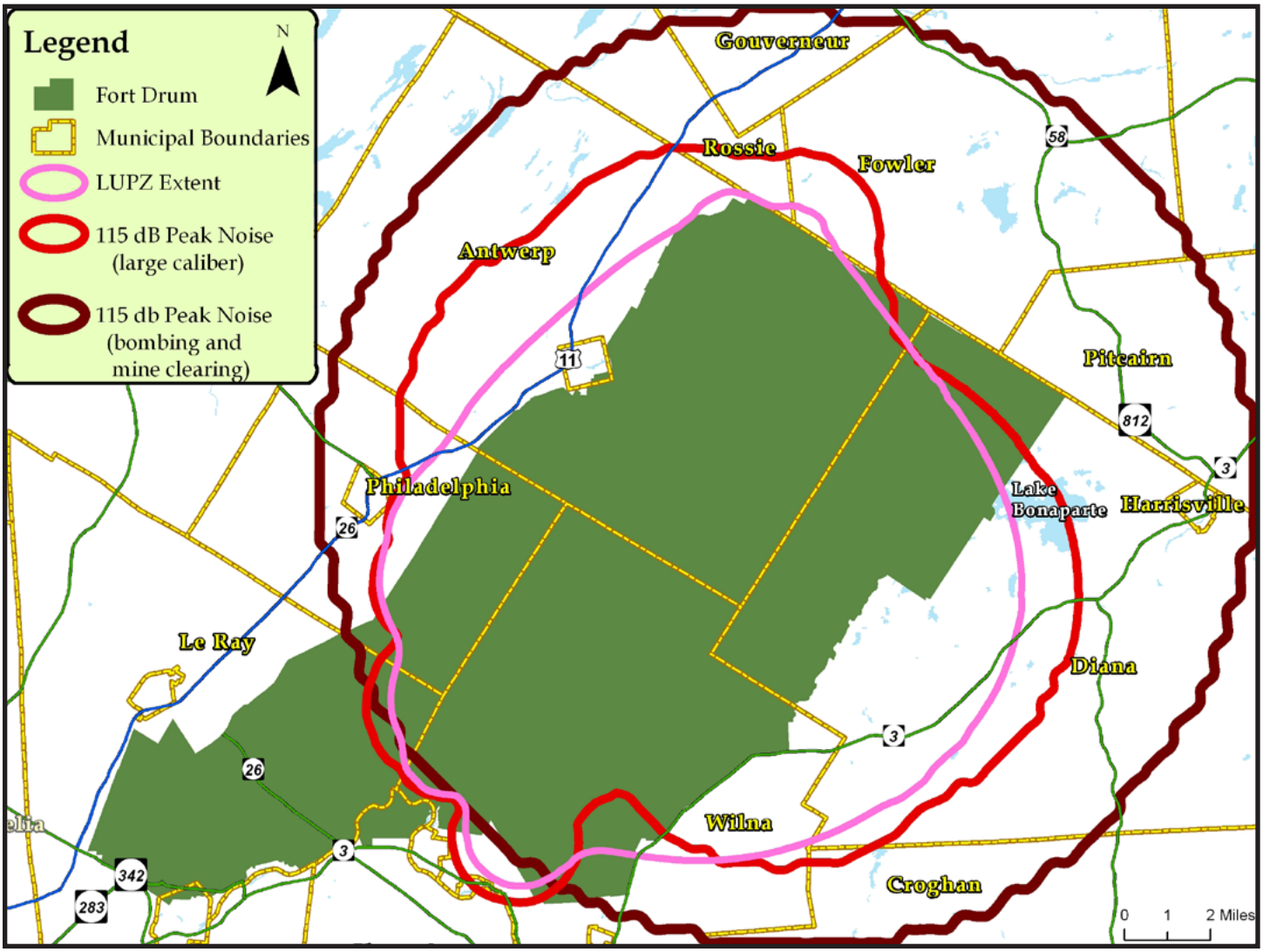
Land Use	Noise Zone II		Noise Zone III	
	65 to 70 dB	70 to 75 dB	75 to 80 dB	80 to 85 dB
Households	Y	Y	N	N
Manufacturing	Y	Y	Y	Y
Retail – General	Y	Y	Y	N
Restaurants	Y	Y	Y	N
Personal Services	Y	Y	Y	N
Hospitals	Y	Y	N	N
Government	Y	Y	Y	N
Education	Y	Y	N	N
Public Assembly	Y	N	N	N
Parks	Y	Y	N	N
Agriculture	Y	Y	Y	Y

This table illustrates the types of land uses that may be incompatible with noise around Fort Drum. The green cells indicate compatibility, the orange cells indicate possible compatibility that may depend on the specific use within the general category (for example within Agriculture row crops would be compatible, however a dairy farm may not), and the red cells indicate uses that are incompatible.[81]

[3]Federal Interagency Committee on Urban Noise land use guidelines, 1980

Peak Noise Levels vs. DNL (average) Noise Levels

In addition to modeling Noise Zones based on DNL (day and night noise levels averaged over the year), the Fort also models Peak Noise Levels. Peak Noise contours were created for both daily Fort operations, as well as infrequent, but very loud activities, such as dropping of live bombs, and mine clearing practice (see Map 2.4). Peak noise levels are significantly higher and extend further from Fort Drum than the DNL Noise Zones described above. It should also be noted that people will hear noise beyond the Peak Noise Level contours shown on Map 2.4. However, decision-making and actions to avoid encroachment should be based on the DNL, as it represents an average noise level at any given time, rather than a less



Map 2.4 - There are three primary noise areas that the communities should be aware of as shown on this map. The LUPZ shows the communities where the potential of average noise level conflicts could arise. The large caliber peak noise shows where the maximum area of 115 dB noise resulting from artillery operations at the Fort will occur 85% of the time. The noise contour with the largest extent (up to 7 miles from the Fort boundary) shows where the maximum area of 115 dB noise resulting from bombing and mine clearing will occur 85% of the time. (Data Source Fort Drum Planning Department)

frequent Peak Noise Level. As always, individual people may possess different tolerance thresholds for acceptable and unacceptable noise levels, even beyond DNL and Peak Noise Zones.

The C-5 Galaxy (top) and the F-16 Falcon (right) are two of the primary contributors to noise at WSAAF.

Land Use Compatibility

Understanding the extent of the Fort's Noise Zones, and the types of land uses that are compatible within them is important for the quality of life of local residents and the ability of the Fort to carry out its mission. Locating incompatible uses within Noise Zones can create undue stress and avoidable conflicts from both the Fort and community perspective. Table 2.1 identifies compatible and non-compatible land uses associated with Noise Zone II and Noise Zone III.

In general, noise-sensitive uses such as housing, schools, places of worship, medical facilities, community centers, day care facilities, senior housing, or industrial uses where noise or vibration would present a problem (such as microchip fabrication), should not be located in Noise Zone III. Thus, local zoning regulations should be evaluated and where feasible, these types of uses should not be allowed in zoning districts that fall within Zone III. This could be accomplished, for example, through a "Fort Drum" overlay zoning district or through modifications to existing districts. These tools are further discussed later in this chapter.

Within Noise Zone II and the Land Use Planning Zone, noise-sensitive uses are generally not recommended. They should be evaluated on a case-by-case basis in close coordination with the Fort.

Accident Potential Zones

WSAAF's 2,200-acre footprint includes two runways, which are used by the Air Force and Air National Guard for training missions, as well as for the routine delivery of supplies to the Fort. Aircraft landing and taking off from WSAAF can produce noise, which can be a problem in areas with higher-density development, such as near the Hamlets of Great Bend and Felts Mills and the Village of Deferiet. Also of concern with WSAAF is the potential, while highly unlikely, for aircraft accidents in certain areas. These areas of concern are represented by "Accident Potential Zones (APZs)" The APZs associated with the

WSAAF runways extend into the communities south of the Fort. The most notable is the APZ that extends over a mile along the Rutland-Champion town line. APZs are further subdivided into the Clear Zone, APZ I and APZ II. Appropriate and inappropriate land uses for each of these zones are identified in Table 2.2.

Table 2.2: Land Use Compatibility Guidelines, APZs

LAND USE	CLEAR ZONE	APZ I	APZ II
Single Family Unit	N	N	Y
Multifamily Dwellings	N	N	N
Manufacturing	N	N	Y
Trans, Comm and Utilities	Y	Y	Y
General Retail	N	N	Y
Restaurants	N	N	Y
Personal Services	N	N	Y
Other Services	N	N	Y
Government Services	N	N	Y
Educational Services	N	N	N
Cultural Activities	N	N	N
Medical Services	N	N	N
Churches	N	N	N
Playgrounds	N	N	Y
Regional Parks	N	Y	Y
Assembly Areas	N	N	N
Other Outdoor Recreation	N	Y	Y
Agriculture	Y	Y	Y
Livestock Farming	N	Y	Y
Forestry Activities	N	Y	Y
Permanent Open Space	Y	Y	Y

This table illustrates the types of land uses that may be incompatible with APZs around Fort Drum. The green cells indicate compatibility, the orange cells indicate possible compatibility that may depend on the specific use within the general category, and the red cells indicate uses that are incompatible. Based on the Federal Interagency Committee on Urban Noise land use guidelines (FICUN 1980)

For the most part, APZs that extend into the communities surrounding Fort Drum are classified as APZ II, with only a small area covered by APZ I. The Clear Zone, the area of highest concern, is entirely contained within the borders of Fort Drum. The locations of APZs associated with WSAAF are depicted on Map 2.11.

"Zooming-In" on Areas of Concern

The following series of "zoom-in" maps focus in on specific areas at the Fort-community border where either of two contours extend out into the communities:

(1) Noise Zone II or Noise Zone III; and/or
(2) Accident Potential Zones

While Fort-scaled maps were previously presented, this section provides more detail through a series of zoom-in maps. In addition to Noise Zones and Accident Potential Zones, the zoom-in maps depict existing community land use patterns.

Existing land uses and local zoning codes for affected communities were reviewed against the land use compatibility tables for both Noise Zones and Accident Potential Zones (see Tables 2.1 and 2.2). The compatibility tables indicate if typical land uses (residential, retail, manufacturing, etc.) are compatible or incompatible within a given Noise Zone or Accident Potential Zone. For each conflict area, uses permitted by local zoning that are, or may be, incompatible have been identified. It should be noted that this analysis is generalized in nature and does not take into account local variations on how the zoning code is interpreted and/or applied. Because local communities often use different land use terms than those set forth in the compatibility tables, a certain degree of interpretation was undertaken in the analysis to fit local land use terms into the terms used in the tables.

It should also be noted that each of the "zoom-in" maps below also depict Land Use Planning Zones (LUPZs) – the buffer zone associated with Noise Zone II and III contours. General recommendations for land use planning in the LUPZ were provided on Page 73.

Zoom-In Maps

The "zoom-in" maps focus in on specific areas along the Fort-community border where encroachment is of particular concern:

Map 2.6: Town of Philadelphia, Town and Village of Antwerp;

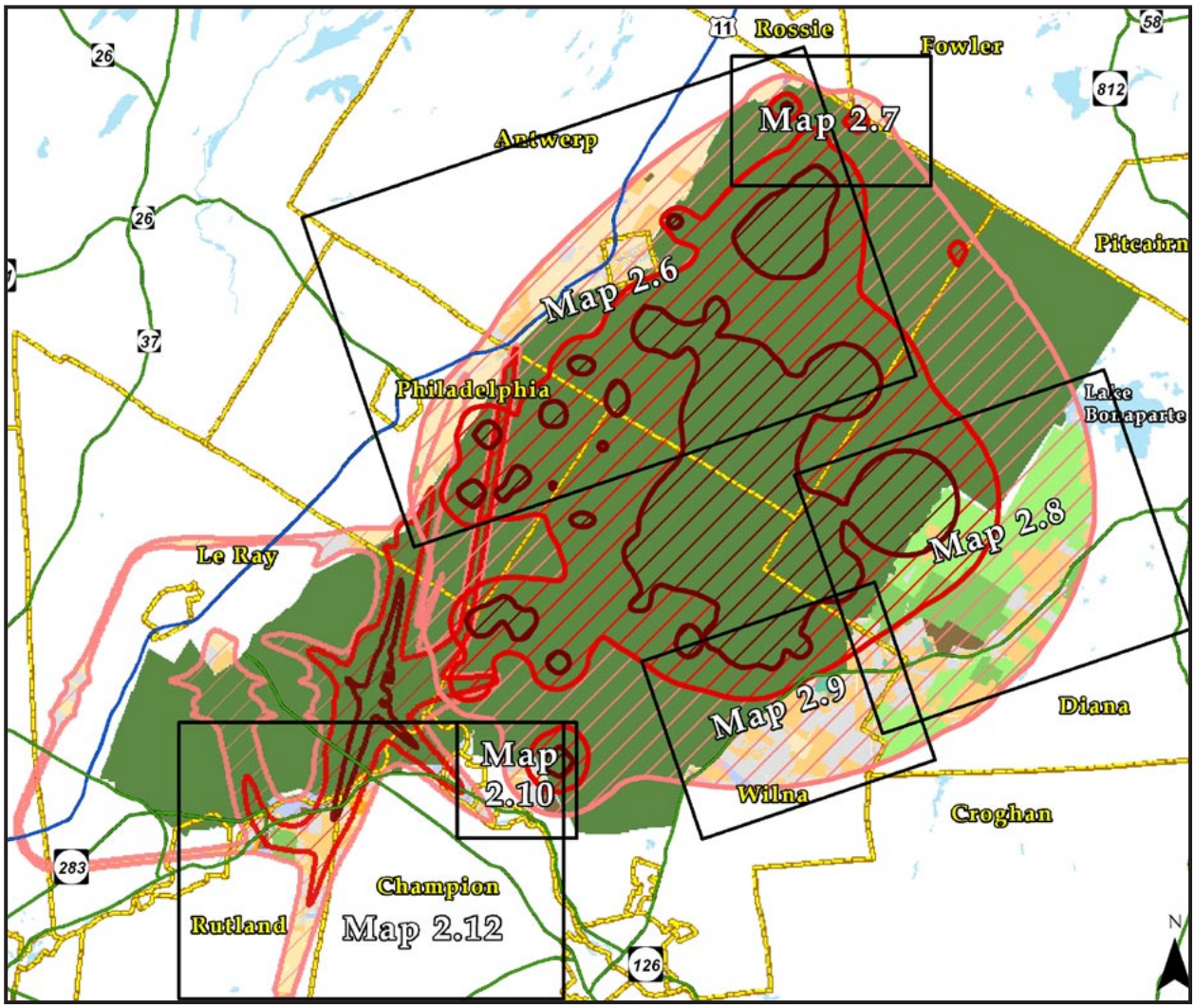
Map 2.7: Town of Rossie, Town of Fowler;

Map 2.8: Town of Diana, Lake Bonaparte;

Map 2.9: Town of Wilna, Town of Diana and Hamlet of Natural Bridge;

Map 2.10: Town of Wilna, Route 3A/County Route 36; and

Map 2.11 and 2.12: Route 3 Corridor: Towns of Rutland and Champion; Villages of Black River and Deferiet; Hamlets of Felts Mills and Great Bend.



Map 2.5 - Index map depicting location of "zoom-in" maps.

The "zoom-in" maps should be considered a starting point for communities who are looking to revisit their land use regulations to ensure they are more "Fort friendly." The Fort too can benefit from understanding where the most significant conflict areas are and consider ways in which their operations could potentially be modified to lessen impacts to the communities.

Rounds fired from mortars like this one contribute to the noise heard around Fort Drum. - Photo by Spc. Timothy J. Belt

Map 2.6: Town of Philadelphia, Town and Village of Antwerp

Map 2.6 covers a portion along the northwest Fort Drum border, including portions of the Towns of Philadelphia and Antwerp and the Village of Antwerp. This area is affected by noise from both large-caliber demolition and arms fire. With the exception of the Village of Antwerp, agricultural and low-density residential land uses are predominant in this area. These uses are compatible with Fort Drum's operations, and should continue to be supported in local land use and zoning regulations.

As shown on the map, very small portions of the Town of Philadelphia, along County Route 30, and of the Town of Antwerp south and northeast of the Village of Antwerp fall within Noise Zone II contours.

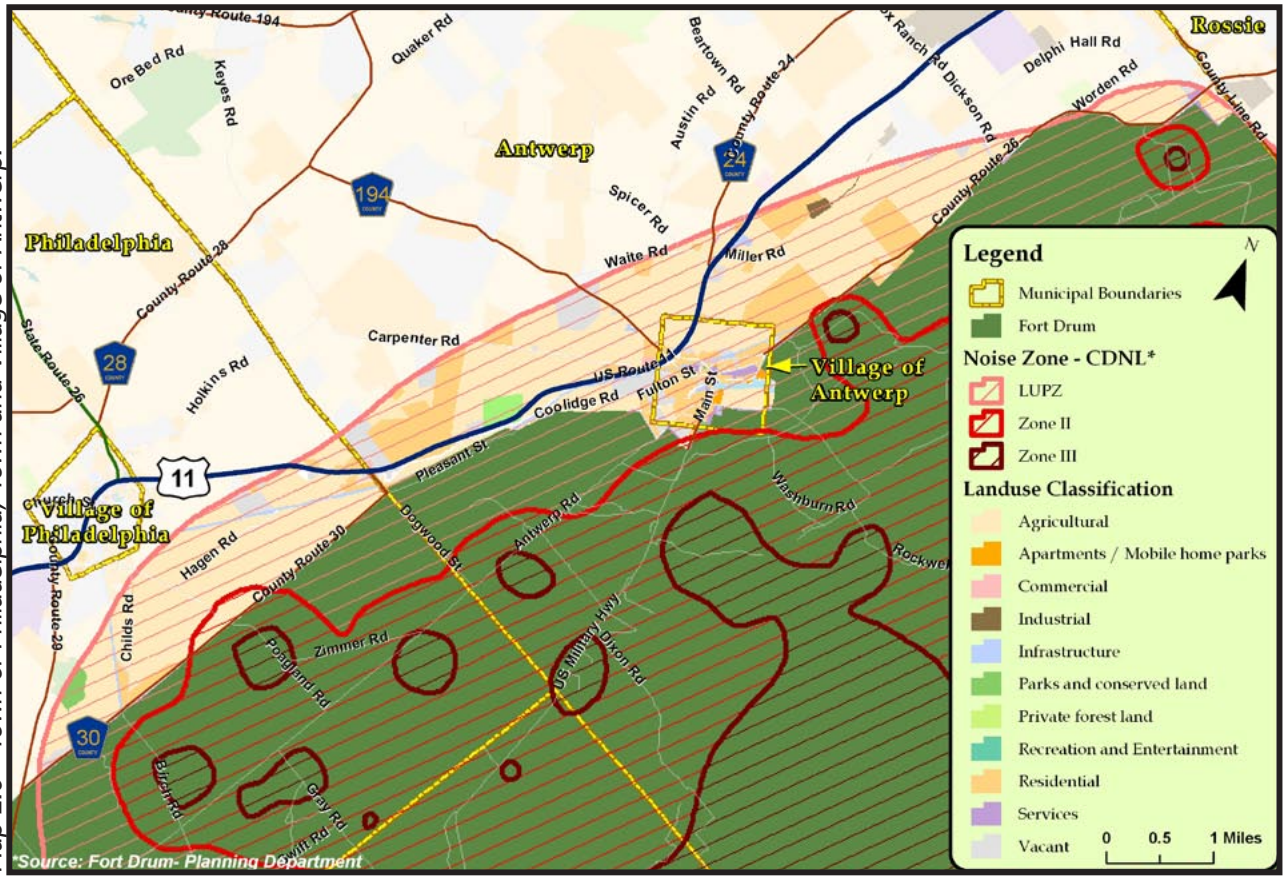
Within Noise Zone II, as shown in Table 2.1 many uses may not be compatible depending on the specific nature of the use and other variables such as how it is designed and located. For example, in areas of the towns that fall within Noise Zone II, these uses could require a special use permit to allow discussion among the planning board (or other permitting board) and Fort about the nature of the proposed use and any potential impacts or concerns. Sound attenuation techniques in building material and practices may also move some of these uses from questionable to compatible.

Although this report supports the concept of growing and revitalizing existing villages such as Antwerp, the proximity of the Village of Antwerp to the Fort border requires that local, regional, and Fort Drum goals must all be evaluated and considered before a plan is developed. Discussion and communication between Fort Drum and the community can help to ensure that both sides benefit from land use decisions with respect to the village.

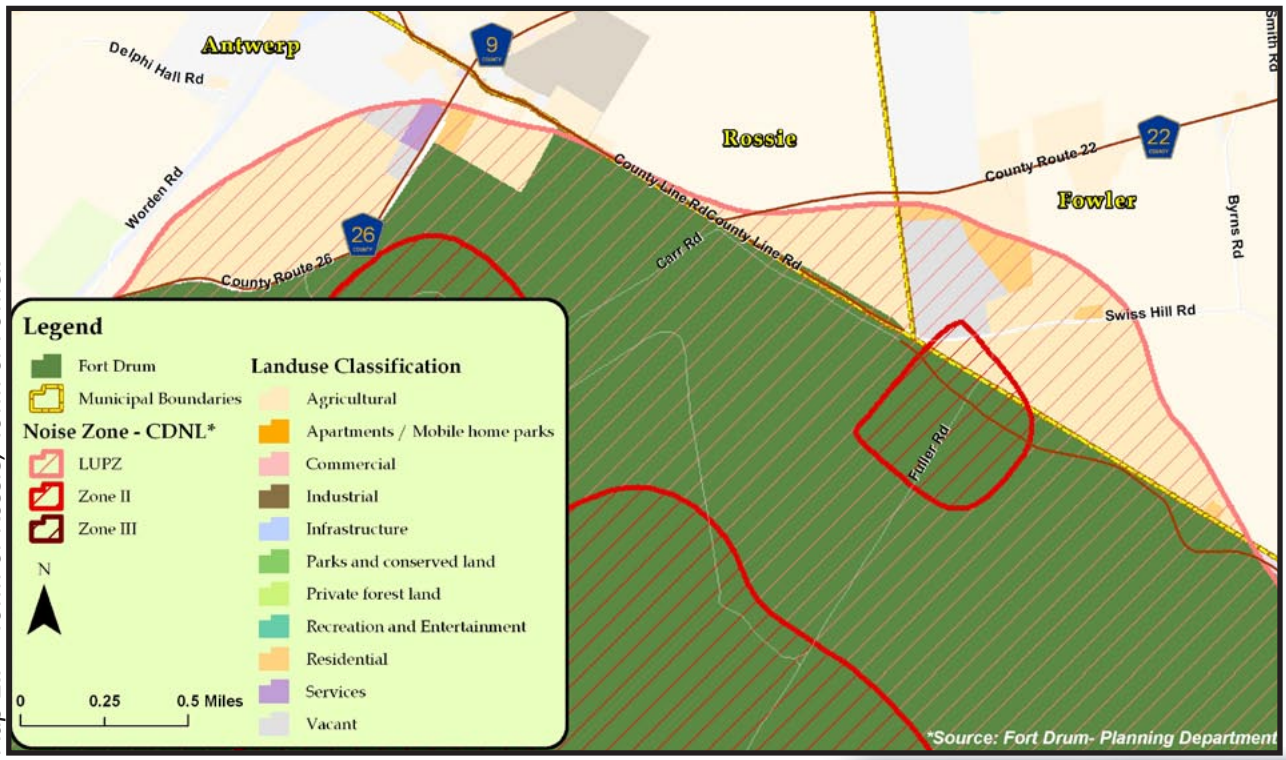
Map 2.7: Town of Rossie, Town of Fowler

Map 2.7 focuses in on a small portion of the Town of Rossie and Town of Fowler along the northern border of the Fort. In this area, a very small portion of Noise Zone II extends out into the towns, near the Rossie-Fowler town line. Land uses in this area – along County Line Road and Swiss Hill Road – are agricultural in nature. Agriculture is compatible within Noise Zone II and should continue to be supported in local land use and zoning regulations.

Neither the Town of Rossie nor the Town of Fowler possesses zoning regulations. Within Noise Zone II, as shown in Table 2.1, many uses may not be compatible depending on the specific nature of the use. The towns should consider adopting zoning or development regulations – if not town-wide, then at the very least to address land use compatibility in this specific area. Zoning regulations that set forth compatible uses will ensure that land use conflicts do not arise in this area.



Map 2.6 - Town of Philadelphia, Town and Village of Antwerp.



Map 2.7 - Town of Rossie, Town of Fowler.

Note: Land use classifications on the "zoom-in" maps based on parcel data obtained from the respective county planning departments.

Map 2.8: Town of Diana, Lake Bonaparte

Map 2.8 depicts Noise Zones for the Town of Diana and the Lake Bonaparte area, along the Fort's southeastern border. Areas in the Town of Diana between Steam Mill Road and the Fort border represent the only area around the entire perimeter of the Fort where Noise Zone III – the Noise Zone representing the highest noise levels – extends off-post and into the community. Noise Zone II also extends a significant distance, to approximately Arnoldville Road.

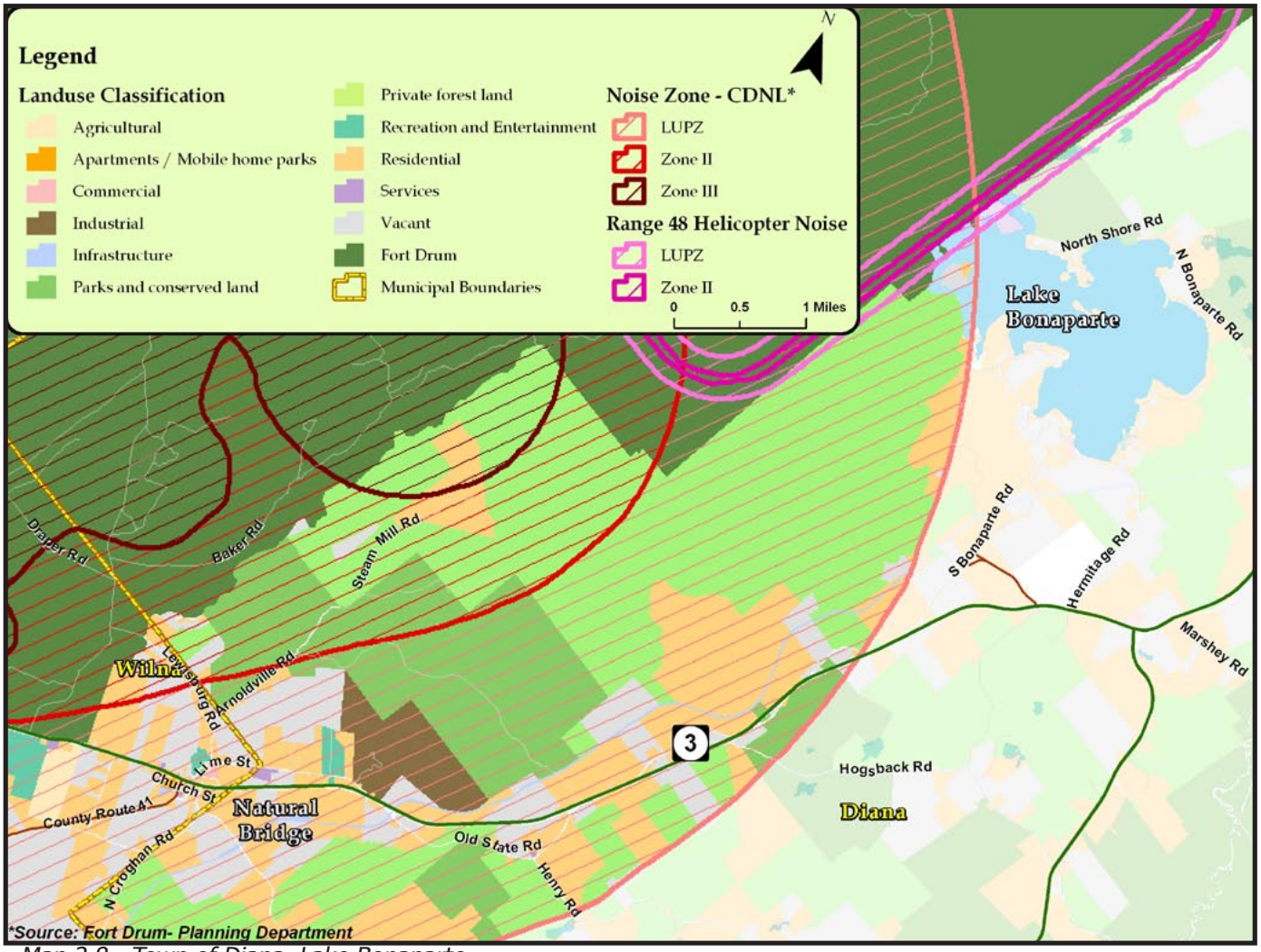
During the course of this project, a number of local residents corroborated the higher noise contours depicted for this area. While reported by individuals in almost every community around the Fort periphery, the most numerous accounts of foundation shaking noise – "It rattled the dishes right off my shelf" – originate from this area and further south and west towards Natural Bridge. Fortunately, the density of development and habitation in this area remains relatively low, although this fact may be of little consolation to existing residents. Most of the area is comprised of forestland or of various agricultural uses, in addition to low-density housing. Along the Lake Bonaparte shore, there are a number of seasonal homes and cottages, many of which predate the mid 1980s expansion of Fort Drum.

Opportunities to mitigate noise impacts in these areas should continue to be explored by the Fort, while the Town of Diana should review its zoning and development regulations. Table 2.1 indicates the degree to which basic land uses categories are compatible or incompatible within both Noise Zone II and Noise Zone III.

Lake Bonaparte and Harrisville residents have also reported high noise levels emanating from the Fort. While much of the area along the lake is outside of the primary Noise Zones for Fort Drum, seasonal use of areas at the northern end of the post by the NYS Air National Guard and US Air Force, particularly related to Range 48, can create extensive noise. These noise levels in peak periods are comparable to rock concerts or chainsaws, with aircraft flying at low altitudes toward the bombing range areas. Moreover, some people have speculated that the surface of Lake Bonaparte may act as an amplifier for certain noises. Noise contours for the Air Guard and Air Force have not been generated since while the noise is significant while it occurs, it is of too short a duration to cause an appreciable DNL. Map 2.4, which depicts among other things peak noise related to the air-to-ground bombing, can be used to get a sense of where noise related to aircraft use may be a problem in the range areas. Other noise generated in the area of Range 48 is related to the 10th Mountain Division's Air Brigade. As can be seen in Map 2.8 noise associated with the brigade helicopters reportedly goes just off the edge of the post, and the LUPZ does not approach the developed areas around Lake Bonaparte.

A set of 500 pound bombs and a pair of A-10 Warthogs - a noisy combination.

In recent years, Fort Drum and the community have been in dialogue over noise issues in the Lake Bonaparte area, in part through the creation of the Governor's Northern New York Military Airspace Committee. The committee, a regional



Map 2.8 - Town of Diana, Lake Bonaparte.

commission led by representatives from the NYS Department of Environmental Conservation and Fort Drum, is comprised of military, regional, and local officials from across the North Country, including Lewis County. According to the committee's charter, this organization meets periodically to discuss issues related to Air National Guard and Fort Drum aviation activities, seeking in part "…to assess and discuss the magnitude of conflicts that arise when the use of the air by the military affects the use of the air or ground by civilians or wildlife". It is anticipated that in future years, this committee will continue to enable dialogue between Fort Drum and regional communities to assist in the mitigation of noise issues such as those experienced in the Lake Bonaparte area.

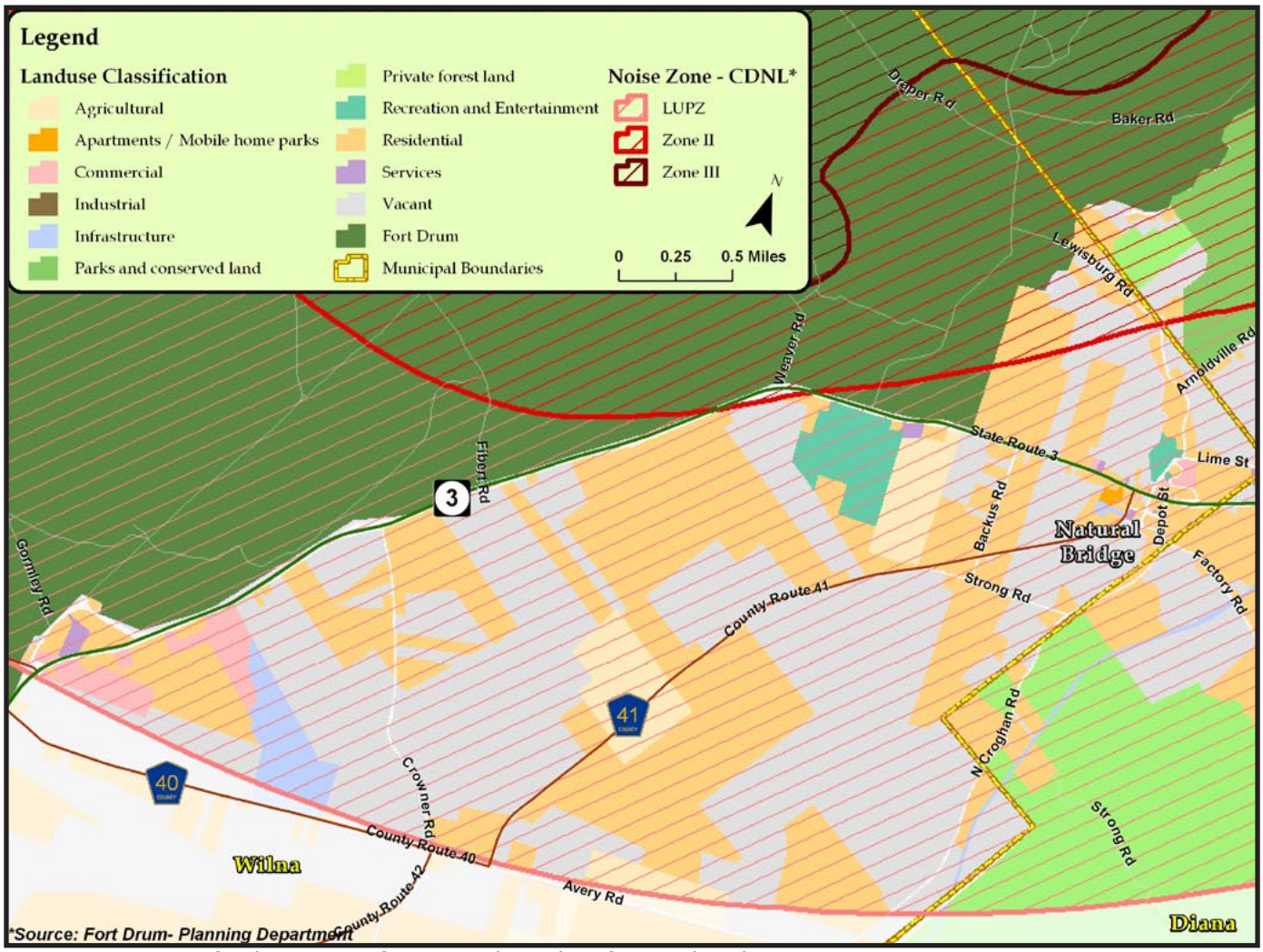
The two types of aircraft that most affect the residents in the area of Range 48 are the A-10 Warthog and the F-16 Falcon. These aircraft fly training missions at Fort Drum an average of 242 days per year, and will fly anywhere from 500 to 15,000 feet above the ground.[82] The low level passes are the most troublesome to area residents, as an A-10 flying at 500 feet will produce 98 dB noise, equivalent to Noise Zone III. The F-16 is even louder, however it usually flies at a higher altitude, lessening the noise impacts.

[82]Operational Noise Consultation, No. 52-EN-06W7a-07, Fort Drum, Mar 07

Map 2.9: Town of Wilna, Town of Diana and Hamlet of Natural Bridge

Map 2.9 focuses in on the southeast border of the Fort, largely along Route 3 and County Route 41. This area includes a small portion of the Town of Diana, a larger portion of the Town of Wilna and the Hamlet of Natural Bridge. Noise Zone II also approaches portions of Route 3. Outside of Noise Zone II, but within the Land Use Planning Zone, land uses are predominantly agricultural and undeveloped, with pockets of development in the Hamlet of Natural Bridge and along Route 3.

Within Noise Zone II, as shown in Table 2.1, many uses may not be compatible depending on the specific nature of the use and other variables such as how they are designed and located. Both Wilna and Diana permit a wide range of uses that fall into this category. The towns should review their zoning to determine the suitability of such uses. Another strategy could be for the towns to require a special use permit to allow discussion among the planning board (or other permitting board) and Fort about the nature of the certain proposed uses and any potential impacts or concerns. Sound attenuation techniques in building material and practices may also move some of these uses from questionable to compatible.

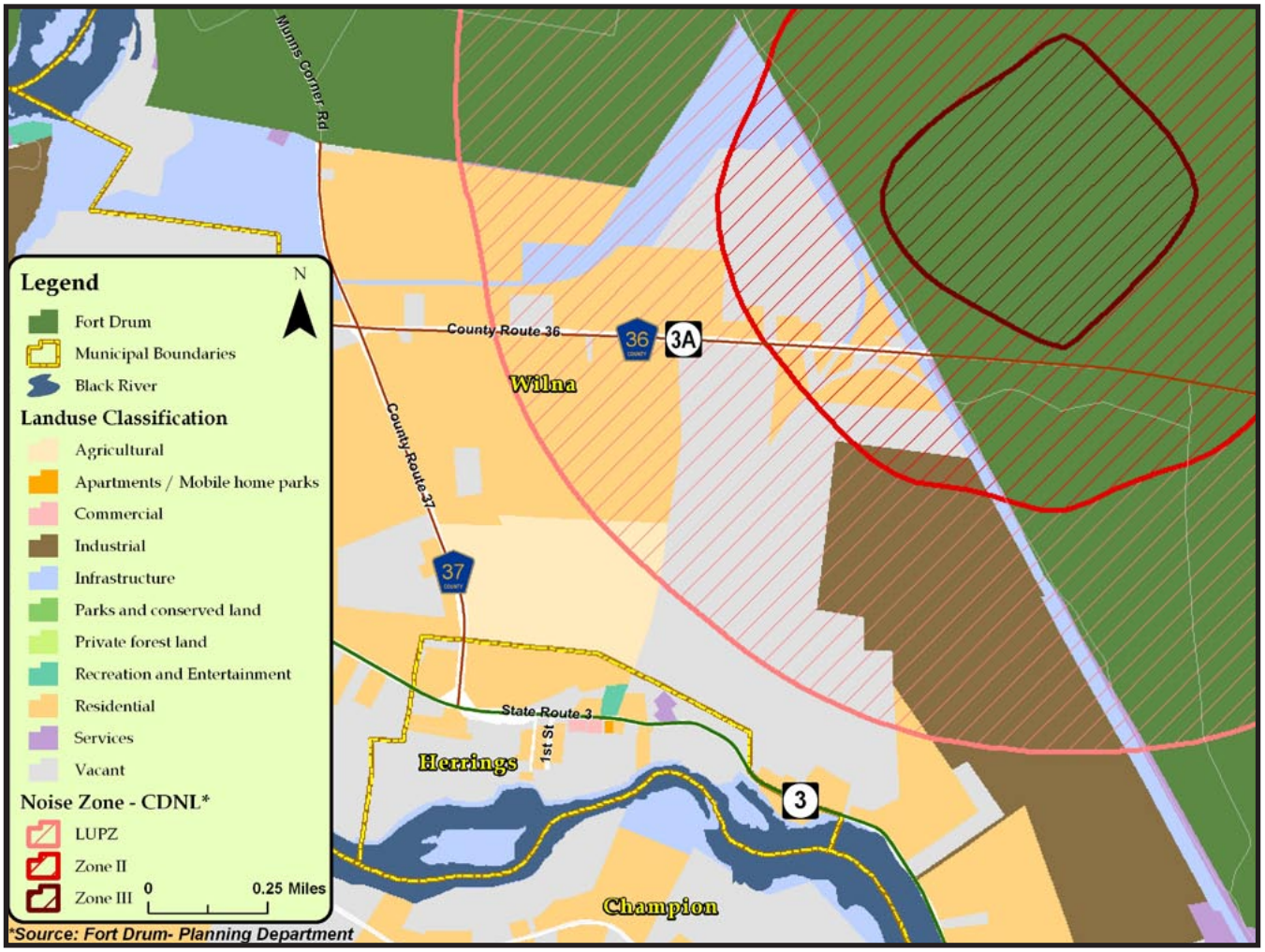


Map 2.9 - Town of Wilna, Town of Diana and Hamlet of Natural Bridge.

Map 2.10: Town of Wilna, Route 3A/County Route 36

Map 2.10 focuses in on a relatively small area in the Town of Wilna, along Route 3A-County Route 36. The area consists of vacant/undeveloped land, some low intensity residential, a mining operation and a concentration of mobile homes directly adjacent to the Fort border. Residential land uses, particularly mobile homes, are generally not suitable in Noise Zone II because residents will be subjected to high noise levels on a routine basis. The town should review its zoning regulations to ensure that similar uses do not locate in this area, and that additional mobile homes are not located here.

Within Noise Zone II, as shown in Table 2.1, many other uses may not be compatible depending on the specific nature of the use and other variables such as how it is designed and located. The town also permits a wide range of uses that fall into this category. The town should review their zoning to determine the suitability of such uses in this area. Another strategy could be for the town to require a special use permit to allow discussion among the planning board (or other permitting board) and Fort about the nature of the certain proposed uses and any potential impacts or concerns. Sound attenuation techniques in building material and practices may also move some of these uses from questionable to compatible.



Map 2.10 - Town of Wilna, State Route 3A / County Route 36.

Map 2.11 and 2.12: Route 3 Corridor: Towns of Rutland and Champion; Villages of Black River and Deferiet; Hamlets of Felts Mills and Great Bend

Maps 2.11 and 2.12 depict areas that are impacted by Wheeler-Sack Army Airfield activities. This area contains the largest mix of uses and the highest density of development of any area along the Fort Drum border directly impacted by Fort operations. In this area, development takes the form of strip residential and commercial development along Route 3, as well as more concentrated development nodes in village and hamlet settings. This area also represents the only place within the study area where, in addition to noise, safety is an issue. As such, the zoom-in maps depict both Accident Potential Zone contours (Map 2.11) and Noise Zone contours (Map 2.12). Areas within the Accident Potential Zones are those areas where, despite the unlikelihood of such an event, there is the greatest chance for an aircraft accident. Areas within the Noise Zones are those areas most impacted by noise generated from aircraft landing and taking off at Wheeler-Sack.

Map 2.11: Accident Potential Zone Conflict Areas

As shown on 2.11, there are two distinct areas within Accident Potential Zones, each associated with a particular Wheeler-Sack runway. The most significant Accident Potential Zone extends south-southwest along the Rutland-Champion border, roughly in the vicinity of Card Road. Currently, the existing pattern of development in this area consists of lower density residential and agriculture. A smaller area in the Champion-Deferiet-Wilna area is also within an Accident Potential Zone. These conflict areas are described in more detail immediately below.

APZ I on the Rutland-Champion Border

A relatively small area straddling the Rutland-Champion border, roughly between Great Bend and Felts Mills, falls within APZ I. The chance for an aircraft accident is higher in APZ I than in APZ II, in consequence whereof there are fewer land uses that are appropriate in APZ I than in APZ II. Current zoning in the Towns of Rutland and Champion in this area permit a wide variety of uses, many of which are not compatible with the safety concerns associated with APZ I (see Table 2.2). These include any use that draws people for any length of time in a contained area – such as stores, churches, educational facilities, restaurants, shopping centers etc. Both towns also allow single-family units, mobile homes and multifamily and/or 2-family dwellings, all of which are non-compatible uses in APZ I. Appropriate uses for this area would include agriculture and community infrastructure such as utilities. Additionally, because the area is also within Noise Zone III, parks and recreational facilities would not be appropriate. This is because noise levels in Noise Zone III would be high enough to significantly detract from the enjoyment of parks and recreational facilities.

APZ II on the Rutland-Champion Border

As one moves further away from Wheeler-Sack, the APZ I described immediately above transitions to APZ II. Because there is less potential for an accident in APZ II, a wider range of land uses are compatible in these areas. Specifically, retail, services and other establishments that do not concentrate large numbers of people for extended periods of time, are compatible.

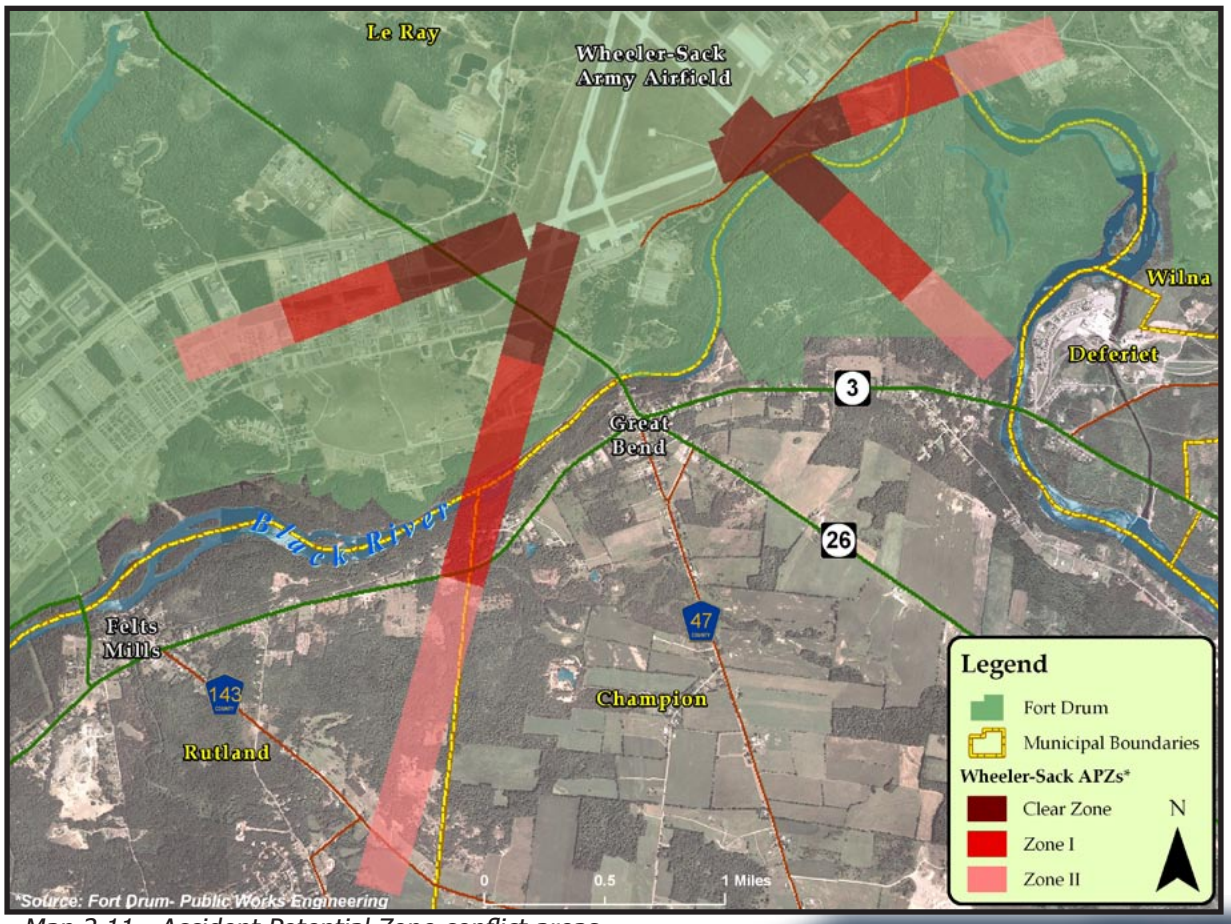
However, similar to APZ I, uses in APZ II that draw large numbers of people for extended periods of time,

such as daycare centers, schools, office complexes or medical facilities, are not appropriate. Outdoor recreational uses and parks may be appropriate, as may be playgrounds. Agriculture is also an acceptable land use in this area. Both Rutland and Champion currently permit a wide range of uses in this area, a number of which are incompatible with APZ II. Such uses include churches, daycare centers, community centers, elder housing and multifamily residential. Sound attenuation measures may make lower density, single family residential development feasible, if not optimal.

With the approval and establishment of each incompatible use within an Accident Potential Zone or Noise Zone, conflicts between the Fort and the community will become more likely, causing problems for both residents and the Fort. Communities should review their zoning regulations to ensure that they permit only compatible uses in areas where safety (and noise) is a concern.

APZ II in the Town of Champion, outside the Village of Deferiet

There is one small, additional area within APZ II in the Town of Champion, just northwest of the Village of Deferiet. A wide range of uses are permitted by the town in this area, some of which would be incompatible with APZ II. These incompatible uses are similar to those cited directly above in connection with the APZ II area along the Rutland-Champion town border. The current land use in this area is undeveloped flood control land along the Black River, which is compatible with APZ II.



Map 2.11 - Accident Potential Zone conflict areas.

Map 2.12: Noise Zone Conflict Areas

Noise Zone III

Noise Zone III is discussed above, in connection with the APZ I discussion, as it is virtually coterminous with APZ I. Both the APZ I and Noise Zone III identify similar compatible and non-compatible uses. The only exception is that outdoor park uses are not compatible in Noise Zone III, as the noise levels in this zone would unduly detract from the ability of people to enjoy park resources.

Noise Zone II

Noise Zone II encompasses a wider area than Noise Zone III. There are two areas where Noise Zone II extends into the communities, each associated with a particular Wheeler-Sack runway. The first and largest Noise Zone II area covers large portions of Route 3 as well as Felts Mills and Great Bend, and extends south roughly along County Routes 143 and 144 in the Towns of Rutland and Champion. Existing land uses in this area are varied including mixed-use hamlet areas, highway strip development, auto salvage, gravel operations, county forest land, as well as lower density residential and agriculture.

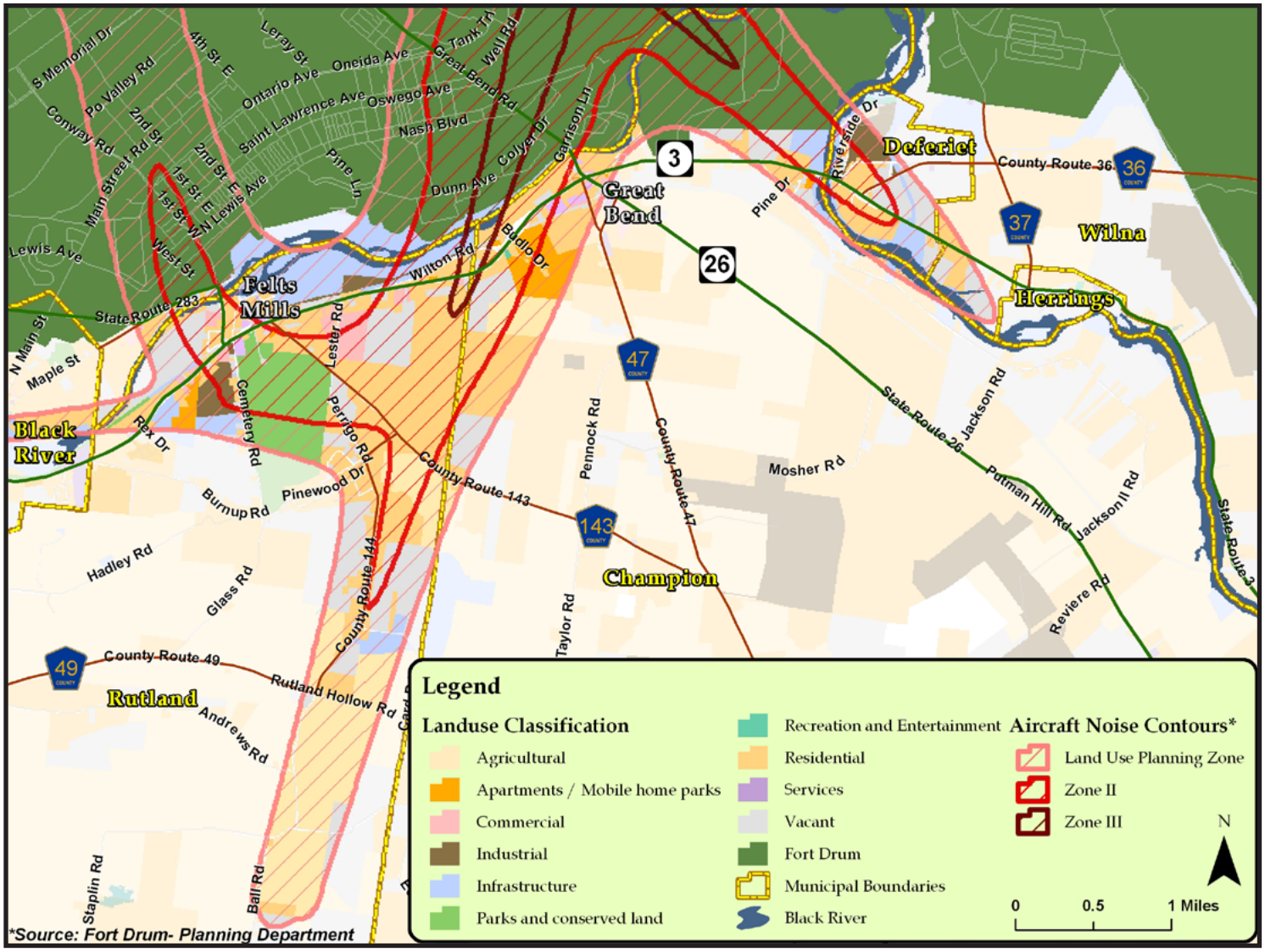
A second area covered by Noise Zone II is the Village of Deferiet and adjoining areas of the Town of Champion. The current land use pattern in this area consists of mixed-uses in the Village of Deferiet, to hydropower plant and flood control lands in the Town of Champion by the Fort border.

A wide range of uses are permitted in this area under existing zoning for the Towns of Rutland and Champion and the Village of Deferiet. Many of these permitted uses may be incompatible depending on a number of factors, including whether or not sound attenuation is provided. Residential uses, particular of a higher density nature, are not compatible.

A recently approved subdivision along Route 3 in the Town of Champion is partially within the Land Use Planning Zone. Sporadic noise complaints have been received from subdivision residents with respect to noise from planes landing and taking off at WSAAF. A real estate disclosure may have helped to prepare new residents for the possibility of loud noises in this area. Looking forward, the town could adopt land use policies and regulations that are more compatible with Noise Zone II standards, to avoid such conflicts from arising in the future.

Maps 2.11 and 2.12 Summary

The Route 3 corridor contains a variety of uses and densities, many of which have a long and established history in this area, particularly with respect to existing villages and hamlets. Further complicating the situation, the area represents the only location along the Fort-community border where both noise and safety are an issue. Communities in this area should review their zoning and development regulations and policies to ensure that they are compatible with the impacts associated with Noise and Accident Potential Zones. Because of the fixed nature of Wheeler-Sack runways, it may be more difficult for the Fort to modify its training and operations to mitigate noise and safety concerns. Extra care will need to be taken to ensure that solutions for more focused, existing areas of development, such as hamlets and villages, are compatible with community goals to reinvigorate these important community centers.



Map 2.12 - Noise conflict areas.

Single-Family Residential Development

Single-family residential development is a particularly important part of the "encroachment equation." As opposed to other land use types, whether single-family residential is compatible or incompatible within a specific noise or safety zone has more to do with the density of residential development, than the nature of the use itself. While single-family residential is considered incompatible, no matter the density in Noise Zone III and APZ I, it can be compatible at lower densities and with sound attenuation measures in the more prevalent APZ II and Noise Zone II.

Single-family residential development is the prevailing form of development along the Fort's borders, particularly in the communities bordering the Fort's range areas. Clearly incompatible uses, such as a movie theater for example, are not likely to locate in these more rural, undeveloped range communities. But most property owners have the reasonable expectation that they will be able to build at least one residential dwelling on their property, so long as it is a minimally conforming lot. Moreover, single-family units are the default allowable use for almost all zoning districts adjoining Fort Drum. For this reason, if a land use conflict arises along the border of the Fort's range areas, it is likely to be related to incompatible residential development. Analyzing communities' zoning codes with respect to permitted single-family densities helps clarify where land use conflicts associated with such development may occur in the future.

There is currently a range of residential densities permitted under existing zoning in communities surrounding Fort Drum. Outside of hamlet or village areas, allowable densities for single-family homes range from 1.5 to just over 2 single-family homes per acre. Agriculturally-oriented zoning districts in several towns (Antwerp and Champion, for example) establish lower residential densities – between approximately 0.5 to 1 homes per acre. In villages and hamlets, by contrast, higher densities are permitted, especially in downtown areas of these communities. Maximum allowable residential densities in these areas are between 8 to 14 single family homes per acre. Lastly, in the hamlet of Great Bend, development density is not tied to lot size, but to setback, frontage, and building height requirements.

Development in the Hamlet of Fargo (Town of Wilna) is relatively low density, but it is also directly along the border of the Fort.

It should be noted, however, that in most of the study area, prevailing market forces and the lack of water and sewer

infrastructure are yielding single-family development densities that are substantially lower than what is permitted "on the books." In communities closest to Fort gates, typical residential development densities range from 1 home per acre in areas serviced by water and sewer, to 0.3 homes per acre in non-serviced areas. Farther out, in the communities adjacent to the Fort range areas, development densities for new development drop to approximately 0.25 homes per acre. Moreover, in most communities around the Fort, particularly those bordering the range areas, the prevailing pattern of subdivision does not take the form of large, multi-lot subdivisions. Rather, most new lots are created as "peel-off's" – one or two lots at a time. Since no community in the study area requires site plan approval for new homes, and many communities do not require subdivision approval for one- or two-lot subdivisions, new residential development over time can incrementally change the landscape and lead to potential land use conflicts with little if any review at the municipal level.

Noise at the Fort is generated from a wide range of sources from machine guns to 2,000 pound bombs.

Various military agencies have recommended densities and uses for lands within areas impacted by military training activity. The US Air Force's Air Installation Compatible Use Zone (AICUZ) Handbook (1992), recommends that all residential development in Clear Zones and APZ I areas near military airfields be prohibited. As noted elsewhere in this chapter, Clear Zones associated with Fort Drum are located entirely within Fort borders, and only a small area along the Rutland-Champion town line is within APZ I. In the more prevalent APZ II areas, the AICUZ handbook recommends a maximum density of 1 to 2 homes per acre, with some additional leeway for Planned Unit Developments where construction takes place on less than 20 percent of the building lot area. This recommended development density is actually higher than the density of development that is occurring in the majority of the Fort Drum region. It is recommended for such areas, that existing, lower development densities be maintained.

In looking at areas impacted solely by non-aviation training activities, the 1980 Federal Interagency on Urban Noise "Guidelines for Considering Noise in Land Use Planning and Control" mention that construction of new residential units within Noise Zone II should be discouraged unless local conditions indicate that there are no viable locations for residential development elsewhere in the community. If new homes are built in Noise Zone II areas, efforts should be made to provide homes with sound attenuation measures. In all cases, the guidelines state that mobile homes in Noise Zone II areas and the construction

of all residential units in Noise Zone III areas should be prohibited, due to the inability to provide effective sound attenuation that would limit noise impacts inside homes in these areas.

Affected communities should consider revising their zoning and development regulations to, at a minimum, reflect existing, lower density development patterns, rather than the higher residential development densities that are permitted by zoning codes. Where possible, new and/or higher density residential development should be steered away from conflict areas altogether. The Fort and communities will need to partner on this effort, to arrive at mutually satisfactory and reasonable solutions. This partnership will be especially important in areas that have historically seen more development, such as established villages and hamlets, and the Route 3 corridor. In addition, as infrastructure improvements are proposed in the region for towns and villages along the Fort Drum borders, communities should be attentive to the potential impacts of new development in areas where training activities may negatively influence the quality of life of new residents. The concept of lower development densities in many range area communities, is also consistent with the desire of such communities to support the local agricultural economy and preserve the rural character of the landscape that is treasured by local residents.

Examples of uses that would be considered compatible and incompatible with Fort operations were they to be located along the border of the Fort. Agriculture and mining operations such as those seen in the foreground would be compatible, while the school in the background would be incompatible.

TOOLS FOR PREVENTING ENCROACHMENT

There is no one-size fits all approach to solving encroachment issues. Fort Drum is a vast entity and along its borders are diverse communities, each with their own unique characteristics and ambitions. However, there are a number of tools that have been used in military communities across the nation, which have helped to solve encroachment issues. Used alone, or in combination, such tools have yielded results that are mutually beneficial to the installation, adjoining communities and individual stakeholders and landowners. Examples of some of the more commonly used and innovative tools, as well as those most applicable to the Fort Drum area, are described below.

As part of this project, Fort Drum communities were also surveyed to determine the prevalence of such tools in the region. To date, most of the tools mentioned in the following pages have not been used in the region.

Army Compatible Use Buffer Program

The Army Compatible Use Buffer (ACUB) program is one tool that is being used by the Army to mitigate encroachment impacts. The ACUB program is currently in place at over three dozen installations throughout the US. The program enables the Army to partner with communities, interested landowners and nonprofit conservation organizations to identify and preserve areas with potential encroachment and/or environmentally sensitive resources. By preserving the land, either in a natural state or in a low-impact land use such as agriculture or forestry, the encroachment impacts are minimized. This allows the military to continue its mission, allows the landowner to gain value from the property that may not have otherwise been realized, and can allow the land to continue to be used for its current purpose (such as agriculture or forestry).

Purchase of Development Rights (PDR)

PDR Refers to the acquisition of development rights by purchase, usually by a local government or non-government organization. In many cases, suitable lands for inclusion in a PDR program are first identified by a local government as part of a municipality's farmland protection program. Once the municipality has decided that a parcel of land might be suitable for inclusion in the program, a property owner could voluntary choose to sell or lease their land to the local government or other organization administering the program. In exchange for having a permanent conservation easement placed on their land, limiting its use to agricultural or open space uses, the landowner is paid a fair-market value for the development rights on the property (total land value less agricultural value, as determined by a certified appraiser). Selling development rights through a purchase of development rights program can provide a way for a landowner to obtain equity out of the land, while being able to retain the land and continue farming. The sale of development rights can provide income for retirement or capital for farm business improvements.

While there are no PDR programs directly overseen by town, village, or city governments in the region, Jefferson County is in the process of instituting a county-wide PDR program. This program allows the county to identify and submit qualified projects for state farmland protection funding.

Case Study: Fort Carson Army Compatible Use Buffer program

Fort Carson has formed one the largest and most successful multi-agency partnerships to conserve natural resources around its installation. The post has used the Army Compatible Use Buffer program to purchase conservation easements from willing sellers on adjacent lands. Non-military partners in ACUB efforts include the Colorado Department of Transportation, the Department of the Army, The Nature Conservancy, the U.S. Fish and Wildlife Service and private landowners.

To date, the military has spent $4.92 million to purchase a conservation easement on approximately 5,000 acres of the Walker Ranches on the southern boundary of Fort Carson. The Nature Conservancy worked with the Walker family, long-time ranchers, to obtain conservation easements protecting the entire southern boundary and the southeastern corner of the post. Ecologists working with TNC on the Walker ranches have found Arkansas feverfew, roundleaf four o'clocks and other rare plants, some dependent not only on shortgrass prairie but specifically on a geologically unique feature known as shale barrens or juniper breaks. The lands also host Mexican spotted owls, ferruginous hawks, mountain plovers, herds of elk and pronghorn, maybe swift foxes.

We are giving up dollars here," says Gary Walker, "but we are getting something in return—preserving this ranch that we love." He adds: "We've talked about this easement protecting the rare plants and wildlife habitat that are here, and helping Fort Carson, but there's a third element for my family, and that's protecting the ranching economy and traditions of this place. We needed an option to development, and this is it."

Fort Carson also initiated the Pikes Peak Sustainability Indicator Project (PPSIP), a partnership between the post and governments, businesses and citizens of the region. The PPSIP consists of a Steering Committee and four working Task Forces: Nature, Economy, Well-being and Society. The Steering Committee includes representatives from the participating local governments and Fort Carson, and organizations that provide technical expertise or support.

Conservation Easements

A conservation easement is a legal agreement placing development restrictions on a property in order to protect important natural lands or resources, such as wetlands, aquifers, wildlife habitats, or forest lands. Conservation easements can also be used to conserve agricultural lands. Property owners may choose to place land in a conservation easement to permanently conserve important resources and/or to obtain federal and state tax and estate benefits. An easement may be purchased, as in the case of PDR, or donated.

Conservation easements are typically custom-tailored to meet the needs of the landowner, and the goals of a land trust or municipality. They can be crafted with flexibility for a landowner's current and future goals. Conservation easements run with the land when the land is bought and sold. Conservation easements do not require public access.

Because a conservation easement is "in perpetuity" or forever, a third-party conservation organization, such as a land trust, is brought in to monitor, steward and enforce the conservation easement. The Tug Hill Tomorrow Land Trust and the Thousand Islands Land Trust are two land trusts in the Fort Drum region.

Transfer of Development Rights (TDR) or Incentive Zoning

TDR is a process by which a community is able to direct potential development toward areas where increased density is desired, while preserving areas with important sustaining natural or agricultural resources. In this process, a community identifies sending areas (areas where resources should be preserved) and receiving areas (areas that can accept higher-density development).

A landowner in the sending area would be able to sell development rights on that property to a landowner in the receiving area. The purchaser of development rights would then be able to develop their property in the receiving area to a higher density than would normally be allowed. The sending property would have an easement placed upon it, limiting future development. This allows the sending area landowner to benefit from the development value of their land while allowing a municipality to preserve natural areas and/or agricultural lands. As such, it provides a more equitable way to share the costs and benefits of property development in a community or region. TDR programs also help to shape growth and focus services (such as water, sewer and public transit) in defined areas.

Incentive zoning allows a landowner or developer to work with a municipality to obtain specific incentives in exchange for providing desired community amenities such as open space conservation. Incentives may include modifications to density, allowed uses, setbacks, or other zoning controls. The landowner or developer may provide, in exchange, dedicated open space, trail access, park land or potentially cash (in lieu of land) to contribute to a PDR program. Incentive zoning could be developed through a Generic Environmental Impact Statement (GEIS) process.

Noise Easement Program

An easement is the right granted to a third party to use private real property in a specified manner. An easement may be given, for example, for overhead wires, underground gas lines, or roads. A noise or navigation easement is a property right acquired from a landowner that grants the right of military training activities in proximity to the affected parcel, including the right to:

- ◇ cause noise, vibration, dust, etc;
- ◇ ensure unobstructed airspace over the property above a specified height; and/or
- ◇ restrict or prohibit certain lights, electromagnetic signals, or land uses that could interfere with communications technology and safe aircraft operation.

Noise easements are typically put in place on a property in close proximity to an airport or military training area. A noise easement allows noise from aircraft or training areas no greater than a baseline set by the municipality or installation until the airport is no longer in business or the installation is no longer in operation. The easement runs in perpetuity with the deed to the property and protects against lawsuits

for military or aviation related impacts. Local governments increasingly rely on such easements to protect military operations against encroachment from nearby developing areas. Local governments, for example, may establish the granting of a noise easement by the developer as a condition for the approval of a proposed new home subdivision in areas subject to military training impacts.

Currently, no towns or villages in the Fort Drum region have a noise easement program in place. In the future, communities adjacent to Fort Drum and WSAAF may choose to utilize noise easements, in conjunction with real estate disclosure forms, as a tool to reduce complaints from training and aviation activities at the post.

Military Installation Zoning Overlay District (MIZOD)

Communities who use this concept typically designate all areas within close proximity (depending on the community) to a military installation or along a primary access route to the installation as being a part of this district. Inside the district, an enhanced set of land use regulations can be put into effect that can accomplish a variety of goals and objectives. Some of these land use tools might include:

- ◇ Limiting allowable densities and/or uses;
- ◇ Identifying sending areas for Transfer of Development Rights programs and/or areas for the Purchase of Development Rights; and
- ◇ Designating areas for the acquisition of parkland open space, or for other uses that would benefit both the post and the community.

Other requirements that mitigate impacts of development on military installations or protect the welfare of citizens in close proximity to Fort Drum can be included in the Overlay District as well. Some examples of these can include outdoor lighting standards, indoor noise-level reduction construction standards, and real estate disclosure.

As of July 2008, no community in the Fort Drum region has instituted a MIZOD. By working together to identify and create MIZODs in each town with land within Fort Drum impact areas, both Fort Drum and the adjacent communities can limit encroachment for both Fort Drum and property owners. For communities, an alternative to a MIZOD is to simply change the underlying zoning of a particular area to permit land uses and development densities that are compatible with Fort Drum activities and noise and safety concerns.

An example of such regulations for Escambia County is attached in Appendix D. These regulations help to identify incompatible land uses and densities and set forth a process for minimizing encroachment on the Airfields in Escambia County, including Naval Air Station Pensacola.

Tall Structure Restrictions

Communities choose to place restrictions on tall structures for several reasons. Most communities look at height restrictions as a way to prevent large-scale urban development and to retain a rural or village scale. In other areas, the proximity of an airport or other entity serves as the impetus to restrict building heights or tall structures such as telecommunications tower in order to protect the safety and viability of aviation or other uses. In most communities, building heights, the heights of accessory structures, and/or the maximum heights of telecommunications towers are limited, either on a town wide basis or in certain districts.

Tall buildings such as this one in Carthage could be incompatible with WSAAF if it were located in an area close to the air field, such as the Hamlet of Great Bend.

In the Fort Drum region, due to the typical development pattern of the area and desired rural quality of life for residents of the region, building heights in most municipalities tend to be limited to no greater than 40 feet, with some additional leeway on larger lots. This leeway is typically utilized for telecommunications or wind towers that would require a greater setback to prevent impacts to adjoining properties. With certain uses, including farm silos, wind towers, and telecommunications towers, there may be a possibility for encroachment to exist, particularly in proximity to airfield activities or in relation to other training areas on Fort Drum. By working to identify possible conflict areas, a community can avoid having these structures in areas that could affect training and operational activities. This can be done as part of a MIZOD designation.

Restrictions on Uses That Cause Electromagnetic Interference

Military and aviation equipment are highly sensitive to both natural and man-made electromagnetic interference such as that created by telecommunications facilities, wind farms, broadcasting towers or microwave transmitters, or other transmission devices. Because of these concerns, military posts typically seek restrictions on the location of telecommunications towers and other uses that may create interference with military machinery in proximity to post areas or areas underneath flight patterns for military or civilian airports. By working to ensure that telecommunication towers and other uses are located in communities at locations that would provide minimal interference with military activities while still being beneficial to the community at large, both military and civilian needs can be achieved.

Several communities in the Fort Drum region have Telecommunications Regulations in place that address electromagnetic interference issues related to telecommunication towers constructed in the applicable municipality. None of the towns or villages, however, have implemented regulations that limit electromagnetic interference in relation to specific activities at Fort Drum.

Innovative Zoning and Subdivision Tools

Conservation Subdivisions

Conservation subdivisions are a tool used by many communities in order to allow residential development to occur on a property while preserving significant natural features or prime farmland soils. In exchange for protecting wetlands, forests, or farm fields, a property owner receives the ability to develop their property with smaller lot sizes than allowed under conventional zoning. By clustering development, viability for sewer and water infrastructure is increased, and areas closer to the borders of a military installation may be preserved.

Currently, few communities adjacent to Fort Drum have conservation subdivision regulations in place. While in some areas, conservation subdivisions may be a way to preserve farmlands and limit impacts in areas adjacent to training facilities at Fort Drum, the large amounts of available land, and the cost of constructing roadways and infrastructure in relation to the limited number of possible lots has limited the potential marketplace for conservation subdivisions in the region. Crafting tailored conservation subdivision guidelines and regulations that are applicable to rural areas without infrastructure and/or that experience lower development pressures (i.e., few large subdivisions), could help this tool to be more useful in the region.

Planned Unit Development

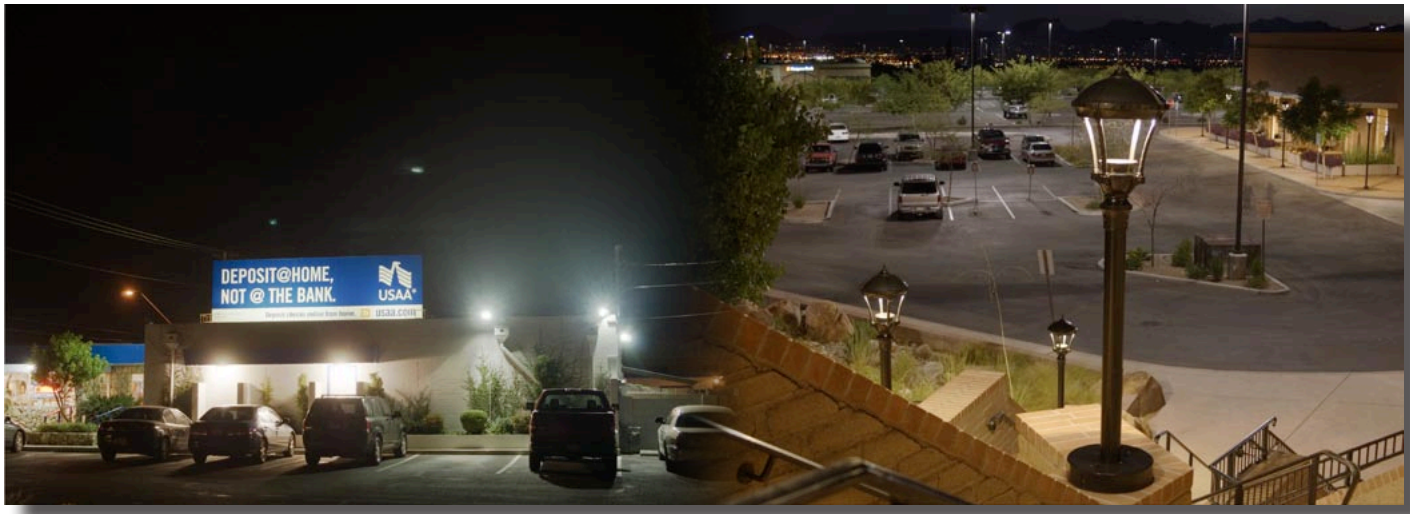
A planned unit development, or PUD, is a unified plan for a large property, often integrating a mixture of land uses. In many communities, both in the Fort Drum region and nationally, the PUD is the only allowable mechanism for communities to permit the creation of mixed-use development on a single site. With PUDs, developers and communities can establish land uses and densities that are site-specific, allowing for increased density in some areas of the PUD in exchange for open space elsewhere inside the PUD boundaries. In relation to encroachment, PUDs can be used to direct uses on a property away from areas that may be within a Noise Zone or Accident Potential Zone of Fort Drum.

Standards for Outdoor Lighting

Communities establish outdoor lighting standards for a variety of reasons. In some communities, the use of certain lighting fixtures and types of lighting may diminish community character. Excessive light pollution can also intrude upon dark skies, making it hard for people to see the stars at night. Concerns regarding the potential harm to wildlife due to excessive lighting have also led to the implementation of outdoor lighting restrictions. Fort Drum's primary concern with outdoor lighting is related to night training needs, since excessive lighting can interfere with the use of night vision goggles and other equipment utilized at the Fort for training activities.

Lighting standards provide for a variety of solutions to existing and potential light pollution issues. Some of these requirements may restrict the height of light poles, require shielded lighting, require lighting to be directed toward the ground surface, limit the use of on-site lighting to business hours, or limit the

dispersion of light from an individual property. Since a key component of military training takes place at night, light pollution can create interference with training, particularly for training utilizing traditional star navigation. For these reasons, balancing the needs of businesses and homes in a municipality with the military's training needs is essential for success. By having reasonable standards in place, the goals of both military and civilian communities are attainable.



Lighting that intrudes into the sky (left) can interfere with night-training missions at Fort Drum, as well as unnecessarily illuminating the night sky. Designing lighting to filter down towards the ground (rather than up towards the sky) can help to ameliorate the interference. Images courtesy of the International Dark-Sky Association

While there are lighting standards in place in several communities in the Fort Drum region, none of these standards have been implemented in direct relation to Fort Drum training operations. In developing standards for lighting, the needs of Fort Drum should be balanced with the needs of area business, institutions, and residences. A sample lighting ordinance from the Town of LeRay is provided for reference in Appendix E.

Identifying Encroachment Concern Areas in the Comprehensive Plan

A Comprehensive Plan is a living document that defines the desired current and future state of a community. Among other things, with public input, a comprehensive plan helps to identify a land use vision for the community, as well as defining needs for other community services, and sets out clear goals and objectives for achieving that vision. The comprehensive plan forms the basis for any land use or zoning modifications. With respect to Fort-community encroachment issues, a comprehensive plan can identify "encroachment concern areas," such as those identified in the zoom-in maps in this plan, so that appropriate land use regulations for these areas can be established, or other actions taken that minimize the chance for encroachment.

In the Fort Drum region, the Town of LeRay is in the process of creating its first comprehensive plan. As part of this process, the town is identifying areas where encroachment is a concern and developing preliminary recommendations to avoid it.

Sound Attenuation and Noise Reduction Measures

Sound attenuation refers to special design and construction practices intended to lower the amount of noise and vibration that penetrates the windows, doors, and walls of a building to provide an overall noise level reduction for outdoor to indoor sound. Local governments can require attenuation as part of building code enforcement for new construction in certain noise-affected areas.

In many communities, regulations exist to limit noise and vibration on an individual property. This is done in order to protect the health and welfare of residents of the community. In communities where noise impacts are known to be at or above 65 dB DNL and the community has agreed to implement sound attenuation measures, a potential creator of noise must show that their use will not create more noise than what was previously present. In addition, in many of these communities, efforts are made to limit land uses that would be impacted by noise and vibration in impact areas, since noise tends to dissipate as one moves away from the source.

No communities adjacent to Fort Drum have regulations in place that directly address sound attenuation and noise reduction measures beyond minimal standards identified in the New York State Uniform Fire Prevention and Building Code. It is possible, however, for municipalities to adopt standards that supplement the existing state code. These standards would ideally apply to areas in Noise Zone II or higher, or areas experiencing high peak noise levels near Fort Drum on a seasonal basis, such as areas near Lake Bonaparte. Efforts could also be undertaken by Fort Drum, municipalities, and area homeowners to help to retrofit existing homes and businesses to reduce noise and vibration.

Early Real Estate Disclosure

In some communities, at or before a real estate closing, local governments require signature of a disclosure form documenting the proximity of the property to a military installation, airport, or other potentially conflicting land use. The disclosure form describes the issues that might occur as the result of the proximity of the property to the nearby conflicting land use. By providing this disclosure, potential property owners are made aware of the nuisances and issues that may occur due to their proximity to the installation while the local government is protected from liability issues due to nuisance concerns. While this may not in and of itself limit development at the Fort borders, if existing and future residents are aware of their proximity to Fort Drum and the full range of potential conflicts and issues that could occur, there may be fewer complaints made by residents.

Case Study: Naval Air Station Oceana Encroachment

Government officials have cited Naval Air Station Oceana in the Hampton Roads region of Virginia as the most encroached upon military air installation in the United States. Adjacent residential uses and dense resort-based development, including hotels and conference facilities, expose approximately 250,000 people to the noise and air safety hazards associated with jet aircraft operations at Oceana and its partner airfields: NALF Fentress and Chambers Field.

A new subdivision takes shape in close proximity to Naval Air Station Oceana, the most encroached upon military air installation in the United States. Advanced planning and Fort-community partnerships can help to ensure that similar situations do not arise in the Fort Drum region.

Ongoing public complaints over noise and concerns about sustaining local economic growth have placed intense pressure on military officials to address these encroachment issues. Recognizing the potential of unmanaged land use conflicts to undermine the military mission, the 2005 Base Realignment and Closure Commission (BRAC) required Virginia and the Cities of Virginia Beach and Chesapeake to take specific actions to prevent further encroachment around NAS Oceana or face the possible realignment or closure of the Navy's East Coast Master Jet Base. These requirements affected land use in more than 23 percent of the entire City of Virginia Beach. The conditions included:

- enacting state-mandated zoning controls that require the government body to follow Air Installation Compatibility Use Zone (AICUZ) guidelines in deciding discretionary development applications for property in noise levels 70 dB Day-Night, average noise level (DNL) or greater;
- enacting state and local legislation and ordinances to establish a program to condemn and purchase all the incompatible use property within the Accident Potential Zone 1 areas for Naval Air Station Oceana;
- codifying the 2005 final Hampton Roads Joint Land Use Study recommendations;
- legislating requirements for the cities of Virginia Beach and Chesapeake to evaluate undeveloped properties in noise zones 70 dB DNL or greater for rezoning classification that would not allow uses incompatible under AICUZ guidelines;
- establishing programs for purchase of development rights of the inter-facility traffic area between NAS Oceana and NALF Fentress; and enacting legislation to create the Oceana-Fentress Advisory Council.

The City of Virginia Beach has adopted measures to minimize future incompatible development, using a combination of land use tools, condemnation, voluntary acquisition and incentive packages to meet the intent of the BRAC Order. The city also participated in the governor's South Hampton Roads BRAC Working Group, which examined the local, regional and state impacts of the BRAC decision and worked with the congressional delegation to address the BRAC requirements.

COMMUNICATION BETWEEN FORT DRUM AND ADJACENT COMMUNITIES

A variety of communication methods are utilized by Fort Drum and adjacent communities in order to mitigate encroachment. The FDRLO serves as the primary interface between the civilian and military communities, providing substantial coordination with the surrounding communities.

In two of the towns that are directly adjacent to Fort Drum (LeRay and Champion), planning board agendas are routinely sent to the Fort planner for review. If there is a situation where there may be a conflict between the Fort's mission and any proposed development plans for the community, the Fort planner will communicate these issues directly to the town's Planning Board, both in writing and in person. Conversely, when an issue that may affect the town is undertaken on the Fort, it is discussed with the neighboring communities. The Town of Champion formalized this process in 2006 through a "memorandum of understanding" with the Fort. In other communities, a formal process has not been developed, in large part due to the limited staff resources and minimal development pressures in these communities. The Fort planner also works closely with the Jefferson, Lewis and St. Lawrence County Planning Boards and the Tug Hill Commission, both through FDRLO and via regular attendance at county planning board meetings.

While this type of coordination between the post planner and local communities is considered highly effective by all involved parties, advanced planning can provide additional help in avoiding potential land use conflicts. For instance, by the time a potentially non-compatible project reaches the attention of a local or county planning board, a landowner or developer has often already expended considerable time, effort and possibly money to develop a project concept. This in turn, can make it more difficult to make significant adjustments and modifications to the planned project if problems are subsequently identified. However, advanced planning within encroachment concern areas (comprehensive planning, modification of land use regulations, etc.) can help to ensure that all parties involved, including the Fort, municipalities, and developers, have a common and shared understanding of encroachment concern areas, appropriate uses, and potential mitigation measures, before even conceptual development plans are drawn up.

Occurrences of incompatible land uses encroaching on Fort operations may be relatively rare at present, but continued communication and cooperation between the Fort and surrounding communities will be necessary to keep it that way. This Fort-community partnership is all the more important if regional growth pressures continue and/or accelerate in the future. Involving regional partners in the communication loop is also important. For instance, both the counties and Tug Hill regularly provide technical planning assistance to communities within their jurisdictions. Such assistance includes, but is not limited to Geographic Information Systems (GIS) mapping services; advice and assistance with land use planning and zoning projects; and helping local communities to access sources of funding for community development. For communities with no full time planning staff (the majority of communities in the Fort Drum region), regional organizations like the counties and Tug Hill can play a key role in land use planning, and by extension, addressing potential encroachment conflicts.

CONCLUSION

Maintaining a productive environment for military operations is critical to the longevity of Fort Drum and our national security. Encroachment can threaten a military operation to the point of closure. Fortunately, Fort Drum currently has very few encroachment problems to date.

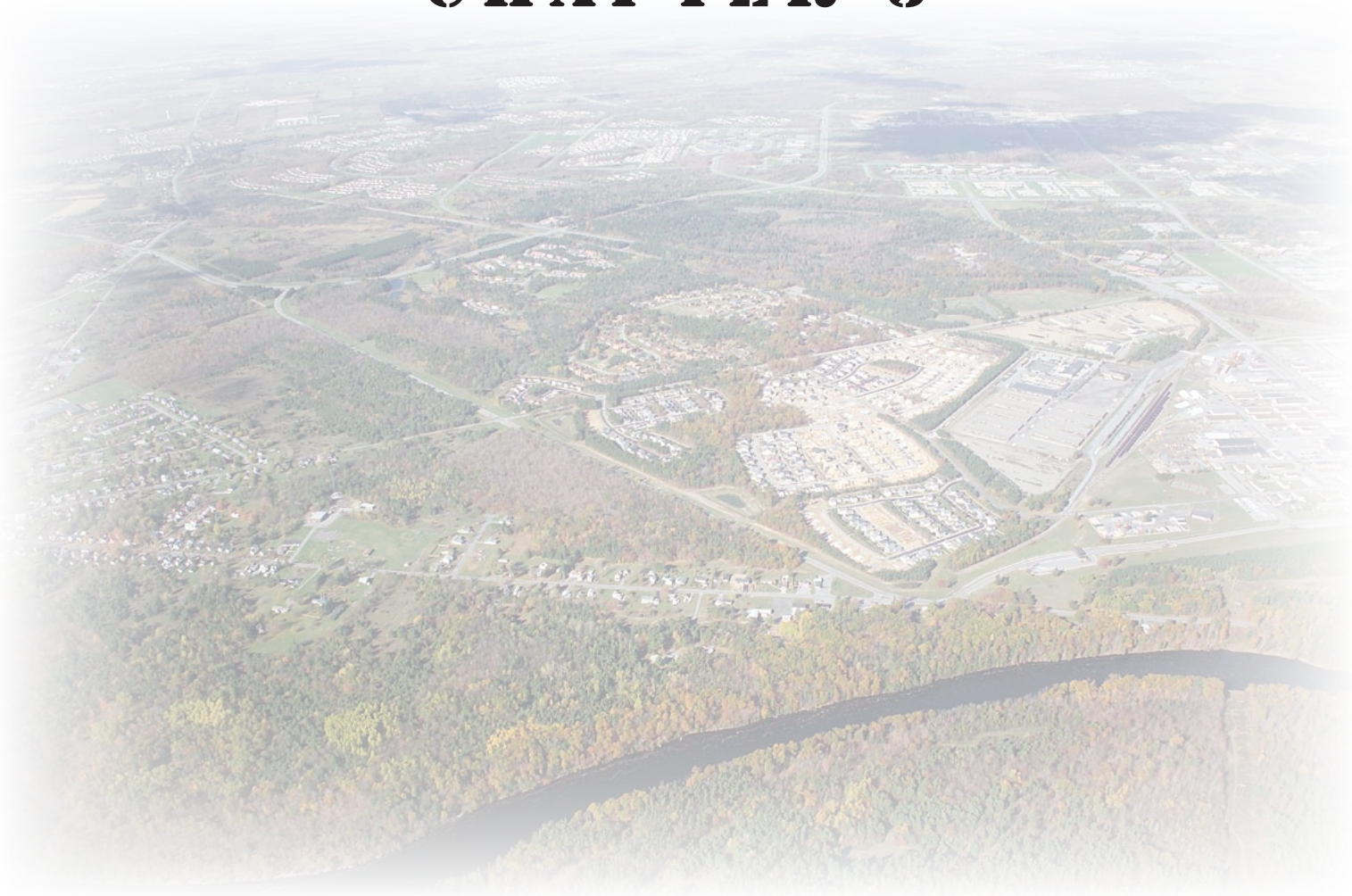
This chapter identifies many areas where encroachment is, or could be, a significant problem for Fort Drum and surrounding residents. One area of significant encroachment concern includes the Route 3 corridor, where recent development has been focused close to Fort Drum's border. Another area of concern is within existing higher-density areas at the borders of Fort Drum, particularly near the training ranges and WSAAF, such as the hamlets of Great Bend and Felts Mills and the Village of Deferiet. Lastly, a number of areas are experiencing some level of encroachment conflict associated with the range areas, including Lake Bonaparte, Natural Bridge and Antwerp. As the region grows and evolves, encroachment concerns will likely escalate since many Fort Drum personnel choose to live close to the Fort. Chapter 3 identifies areas where encroachment and quality of life may be compromised under various future growth scenarios.

One of the major goals of this plan is to identify how Fort Drum and the surrounding communities can plan together to avoid encroachment. There are many tools that can be used to avoid or minimize the impacts of encroachment, both on Fort Drum and the surrounding communities. This chapter provided an overview of some of the main tools that are used to address encroachment, as well as some examples of how they have been applied in military areas. Chapter 4 provides specific recommendations for applying the most applicable tools in the Fort Drum region.

FORT DRUM GROWTH MANAGEMENT STRATEGY

FORT DRUM GROWTH MANAGEMENT STRATEGY

CHAPTER 3



ENVISIONING FUTURE GROWTH: IMPACTS AND OPPORTUNITIES

The City of Watertown - 1891 and 2007
Source of 1891 image: Library of Congress, Geography and Map Division

ANALYSIS OF GROWTH SCENARIOS AND IMPACTS

Introduction

The population of the 3-county Fort Drum region has ebbed and flowed over the years. As discussed in Chapter 1 of this plan, various areas within the region have seen alternating periods of growth and decline over the last century. In St. Lawrence County, a growth spurt in the 1950s and 1960s coincided with the expansion of colleges and universities, as well as the opening of the St. Lawrence Seaway, which in turn attracted several large employers to the area. Growth in Jefferson County, and Lewis County to a lesser extent, has been more directly influenced by growth and expansion of Fort Drum.

Growth can also be viewed through an economic lens – new jobs, retail and housing choices, rising incomes – all constitute growth. Economic growth, in turn, often spurs increased population growth. It is hard to separate these two facets of growth – population growth and economic growth – for they are clearly related. New jobs and economic opportunities keep existing residents in the area and draw new ones. A high quality of life, in turn, attracts new residents, who in turn further contribute to the region's economy, creating new jobs and opportunities. For instance, the Fort Drum region attracts many military retirees, who are drawn to the region's high quality of life.

While the factors that influence economic growth are varied and complex, the region can have a direct influence on growth through decisions made at many levels. Investments in infrastructure can attract industries and employers. The growth and expansion of institutions, such as the cluster of academic institutions in St. Lawrence County can have enormous ripple effects on the economy and quality of life. Public sector decisions, starting at the local level, can directly impact a community's future opportunities to grow and prosper. And lastly, individual residents and business owners every day are making decisions and investments to increase their own economic prosperity. A sound economic growth policy and approach defines a clear role for all players and has its ear to the ground, taking its cues from the entrepreneurial instincts of individual residents and business owners. Lastly, in a world of increasingly mobile capital and labor, economic strategies that leverage community quality of life assets are best poised to attract new and beneficial growth.

As discussed in Chapter 1 of this plan, significant changes have occurred on both Fort Drum and in the communities surrounding it, during the past several decades. Communities in the Fort Drum region, especially those closest to Fort Drum gates, have experienced substantial population growth and development. And the Fort itself has undergone a significant transformation in recent years in response to the Global War on Terrorism. A substantial increase in the personnel assigned to Fort Drum has already occurred with approximately 5,500 additional personnel assigned between 2004 and 2006. By 2013, approximately 19,500 troops will be permanently assigned to the post, and nearly as many family members will accompany them. Beyond this point, it becomes difficult to predict future Fort population and related growth in the communities because of the dynamic nature of the installation. However, under the Army's force stabilization policies, which include longer term assignments to posts (5 to 7 years), it is likely that the communities surrounding Fort Drum will experience growth pressures well into the future as military personnel and their families establish more permanent roots in the region. As discussed in

Chapter 1 of this plan, the latest census estimates indicate that growth is once again increasing in the region, particularly in areas closest to the Fort.

This chapter offers a "reality check" on future growth in the Fort Drum region: How will future development exhibit itself in communities and neighborhoods? Where is it most likely to locate? How can communities and the Fort be sure that growth does not encroach upon the operations at Fort Drum? How can the benefits of future growth in the communities and region be harnessed for long-term benefits and success? Advanced planning in the region can help to meet the two major goals of this plan: (1) ensuring the long-term viability of Fort Drum and its ability to carry out its mission; and (2) maintaining and improving quality of life in the region.

The images below and to the right illustrate in conceptual terms two contrasting approaches to growth.[83] The image below is of existing conditions for a village along a river setting, similar to many communities in the Fort Drum region located along the Black River. The images at right illustrate two possible development scenarios. The top image illustrates one end of the spectrum, a decentralized development pattern of homes on large lots. As shown in the image, while each individual home is situated on a large lot, the cumulative impact on the landscape and character of the community can be significant. The other end of the spectrum is illustrated in the image below where a "clustered" or neighborhood based development approach concentrates development in some areas, especially at the village edge, while conserving character, farms and natural habitat areas in others. In reality, most communities contain a mix of development patterns that lie somewhere in between. The goal of any community should be to find the "mix" that affords the choices that individual residents want, while achieving the shared long-term goals that all residents wish to achieve for the community. This chapter describes modeling that utilized modified versions of these two contrasting development approaches to understand and explore the implications of future growth in the Fort Drum region.

Existing Conditions

[83]Images on these two pages were created by Dodson Associates for the Saratoga County Green Infrastructure Plan

ENVISIONING FUTURE GROWTH

Conventional Development Scenario

Conservation Development Scenario

These two images are "real-life" examples of the concepts illustrated on the previous page. The Village of Black River (above) is an example of how compact development, while allowing residents the option to live in single family homes, can create a sense of place, with schools, parks, and other facilities that serve as venues for meeting and public interaction; compare that to a dispersed pattern (below - image from Saratoga County, NY) which shows how large amounts of land can be consumed with larger lot development. While this is an attractive and desirable option for many people, cumulatively, this type of development can result in many negative impacts on the region.

As discussed in Chapter 2 of this plan, encroachment is a threat to long-term Fort viability and quality of life in the surrounding communities. Unchecked, encroachment can jeopardize Fort Drum's future, as well as the safety and quality of life for individuals or communities. As the region grows, encroachment will increasingly become a concern. Advance planning can help to avoid the types of encroachment conflicts that have plagued other military installations.

Growth can also be planned to maintain and improve the quality of life in the region. A commonly held belief is that more development automatically translates to an increased tax base and improved fiscal

health for a community. However, many studies have shown that the equation is not so simple.[84] Rather, it is not only the quantity of new growth, but the quality of new growth that will influence the long-term fiscal health and quality of life of the Fort Drum region for years to come. For example, compact, walkable neighborhoods have been shown to cost taxpayers less than development that is more spread out. There are many reasons for this savings. For instance, the costs to build and maintain roads and other infrastructure are less when communities are more compact. Walkable communities have also been cited for their health benefits and the opportunities they provide for many different forms of transportation. And when growth is focused in areas with existing infrastructure, development pressures on the agricultural landscape are reduced, helping to ensure that the region's significant agricultural industry remains healthy and vigorous.

Visualizing Future Growth

In the course of this project, two exercises were undertaken to visualize future growth in the region, analyze its potential impacts, and gauge residents' preferences for development patterns and practices, the results of which are described in this chapter:

Growth Model

Four future growth scenarios were explored for the region, using a growth model. The growth model provides an opportunity to visualize the impacts and implications of growth at a regional scale. Where is future growth likely to locate? What impacts and implications are associated with different approaches and policies regarding future growth in the region? Where are fort-community encroachment conflicts most likely to arise in the future? The growth model helps to answer these questions and better enable the Fort and surrounding communities to plan ahead to prevent encroachment and enhance the region's quality of life. The growth model is discussed in more detail beginning on the next page of this chapter.

Community Preference Exercise

In addition to modeling future growth at a conceptual, regional scale, a community preference exercise was conducted in a series of workshops with the region's residents. Residents were shown images of different forms of growth – buildings, neighborhoods, landscapes, etc. – and asked to state their preferences with respect to each. This exercise enabled residents to visualize growth in a more concrete, on-the-ground manner, in contrast to the more conceptual growth models described above. The community preference exercise and results are discussed in more detail beginning on page 128 of this chapter.

The results of the two above described exercises help the region to better understand the implications of future growth and to adopt policies and practices that help to ensure that such growth leads to desired outcomes. In the end, it is about developing a long range vision for the future of the region, while remaining flexible to meet the unique challenges and opportunities presented by the highly dynamic Fort Drum environment.

[84] "Fact Sheet: Cost of Community Services Studies," American Farmland Trust, November 2002

Future Growth Model

Introduction

The growth modeling exercise is meant to assist with joint land use planning initiatives between Fort Drum and the surrounding communities. It provides a generalized look at the future patterns of single-family residential growth, and where this growth might "land" in order to:

- ◇ Identify areas where growth may potentially lead to encroachment on Fort Drum, in order to plan ahead to avoid encroachment; and
- ◇ Understand, in general terms, the benefits and impacts of different patterns of growth to inform future planning decisions related to quality of life, such as those related to transportation and development infrastructure.

The growth model conceptually illustrates how the region's landscape and population centers could be influenced by future development under a range of growth scenarios. Each of four growth scenarios is explored in 5-year intervals, culminating in a 20-year build out. The building block of the growth scenarios is the single-family residential home. How many single-family homes can the region expect over the next 20 years? Where will they likely locate? To answer these questions, the growth scenarios employ two main variables: the intensity of future development as expressed by a moderate growth rate (Moderate) and a high-end growth rate (Hyper) and the form of future development as expressed by a scattered development pattern (Dispersed) and a more compact development pattern (Centered).

Mixing and matching the two growth rates (Moderate and Hyper) with the two development patterns (Dispersed and Centered) yields four distinct growth scenarios, as shown in the matrix at right.

Table 3.1: Growth Model Scenario Comparison

		Growth Rate	
Development Pattern		Moderate	Hyper
	Dispersed	Moderate Dispersed	Hyper Dispersed
	Centered	Moderate Centered	Hyper Centered

The modeling results for the four growth scenarios are depicted in a series of maps and further analyzed with respect to their implications for the for the region's communities and for Fort Drum. The conceptual nature of this exercise should again be stressed. Actual future growth (or lack of growth) in the Fort Drum region will depend on many factors and future events that cannot be known with certainty at this time. It is important to realize that the 20-year build-out could actually occur during a longer or shorter period of time, but the impacts of the growth would be the same regardless of exactly when it occurred.

Growth Modeling Results

As discussed above, the growth modeling exercise explores future growth in the region via four growth scenarios. Before proceeding to the results of the growth modeling exercise, it is important to describe in more detail the two variables from which the growth scenarios are derived: (1) future growth rates and (2) future development patterns. A more detailed description of the methodology employed in the growth modeling exercise is provided in Appendix F.

Future Growth Rates: Moderate Growth vs. Hyper Growth

Two different population growth rates were utilized to model growth 20 years into the future – a moderate growth rate and a high-end growth rate. The moderate growth rate – the "Moderate" rate – is based on the rate of new home construction in the region from 2000 to 2007. The Moderate growth rate assumes that this recent rate of growth will continue for the next 20 years. The high-end growth rate – the "Hyper" rate – is based on growth rates from the second half of the 1980s, following the activation of the 10th Mountain Division at Fort Drum. The Hyper growth rate assumes a return to 1980s levels of growth for the next 20 years.

The substantive difference between the Moderate growth rate and the Hyper growth rate is quantitative. At the end of the 20-year window for the growth model, the Moderate growth rate yields 4,000 single-family homes while the Hyper growth rate yields 10,500 single-family homes.

Future demand for retail space in the Fort Drum region was also projected. This was done by applying multipliers from the Urban Land Institute[85] to the low-end and high-end single family home growth projections described in the preceding paragraph. Based on the number of new single-family homes added to the region during the next 20 years under Moderate growth, demand for an additional 300,000 square feet of retail space would be generated. This demand is roughly equal to the current amount of retail commercial space along Route 11 in the Town of LeRay. Based on the number of new single-family homes added to the region over the next 20 years under Hyper growth, demand for approximately 755,000 square feet of retail space would be generated (roughly twice the existing commercial development along Route 11 in LeRay, or one Salmon Run Mall). However, it should be noted that some portion of future demand for retail space would likely be absorbed by increased patronage of the region's existing retail establishments. A more detailed study would need to be undertaken to determine the capacity of existing establishments to absorb future retail demand before new retail space is required, as well as evaluate the demand resulting from more on-post housing. The above growth modeling results are summarized in the table below.

Table 3.2: Growth Model Scenario Results

	Growth Rate	
Development Pattern	Moderate Dispersed ~4,000 single-family homes ~300,000 ft^2 commercial	Hyper Dispersed ~10,500 single-family homes ~755,000 ft^2 commercial
	Moderate Centered ~4,000 single-family homes ~300,000 ft^2 commercial	Hyper Centered ~10,500 single-family homes ~755,000 ft^2 commercial

Projecting the quantity of future growth over the next 20 years is only one part of the equation. Even more critical is to examine where these future dwelling units will locate within the Fort Drum region. To answer this question, two contrasting development patterns were utilized – Dispersed and Centered – as described in more detail on the following pages.

[85] Ryan B, and Edwards, M. (1999) "Retail Development in Growing Communities: How Much Retail Can Our Town Support?" University of Wisconsin Extension Services

Future Development Patterns: Dispersed vs. Centered

Two different development patterns were employed to model future growth across the landscape of the Fort Drum region: Dispersed and Centered. For the purposes of the growth model, the Dispersed development pattern spreads development across the landscape, often with minimal connection to other developed areas. Over time, Dispersed development can replace large areas of farmland, woodlands and other rural or natural areas along existing roadways in the region. Costs to provide services can also increase – such as road maintenance and the provision of utilities – with increasing distances between one home to the next. The Dispersed development pattern is closest to the actual, prevailing development pattern in the Fort Drum region.

The Village of Gouverneur as seen in this 1885 illustration is an example of one of the many historic centers in the Fort Drum region. Source: Library of Congress, Geography and Map Division

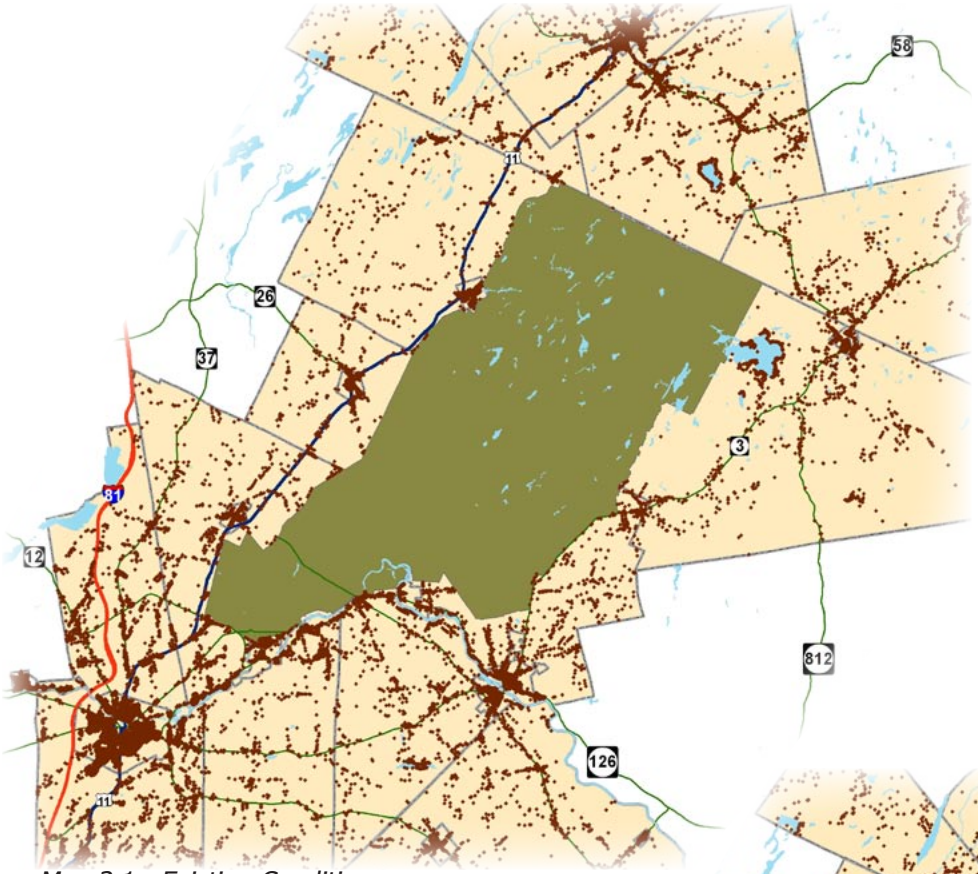
In contrast to a Dispersed development pattern, the Centered development pattern is more similar to the settlement patterns of the late 19th and early 20th centuries, when developed areas were based around transportation nodes such as railroad stations and canals. The Fort Drum Region has many existing centers, including the City of Watertown and numerous villages and hamlets. For the purposes of the growth model, the Centered development pattern directs more growth in and around existing cities, villages and hamlets, areas that serve as potential hubs for new mixed-use residential and commercial development. Such growth can take place either through the reuse of existing buildings or by new construction.

The substantive difference between the Dispersed development pattern and the Centered development pattern is qualitative. Each pattern will yield a distinctly different outcome for the region at the end of 20 years in terms of community character, quality of life and the future success and vitality of both the communities and Fort Drum.

ENVISIONING FUTURE GROWTH

Future growth utilizing the Dispersed and Centered development patterns, as well as how these patterns could occur under Moderate versus Hyper growth rates, are illustrated on Maps 3.2 through 3.5, beginning on page 114. Each dot on the map represents the location of a possible future single family home. Due to the conceptual nature of the growth modeling and the regional scale of the examination, future retail growth is not represented on the maps. However, under the Dispersed development pattern, new retail commercial growth in the Fort Drum region will most likely continue to locate along the region's major transportation corridors, particularly in the Watertown area and along Route 11 in LeRay. New pressures would likely be placed on secondary commercial corridors, such as Route 3 south of Wheeler-Sack Army Airfield (WSAAF). Under the Centered growth scenario, more housing and new residents would be absorbed by the City of Watertown and the region's villages, which in turn could stimulate commercial revitalization in these communities. However, without concerted efforts and planning, these areas will continue to experience relatively small amounts of new commercial development.

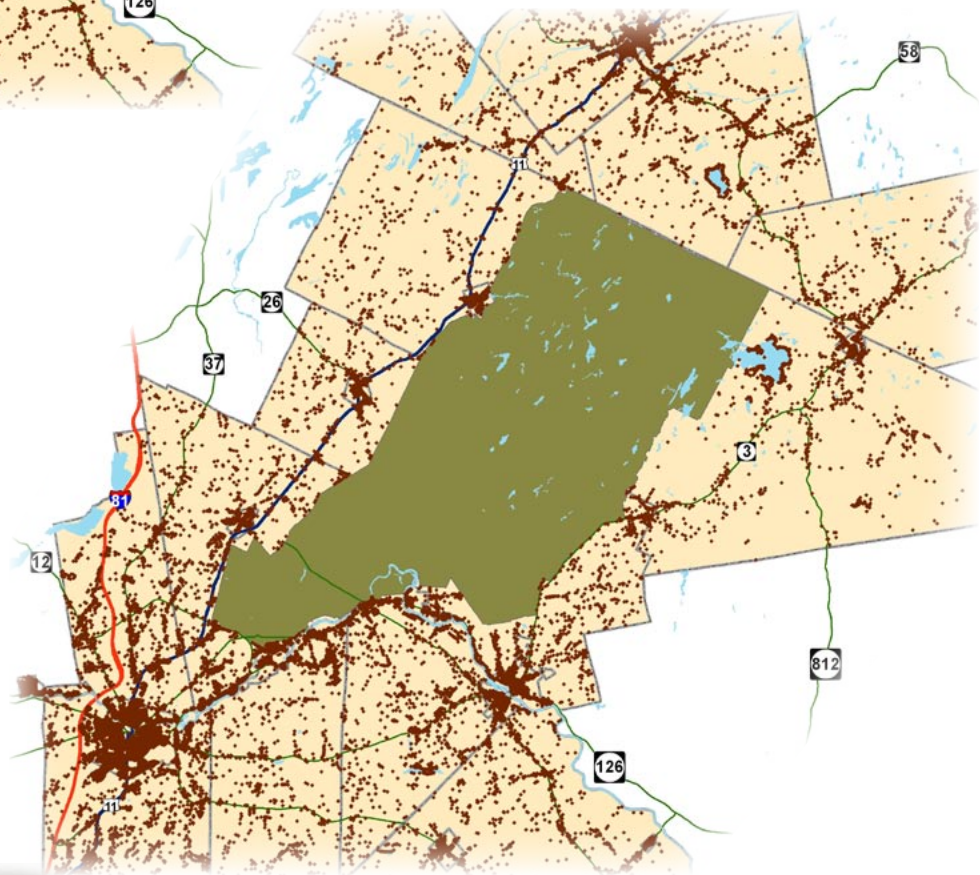
Two typical forms of commercial development that can be found in the Fort Drum region: Commercial infill within population centers, such as the automotive dealership at left; and strip-style development along highway corridors (below) that often occurs in conjunction with dispersed development patterns.



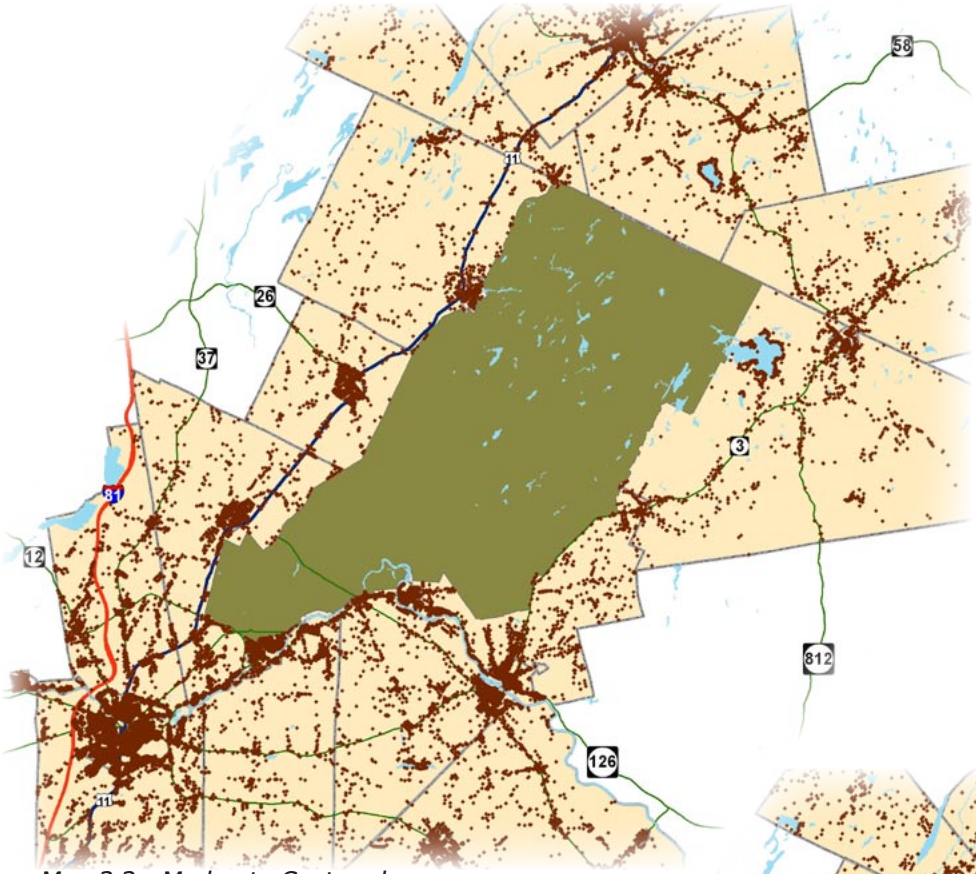
Map 3.1 - Existing Conditions

The map at left depicts the locations of single-family homes in the Fort Drum region at the end of 2007. As can be seen the majority of development is clustered around hamlets and villages and along road corridors. In the range areas the locations of homes are more dispersed, which is to be expected as this area possesses fewer development nodes, and fewer major roads. In this map, and the subsequent maps, the "dots" representing homes are approximately 3 acres in size, as to best illustrate not just a building, but the property associated with the home. This size was also chosen so as to best visualize the pattern of growth - smaller dots would be difficult to see, larger dots would overlap too much and mask the development patterns.

The map at right depicts the model results for the Moderate Dispersed growth scenario. The results look similar to the existing conditions map, but with a larger amount of development along the roads and near the hamlets and villages, and a noticeable increase in the dispersed style of development spread across the region. The implications of this development are discussed later in the chapter.

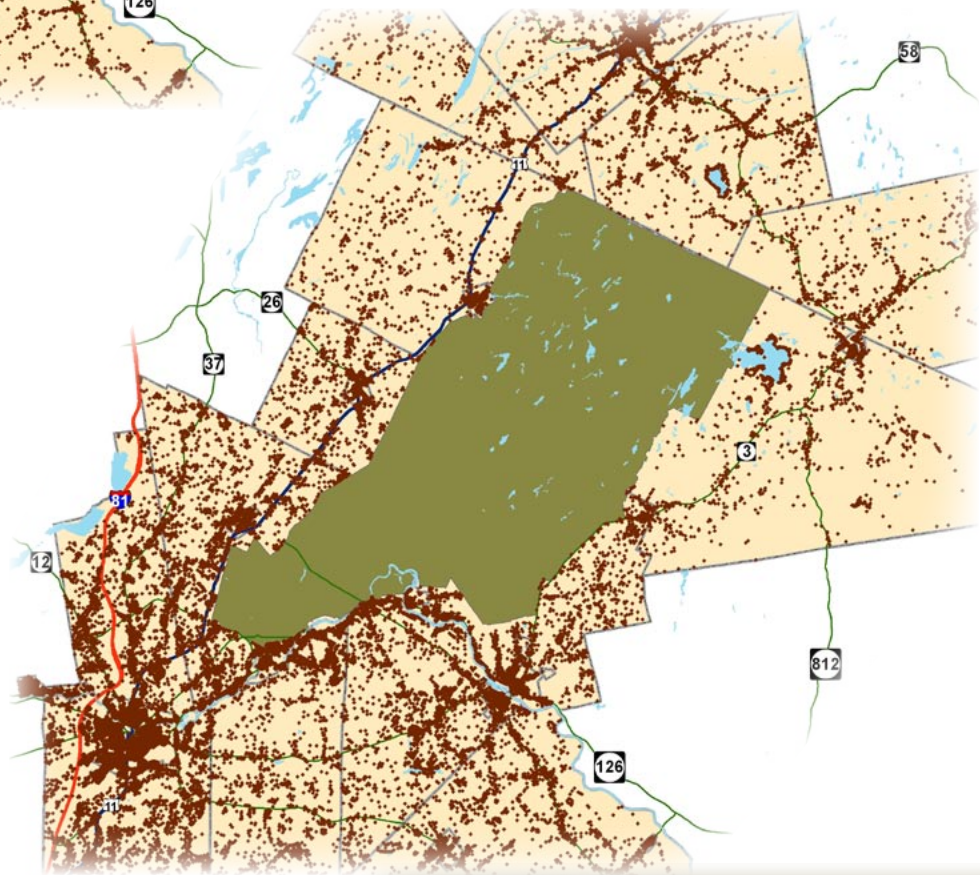


Map 3.2 - Moderate Dispersed



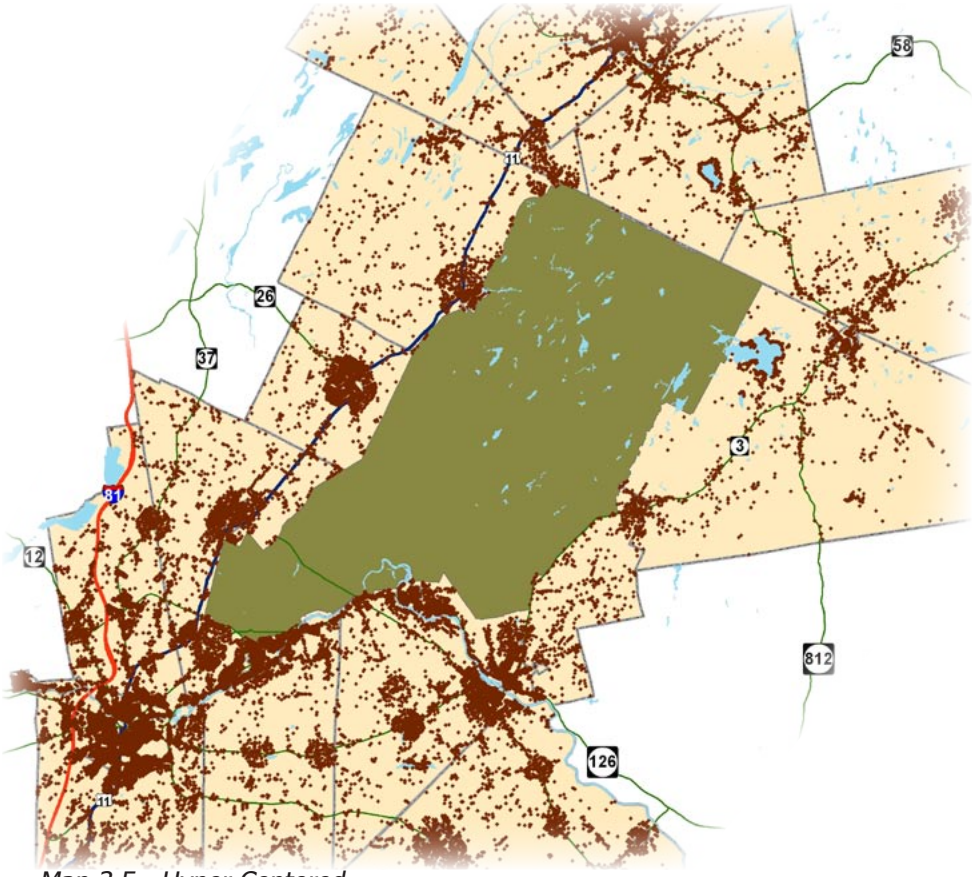
Map 3.3 - Moderate Centered

The map at left depicts the model results for the Moderate Centered growth scenario. The results look similar to the existing conditions map, but with a larger amount of development near the hamlets and villages, and a negligible increase in the dispersed style of development. The implications of this development are discussed later in the chapter.



Map 3.4 - Hyper Dispersed

The map at right depicts the model results for the Hyper Dispersed growth scenario. Development is noticeably intense across the region, especially in the gate communities. This scenario is of course an extreme example, but not unlikely. Even if it were not to occur in the 20 year window of the model, it could still be reality given a longer timeline. The implications of this development are discussed later in the chapter.



Map 3.5 - Hyper Centered

The map at left depicts the model results for the Hyper Centered growth scenario. Development is noticeably intense around the region's hamlets and villages, while moderate in the rest of the region. Like the Hyper Dispersed scenario this is an extreme example, but not unlikely. Even if it were not to occur in the 20 year window of the model, it could still be reality given a longer timeline. The implications of this development are discussed later in the chapter.

Interpreting the Impacts of the Growth Scenarios

The growth modeling exercise is a conceptual endeavor. Its value lies in illustrating conceptually the impacts of future growth in the region under different scenarios. The previously presented growth scenario maps in particular help to communicate in a visual manner the cumulative impacts of growth in the region over the next 20 years. The general impacts of this new growth are set forth immediately below. A more detailed analysis of the impacts of future growth on selected key elements of the region's infrastructure can be found in the sections that follow.

General conclusions drawn from the results of the growth modeling exercise:

1. ***Both the Moderate and High-Growth Scenarios Result in a Significant Amount of Development in the Region over the Next 20 Years***
   In terms of sheer quantity of growth, the modeling results indicate that even under the lower growth scenario (Moderate), which is a continuation of 2000 to 2007growth rate, approximately 4,000 new single-family residential units will appear in the Fort Drum region over the next 20 years. Under the high growth scenario (Hyper), which replicates the region's 1980s growth rates, this number could be as high as 10,500 single family units. Again, it must be stressed that the growth modeling exercise did not consider a flat or negative growth scenario.

2. ***Growth Will Have a Significant Impact on the Regional Landscape and Quality of Life***
   Growth rarely transforms a region overnight. Most often, growth is incremental. In the Fort Drum region, although there are certainly exceptions, much recent growth has taken the form of small subdivisions and one- or two-lot peel-off's from larger parcels. All too often, the impacts of development are evaluated on a case-by-case or town-by-town basis. However, while any one development may not have a significant impact to the community or region, the cumulative effect of development over a longer period of time can have dramatic consequences. The growth scenario maps illustrate that the cumulative, regional impacts of future growth, even under the moderate scenario, will be significant for the Fort Drum region. In other words, the next 20 years of growth have the potential to significantly impact the character, quality of life and future prosperity of Fort Drum and the communities that surround it. By the same token, Fort Drum and the communities, working together, have the opportunity to significantly change the face of future growth, guiding it to desired outcomes based on mutual win-win solutions. These desired win-win outcomes are at the heart of this planning project.

3. ***The Quality of Future Growth is as Important as the Quantity of Future Growth***
   The growth scenarios maps illustrate that 20-years worth of growth will look significantly different depending on the form that growth takes. Under the Dispersed development pattern, which is the prevailing manner in which development currently occurs in the region, growth will place a strain on the region's rural character and rural farms. More frontage development and driveways along the region's major roads will affect not only community character, but the safety and efficiency of the region's transportation network. Lastly, and as discussed in more detail immediately below, the Dispersed development pattern will likely pose more encroachment conflicts than the Centered development pattern, as development surrounds the Fort around its edges.

By contrast, the Centered development pattern shift more (but not all) development to existing "centers" (City of Watertown, villages). This takes pressure off of the rural landscape, reinvigorates historic centers, and focuses development closer to where the region has made significant investments in infrastructure (the DANC line, for example). However, accommodating growth in some villages – particularly those nestled against the Fort's borders – may pose some challenges with respect to Fort-Community encroachment concerns. Lastly, encouraging more focused growth requires that a clear community vision for such growth and the tools to achieve it, are in place. Without a clear plan in place, the quality of future development is less certain and the overall benefit to the community – both in the short run and the long run – may not be fully realized.

4. ***Future Growth May Lead to Increasing Potential for Encroachment Conflicts***
As shown in Chapter 2 of this plan, there are a number of areas along the Fort-Community border where encroachment is particularly of concern. The growth modeling exercise clearly indicates that 20 years worth of growth in the Fort Drum region will increase the chances for encroachment conflicts between Fort Drum activities and land uses on the community side. While encroachment will continue to be a concern along all areas along the Fort-Community border, the growth modeling exercise confirms that the following areas are most likely to see increased chances for encroachment conflicts in the future:

Route 3 Corridor south of Fort Drum
Looking to the future, the biggest area of encroachment concern relates to Wheeler-Sack Army Airfield and the Noise Zones and Accident Potential Zones associated with it. This comes to no surprise, as this area is currently identified as an area of concern (see Chapter 2). Under both Moderate and Hyper growth rates, significant development pressures will continue to be experienced in the Route 3 corridor between the Villages of Black River and Herrings. Under the Dispersed growth scenarios, growth will be more evenly distributed along Route 3, while under the Centered scenarios, more development will occur in and around the established villages and hamlets. Both the Dispersed and Centered growth models present concern for encroachment within this area, as there is already a relatively high concentration of development and development centers within the noise and accident potential zones south WSAAF.

Villages and Hamlets Along the Fort Border
There are a number of established villages and hamlets along the Fort border. The main areas of concern are villages and hamlets along Route 3 discussed previously, and the Village of Antwerp along Route 11 on the northwest side of the Fort. In some cases, steering additional growth into these communities may raise encroachment concerns. However, one of the goals of this plan is to leverage new growth in the region to benefit and revitalize existing centers. Therefore, villages and hamlets along the Fort border should work closely with Fort

The Village of Deferiet and the Route 3 corridor are two areas where future growth could lead to encroachment conflicts due to their proximity to Wheeler-Sack Army Airfield.

Drum to arrive at solutions that are in keeping with local goals and aspirations while minimizing the potential for Fort-Community land use conflicts.

Incremental, Parcel-by-Parcel Development Along the Fort Border
As noted elsewhere in this plan, growth and development does not take place overnight. Often, the cumulative impacts of small scale growth – one lot here, another lot there – do not become apparent until it is too late and the damage is done. The "Dispersed" growth models illustrate the potential problems with this growth pattern. Over time, the region's rural character and working agricultural landscape can be eroded by dispersed, large lot development. From an encroachment standpoint, while widely scattered and low density residential development may be acceptable in any one area, the cumulative effect of surrounding the Fort with such development can pose problems.

Impacts to the Region's Infrastructure

In addition to the above analysis of future growth patterns, a more specific analysis was undertaken to determine at a conceptual level the impacts of future growth on the following elements of the region's infrastructure: (1) Water and Sewer; (2) Transportation; and (3) Schools. The intent of this analysis is to shed light on the ways in which future growth levels and patterns may impact the region's infrastructure and, more importantly, how the region can set policy and make decisions to ensure that it gets the most out of its infrastructure investments.

Impacts to Water and Sewer Infrastructure

Key characteristics of the region's water and sewer infrastructure are described in Chapter 1 and Appendix A of this report. As noted in Chapter 1, there are two main components to the region's water and sewer infrastructure:

- ◇ The DANC Water/Sewer Line – Watertown to Fort Drum; and
- ◇ Numerous independent systems usually associated with a village and sometimes shared with adjoining towns.

The impacts of future growth on the region's water and sewer infrastructure systems and investments are discussed below.

Water & Sewer Capacity

DANC System

Water
According to DANC[86], the Watertown water treatment plant is capable of providing approximately 15 million gallons of water per day (mgd) to their service area, which included Fort Drum. As of 2006, the system experienced an average load of approximately 6 mgd, with a maximum usage day back

[86]Stearns and Wheler LLC (2006) "Water and Sewer Capacity Assessment City of Watertown, NY and Development Authority of the North Country"

in 2003 of 8.9 million gallons. As such, the water line is estimated to be able to handle approximately 60% more demand (based on the maximum day demand). The Centered growth scenario directs more new growth to the DANC service area than does the Dispersed growth scenario. Based on the Centered development pattern and the highest (Hyper) growth rate, new development within the DANC service area would increase by approximately 30% during the 20-year model, equal to half of the apparent excess capacity of 2006. The model does not account for expansion of the service area, however it would appear that there may be enough capacity to do so. These estimates on capacity do not factor in an additional demand from Fort Drum. If the Fort increases demand, then that in turn would decrease capacity for the surrounding area. The DANC system represents a significant regional investment in infrastructure and the Centered development is the pattern most likely to capitalize on this investment by steering more growth to the existing service area.

Sewer
With respect to sewer capacity, the biggest issue is sewer plant capacity. The Watertown sewer plant occasionally exceeds capacity under existing conditions, mostly due to storm water mixing in the with sewer flows. Therefore it is difficult to predict what magnitude of impact the new development will have on the sewer system. It is estimated that new development within the existing sewer districts would increase demand by approximately 30% under hyper growth in centers scenario. As with the water system, this anticipated demand does not account for additional growth on the Fort. Fort capacity could be limited depending on where new development occurs, as the older section of the Fort is more restricted by the size of the existing sewer lines.

Village Systems

For village systems, age of infrastructure is an issue. Many village systems are older and therefore condition is as much of a concern, if not more, than capacity. Villages that wish to capture the benefits of future growth may need to address the quality of the existing infrastructure and upgrade their systems accordingly. Through the use of local regulations, new development could help offset the cost of these infrastructure upgrades.

Water & Sewer Impacts: Dispersed vs. Centered Growth

The impacts of future growth to the region's water and sewer infrastructure systems will vary, depending on the development pattern that growth takes – Dispersed vs. Centered. The impacts of each development pattern on water and sewer are summarized as follows:

Dispersed Development Pattern

◇ Water & Sewer Infrastructure is more costly per mile/unit to provide.

◇ A critical mass of new lots in the countryside utilizing septic/wells may lead to further demands and/or needs to extend infrastructure into previously undeveloped/non-serviced areas, even though there may be extra capacity in currently served areas to absorb growth. This in turn can lead to increased pressure on working farms and the rural landscape.

◇ The region capitalizes less efficiently on its investments in existing water and sewer systems (DANC line, village systems).

Centered Development Pattern

◇ New development can be steered to areas currently served by infrastructure. This includes the DANC water-sewer service area, as well as independent, mostly village-based systems.

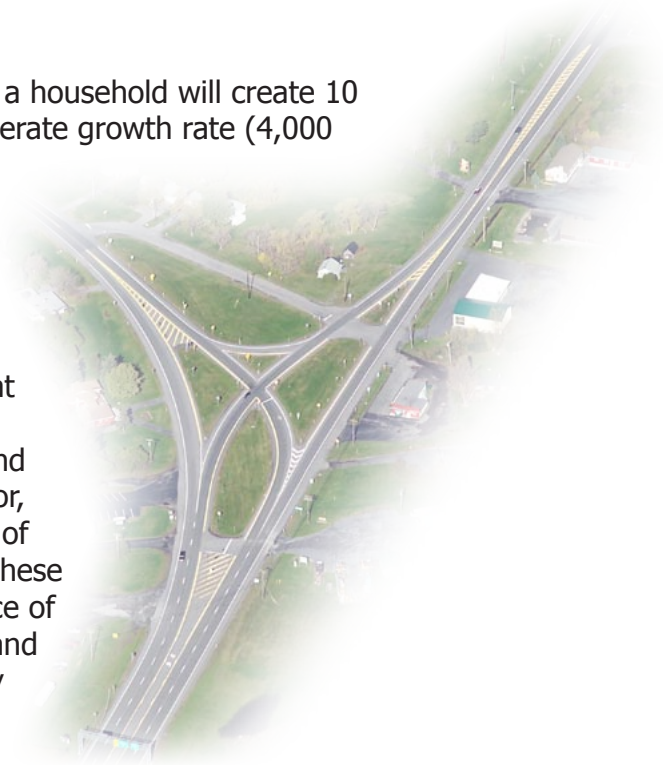
◇ Many water and sewer systems in the region are old and would potentially need upgrades regardless of whether new development and revitalization occurs in villages. In some cases, new growth and revitalization of villages may help to pay for upgrades to existing systems.

◇ The region capitalizes on its investments in existing water and sewer systems by encouraging growth and development in existing serviced areas.

Impacts to Transportation

The region's transportation infrastructure is described in Chapter 1 of this plan. As noted in Chapter 1, the region is heavily reliant on private automobile use to meet its transportation needs. The exceptions are the public transportation system in Watertown, a planned transit line between Gouverneur and Watertown, and a number of transit services in the region for special needs populations such as the elderly and disabled. The impacts of future growth with respect to transportation are discussed below.

Transportation Network Capacity



Based on data from the Institute of Transportation Engineers a household will create 10 vehicle trips per day. Based on this multiplier, under the Moderate growth rate (4,000 new homes), 40,000 additional vehicle trips per day would be added to roads in the Fort Drum region. Under the Hyper growth rate (10,500 homes), 105,000 additional trips per day would be added to roads in the Fort Drum region.

While the additional trips would be dispersed over the entire region, common sense dictates that there are some areas that would likely see a greater impact. These include the primary roadways that currently feed into Fort Drum (US Route 11 and NYS Routes 3, 26 and 342), and the new Fort Drum Connector, which would draw soldiers commuting from the western side of Watertown and points south and north along Interstate 81. These findings are corroborated by interviews with the regional office of the NY State Department of Transportation. Road segments and communities in close proximity to Fort gates will be especially impacted. For instance, and as discussed in Chapter 1 of this plan, some residents of the region have reported traffic and

safety concerns at the intersection of Routes 3 and 26, which attracts higher volumes of traffic during rush-hour periods as off-post residents converge from various directions to access the Fort via Gate 1 (Gasoline Alley) and Gate 5 (Wheeler Sack Army Airfield). These current issues will almost certainly be exacerbated by future growth in the region.

Transportation Impacts: Dispersed vs. Centered Development

Future growth, no matter how it manifests itself across the region's landscape, will demand more of the region's existing transportation infrastructure. However, the impacts, as well as opportunities, will differ substantially, depending on what form development takes. The impacts to the region's transportation infrastructure under both Dispersed and Centered development patterns are summarized as follows:

Dispersed Development Pattern

◇ It is more costly per mile per unit to provide an efficient transportation network when development is dispersed. The cost of building roads (labor, cost of materials, etc.) is higher as greater distances must be covered to serve thinly spread out residents.[87]

◇ Public transit is more difficult to provide. Without critical mass at key locations, it is difficult to establish efficient and convenient public transit routes.

◇ Individuals have to make more and longer trips for shopping, services, etc. This leads to increased traffic on limited rural roads.

◇ Continued dependence on conventional automobiles increases the region's reliance on oil and the associated impacts, such as air and water pollution.

◇ Continued frontage development along the region's major roads, which increases driveways and chances for accidents, reduces road efficiency and safety.

Large automobile-centric plazas like this one under construction along Route 11 are typical under a dispersed form of development. While such development brings new retail choices to the region, steering a portion of new commercial growth into the region's historic centers will help to reinvigorate them and enhance the region's quality of life.

Centered Development Pattern

◇ The cost of roadways to service new development is almost always lower than costs associated with dispersed growth.[88]

[87]LaQuatra J. Et Al. (2007) "The Changing Nature of Housing Markets in Upstate New York" Housing and Society, V.34 No. 1 2007
[88]Litman, T.(2008) "Evaluating Transportation Land Use Impacts"

- ◇ Arterial and collector roads can function better, since there are fewer driveway cuts and conflict points between destinations.
- ◇ Public transit is more feasible as transit stops and routes can be organized around nodes of residential and commercial development.
- ◇ Fewer and shorter trips are needed for completing daily tasks (shopping, commuting, transporting children, etc.). This in turn results in less stress on the transportation network.
- ◇ The region's dependence on oil is reduced and a smaller "carbon footprint" is created, as fewer and shorter automobile trips translate into lower emissions.
- ◇ It is easier and more cost effective to provide trails, sidewalks and other alternative transportation amenities for those who want to walk or ride bicycles.

Impacts to Schools

The region's school systems are perhaps the most treasured and appreciated component of the region's portfolio of community "infrastructure." As discussed in Chapter 1 of this plan, schools in the Fort Drum region not only educate the region's children, but act as a rock of stability for children, families and entire communities. Future growth in the region, based on the conceptual growth scenarios, will likely significantly increase student enrollments, particularly for those school districts closest to Fort gates. As the region grows and changes during the next 20 years, schools will continue to play a key role in the education of the region's children and in the life of the communities in which they are located. The potential impacts of future growth with respect to the region's schools are discussed below.

School Capacity

Key characteristics of the region's school systems are discussed at length in Chapter 1 of this plan. As noted in Chapter 1, the three districts in the Fort Drum region that are most influenced by Fort-related growth are the Carthage, Watertown and Indian River School Districts. The impacts of future growth with respect to schools are discussed in more detail below, both generally, and more specifically with respect to the three aforementioned school districts.

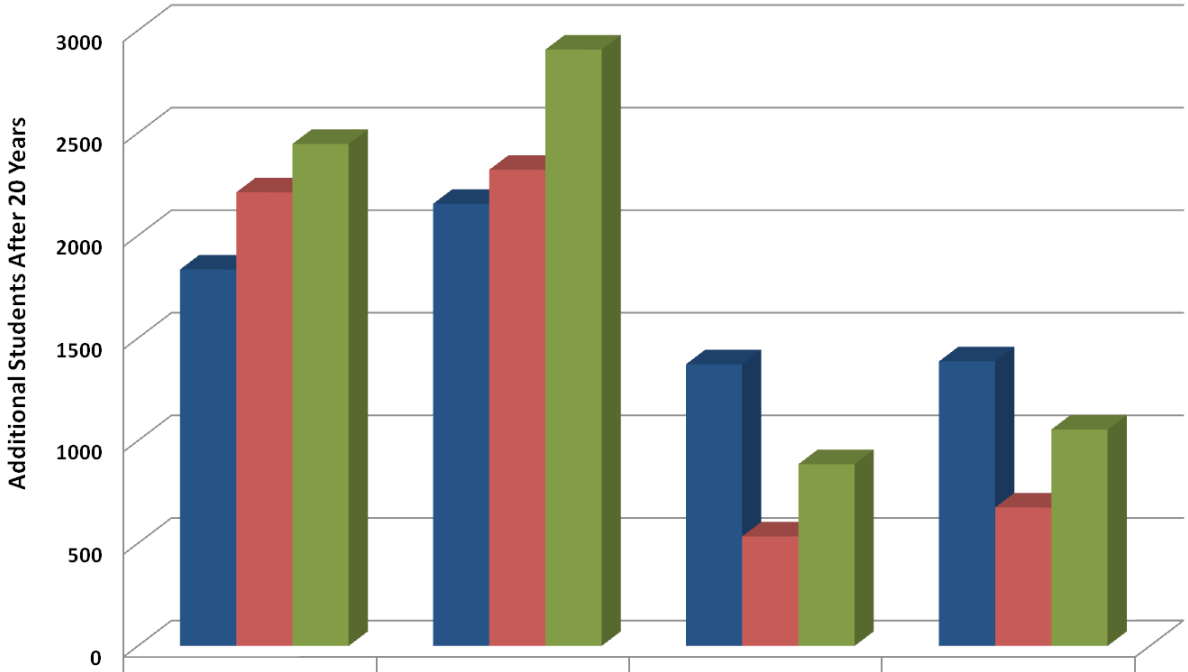
Estimating Future Student Populations

A simple method of estimating future student population is to use a multiplier that yields a predicted number of school-aged children per household. Based on 2000 US Census data for Jefferson County the average number of school-aged children per household is 0.49. Since most of the new development is in Jefferson County this multiplier is applied to the number of new households generated under the growth scenarios. Based on the Moderate and Hyper growth scenarios, between 2,000 to 5,100 additional school aged children respectively could potentially be added to the region's school districts over a 20 year period. The Carthage, Watertown and Indian River school districts are estimated to absorb between 60% to 80% of the new growth based on the four growth scenarios that were modeled.

Under the Hyper growth scenarios, the Carthage School District is estimated to see the most new growth in enrollment, followed by Indian River and then the Watertown City School District. Under the Moderate scenarios, however, Watertown is estimated to receive the most growth, followed by Carthage and Indian River. This is because developable land within the Watertown School District begins to reach "maximum build out" in the Hyper growth scenario, while the less developed lands in the Indian River and Carthage School Districts would continue to absorb development. In the lower growth, Moderate scenarios, land within the Watertown School District does not reach maximum build-out, so the district effectively attracts more new students than either the Carthage or Indian River School Districts.

The chart below illustrates the calculated amount of new school-aged children for each scenario within the three school districts under both the Hyper and Moderate growth scenarios.

New School-aged Children Based on 20-Year Growth Scenarios

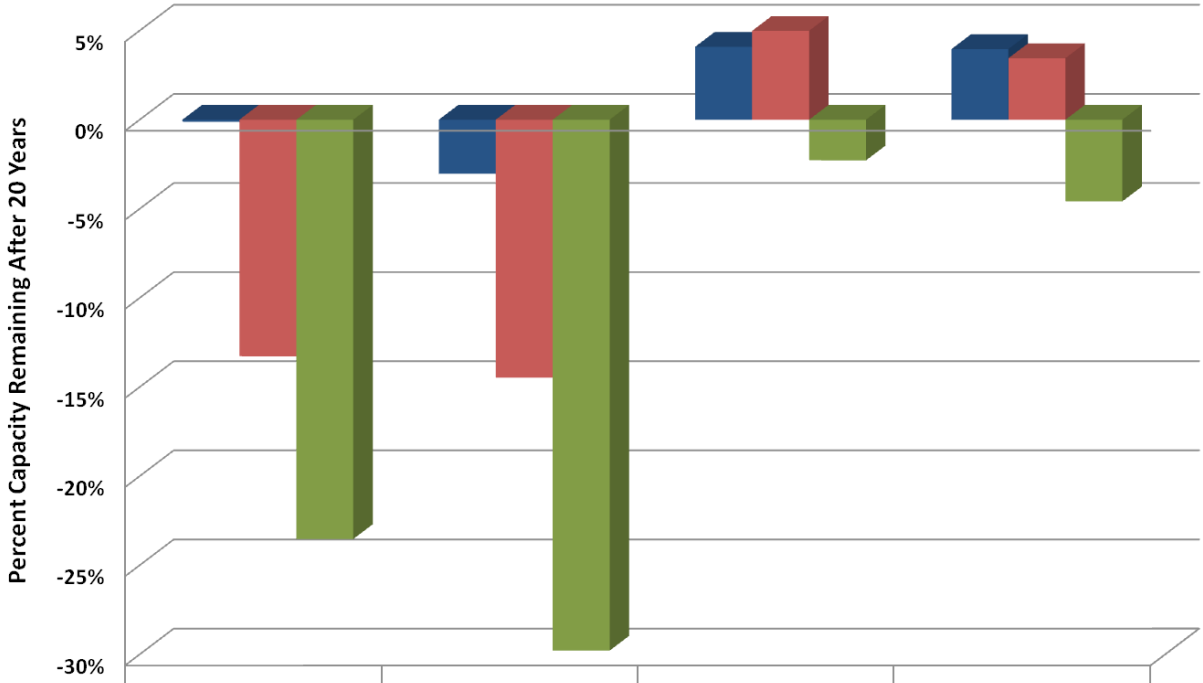


	Hyper - Dispersed	Hyper - Centers	Status-Quo - Dispersed	Status-Quo - Centers
Watertown	1835	2155	1373	1387
Indian River	2211	2321	534	675
Carthage	2447	2907	886	1055

More important than the amount of new children, is the capacity of the schools to handle the new demand. As the chart on the following page illustrates, under Moderate growth conditions, Watertown and Indian River School districts should have enough capacity to accept the new growth and Carthage's capacity would be exceeded by 5% or less. Under the Hyper growth scenarios, however only Watertown would be in a position to handle new growth, with Indian River capacity exceeded by over 10% and Carthage's capacity exceeded by up to 30%.[89]

[89]Baseline for capacity information obtained from the Fort Drum Regional Liaison Organization (2007) "Data on School Enrollment and Impact Aid From Local Educational Agencies and the Army"

Residual School Capacity Based on 20-Year Growth Scenarios



	Hyper - Dispersed	Hyper - Centers	Status-Quo - Dispersed	Status-Quo - Centers
Watertown	0%	-3%	4%	4%
Indian River	-13%	-14%	5%	3%
Carthage	-24%	-30%	-2%	-5%

Capacity information based on data from: Fort Drum Regional Liaison Organization (2007) "Data on School Enrollment and Impact Aid From Local Educational Agencies and the Army"

Based on these data, school district facilities in the region may be able to handle additional growth under Moderate growth rates. If growth in the region occurs more in line with Hyper growth rates, however, Indian River and Carthage School districts would appear to need additional facilities to meet the increased demand. It should be cautioned, however, that school districts currently undertake their own planning efforts and this analysis is not meant to in any way supersede such efforts – only to conceptually explore impacts to the region's schools based on potential future growth. The impacts to the region's school systems under both Dispersed and Centered development patterns are summarized as follows:

The Carthage Central School District could be the most in need of expansion as a result of new development in the Fort Drum region.

Dispersed Development Pattern

◇ Transportation costs for busing school children will rise to transport children across greater distances, particularly as fuel prices continue to rise. The Indian River school district, for example, has budgeted approximately

$4.4 million for transportation, of a total budget of approximately $52 million, in the 2008-2009 school year. The more dispersed the settlement patterns are, the larger the distances buses must travel to reach children, and the more often the buses need to stop at individual driveways along the way.

◇ It is harder to provide school facilities in centralized locations and in close proximity to where children live. Longer trips back and forth to school – for both parents and children – results in less participation and engagement in the education process.

◇ School children walk less, depending instead on bus transportation. Parents must also log extra time in the car carrying children back and forth between home and school activities.

◇ Scattered, random development makes it more difficult for schools to anticipate where new and/or improved facilities should be located.

Centered Development Pattern

◇ It is easier to provide school facilities in centralized locations and in close proximity to where children live. Shorter trips back and forth to school – for both parents and children – results in greater participation and engagement in the education process.

◇ More children can walk to school. The Indian River School District has established a 0.3 mile boundary, within which children are expected to walk. For most schools in the district, this equates to virtually no walkers. Moreover, there are few safe areas for children to walk. Under the Centered growth model, more housing can be located in neighborhood settings and better integrated with schools, sidewalks, trails and other amenities to induce more children to walk to school.

◇ Schools are reinforced as focal points of community. Schools that are interwoven into the fabric of a village or neighborhood are generally more woven into the daily life of the community. Schools can also double as community centers, recreation facilities etc. – this is more cost effective and efficient and also binds communities and schools closer together. The Indian River school district recognizes the important community building role that schools play and incorporates this into decision making. For instance, school playgrounds have been designed and located in such a manner as to encourage use by community members and neighbors during times when school is not in session.

◇ Parents may not have to drive as far and will be more likely to participate in their children's education. Children that have easy access to schools are also more likely to take advantage of extracurricular activities.

◇ With more people living in established villages and the City of Watertown, existing, under utilized schools can be more fully utilized or even reopened (Starbuck Elementary School in Watertown, for example).

Growth Models Conclusion

The "Centered" growth approach – under both Moderate and Hyper growth rates – can help the region to absorb growth more efficiently and effectively. By focusing some of the region's future growth into areas already serviced by infrastructure, development pressure can be taken off the rural landscape. Villages can also benefit from growth in terms of rehabilitated and new housing stock and revitalized downtowns. The "Centered" approach strikes a balance between new development in the region's countryside, revitalization of the region's historic communities and directing new growth to areas where the region has already made a significant investment in infrastructure. It is also about economics. In almost all cases, costs to providing services and infrastructure are lower when development takes a more compact form. The economic vitality and quality of life of communities is important, both for the communities themselves and for Fort Drum. The Fort relies on successful, attractive and prosperous communities to provide places for its military personnel and their families in which to live and work. Successful communities are key to the long-term success of Fort Drum. Lastly, the "centered approach" can help to take pressure off of the Fort Drum border areas, by pulling development away from the largely undeveloped buffer.

In the end, it is about options. Development will continue to occur in the region's agricultural and undeveloped areas and the allure of a large, private residential lot in a beautiful rural setting will never disappear. However, by taking a proactive approach to growth in the region and steering at least some new growth into established centers, the countryside can retain its rural charm, farms can continue to operate and the historic hamlets and villages and City of Watertown can capture some of the positive benefits of growth and continue to contribute to the region's high quality of life. As a result, more soldiers and their families will likely decide to settle in the area, both while on active duty, as well as once they retire.

COMMUNITY PREFERENCE EVALUATION

Introduction

Several methods were used to explore preferences regarding development and land use patterns in the Fort Drum Region. In addition to the growth scenarios discussed earlier in this chapter, community input was sought to evaluate preferred development patterns in the region. To this end, a community preference exercise was conducted to provided an opportunity for participants to express their opinions about future development patterns in their neighborhoods and communities, as well as in the Fort Drum region. The results of the community preference exercise provides some insight on the views of the group sampled, but cannot necessarily be extended to the population at large due to the relatively small sample size.

In all, three workshops were held to explore community preferences, one in each of the three counties in the Fort Drum Region:

- ◇ June 2, 2008 at the Lowville Central School (Lewis County)
- ◇ June 3, 2008 at the Gouverneur Village Hall (St. Lawrence County)
- ◇ June 24, 2008 at the Dulles State Office Building in Watertown (Jefferson County)

At the workshops, participants were asked to quickly rate a series of images depicting various development types or patterns, based on how appropriate the particular form of development would be for the Fort Drum region. Participants graded each image on a scale of -3 to +3 with -3 being the most inappropriate and +3 being the most appropriate. Participants also had the option to provide brief comments clarifying their score for each image. A total of 42 images were viewed. The images were grouped into three categories:

- ◇ Landscape Patterns
- ◇ Commercial Development
- ◇ Residential Development

By a show of hands, participants were asked how they generally graded each image (positively, negatively, or in between) and were then prompted to share the reasons for their scores. This dialogue gave participants an opportunity to discuss development patterns and design types that would be desired for the region, as well as what was not wanted for areas within the Fort Drum region.

Summary of Results

Based on the input from workshop participants, a general consensus emerged as to the types of development that are most and least desirable. In general, participants scored village- and neighborhood-scaled development (such as villages, cities, and hamlets) and very rural development highly. On the whole, participants were less enthusiastic about "in between" development patterns, such as intense suburban residential development and strip commercial development. However, participants also recognized the need for a diversity of development types in the region.

The images that scored the highest demonstrated a sensitivity to the scale and context of the surroundings. These images were similar to existing conditions in many communities within the Fort Drum region. Participants favored images that depicted large tracts of open farmland, with sparse amounts of development nearby. In situations where residential or commercial development was depicted at a denser scale, such as village or hamlet areas, participants responded positively to sidewalks and connectivity to adjacent areas and uses. Participants responded most positively to small scale commercial development, with small country stores and shops that evoked rural settings being most favored in the evaluation.

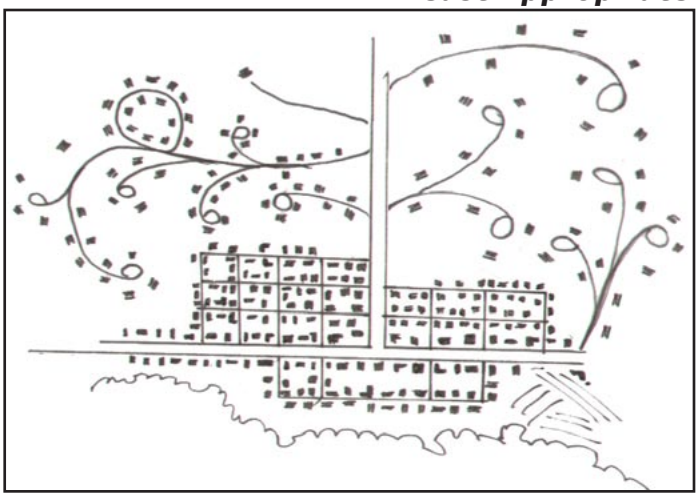
Conversely, participants gave some of the lowest scores to images of high intensity suburban commercial development. This style of development is typified by "corporate design," with single story, windowless big-box stores surrounded by acres of parking, with each business having a separate entrance off of the highway corridor and no connection to adjoining businesses or the greater community.

The following images represent the highest (most appropriate for the Fort Drum Region) and lowest scoring (least appropriate for the Fort Drum Region) images in each evaluation category. Notwithstanding the general conclusions and analysis above, caution should be taken in drawing too specific conclusions from the results, as it is impossible to know the exact reasons why particular individuals rated images positively or negatively.

Landscape Patterns

Most Appropriate

Least Appropriate



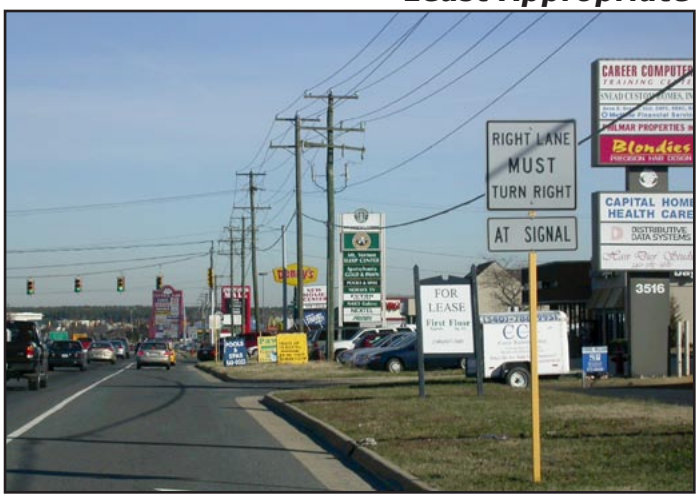
Participants favored images that illustrate undeveloped lands surrounding villages or urban areas (the "town and country" character). Participants also preferred images that showed a distinct delineation between village settings and rural areas, as shown in the image at left.

Conversely, participants were not in favor of developments that consumed large amounts of farmland and open space, either as an extension of the village into agricultural areas, as shown in the image to the right or through the piecemeal elimination of farmland shown in the image below.

Commercial Development

Most Appropriate

Least Appropriate



With respect to commercial development in the Fort Drum Region, evaluation participants favored uses that are scaled to the surrounding rural character. Country stores and small shops that evoked village settings were preferred. Shopping areas that include green space and other civic amenities were rated highly. According to several comments, this type of development fits into the existing community. Participants were strongly opposed to high-intensity strip development such as that shown on the image above (right). Images depicting corporate "strip" commercial development were the least desired overall by evaluation participants.

Residential Development

Most Appropriate

Least Appropriate

In the category of residential development, participants rated traditional neighborhoods with sidewalks and tree-lined streets as most appropriate for the region. Conversely, in all cases, images of neighborhoods that did not feature sidewalks and foliage, and where there was a marked focus on automobiles, scored lowest in the evaluation.

A detailed summary of the Community Preference Evaluation, including average scores for each image, both by county and overall, as well as a summary of comments noted by participants, can be found in Appendix G.

Vision Statement for the Fort Drum Region –

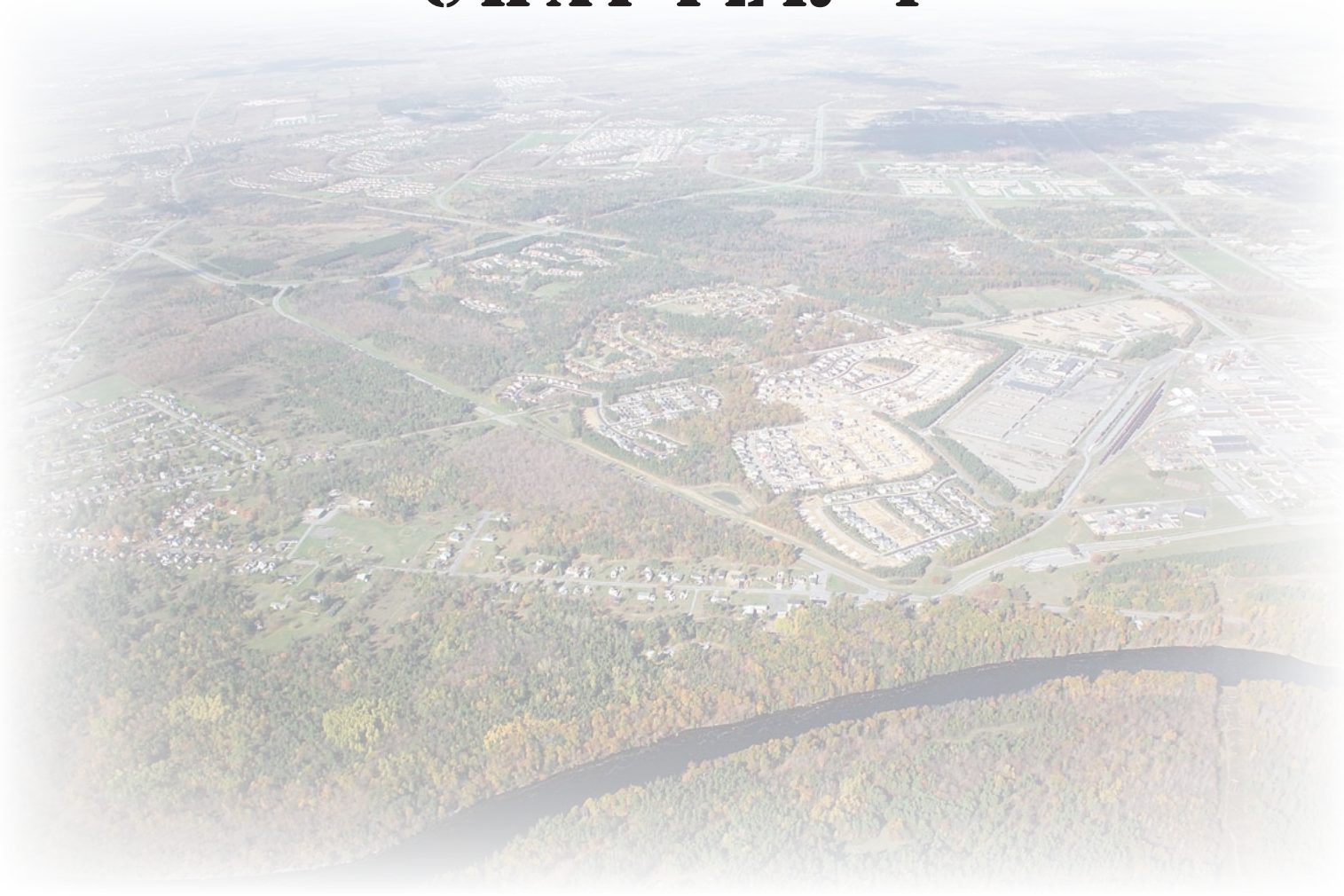
Based on the input received from the community preference exercise and the results of the growth modeling exercise, the following proposed vision statement was created to summarize the types of places and patterns desirable for the Fort Drum Region.

Rural heritage and traditional settlement patterns are valued assets of the Fort Drum Region. The traditional settlement areas (city, village hamlet) are the backbone of the region's population and commercial centers. They are surrounded by beautiful open countryside – farms, forests, and meandering river corridors. As communities grow, they will strive to maintain and enhance these traditional patterns. They will continue to provide a diversity of housing options for the region's residents. Growth and improvements will be focused in and near the City of Watertown, and the villages and hamlets. New residential neighborhoods will be created that integrate with their rural surroundings and respect the natural landscape. Development will emulate traditional village patterns with tree-lined streets, defined green spaces, sidewalks, and public spaces. Neighborhoods will be connected to one another, and to commercial centers. Commercial development will reflect the vernacular architecture and scale of the Fort Drum region, and serve as an asset for the communities. Communities and Fort Drum will consider the effects of growth on the region's quality of life and on the potential for encroachment and conflicts between Fort Drum and community activities and land uses.

This vision statement is consistent with the growth in centers scenario. In order to achieve this vision, and the centralized growth scenario, the communities in the region will need to work together. Communities may also need to modify their land use regulations and policies to ensure that they support the vision and centralized growth scenario. These types of modifications are discussed further in Part 4 of this report.

FORT DRUM GROWTH MANAGEMENT STRATEGY

CHAPTER 4



STRATEGIC ACTION PLAN

INTRODUCTION

The recommendations set forth in this chapter are designed to build on the strong spirit of cooperation that already exists between the Fort and the communities of the Fort Drum region. Working together, both Fort Drum and the surrounding communities can help to ensure that the future of the Fort Drum region is a prosperous one. A prosperous future means leveraging the growth of today for long term community success. It also means avoiding encroachment on the Fort's borders so that Fort Drum can remain a viable military installation. The recommendations build on the foundation of research and analysis contained in Chapters 1, 2 and 3 of this plan, as well as the extensive public outreach that was conducted as part of this project (see Appendix H for a summary of public outreach efforts).

Specifically, within this chapter can be found:

Recommendations
Recommendations are set forth under three major goals of the Growth Management Strategy:

◇ Continuing the Fort Drum-Community Partnership

◇ Ensuring the Long-term Viability of Fort Drum

◇ Leveraging Growth for Long-term Community Success

Land Use Tools Table
The Land Use Tools Table sets forth the tools most suitable for the region to address encroachment and quality of life. Because development trends and patterns, as well as encroachment issues, differ across the Fort Drum region, the degree to which a particular land use tool is applicable for a given area of the region will differ. For this reason, the table evaluates tools for their applicability with respect to Gate communities and Range communities. It should be noted, however, that each individual community, be they a Gate or Range community – or beyond, will need to evaluate its own unique circumstances and goals to arrive at the right set of land use tools. As such, this table should be used as a departure point for further community conversations at the local level.

Fort Friendly Checklist
The Fort Friendly Checklist is a simple yes/no questionnaire that can be used by communities to begin the process of evaluating whether they have taken the steps to ensure that land use policies and decisions are supportive of Fort Drum and its mission.

Implementation Table
Priority recommendations are set forth in the Implementation Table. The implementation table can be used to benchmark progress on the recommendations. For each recommendation, responsible parties are identified and, where pertinent, funding sources are identified.

List of Recommendations

For Ease of reference the following is a listing of the key recommendations in this chapter and the associated page numbers where they can be found.

I - Continuing the Fort-Community Partnership **Page 137**

II - Ensuring the Long-term Viability of Fort Drum **Page 138**
- IIA - Strengthened Communication Between Fort Drum and Communities Page 138
- IIB - Tools for Avoiding Encroachment Page 144

III - Leveraging Growth for Long-term Community Success **Page 157**
- IIIA - Municipalities Develop a Vision for Growth Page 157
- IIIB - Encourage "Centered" Growth Page 159
- IIIC - Take a Regional Approach to Transportation Page 163
- IIID - Economic Development Initiatives Page 167
- IIIE - Sustainability and "Green Planning" Page 171
- IIIF - Take a Regional Approach to Land Use Planning and Growth Management Page 174

IV - Area Specific Recommendations **Page 177**

RECOMMENDATIONS

I - Continuing the Fort-Community Partnership

The Fort Drum region is notable among military communities for its unique Fort-Community partnership approach to solving problems and proactively seizing opportunities. Regional entities, most notably FDRLO, have played a significant role in facilitating and strengthening this partnership for nearly twenty years. The partnership approach, documented throughout this plan, but most fully in Chapter 1, permeates nearly every aspect of life in the Fort Drum region. It is hard to imagine the Fort Drum region without the Fort; but equally hard to image Fort Drum without the communities that surround it. With this in mind, the aim of this plan and the theme that is woven through every recommendation that follows is "partnership". While the recommendations contained in this chapter are specific in nature, many pertaining to a particular issue, opportunity or given community, the "partnership" approach is always relevant. By working together toward shared goals the Fort and surrounding communities can help each other to succeed well into the future.

This diagram illustrates the partnership that went into the creation of this document; this same partnership will be necessary for the successful implementation of the Fort Drum Growth Management Strategy.

II - Ensuring the Long-term Viability of Fort Drum

Uncontrolled development can have negative consequences for both military installations and the communities that surround them. In some cases, uncontrolled development and conflicts have been factors in installation closures. Good development that bolsters quality-of-life in military communities is also critical to an installation's mission and viability. This is especially true in the Fort Drum region, as many of the Fort's personnel and their families live off-post. Even those who live on-post depend on the communities surrounding Fort Drum for services, recreation, education…the list is almost endless. Quality communities, therefore, play an integral support role for the Fort, helping to ensure that Fort personnel are productive and happy.

The Fort Drum region is well poised to address land use issues now, as the Fort-Community border remains relatively free of encroachment. Communities surrounding Fort Drum also have an opportunity to leverage current growth and development to create quality living and working environments that hold their value and appeal for years to come. Other military communities have not been as fortunate.

The following recommendations will help to ensure that encroachment at the Fort-Community border is avoided to the maximum extent practicable.

IIA - Strengthened Communication Between Fort Drum and Communities

Communication and sharing of information is critical to the Fort-Community partnership, particularly when it comes to avoiding encroachment and land use conflicts. There are many existing examples of successful collaboration and partnerships between stakeholders in the Fort Drum region. However, there are *many* opportunities to strengthen the information sharing and communications process to enhance both Fort Drum and community goals. Timely sharing of information is critical.

IIA.1 - Establish Protocol to Share and Update Fort-Community Mapping

Using maps to depict the locations of potential encroachment conflicts (such as noise and safety zones associated with the Fort) helps to inform land use decisions so that encroachment can be avoided in a proactive way. The maps provided in Chapter 2, particularly the "zoom-in" maps, can help communities and the Fort to better understand where encroachment conflicts are most likely to arise. A solid understanding of the geography of encroachment, in turn, helps communities to be more proactive in their planning efforts. For instance, before a community can consider adopting an overlay district with respect to Wheeler-Sack Army Airfield (WSAAF), it needs to know which areas of the community are impacted by WSAAF activities. An additional benefit is that a common set of information and maps on encroachment concern areas ensures that everybody – communities, counties, the Fort, etc. – have the knowledge that they are accessing and responding to the same set of data, concerns and opportunities.

Ideally, encroachment information would be available to both the Fort and Communities in electronic format as map layers. For instance, a municipality provided with encroachment information in electronic format can overlay such information with municipal zoning maps, to better understand the relationship and potential conflicts between zoning and areas of potential land use conflict. In another example,

if the counties are provided with encroachment maps in electronic format, they can overlay these with parcel maps to pinpoint if a particular project that has been referred to them for review is within an encroachment concern area. This helps the county to provide useful comments to local municipalities for avoiding land use conflicts.

It is imperative that a mutual commitment be made between the Fort and the community partners to provide each other with maps and other data regarding current activities and future plans. Maps need to be continuously updated and shared. It will up to the Fort to help make this happen.

See Chapter 2, especially pages 71 – 89, for information on encroachment and maps depicting areas of encroachment concern.

A portion of a map depicting Accident Potential Zones around WSAAF.

IIA.2 - Designate Information "Gatekeepers"

Designating an individual(s) from both the Fort and community side (such as County staff), who are responsible for compiling and transmitting a unified and regularly updated set of information will help to ensure that all involved parties (communities, Fort, counties, etc.) are on the same page when it comes to avoiding land use conflicts.

With respect to Fort Drum, a Fort point-person for land use and encroachment information not only assists the Fort-Community dialogue, but the dialogue within the Fort itself (a vast community made up of many individuals and divisions). In the course of a given day, let alone a year, the Fort conducts a vast and diverse array of training activities and operations, all of which may have implications for land use planning in the communities surrounding it. By designating an individual or department that is responsible for compiling and disseminating information about such Fort activities, the Fort can more easily speak with one voice and ensure that communities are provided with the type and scale of information they need to address land use and encroachment issues at the local level.

Legitimate concerns about compromising Fort and national security will always factor into decisions about the type of information that the Fort can share with communities to ensure that communities can take the necessary actions to avoid land use conflicts and encroachment. However, providing an adequate level of information to communities is key to the long-term viability of the Fort and its mission. Local municipalities, counties and regional entities that work with local communities on land use issues on a day-to-day basis can help in the process of identifying the right level of information that communities need, without compromising Fort security. At a minimum, such information should include maps of noise and safety concern areas, similar to those provided in this plan.

Regional entities, including the counties, can also play a role in transmitting community information to the Fort. This includes updated zoning and land use maps, adopted comprehensive plans and planning documents, and information on community infrastructure projects. Counties may be in the best position to designate points of contact with the Fort in order to ensure that the Fort is receiving important information on local municipal planning and land use decisions and efforts within the context of a regional perspective.

Recommended Next Steps:

- ◇ Counties, regional entities and Fort Drum should continue to meet regularly, and build upon the information from this plan, in order to take proactive steps to avoid encroachment. The first meeting following the completion of this plan could be to initiate discussion about points of contact for the exchange of information and the idea of establishing information "gatekeepers."

- ◇ The Fort should hold an internal meeting that gets all those to the table that are involved in decision making with respect to Fort training and operations activities. A key goal of this meeting should be to establish the level and type of information that can be shared with the communities surrounding the Fort in order to avoid encroachment – without compromising Fort and/or national security. The goal of the meeting(s) should be to establish a protocol for sharing information with the public that resolves any concerns about Fort security.

- ◇ The Fort and regional entities should discuss how best to provide regional entities with encroachment maps in electronic format.

- ◇ The Fort should consider participating in the New York State GIS Clearinghouse, an organization that facilitates GIS information sharing between users across New York State. In becoming a member, Fort Drum would have convenient access to a range of regional and local GIS information on a continual basis.

IIA.3 - Develop an Informational Website Accessible to the Public

A number of military installations are utilizing the internet to communicate information on encroachment concerns, including maps that indicate the locations of concern areas within local communities. A centralized website makes it easier to find information, and can provide a convenient way for both Fort personnel and community leaders and decision makers to access the same set of information. Such a website can also be periodically updated, something that is difficult to do with hard copy reports and documents. The website's goal should be to provide an appropriate level of information that is useful for community land use planning purposes.

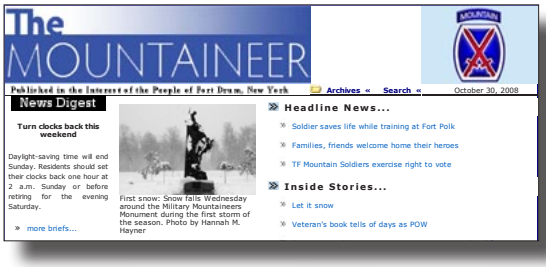
Naval Air Station Oceana hosts and maintains the following website, which provides extensive information to the public on encroachment issues, including maps highlighting potential encroachment conflict areas:

https://www.cnic.navy.mil/Oceana/Programs/NavalStationDepartments/FlightOperations/AICUZ/AICUZ/index.htm

Recommended Next Steps:

◇ The Fort should take the lead in coordinating with regional entities (counties, Tug Hill, FDRLO, etc.) to meet and discuss logistics of website.

IIA.4 - Regularly Issue a Newsletter Briefing Communities on Fort Drum Activities/ Changes


The MOUNTAINEER
Published in the Interest of the People of Fort Drum, New York
Archives « Search « October 30, 2008
News Digest
Turn clocks back this weekend
Daylight-saving time will end Sunday. Residents should set their clocks back one hour at 2 a.m. Sunday or before retiring for the evening Saturday.
more briefs...
First snow: Snow falls Wednesday around the Military Mountaineers Monument during the first storm of the season. Photo by Hannah M. Hayner
Headline News...
Soldier saves life while training at Fort Polk
Families, friends welcome home their heroes
TF Mountain Soldiers exercise right to vote
Inside Stories...
Let it snow
Veteran's book tells of days as POW

The Mountaineer (formerly the Blizzard) is a publication for the residents of Fort Drum - a similar newsletter could be created that is aimed at the broader Fort Drum region.

While there is sometimes little the Fort can do to mitigate the impacts of its activities, simply communicating about what is happening can go a long way. When flight patterns change, new equipment is put into use or other significant changes occur that could affect communities, Fort Drum can inform the surrounding communities. This helps to dispel misinformation and allow local leaders to accurately respond to comments or complaints from community members. A newsletter could be issued by the Fort several times a year. Sometimes it may describe changes that have already occurred, and other times it may give advance notice of future changes. Also, many of the region's residents take pride in the development of new military technology and equipment and its application at Fort Drum. The newsletter would provide a way to directly engage this audience. Lastly, it should be noted that the newsletter need only contain information deemed suitable by the Fort for public consumption.

IIA.5 - Utilize Counties/Regional Entities to Provide Information to Local Municipalities

Regional planning agencies play a critical role in the Fort Drum Region.

The counties (Lewis, St. Lawrence, Jefferson), the Tug Hill Commission, FDRLO and DANC – among others – play a critical support role in both regional and local planning efforts in the Fort Drum region, particularly for local communities that do not have dedicated planning staff or resources. The Fort can help to facilitate good land use planning in the region, with respect to encroachment, by providing the counties and the regional organizations with the information they need to advise and assist local communities. County advice to local communities on avoiding land use conflicts is bolstered when the county has concrete information from Fort Drum to back it up. For instance, when a potentially inappropriate land use or activity is proposed in a community adjoining Fort Drum, the county is better able to make a constructive recommendation to a local municipality when it knows exactly where a particular property is located with respect to noise and safety concern areas, and the nature of the Fort activity that is causing the noise and/or safety concern. A 1-mile buffer around the Fort could be established that requires all development proposals to be submitted for county review, not just the proposals that are 239M referrals under general municipal law.

Conversely, if county and regional entities are informed in advance of proposed changes to Fort Drum activities and operations that may impact the Fort-Community border, they may be able to advise the Fort on potentially avoidable impacts and prompt the Fort to investigate alternatives, when possible, that minimize or avoid impacts to the communities. In all cases it is important to recognize that review processes take time, and therefore a well defined system of procedures and key personnel should be in place so as to not put an undue burden on the parties involved.

In short, providing counties and regional entities with as much information as possible, and in a timely fashion, empowers them to play an active role in the local land use planning process of individual municipalities when it comes to avoiding encroachment conflicts between the Fort and the communities that surround it. This benefits the Fort as well – partnering with regional entities is a more efficient way of disseminating information than on a town-by-town basis.

IIA.6 - Land Use Training Sessions/Focus Groups

Land use training sessions focusing on Fort Drum encroachment issues (as well as quality of life and economic development) should continue to be held in the region. Annual events, such as the Local Government Conference organized by the Tug Hill Commission and the Growth Management Series, sponsored by local planning agencies serve as ideal venues for hosting training sessions. The counties and regional organizations like the Tug Hill Commission can also potentially play a role in organizing smaller focus group sessions with applicable communities, to address land use and encroachment issues. Opportunities for Fort Drum to support and/or fund such sessions should be explored.

IIA.7 - Track Regional Land Use and Growth Patterns

Existing efforts by Fort Drum and regional entities, such as the quarterly published Jefferson County Housing Construction Indicators, should be expanded to track regional land use and growth patterns. Trends such as land subdivisions (currently only tracked for 10^{+} lot subdivisions), lot sizes, land uses and population density, and infrastructure investments are just some of the indicators that could be tracked. A special emphasis should be placed on development trends and patterns in encroachment concern areas (see Chapter 2). The origin points of noise and other complaints from residents could also be tracked and mapped geographically. An annual or semi-annual "growth" report would help the region to get ahead of the curve on identifying and addressing emerging growth and development trends that pose encroachment risks.

The tracking of growth trends should be simple enough that it can be undertaken on a regular basis with relative ease, but detailed enough to be of use in identifying trends and avoiding encroachment. The issuing of the report could coincide with a Fort-Community meeting to discuss findings and address any issues identified. The usefulness of such an exercise is that it can help the region to get out ahead of the curve in responding to encroachment. An annual tracking report helps to pinpoint emerging concerns and patterns that can often be difficult to discern in the short term. Another benefit of an annual report is that it prompts an annual discussion about growth trends and patterns as they relate to encroachment.

Recommended Next Steps:

◇ Identify land use and development metrics to track.

◇ Fort-County collaboration on tracking locations of complaints.

◇ Establish baseline set of information and target date for first annual report.

IIA.8 - Hold Periodic Fort-Community Meetings

Periodic Fort-Community meetings should continue in the Fort Drum region to reinforce relationships, convey information, and discuss issues. Throughout the course of this project, local community members have indicated their appreciation when Fort personnel have joined them at the table in town and village halls across the region. Continuing these meetings could help to ensure continued dialog and solidify the interpersonal relationships that are so critical to partnering on solutions. Such meetings could potentially coincide with the release of a newsletter (see IIA.4 above), perhaps 2 or 3 times per year.

IIA.9 - Continue to Hold Public Events on Fort Drum

Events like the periodic air shows on Fort Drum are extremely popular with the public. The Fort should continue to hold such events in the future. Getting the public on-post is important to cementing Fort-Community bonds. This is especially important since routine public access to the Fort has been curtailed in recent years due to security concerns.

A crowd gathers to take a tour of a B-17 Flying Fortress at the 2008 Centennial Air Show held at Fort Drum.

In addition to periodically held public events, the Fort should reach out to communities and let them know about all of the publicly available resources on-post. Fort access policies for the public should also be shared with communities. Since 9-11, the increased security at the Fort has resulted in a public perception that the Fort is no longer publicly accessible. Therefore, an extra effort may be needed to inform the public of resources and facilities on-post that continue to be available to the public.

IIA.10 - Coordinate with the Governor's Northern New York Military Airspace Committee (NNY MAC)

The NNY MAC (formerly the Governor's Ad Hoc Committee on Low Level Flight) is composed of a diverse group of stakeholders and individuals interested in balancing the need for New York's military airspace to be available for use in a way that both accomplishes the military's constantly changing missions and also reduces or eliminates impact on people and wildlife. Among others, membership includes the New York Air National Guard, the New York Division of Military & Naval Affairs, New York Army National Guard,

New York State Department of Environmental Conservation, County government, Regional Agencies, and Non-Profit advocacy groups. The committee meets as necessary (annually at a minimum) and strives for "relationship-based resolution of conflict whenever possible."

Communities in the Fort Drum region should be updated on the results of the NNY MAC's meetings, and also have a way to have their views and concerns known at the meetings. The Fort could include information from the NNY MAC on a publicly accessible website (IIA.3) and/or in a public newsletter (IIA.4).

IIB - Tools for Avoiding Encroachment

Tools for addressing encroachment are described in detail in Chapter 2 of this plan. The following tools are recommended as most applicable across the region, both currently, and in the near future – though all of the tools listed in Chapter 2 could potentially be used. Ultimately, the decision on which tools to use will rest with individual communities, who must respond to their own unique circumstances and goals. As the region and Fort evolve over the years, other tools may become more relevant for the region and/or for individual communities within the region. The Land Use Tools table on page 184 provides an overview of the most applicable land use tools for Gate and Range communities in the Fort Drum region.

For more on tools to avoid encroachment see Chapter 2, especially pages 93 – 102.

IIB.1 - Pursue Land Conservation

For more on the Army Compatible Use Buffer program See Chapter 2, pages 93 and 94.

Fort Drum is in the initial stages of implementing the Army Compatible Use Buffer (ACUB) program. Through this program, the Army has the authority to partner with local governments and conservation organizations to assist in acquiring land or the development rights of land near military installations from a willing seller when the acquisition can protect both the environment and the military mission. Conserving farmland and natural habitat areas near the Fort helps to avoid encroachment, by limiting incompatible development and land uses near the Fort border.

Dairy farms make an ideal Fort neighbor, in part because cows are less sensitive to loud noise than people, and the farm keeps the land around the Fort open, further reducing potential border conflicts.

In the agriculturally oriented Fort Drum region, conservation efforts should be tailored to the needs of farmers, to the maximum extent practicable. Wherever possible, Army led conservation efforts should complement community goals. For instance, targeting land conservation efforts to areas that the community has identified as priority conservation areas.

Jefferson County has also started a County Purchase of Development Rights (PDR) Program. Where feasible, the County and Fort Drum should partner on PDR projects, as

the Fort has indicated a willingness to contribute matching funds when potential projects are located in encroachment concern areas.

There are also opportunities for Fort Drum and the surrounding communities to partner on preserving natural habitats for the region's endangered and threatened species. While these habitats are important in their own right - they also help protect drinking water resources and add to the quality of life in the Fort Drum Region. As such, the Fort and communities should work together to identify off-post habitat areas that could be preserved through ACUB. For example, the Town of LeRay, as part of its recent comprehensive plan effort, has generally identified sensitive habitat locations in a high growth area of the community. This information was used to develop a greenway concept that incorporates these habitat areas into a potential system of natural areas, trails and park lands. The Fort may be able to help the town realize this vision by partnering on habitat conservation projects in this area.

A greenway concept (dark green), surrounding future parkland (light green), which would support habitat protection and provide for trail connections. Image from the 2008 Town of LeRay Comprehensive Plan.

Map 4.1 conceptually depicts potential conservation areas from a broad, regional perspective. It should be noted that within these broadly defined areas, there is room for a much finer grained and extensive pattern of land use activity that goes far beyond agriculture and natural resources and habitat. Map 4.1 merely indicates at a regional level, where it makes most sense to target conservation efforts. Individual communities can help to refine and focus conservation efforts by identifying at the local level those areas best suited to support and maintain farming and those habitat areas and natural resources most in need of protection.

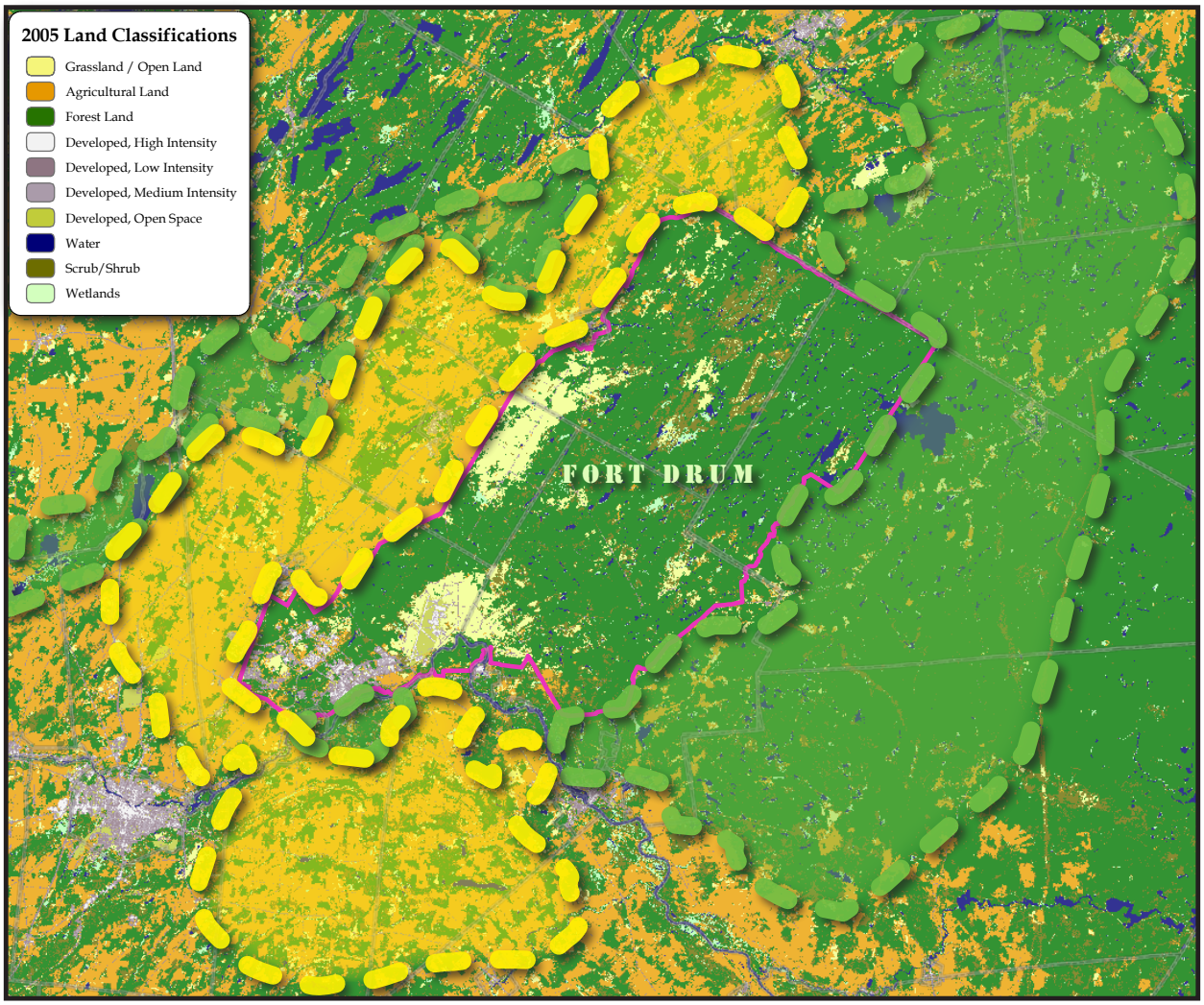
Target Areas for Conservation of Agricultural Land

A balance must be struck when identifying the best areas to focus agricultural conservation efforts. Ideal areas for conservation are those that are under development pressure, yet retain a critical mass of active farmland to conserve. Fragmented and isolated agricultural parcels that are surrounded by development do not, in most cases, represent the best investment of resources for farmland protection. The following areas represent the most suitable areas in the region to focus agricultural conservation efforts. These areas are also represented in yellow on Map 4.1.

Route 11/Route 3 Corridors

Concentrations of farms off the Route 11 and Route 3 corridors, along the west and south side of the Fort respectively, may represent the best areas in which to initially focus agricultural conservation efforts. In these areas, development and noise/safety impacts of Fort Drum activities are most likely to come into conflict (particularly north of LeRay for Route 11). Moreover, as described in Chapter 3, looking to the future, these same areas will most likely continue to attract the most development in the

Fort Drum region. Lastly, the higher level of growth pressures in these areas (and consequently land values) may make a PDR project a more attractive or viable option for a landowner. Applications made to the State of New York for funding PDR projects could potentially be strengthened if they also help to support Fort Drum by avoiding encroachment.



Map 4.1 - Conservation Target Areas: Areas outlined in green represent regionally significant areas for natural and habitat conservation; areas outlined in yellow represent regionally significant areas for agricultural conservation. The implication is not that these areas should be undeveloped, rather that new development should be well planned in these areas to reduce impacts to the existing resources and minimize encroachment along the Fort border.

Target Areas for Conservation of Natural Habitats and Resources

Eastern Side of Fort Drum

As shown on Maps 2.1 (Chapter 1, page 68) and 4.1, the predominant land coverage along the eastern side of Fort Drum is forest and natural features such as lakes. In Lewis and St. Lawrence County, substantial areas of forested lands are DEC State Forest lands. As such, this part of the Fort Drum

region represents the best area to focus natural resource conservation efforts. Areas under the most pressure for development (Lake Bonaparte, Route 3 in Jefferson County) make the best candidates for conservation efforts, although conservation opportunities in high noise areas (see Map 2.8 on page 83) should also be pursued.

Gate Communities

As noted throughout this report, the Gate Communities have experienced the most growth in recent years (pages 32, 33) and are mostly likely to absorb the lion's share of future growth in the region (see Chapter 3, especially pages 114 – 119). While it may seem counter intuitive, this area of the Fort Drum region may present some of the best opportunities for natural resource and habitat conservation. As new development locates in this area, communities can incorporate preserved habitat and open spaces, which can double as passive recreational resources such as trail systems. Fort Drum can help play a role by supporting the preservation of habitat and natural areas as well. As noted elsewhere in this plan, the Fort and the Town of LeRay have discussed the possibility of collaboration on habitat preservation, parks and recreation trails in the high-growth area of Route 342 & 11.

Recommended Next Steps:

◇ Agriculture is a predominant land use in the St. Lawrence County towns that border on Fort Drum. As such, the county should consider undertaking a Purchase of Development Rights feasibility study similar to that which was recently undertaken by Jefferson County.

◇ Conduct outreach and education on PDR and ACUB in the Fort Drum region. Consider holding a session on land conservation as part of the annual Local Government Conference.

◇ Administrators of PDR plans and programs should meet with the Fort's ACUB personnel to coordinate efforts and funding.

◇ Local municipalities can develop Farmland Protection plans. As of 2008, the New York State Department of Agriculture & Markets provides grants of up to $25,000 for a community to prepare a local farmland protection plan. Grants of up to $50,000 are available for two towns to jointly prepare a farmland protection plan. Local farmland protection plans help to inventory agricultural resources and quantify their value to the local economy and quality of life. The goal of the plans is to develop strategies for maintaining viable agriculture at the local level. They also help to build local community support and awareness for the protection of farmland.

◇ Fort Drum should consider utilizing a third party with local knowledge of the region, and sensitivity and experience working with farmers, to coordinate and implement the ACUB program. The third party could undertake everything from public outreach, education and awareness, to landowner negotiations, to assistance with completing projects and closing deals (obtaining appraisals and surveys, coordinating closings, etc.). The third party could also explore ways to leverage Fort Drum money and resources, for instance by pursuing matching farmland protection grants through New York State and the Federal government, and by coordinating efforts with the Jefferson County PDR program.

◇ Promote existing tools to support agriculture (participation in agricultural districts, agricultural assessments, etc.). Communities can also review their land-use regulations to ensure that they are "farm-friendly". A Farmland Protection Plan (see above) provides more context and resources for exploring these tools and their usefulness for individual communities.

◇ Future revisions to County agriculture protection plans should include references to Fort Drum and the compatibility between Fort activities and most agricultural activities.

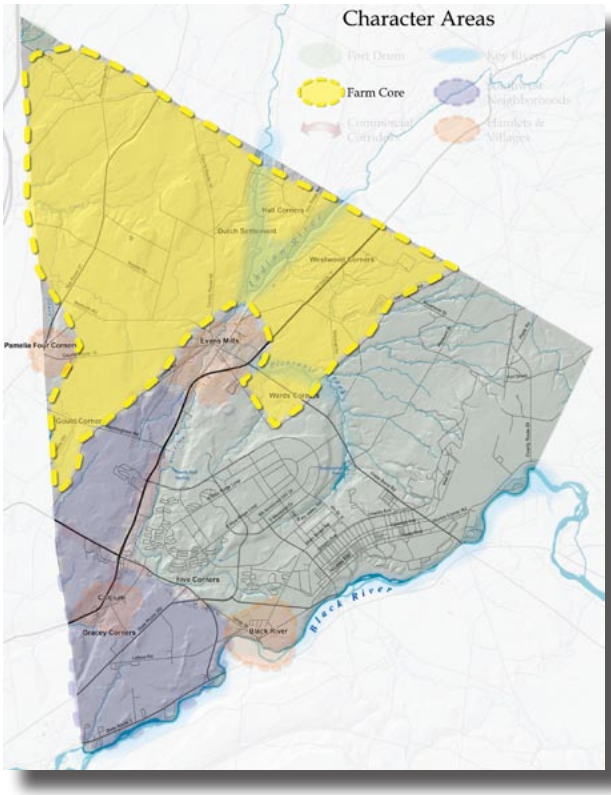
◇ The Fort and local municipalities and entities should work closely with local and regional conservation groups, such as the Indian River Lakes Conservancy and Lake Bonaparte Conservation Club, to identify lands for conservation and partner on other land conservation efforts.

◇ Tax breaks are available to keep land in timber production. Under Section 480(a) of the New York State Real Property Tax Law, landowners with 50+ contiguous acres of forest, all of which are dedicated to timber production, can apply for a partial exemption of town, county and school taxes. To receive this benefit, they must follow a 10-year forest management plan developed by a consulting forester and approved by DEC, meet DEC timber harvesting requirements and file an annual commitment with the local assessor. The forest management plan also needs to be updated every five years. This program can provide much-needed tax breaks for landowners, but the commitments and obligations should be carefully evaluated before enrolling.

IIB.2 - Undertake Comprehensive Planning

Communities that develop comprehensive plans are more able to address encroachment and quality of life issues within a broader context. Often, through the comprehensive planning effort, communities can identify goals and aspirations that may dovetail with other regional considerations, such as avoiding encroachment. For instance, the Town of LeRay, as part of its draft Comprehensive Plan, has identified an area of town as the "Farm Core" – where there exists a concentration of active farmland that the community wants to support and preserve. These same areas are also close to the Fort border and bordering on areas where noise may present land use conflicts. The Town of LeRay's comprehensive plan, therefore, provides a foundation for the town and the Fort to pursue win-win solutions. Moreover, the comprehensive plan process can build the foundation of public support that is necessary to implement solutions.

See Chapter 1, pages 36 and 99, for additional discussion of comprehensive planning, as well as recommendation IIIA on page 157 of this chapter.



The "Farm Core" area identified in the Town of LeRay Comprehensive Plan.

Comprehensive planning would be especially useful for villages in the Fort Drum region. Developing a community supported vision for growth and revitalization, and identifying opportunity sites for new development, will help to ensure that villages can attract their share of new investment and growth. Comprehensive plans can also identify important catalyst projects and improvements, which can potentially be supported by grants and other public funding sources. Comprehensive planning is all the more important for villages located close to Fort borders and impacted by noise and/or safety concerns. By having a comprehensive plan in place, such villages are better able to partner with the Fort on long-term solutions that avoid encroachment conflicts, while achieving community goals. Intermunicipal comprehensive planning efforts (such as the joint planning effort between the Village and Town of Philadelphia that is currently underway) may achieve certain efficiencies of scale with respect to project goals, costs and implementation.

Recommended Next Steps:

- ◇ Communities can undertake comprehensive planning efforts. It is in the best interest of each and every town and village in the region to have a comprehensive plan. Through the plan itself, as well as the planning process that leads up to the plan, communities can identify their local goals for land use and community infrastructure and services. The plan and process lay the foundation for communities and Fort Drum to explore goals of mutual interest and ways to partner on them for win-win solutions. As of 2008, only the Town of LeRay has an up-to-date comprehensive plan. The remainder of the Fort Drum region communities have either outdated plans, or in most cases, none at all. A number of communities do not even have zoning regulations in place.

- ◇ Explore Fort-Community coordination in the comprehensive planning process. Comprehensive planning is by its very nature a community driven task. However, by involving Fort Drum in the planning process, mutual goals and partnership opportunities can be identified. Once completed, Fort Drum should be provided with a final, adopted copy of the plan. A post-adoption meeting between Fort Drum and the community should take place to coordinate how to move priority implementation actions forward.

- ◇ The comprehensive planning process should also be coordinated with the "Army Strategy for the Environment" initiative (see recommendation IIIE – pages 171 – 172 of this chapter) as the two efforts have much in common.

IIB.3 - Develop Fort-Friendly Zoning and Development Regulations and Military Installation Zoning Overlay Districts (MIZODs)

Chapter 2 provides an analysis of existing land use patterns, existing local land use regulations, and preliminary recommendations for addressing existing and potential encroachment conflicts. Chapter 2 should be consulted as a starting point for addressing land use and encroachment conflicts around the Fort. The growth models in Chapter 3 of this plan illustrate that future growth will increase the chances for land

See Chapter 2 for more on MIZODs and maps and analysis of current areas of encroachment concern. See Chapter 3 for "hot spots" in the region where future growth may increase the chance for encroachment and land use conflicts, especially pages 110 – 119.

use conflicts in areas where encroachment is already a concern. Working with regional partners (counties, Tug Hill, FDRLO, etc.) and Fort Drum, communities can arrive at solutions that achieve local goals and aspirations, while avoiding encroachment.

Rather than focusing exclusively on prohibiting incompatible uses in noise and safety concern areas, communities can identify desired uses that are compatible and may achieve community economic development goals. While Chapter 2 provides a basic breakdown of compatible land uses for analysis purposes in the regional context of this plan, the land use compatibility table in Appendix C includes a more fine grained breakdown of compatible land uses with respect to safety and noise that can be used to guide planning and decision making in individual communities and for individual projects.

Target Areas for MIZODs

The series of maps in Chapter 2 depicts the areas around the Fort-Community border where noise and safety issues associated with Fort activities and land use and development in the surrounding communities are most likely to come into conflict. Noise is generated from both activity at Wheeler-Sack Army Airfield and from training exercises on the Fort. Map 4.2 compiles the more detailed noise maps of Chapter 2 into one simplified "Noise and Safety Impact Map."

Because noise and safety issues present different implications for land use planning, each is described separately below, along with communities affected by noise and/or safety. A different set of land use regulations and tools will need to be put in place, depending on whether a community is responding to noise concerns or safety concerns. Communities will need to evaluate their zoning and land use regulations and implement some form of a MIZOD to ensure that future development does not come into conflict with Fort activities.

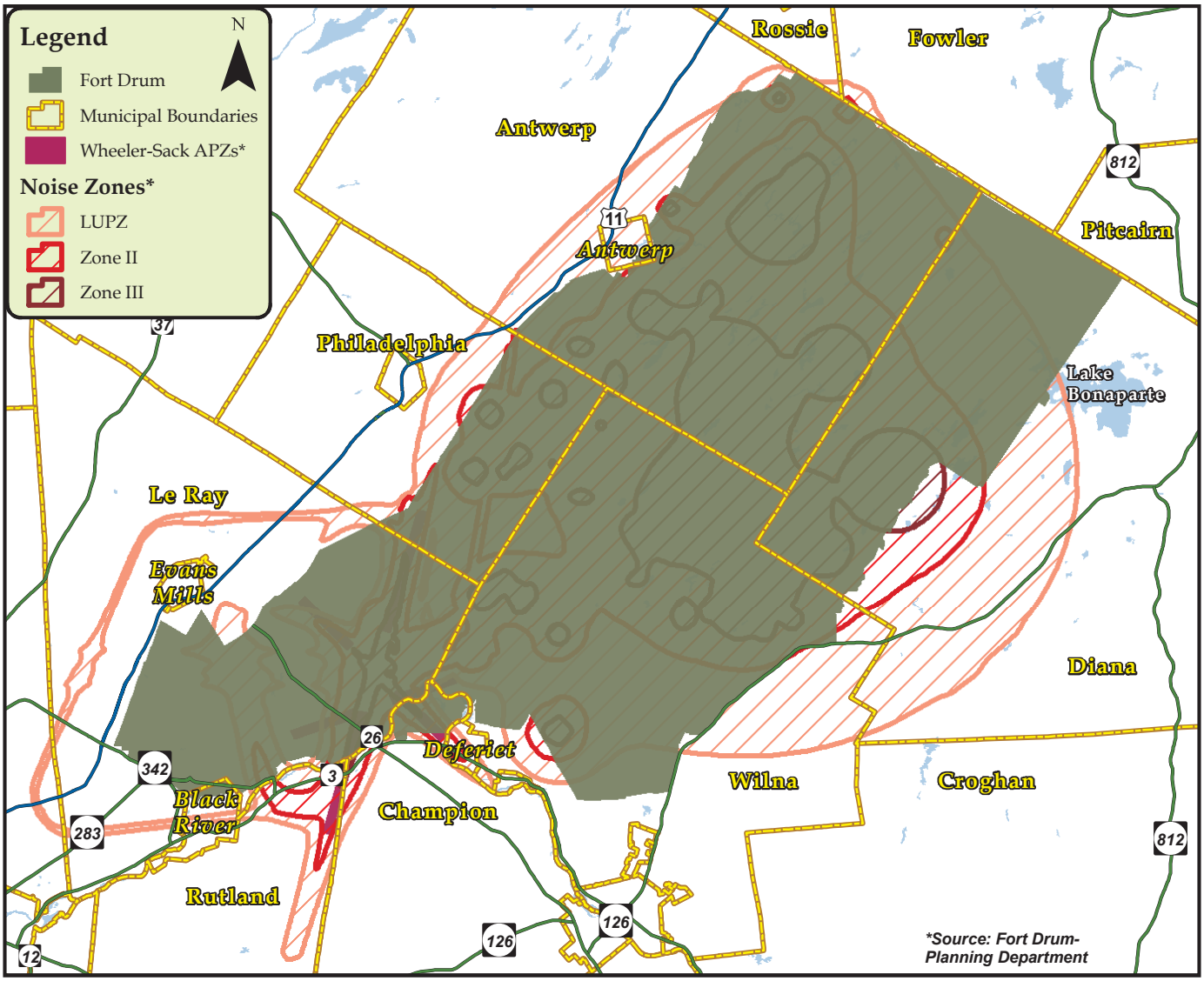
See Chapter 2 for a more detailed series of maps depicting areas of noise and safety concern, as well as "zoom-in" maps to individual towns and villages.

Noise Concern Areas
Recommendations for land use regulations in noise zone areas are described in detail in Chapter 2, especially pages 71 – 76, and in connection with the "zoom-in" maps presented on pages 79 – 91. The land use compatibility table in Appendix C can also be consulted for more detailed guidance on land use compatibility.

It should be noted that an aircraft holding pattern associated with Wheeler-Sack results in a narrow noise contour that affects Black River, LeRay and Pamelia. This noise contour represents the lowest noise threshold and is generally no more than 500 feet wide in any given place (except for a moderate widening in two portions of LeRay). The affected communities and Fort should sit down together to discuss the need for, and practicality of, instituting any land use regulations or overlay districts in these areas.

Safety Concern Areas
Recommendations for land use regulations in safety zone areas (currently confined to the Towns of Rutland and Champion, and to a small extent the Village of Deferiet) are described in detail in Chapter

2, especially pages 76 and 77, and pages 86 and 87 in connection with the "zoom-in" map for this area. The land use compatibility table in Appendix C can also be consulted for more detailed guidance on land use compatibility.



Map 4.2 - Noise and Safety Impact Map: Summary of the noise zones related to operations at Fort Drum, including WSAAF; also depicted are the APZs associated with WSAAF. Municipalities with noise concern include the towns of: Antwerp, Champion, Diana, Fowler, LeRay, Pamelia, Philadelphia, Rossie, Rutland, and Wilna and the villages of: Antwerp, Deferiet, Black River.

A MIZOD may be especially critical for the Route 3 corridor south of Wheeler-Sack Army Airfield. As noted in Chapter 3 (page 118), the Route 3 corridor south of Wheeler-Sack will likely continue to face increasing growth pressures. Proximity to Fort gates and transportation routes, areas serviced by water and sewer, and a combination of rural character and convenience to retail, services and entertainment hubs – all mean that this area will continue to attract development and new residents. An overlay

district would help to ensure that land use conflicts do not arise in the most sensitive areas with respect to noise and safety.

Such an overlay district could be modeled on similar districts that are routinely put in place for lands adjacent to both civilian and military airports. The MIZOD can address a variety of issues, including land use, tall structures and electromagnetic interference. MIZODs can also incorporate more flexible standards for develop that incentivize and/or require development practices that avoid encroachment.

Lastly, in some cases, the base zoning of a particular area may be so in conflict with noise or safety zones that an actual zoning change may need to be undertaken in conjunction with, or as an alternative, to a MIZOD.

While rare, accidents like this one at Dover AFB do happen, and therefore it is critical to not only have safety zones, but to make sure municipalities understand what uses are compatible within the zones. Photo by Doug Curran

Recommended Next Steps:

◇ Hold meetings to figure out how to direct compatible economic development to encroachment concern areas (as an alternative to non-compatible development). Participants should include regional economic development agencies (counties, IDA's, DANC, Tug Hill, FDRLO, etc.), the business community, Fort Drum and applicable communities.

◇ Develop overlay zoning for Route 3 communities south of WSAAF.

◇ Regional entities (counties, Tug Hill, FDRLO, etc.) and the Fort should partner on planning and zoning efforts in the Fort Drum region, including efforts to secure funding.

◇ Utilize Chapter 2 of this plan to draft and implement new and revised "Fort-friendly" zoning and land use regulations.

IIB.4 - Encourage Early Disclosure

Disclosure can be an effective tool for communities in the Fort Drum region. The purpose of disclosure is to make potential buyer aware of the operations at Fort Drum that may affect their quality of life (such as the noise and dust associated with training facilities) before they make a purchase. However, a modification to the New York State "Real Estate Disclosure" form (Real Property Law § 443) to disclose to potential buyers/sellers the presence of a noise or safety zone, cannot be made without New York State Legislation.

An alternative to pursuing a change to the Real Estate Disclosure form includes passing a local law that would require recorded site plans and subdivision plats to contain a note disclosing the fact that a property is within a Fort Drum noise and/or safety zone.

Recommended Next Steps:

- ◇ Investigate feasibility of creating a real estate disclosure related to location within a noise or safety zone - either at the state or local level.
- ◇ FDRLO should sponsor a meeting with local realtors to share the conclusions of this report - with particular emphasis on the "zoom-in" encroachment maps from Chapter 3.

IIB.5 - Pursue Sound Attenuation in Noise Sensitive Areas

See Chapter 2 for detailed discussion of noise zones and sound attenuation, especially pages 71 – 76 and page 100.

Sound attenuation measures are appropriate for all Fort Drum region communities impacted by noise. Requiring sound attenuation building practices can reduce complaints and allow people to more fully enjoy and utilize their land. Sound attenuation measures may also move some uses from incompatible to compatible, particularly with respect to A-weighted noise (primary noise type generated by WSAAF). As such, sound attenuation may be most effective in the Route 3 corridor south of WSAAF. Sound attenuation is less effective for C-weighted noise, which is noise that causes vibration. C-weighted noise is especially predominant in communities along the east side of the Fort, in connection with training activities. It should be noted that noise attenuation measures will not address safety concerns or other potential encroachment issues such as electromagnetic interference.

Modifying local building codes can be an effective way to implement building practices to address noise in Fort Drum noise zones. Since the New York State Uniform Fire Prevention and Building Code does not currently contain any sound control requirements pertaining to the mitigation of external sound on internal building space, such modifications to the local building code would not require any petition to the state for approval.

Any new building code requirements for sound attenuation should be applied in a reasonable manner, since many Fort Drum region residents and business owners have been living with noise for years and have acclimated to it. As such, sound attenuation requirements should distinguish between renovations and alterations to existing structures and the building of completely new structures. For the former, a threshold could be established for the scale of modifications to an existing building that would trigger requirements for sound attenuation. Sound attenuation requirements in such a case should be reasonable and consistent with the scale of the proposed renovation. By contrast, more stringent sound attenuation requirements could be required for new construction. Business owners and property owners can benefit from more sound attenuation in noise zones, because it will allow for a wider range of potential tenants/ businesses and lead to less complaints about noise.

Of course, when it has the ability to do so, the Fort should continue to pursue opportunities to mitigate the noise impacts of its training and operations. These Fort-oriented opportunities and tools are set forth in recommendation IIB.7 on page 155 of this chapter.

Recommended Next Steps:

- ◇ Local and regional entities charged with implementing and enforcing building codes should meet to discuss how to modify current building codes to require sound attenuation for properties and buildings located in Fort Drum noise zones.
- ◇ Training sessions should be held in the region to educate building and code officials and developers on sound attenuation techniques.

IIB.6 - Address Light Pollution

Light pollution threatens the ability of the Fort to conduct nighttime training exercises that utilize technology such as night vision goggles. This in turn, reduces the ability of the Fort to prepare our soldiers for nighttime battle. Currently, night fighting technologies developed by the US military give our soldiers a competitive advantage in carrying out missions across the globe.

Lighting designed to filter down towards the ground (rather than up towards the sky) can help reduce light pollution.
Images courtesy of the International Dark-Sky Association

As noted in a recent National Geographic article on light pollution, "of all the pollutions we face, light pollution is perhaps the most easily remedied. Simple changes in lighting design and installation yield immediate changes in the amount of light spilled into the atmosphere and, often, immediate energy savings."[90] All communities in the Fort Drum region, therefore, can adopt and/or refine their lighting standards to avoid impacts to night training activities at the Fort, and to take advantage of the quality of life and environmental benefits that well designed lighting provides.

The Town of LeRay's lighting ordinance (see Appendix E) provides a good template as a starting point for other communities that seek to address light pollution. All towns and municipalities, including LeRay, should develop lighting ordinances that suit their own local goals and match their capacity to enforce and implement the ordinance. At a minimum, every community can require that lighting be directed downward and be fully shielded to minimize glare. Outdoor lighting regulations should also explicitly reference Fort Drum and the need to minimize light pollution with respect to nighttime training activities. Fort Drum itself should ensure that all on-post lighting reduces glare and light pollution to the maximum extent practicable. Lastly, since lighting of streets, highways and interchanges is one of the most significant contributors to light pollution, Federal, State and local agencies that have jurisdiction over the lighting of the region's transportation network should also utilize sensible lighting techniques. The International Dark-

[90] "The End of Night: Why We Need Darkness," National Geographic, Nov. 2008, pgs 102 – 123

Sky Association is an excellent resource for lighting standards and practices that can be implemented to keep skies dark and reduce unnecessary light pollution: *http://www.darksky.org/mc/page.do*

Recommended Next Steps:

- ◇ Hold a "Cleaning up Light Pollution" training session. Because light pollution is relatively easy to address, it makes an ideal "roll-out" implementation step for the Fort Drum region. The problem of light pollution is relatively easy to define and something that every community can tackle, even those without a solid foundation of planning work under their belts (comprehensive plan, etc.). The session could include presentations from Fort personnel involved in nighttime training exercises and from lighting experts and/or manufacturers. Techniques for minimizing light pollution and a presentation of a model lighting ordinance should also feature prominently in the training session.
- ◇ Communities can adopt and/or improve outdoor lighting standards.
- ◇ Fort Drum should consider conducting an internal "light pollution audit" to ensure that good lighting practices are being employed on-post.

IIB.7 - Fort-Oriented Recommendations for Reducing Land Use Conflicts

Encroachment should be addressed as part of the Fort's master planning efforts. The Fort should set a goal of internal coordination on long-term planning. The coordination and planning should focus on how new construction, training activities, and equipment changes could relate to encroachment, and determine how to best minimize potential conflicts with surrounding land uses. Additionally the Fort should look at ways to mitigate existing encroachment concerns where feasible.

As noted elsewhere in this plan, Fort Drum can continue to play a role in reducing the chances for land use conflicts between Fort operations and adjoining communities. There are a number of instances where the Fort has altered its behavior to reduce impacts. For instance, cloudy days increase the amount of sound that bounces back to the ground from Fort activities, as opposed to clear days when sound waves are better able to disperse and dissipate. The Air National Guard, when it has been able to, has rescheduled bombing runs from cloudy to clear days. This is no small feat, as such training exercises are often planned far in advance and involve the coming together of equipment, technology and manpower from many different locations across the country.

While the Fort does not always have the ability to alter training or operations to mitigate impacts to communities, there are a number of strategies it can take, when the opportunity presents itself, which are set forth below. These strategies come from the U.S. Army's "Operational Noise Management" manual of November 2005.[91] An updated version of the manual is currently being developed and should be consulted as it becomes available.

Selected Fort Strategies for Managing Operational Noise

The following is a summary of techniques and strategies from the Operational Noise Management Manual for minimizing and/or avoiding noise impacts to communities. To the maximum extent

[91] "Operational Noise Management: An Orientation Handbook for Army Facilities," U.S. Army Center for Health Promotion and Preventative Medicine," November, 2005

practicable, these strategies should be shared with all divisions and departments on-post, so that both long-range planning and day-to-day decisions about Fort operations and training can minimize impacts to the communities and reduce the chance for land use conflicts. As a general rule of thumb, if an equally viable option exists that reduces noise impacts to the communities, the Fort should pursue it. The Fort should also factor into its calculations the long-term value of positive Fort-Community relations in keeping the Fort viable and locally supported for many years to come.

Implement Noise Avoidance and Mitigation Strategies when Feasible:

- ◇ Mitigation at the Source - Includes techniques for muffling noise at the source and for conducting operations in a way that directs noise away from communities and populated areas;
- ◇ Mitigation along the Path - Involves the interruption of sound waves. Techniques include barriers or berms; the grounding of sound producing equipment; maximizing the distance/altitude between sound producing equipment and populated areas; and conducting noisy activities downwind of populated areas;
- ◇ Avoiding the Amplifying Effects of Water - Where possible, sound producing activities should be directed away from bodies of water. Some residents in the Lake Bonaparte area have in fact speculated that Fort noise is amplified by the waters of Lake Bonaparte;
- ◇ Absorbing Noise with Forests - Large areas of trees perform well at muffling sound. Where possible, this attribute of trees should be utilized to minimize off-post noise impacts; and
- ◇ Minimizing Blasts and Arms Fire on "Bad Weather" Days - As noted above, some Fort Drum operations (National Guard bombing runs) already attempt to schedule training activities on the clearest days, when sound waves can travel "up and out" – more readily dispersing than they would on overcast days.

Case Study: St. Clair County, Illinois/ Scott Air Force Base

During the Joint Land Use Study (JLUS) process, locally elected officials agreed to the value of a Regional Advisory Board to coordinate and review land use decisions around Scott Air Force Base (AFB). The Board's purpose is to review potentially incompatible development applications within a specific geography around Scott AFB affected by noise and safety zones.

Members on the Regional Advisory Board (RAB) are appointed by local zoning authorities and convene only when a proposed project is deemed incompatible by Scott AFB. In this case, the Board will meet and present an advisory finding concerning the potentially incompatible project to the local jurisdiction responsible for approval of the application. The local authority would then make the final decision, though each jurisdiction may determine that a super-majority of votes is required to proceed with an application that the Board has found to be incompatible.

A development application within the specific noise and safety zones follows this process:

- ◇ The local governments will notify the Air Force of those actions (rezoning, subdivisions, development proposals, changes in the future land use, etc.) inside the areas determined during the JLUS process.
- ◇ The Air Force will review these actions within a 30 calendar day period and render an advisory opinion on those actions.
- ◇ If the Air Force finds an application within the noise and safety zones to be incompatible, the Regional Advisory Board (RAB) will meet within a 30 calendar day period following an incompatible finding. The Air Force has agreed to provide administrative support for the scheduling of the RAB meeting and the distribution of necessary background materials.
- ◇ The RAB will render a finding, which the local government shall consider. The local government should not make a final decision without first receiving the finding from the RAB.

III - Leveraging Growth for Long-term Community Success

The Fort Drum region is a dynamic environment that is directly influenced by national and world events, which can change at a moment's notice. Such events can quickly trickle down to Fort operations, which in turn can have significant impacts for the surrounding communities. By leveraging the growth of today, the region will be better able to adapt to changing conditions of tomorrow. Moreover, the Fort increasingly relies on the communities to provide the services, living environments and quality-of-life that keep military personnel and their families happy and productive. The Fort Drum region has a high quality of life – long-term residents know this and those who move to the area quickly learn it. The high number of military retirees that choose to settle in Fort Drum is a further testament to the area's high quality of life. Maintaining and enhancing this quality of life will help to secure the region's future and the vitality of Fort Drum for years to come. The following recommendations seek to leverage current growth in the region for long-term community success.

IIIA - Municipalities Develop a Vision for Growth

Because many communities in the study area will be subject to growth pressures in the future, it is important that they establish a clear vision of how they want to look and feel as they grow and develop - the regional vision statement on page 132 can be used as a starting point. Additionally, communities that want to stimulate and attract new growth also benefit from developing a vision. Each new project proposed in a community can help bring the community closer to the kind of place it wants to be. Establishing such a vision from the outset gives potential developers, local boards charged with reviewing and approving projects, and other agencies and involved stakeholders, a clear picture of what the community expects and wants from the get-go. In the Fort Drum region, a clear community vision can help to ensure that new development maintains and even increases the region's high quality of life and ensures the long-term vitality of the Fort.

There are three main tools for communities to communicate their vision and influence the shape of development:

- ◇ Comprehensive Plan;
- ◇ Zoning Regulations; and
- ◇ Design Guidelines.

See also recommendations IIB.2 and IIB.3 on pages 148 – 149 of this chapter and the area specific recommendations beginning page 177.

IIIA.1 - Develop and Update a Comprehensive Plan

A community's comprehensive plan examines existing conditions and trends across a wide variety of community topics and sets forth recommendations and strategies for achieving key community goals. Typically, a comprehensive plan provides a broad vision statement that defines what kind of place the community wants to be in the future. Among other things, an adopted comprehensive plan provides the community with a solid foundation and context for developing and adopting other community development tools, such as zoning regulations and design guidelines.

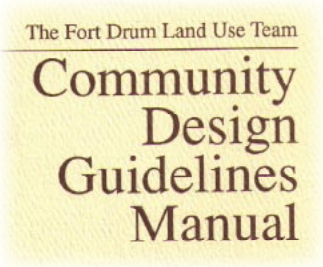
IIIA.2 - Develop and Update Zoning and Land Use Regulations

A community's zoning regulations establish minimum standards for development in a community. Ideally, such standards derive from a community's adopted comprehensive plan. Easily quantifiable or interpreted standards such as minimum lot size, area requirements for signs, or use regulations, lend themselves to regulation under zoning. Zoning can also be used to promote smart growth principles as well as address stormwater management.

IIIA.3 - Develop Design Guidelines

Design guidelines are a useful and important tool for communities that want to proactively influence the outcome of development. Design guidelines fall somewhere between a comprehensive plan and zoning. They set forth a more detailed vision for development in a community than what is typically set forth in a comprehensive plan, often focusing on a particular area of a community or a particular type of development. Design guidelines offer more flexibility to developers and local municipal review boards than the minimum standards typically found in zoning regulations. However, because even zoning standards involve some level of discretion on the part of local reviewing boards, design guidelines are a useful tool to support the decisions of boards in the course of the review and approval process. Guidelines allow for a greater level of flexibility and common sense on a case-by-case basis, for each individual and unique property in a community. With adopted design guidelines in place, a community is more protected from accusations of unfair treatment or inconsistency from project to project. Therefore, combined with the broad comprehensive plan and the more narrowly focused zoning regulations, a community's adopted design guidelines can help streamline the development review process and give local reviewing boards the confidence to ask for what they want.

In the summer of 2008, the Town of LeRay adopted design guidelines for commercial and multifamily development in its key commercial corridors. In 1984, the Tug Hill Commission authored a comprehensive set of design guidelines.[92] While nearly 25 years old now, much of what is contained in this document still pertains today and could be utilized by communities across the Fort Drum region – either directly, or as a departure point for developing customized guidelines that speak to the unique issues pertaining to the particular community.



IIIA.4 - Undertake Infrastructure Policies and Plans that Support Centered Growth

Public sewer and water infrastructure provides a solid foundation for economic activity and development. Planning in the region should focus on upgrades to existing systems in villages and the City of Watertown, and focusing growth into areas already serviced by sewer and water. The region should consider adopting a regional policy statement on infrastructure, to help guide local and regional decision making for this important issue.

See Chapter 3, especially pages 119-121, for the concept of centered growth and the benefits of guiding growth to areas already served by water and sewer.

[92] Fort Drum Land Use Team: Community Design Guidelines Manual". 1984. Tug Hill Commission, et al. Watertown, New York

IIIB - Encourage "Centered" Growth

As discussed in Chapter 3, "centered growth" – guiding some new growth to areas already serviced by sewer and water, as well as the established villages in the Fort Drum region and the City of Watertown, can help to avoid encroachment on Fort Drum's border. It can also strengthen the region's quality of life by revitalizing its historic downtowns and housing stock, and taking some development pressure off of the rural landscape. As importantly, many studies have documented that in the long-term, more compact growth results in lower costs to provide community services and infrastructure, as discussed in Chapter 3 of this plan. Lastly, residents of the Fort Drum region have cited, throughout this planning process, the unique and special contribution that the region's historic population centers make to quality of life. This sentiment was made clear in a series of Community Preference Exercises that were conducted as part of this project. Images of neighborhood and village settings were some of the most preferred images of development shown to residents in the Community Preference Exercise. The results of these exercises are summarized in Chapter 3 and Appendix G.

Centered growth doesn't just mean villages, but includes hamlets, such as Natural Bridge.

Of course, not all new investment and growth will, should or can take place in the region's historic population centers. However, without a concerted effort from the public, all levels of government and partners such as Fort Drum, the prevailing pattern of dispersed development will likely continue into the future. The likely result of this is that the region's population centers will continue to decline, more development will occur in the region's rural landscape, and infrastructure costs and burdens on local communities will increase as services are extended to an ever more scattered population.

See Chapter 1, pages 29 – 37, and Chapter 3, pages 112 – 118 and 128 – 132 for more on the Fort Drum region's historic population centers.

There are two main steps that will need to be taken in order to facilitate revitalization and redevelopment of the region's historic centers. The first step is for communities to undertake comprehensive planning to identify community goals, opportunities and to solidify public support for implementation. An important part of this process is to identify priority reinvestment opportunities and/or sites. The second step is to get such sites and opportunities in a "shovel ready" state, by resolving all potential barriers to redevelopment. This may involve a number of issues, including environmental cleanup of a site, revised zoning and development regulations to match redevelopment goals, and addressing any infrastructure (roads, sewer/water) impediments. Support from regional entities and Fort Drum may be needed to assist communities in these efforts, particularly those smaller communities with limited staff and resources.

Recommendations for encouraging more "centered" growth include:

IIIB.1 - Develop Land Use Tools and Regulations that Foster Centered Growth

There is often a gap between the land use and development goals of a community and the existing "on

the books" land use and development regulations the community has at its disposal. Moreover, as noted elsewhere in this plan (see Chapter 2), several communities in the Fort Drum region do not even possess zoning regulations. Communities that want to see quality development occur, and particularly those that want to revitalize existing historic centers and downtowns, will need to develop tools that encourage and permit such development. For instance, many village zoning codes in the region set forth development standards that are not in keeping with village character - excessive parking standards, large setbacks from the street, etc. Many town zoning codes do not recognize the unique character of their historic hamlets and require development patterns that will only further erode these special places. A comprehensive plan, zoning regulations and design guidelines can all be used in concert, to guide and encourage future development and investment to occur in ways that meet community goals and give developers the flexibility they need to exercise creativity and common sense. See also previous recommendation IIIA.

IIIB.2 - Encourage High Quality New Development

In addition to steering some growth and reinvestment into existing historic population centers, there is clearly a need for "new" development in the region, both currently and in the future. As noted in Chapter 1 of this plan (in particular, pages 24 – 37) Gate communities in the region are currently experiencing significant development pressures, most notably LeRay. The exploration of future growth patterns in Chapter 3 of this plan suggest that these very same areas will continue to attract a high proportion of any new development that comes to the region in the future. While this new growth poses challenges, it also presents a "once in a lifetime" opportunity to shape and guide growth in a positive manner that contributes to the long term economic health and quality of life of the region. Higher density housing, in particular, present both the biggest challenges and the biggest opportunities. Done right, new higher density residential neighborhoods can include trails and open spaces, places to walk and congregate, and connections to shopping, transit and workplaces.

A testament to the appeal of higher density, planned neighborhoods is the popularity of newly built, government subsidized, Mountain Homes residential neighborhoods on Fort Drum. These new neighborhoods share many similarities with the region's historic villages and the neighborhoods in the City of Watertown. Porches, sidewalks, closely spaced homes and conveniently located park space and recreational amenities combine to make for a high quality living environment. Local and regional entities/governments and Fort Drum should continue to work together to encourage the highest quality development both on- and off-post.

See Chapter 1, pages 21 and 22 for more on Mountain Homes.

Some strategies for encouraging and stimulating high quality new residential development in the region include:

◇ <u>Pursue Partnerships with the Army Sustainability for the Environment Program</u>
Communities should consider partnering with the "Army Sustainability for the Environment" program. While the program is in its early stages at Fort Drum, collaboration on creating new, high-quality, sustainable residential neighborhoods is a common goal of this plan and the Army's program. For more on this program, see recommendation IIIE on page 171.

◇ Reduce Cost Barriers to High Quality Development

High costs (perceived or actual) often pose barriers to high quality design and development. "High quality" can mean many things, but in its most general sense it means development that holds its value and appeal for many years to come, whether it be places to shop and do business, or to live. Communities can use a combination of zoning, comprehensive planning and design guidelines to communicate and implement their own ideas about what constitutes quality development in their own communities (see recommendation IIIA above as well as the results of the community preference exercise in Chapter 3). Having a clear vision for what the community wants, can constitute one of the biggest cost savings to developers. A clear, up front statement from the community saves a prospective developer time and money trying to "guess" what the community wants. Some recommendations for reducing cost barriers to high quality development include:

- Reducing Road and Other Standards.
  Many communities have a one-size fits all approach to road standards. This often leads to road widths and design that far exceeds the land uses and environments they service. Flexibility in design standards for roads, for example, can greatly reduce development costs for this element of a development project, in turn freeing up resources and money to spend on better project design and layout. Parking standards are another type of standard that can often be relaxed or reduced. Many zoning codes require excessive parking standards, particularly in village or neighborhood settings. Reduced parking standards and "credit" for shared parking between businesses and land uses, can help to reduce unnecessary costs when it comes to parking. Villages and neighborhoods should also review their on-street parking regulations. Overly cumbersome on-street parking regulations on both main streets and adjacent residential streets can put a damper on the economic health of traditional downtowns.

- Striving for Low-Cost, High Quality Architectural Detailing.
  While architectural details are important, an equal emphasis should always be placed on site design and layout. When too large a share of project resources are devoted to poorly executed, low quality architectural detailing, high quality site design and amenities can be compromised. Often, higher quality materials applied simply can result in a more aesthetically pleasing building than a building that is "dressed up" in poorly executed architectural detailing. Communities that develop design guidelines are in a better position to communicate the relative importance of architectural detailing vs. good site layout and other site amenities.

- Coordinated Planning and Design.
  In higher growth areas of a community, a more detailed plan can be developed that provides guidance to developers on how such areas are expected to grow and develop in the future. The locations of proposed future parks, roads and community facilities help developers to fit their own projects into the overall vision for the area. This in turn expedites the review and approval process. Coordinated infrastructure planning and implementation can also be explored – often economies of scale can be found in undertaking such improvements with a longer range view in mind, rather than on a project by project basis.

◇ Incentive Zoning

Utilizing incentive zoning can be a useful tool when it comes to achieving high quality residential development (and non-residential development). A good incentive zoning regulation involves "carrots" (density bonuses, flexibility in zoning requirements, streamlined review and approval process, etc.) and "sticks" (setting a lower base permitted density than what a developer or the market would likely provide). Incentive zoning involves a compromise – in exchange for good design

and amenities from a developer, communities will allow for a higher density (or some other incentive) of development than would normally be permitted. The trick is to properly calibrate the incentive zoning to make it attractive and useful for both developers and the community. A sample incentive zoning ordinance is provided in Appendix I (See also Chapter 2, page 98).

◇ Design Guidelines
Many historic downtowns struggle to keep storefronts filled and face rising costs and diminishing tax bases. Ensuring that new development leverages village and neighborhood qualities, helps to ensure the long-term viability of neighborhoods and villages. Design Guidelines can be a useful tool to ensure that new development makes the most of its village or neighborhood setting. A clear vision up front saves time and money for both developers and municipalities, since expectations and opportunities are defined up front.

◇ Ensure that all Project Partners Work Towards High Quality Development
A number of recently completed or in-process residential developments in the Fort Drum region have included funding and support from public sources. In such cases, funding sources and decision makers should work together to ensure that funding and support is tied to high-quality housing design and layout. Developing a regional "memorandum of understanding" amongst partners that come together on such projects, would be beneficial. The memorandum should describe what constitutes new, high-quality development. During periods of intense and immediate need for new housing, such as during military expansion, the cost of higher quality development and amenities must be balanced with the need to attract private investment for affordable construction.

◇ Partner with Fort Drum on Habitat/Open Space Preservation (ACUB)
High quality, new residential development – particularly of a higher density nature, is greatly enhanced when it is provided in connection with publicly accessible open space and recreation resources. Local communities, regional entities and government, and Fort Drum, should work together to see how Fort Drum's interest in preserving habitat and natural areas can dovetail with the provision of high quality development and open space resources in local communities. It may be beneficial to bring the Fort to the table early in the review process for new development projects, to see what role they could play in enhancing the end result. Local communities and regional partners could come together to develop a regional open space and recreation plan that helps to communicate to the Fort and to prospective developers the role that open space and recreation amenities can play in creating high quality living environments as the region grows and develops in the future.

For more on conservation and the ACUB program, see Chapter 2, pages 93 and 94.

IIIB.3 - Maintain a Comprehensive Housing Guide

Ensure that new residents (particularly military personnel) are aware of living options in the surrounding communities – in addition to housing options on-post.

IIIB.4 - Encourage the Reuse and Rehabilitation of Historic Structures

The Fort Drum region's historic villages, neighborhoods and the City of Watertown contain a wealth

and variety of living and work environments with unique qualities that are difficult to reproduce today. Unfortunately, the older condition of such structures, many of which have been vacant for years, can be a barrier to their reuse. Historic communities should evaluate opportunities for the reuse and rehabilitation of older structures for a new lease on life.

The City of Watertown is currently pursuing an effort to rehabilitate upper-floor space in older, downtown buildings. The city has creatively assembled grant funding from diverse sources to get the effort underway. The city hopes to secure additional funding to further this effort into the future. Information on funding sources available for historic downtown revitalization and rehabilitation are provided in Appendix J.

IIIB.5 - Pursue Grant Funding Opportunities for Rehabilitation and Revitalization

While reinvestment and redevelopment of the Fort Drum region's historic centers (Watertown, villages) can lead to the long-term fiscal health of the region and an improvement in the region's quality of life, the short term cost barriers to rehabbing historic structures and properties can be high. However, there are many resources available to communities that seek to leverage their historic qualities and revamp 19th century downtowns and neighborhoods for success in the 21st century. The Genesee/Finger Lakes Regional Planning Council recently compiled an excellent guidebook – "Preparing Village Main Streets for Planning" – that focuses on planning and rehabilitation of main streets and commercial districts.[93] The guidebook includes a particularly useful section and table on funding sources that is included as Appendix J of this plan.

IIIC - Take a Regional Approach to Transportation

Transportation is the lifeblood of a community and also sets the tone and character of the places where people live and work. The following recommendations are set forth with respect to planning for transportation in the Fort Drum region:

See Chapter 1, pages 43 – 49 for discussion of the current state of (and Chapter 3, pages 121 – 123 for potential impacts of future growth on) transportation infrastructure in the Fort Drum region.

IIIC.1 - Explore the Creation of a Metropolitan Planning Organization (MPO) or Rural Planning Organization (RPO) to Address and Plan for Transportation on a Regional Scale

Even with elevated fuel prices, people and business activity routinely cross municipal boundaries. For this reason, land use and development in one community has implications for transportation in another. To help plan for transportation at the right scale, a regional scale, the region should pursue the creation of an MPO and/or RPO, each of which are discussed in more detail below.

Metropolitan Planning Organization (MPO)

According to the US Department of Transportation's Metropolitan Planning section (*http://www.planning.dot.gov/metro.asp*), any community designated as an urbanized area (over 50,000 residents in a contiguous area consisting of over 1,000 residents per square mile based on census block data) is required by federal law to create an MPO to serve as the regional transportation planning agency for a community (23 USC 134 and 49 USC 5303.l).[94] An MPO looks at both short and long term

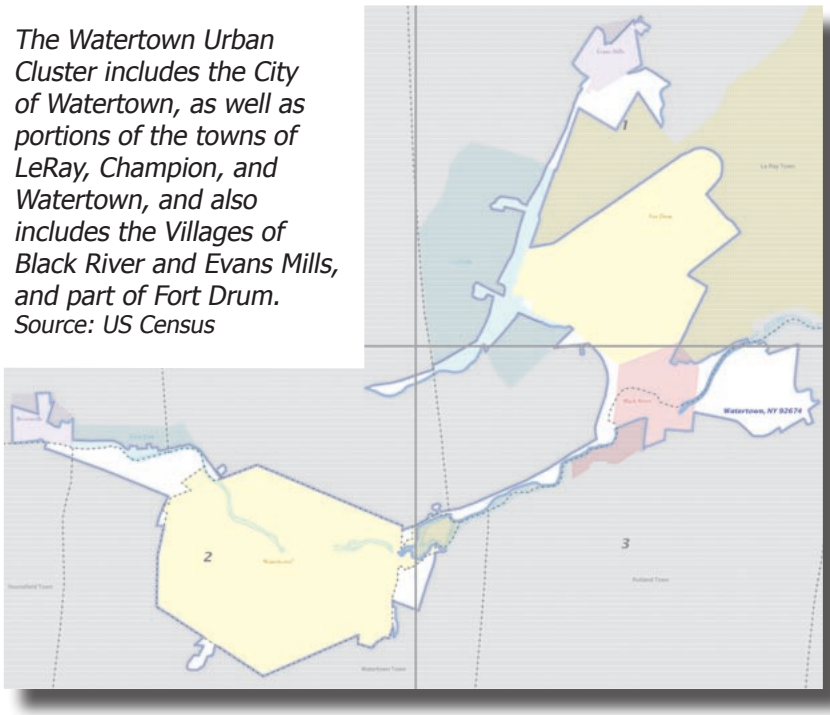
[93] "Preparing Village "Main Streets" for Planning: A Guidebook for the Planning of Main Streets and Commercial Districts," Genesee/Finger Lakes Regional Planning Council, June 2008

[94] "Federal Requirements Related to the Creation of New MPO's". Retrieved on October 21, 2008 from http://www.planning.dot.gov/metro.asp#briefing

transportation issues and their relationship to land use in a region. With an MPO in place, communities with an urbanized area are eligible for federal funding of transportation planning efforts through the Federal Transportation Administration's Metropolitan and Statewide Planning Program.[95]

Within Jefferson County, as of the 2000 US Census, the population of the Watertown urban cluster (a contiguous area with at least 1,000 residents per square mile and a population between 2,500 and 50,000) was slightly less than 46,500 residents. In addition, there are also two smaller urban clusters in the Fort Drum region - the Carthage area, consisting of slightly less than 6,500 residents and the area around the Village of Gouverneur with approximately 4,500 residents as of the 2000 Census.

With the expansion of Fort Drum since 2000, it can be reasonably assumed that the Watertown urban cluster could be declared an urbanized area after the 2010 Census takes place. This would necessitate the formation of an MPO consisting of the urbanized area as of the 2010 Census. At the time of formation of the MPO, an agreement would have to be made between local governments consisting of 75% of the population of the urbanized area and the Governor that would, at a minimum, identify the membership structure of the policy board and establish the metropolitan planning area boundaries.[96] It may also be possible to include all of Jefferson County in the MPO as well.[97]



The Watertown Urban Cluster includes the City of Watertown, as well as portions of the towns of LeRay, Champion, and Watertown, and also includes the Villages of Black River and Evans Mills, and part of Fort Drum.
Source: US Census

Rural Planning Organization (RPO)

In recent years, federal legislation under the Intermodal Surface Transportation Equity Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) have encouraged state transportation agencies to place more of the decision making process in the hands of local planners.[98] While some states have legislated the creation of RPO's to serve an advisory role in regional transportation efforts outside of urbanized areas, according to the RPO America website (*http://www.ruraltransportation.org/RPO-America/RPO-America*) there are no formal mechanisms in place between New York State and regional planning and development boards and authorities such as DANC to enable this to occur. While there has been no official legislation, DANC and other regional planning organizations in the state have worked to spearhead transportation planning efforts in rural areas of the state as part of their overall mission for their respective regions. In the case of DANC, these efforts have extended to the completion of the North Country Transportation Study and the ongoing efforts related to the Northern Tier Expressway. In order to create an RPO, local governments within the region would need to come together to agree to allow DANC or another organization, such as a potential Jefferson County MPO, to also serve as the RPO for the region. A concern, however, is that the RPO would serve merely in an

[95]FTA Authorization Fact Sheet Metropolitan and Statewide Planning Programs. Retrieved on Oct. 21, 2008 from http://www.fta.dot.gov

[96/97]US Department of Transportation "Frequently Asked Questions Applying 2000 Census Data to Urbanized and Urban Areas, January 5, 2006 Version" Retrieved October 21, 2008 from http://www.fhwa.dot.gov/planning/census/faqa2cdt.htm

[98]National Association of Development Organizations Research Foundation (2005) Transportation Planning in Rural America: Emerging Models for Local Consultation, Regional Coordination & Rural Planning Organizations

advisory capacity to local governments, and would not be eligible for funding for planning efforts from the same streams as would MPO's.

IIIC.2 - Assess Feasibility of Regional Solutions to Public Transit

The limited public transportation in the region, particularly between Fort Drum and local communities, reduces access and interaction between the Fort, its personnel, and adjacent communities. The Fort, regional entities and local communities should collaborate on developing regional solutions for public transit in the region.

Strategies for improving public transit:

- ◊ Build on Jefferson County Transit Study
  A broader, informal working group comprised of NYSDOT, Fort Drum, City transit staff, and planning and transportation experts from the three-county region has assembled a needs assessment outline that would lead to an evaluation of public mass transit needs and any potential "right-sized", sustainable solutions. This might involve "piggy-backing" onto the existing, limited public transit options in Watertown and St. Lawrence County. Opportunities for support and funding from the Department of Defense and/or the Office of Economic Adjustment should be explored. A possible next step is to distribute a Request for Proposals (RFP) to transportation consultants with rural transit experience and expertise.

- ◊ Support St. Lawrence County Public Transit Initiative
  Bus service between St. Lawrence County (Gouverneur) and the City of Watertown is expected to begin in January/February of 2009. Regional public transit studies should incorporate and support this bus service. Opportunities for further supporting and enhancing public transit between St. Lawrence County and the City of Watertown should be explored.

IIIC.3 - Pursue Community-Fort Partnerships to Address Fort Drum Gate/Access Issues and Opportunities

As noted in Chapter 1 (pages 46 through 48), gates and access to the Fort is an important issue. These portals between the Fort and the community play a significant role in the interaction between each. For instance, convenient pedestrian access to the Village of Black River from the Fort would improve the ability of military families to access village amenities and generate more economic activity for village businesses. While Fort security must remain the primary goal, opportunities for addressing community concerns with gate access policies should be pursued when feasible and in the best interests of both the Fort and the surrounding communities.

IIIC.4 - Accommodate Bicyclists and Pedestrians

Creating alternative transportation systems and pathways for bicyclists and pedestrians should be pursued. Links between regional systems, such as the in-progress Black River Blueway Trail, and local systems and Fort Drum should be made where possible. There are a number of efforts and planning

studies underway throughout the region, including:

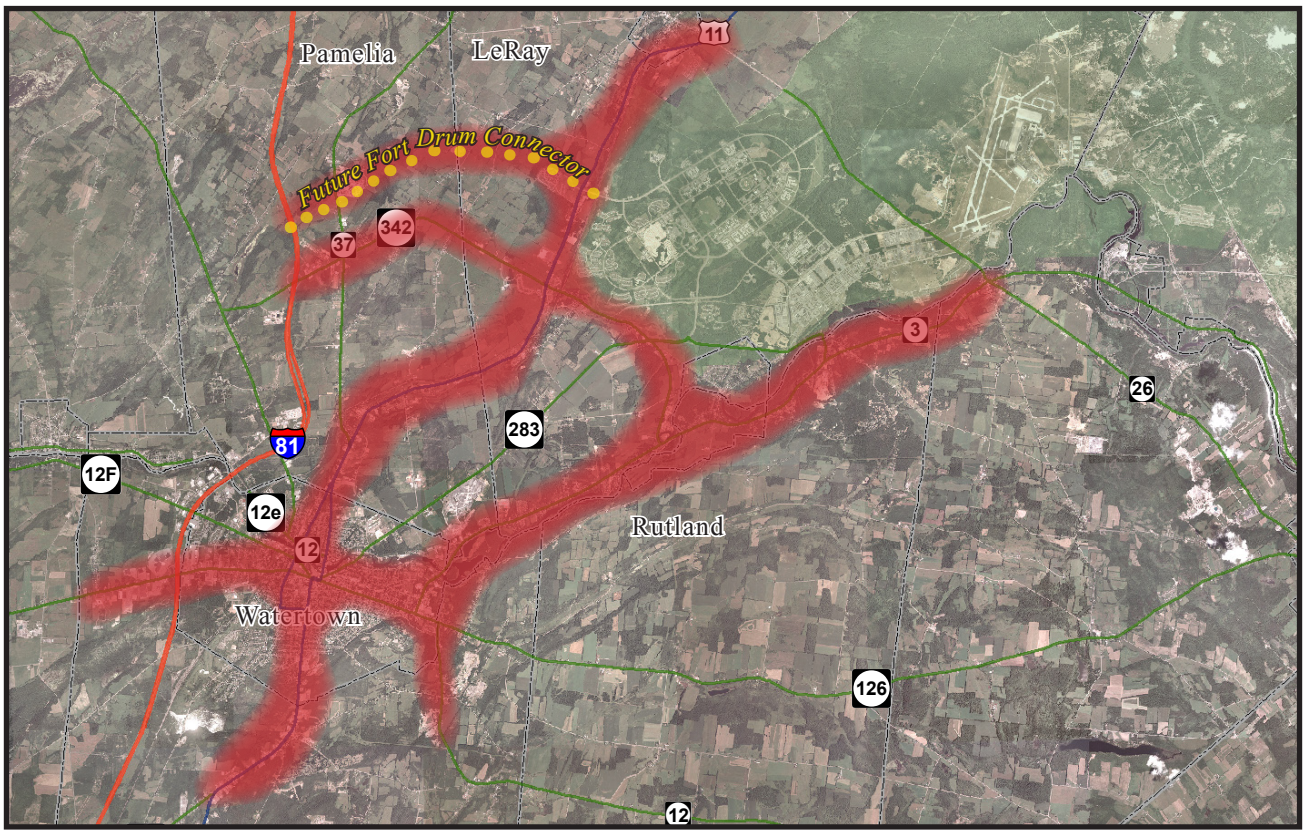
See Chapter 1, pages 48,49 and 56, 57 for more discussion on trails and trail planning.

- City/Town of Watertown Trail System Study
- Town of LeRay trail and pedestrian system
- Black River Blueway Trail – Carthage Blueway Trail segment – connection to Watertown-Black River Trail.

Planning for trails and bicycle paths should ideally take place not only at the local level, but regionally. Counties and regional organization should continue to play a role in coordinating trail development efforts in order to build a regional network.

IIIC.5 - Proactively Address Transportation Needs

As discussed in both Chapter 1, and explored further in Chapter 3 with respect to potential future growth in the region, a number of roads can expect to see significant increases in use over the coming years, should population and development continue at the rates modeled in Chapter 3. These roads and corridors are indicated on Map 4.3. It should be noted that this represents a regional perspective based on conceptual growth models and local interviews. As such, this map should not be considered an exhaustive catalog of areas where current transportation issues can be found in the region, or where



Map 4.3 - Transportation "hot spots": The highlighted areas represent transportation corridors that are expected to see significant growth pressure in the coming years.

they may arise in the future. The creation of a regional transportation planning entity such as an MPO – see recommendation IIIC.1 above – would help to ensure that regional perspectives and resources are brought to bear on solving transportation issues.

The following are two particularly noteworthy areas within the region where transportation and transportation-related land use issues will need to be addressed both locally and regionally.

Route 3 Corridor
Residents of the region have identified traffic and safety issues along Route 3 south of Wheeler-Sack Army Airfield. Some residents believe that the closure of the "Deferiet Gate" in 2001 exacerbated this issue. Growth Modeling for the region (see Chapter 3) indicates that higher development pressures will likely continue to be experienced in this area, relative to other areas within the region. As such, a concerted effort should be made to address the future of this important transportation corridor, not only with respect to traffic and safety, but with respect to community character and quality of life issues. The Route 3 East Corridor Plan should be utilized as a departure point for further discussions on the future of this corridor.

Planned Route 11-Fort Drum Connector Interchange
The planned interchange is likely to create increased development pressures further north along Route 11 in the Town of LeRay, and perhaps in the Towns of Antwerp and Philadelphia. These communities should examine their zoning and development regulations to ensure that future development in this corridor makes the most of likely growth pressures and that it avoids encroachment conflicts with Fort Drum. Limits to commercial growth should be explored by the local governments to avoid diluting the limited real estate potential/success for the commercially developed corridors nearby. The area near the Route 11-Fort Drum interchange could be an appropriate setting for office and research and development activity that benefits from proximity to the Fort and to a highway interchange. Attention to site design and access management now will help prevent problems in the future.

Commercial development often concentrates near highway interchanges as seen here in Pamelia.

See Chapter 1, pages 43 and 44 for more information on the planned Fort Drum connector.

IIID - Economic Development Initiatives

In the information-age economy, labor and capital are increasingly mobile. While traditional job development strategies are still relevant, many increasingly acknowledge the power of "quality of life" to attract labor and capital to a region. At the same time, the region must look to its competitive

advantages and pool of resources, talent and opportunities to proactively invest in the region and build a foundation for economic vitality. While Fort Drum presents many opportunities for collaboration on this important effort, the end goal for the region and the Fort is to leverage the Fort's enormous and beneficial economic impact to the region today, for a more diversified and stronger economy tomorrow. There are currently a number of efforts underway in the region to further economic development. Many of the recommendations below relate to supporting these efforts, rather than reinventing the wheel within the context of this plan. However, throughout the course of this project, a number of more focused strategies and ideas did emerge, a number of which are also discussed below.

IIID.1 - Continue to Build on County Comprehensive Economic Development Strategy Efforts and Pursue Fort-Community Partnerships on Items of Mutual Interest

Significant effort and resources have been devoted to developing Comprehensive Economic Development Strategy (CEDS) plans in all three counties (Jefferson, St. Lawrence and Lewis). While there are a number of common goals that appear in each of the three latest plans, there are some unique goals pertaining to each county. Coordination between the Fort, local communities and regional entities should utilize the CEDS plans as a framework for future planning efforts.

IIID.2 - Utilize the Gap Analysis to Target Economic Development

The 2007 North Country Gap analysis[99] identifies a range of economic activities that the region should focus on attracting and/or expanding. Using a rating system that factors in the region's strengths and opportunities, the analysis has found that the most likely fields for the area to expand in are:

- ◇ Dental and other medical services, due to the talents and abilities of spouses
- ◇ Back Office Insurance
- ◇ Electronic Components
- ◇ Manufacture of Office Furniture
- ◇ Toy Manufacturing
- ◇ Explosives Manufacturing
- ◇ Construction
- ◇ Maintenance Construction
- ◇ Fabricated Plate Work
- ◇ Switchboard and Switchgear apparatus
- ◇ Manufacture of Communications broadcasting equipment
- ◇ Industrial Truck Manufacture: Carts and Dollies
- ◇ Rubber and Plastic Hose and Belting

The analysis also spells out a marketing plan for the region, including how the region could market itself to other military support industries and tie into the expanding fortunes of companies in the Ottawa Valley area to the north of the St. Lawrence River.

One of the many local businesses supporting the Fort Drum Region

[99] "North Country Business and Resources Gap Analysis," prepared for the Fort Drum Regional Liaison Organization by Economic Development Research Group, Inc. – Location Advisory Services, with assistance from The Spectrum Group, February, 2007

IIID.3 - Take Steps to Address Perception and Reality of Fort-Community Economic Competition

Some community members identified Fort-Community competition as an area of key concern. Uncertainty of the scale and type of future businesses that may be provided on-post has, according to some entrepreneurs, had a "chilling effect" on investment decisions in the communities. The Fort should coordinate with the local business community to make them aware of potential future businesses and services to be located on-post, and to avoid wherever possible, negative impacts to existing local off-post businesses.

IIID.4 - Continue to Utilize Local Contractors for Jobs and Broaden their Scope of Involvement Where Feasible

The local business community and the Fort could potentially work together to identify and communicate future contracting needs, so that local contractors will be in a better position to anticipate and address future Fort Drum needs. Local education providers, such as Jefferson Community College, can also benefit from knowing "what's coming down the pipeline" and provide educational offerings to help ensure that needs can be met by the local workforce. The more experience and opportunity local contractors and entrepreneurs have to meet the needs of the Fort, the more chance for local businesses and entrepreneurs to expand, specialize and innovate. The military has long been a driver of innovation and technology – many of the conveniences that civilians enjoy today can trace their origins to a military application.

Support the Procurement Technical Advisory Center (PTAC)
PTACs help local companies and entrepreneurs to connect their services and expertise with Federal, State and local contracts. While it is up to the individual company and/or entrepreneur to follow through, a PTAC helps to get the word out about opportunities and also helps local entrepreneurs to navigate the complex process that is associated with government contracts.

In March of 2008 FDRLO was instrumental in bringing regional partners together to get a local PTAC off the ground in the Fort Drum region. Current funding should enable the PTAC to operate for the next three years, after that funding is uncertain. PTACs in both Monroe County (Rochester, NY) and Cattaraugus County (also serving Allegany, Chautauqua and Wyoming Counties), receive ongoing support from county government. In fact, the Cattaraugus County PTAC has been in existence in some form, for nearly 20 years. Such a model could potentially be pursued in the Fort Drum region. More information on the Monroe County and Cattaraugus County PTACs can be found, respectively, at: *http://www.rochesterptac.com/* and *http://www.cattco.org/economic_development/gma/.*

IIID.5 - Marketing for Jobs and Quality of Life

The region should continue to market itself and aggressively pursue leads in bringing new employers and jobs to the region, as well as connecting employers and employees. However, with the increasing mobility of capital and labor, quality of life has become an increasingly important asset to facilitating economic growth. Cities that draw new residents because of high quality of life, such as Portland, Oregon, become

"brews" for the emergence of new ideas and industries. Many young people relocate to such cities regardless of job prospects. Eventually, some of these people create new and exciting ideas of their own that lead to economic development and new jobs.

Regional efforts, such as the Jefferson County Industrial Development Agency's "Jefferson County: A New Beginning" campaign should be continued and broadened. Marketing should focus on the region's existing strengths (winter recreational activities, proximity to Montreal/Ottawa, relatively low housing costs, good schools, etc.). An "edgier" marketing campaign might be more helpful in attracting and retaining young and creative entrepreneurs. Such a campaign might focus more on proximity to large international cities, affordable housing, and affordable retail and living space in historic buildings and lofts in places like the City of Watertown.

The region may want to involve local residents more extensively to sell the region to outsiders, for example, drawing on young entrepreneurs in the area, or the region's large community of retired military personnel. Venues for marketing the region should be aggressively pursued. Such venues may include advertising on military related blogs and websites, representation at military conferences and conventions, or more civilian oriented venues and outlets, such as marketing at winter sports venues to attract residents who value ample snow and recreational activities.

In the end, successful marketing will rely on leveraging and strengthening the region's unique assets for the benefit of current residents. The successful marketing campaign will then communicate these assets to a wider audience of future residents and employers through a clear, concise and strong message that establishes a brand identity for the region.

IIID.6 - Invest in the Region's Economic Development "Support" Infrastructure

In addition to direct investments and efforts for spurring economic development, there are a number of support services that bear mentioning. Such support services build a stronger community and a more solid foundation for the economic health of the region.

Conduct and/or Update a Child Care Needs Assessment and Create an Operational Model with a Business Plan for Sustaining Child Care Services
A lack of adequate child care services in the region has been repeatedly cited as a challenge to economic development in the region.

Support the Educational and Social Value of Primary and Secondary Education
The region's public schools are critical to the long-term success of the region. See Chapter 1, pages 49 – 53, for more on the region's public schools. While each school district is responsible for undertaking its own school planning activities, the following general recommendations are offered:

◊ *Integrate Schools with Communities*
Wherever possible, schools should be closely integrated with communities and residential neighborhoods. This allows schools to play a larger role in community life, enables more children

to walk to school, and facilitates more participation by both students and children in the education process. The growth modeling exercise in Chapter 3 (see pages 123 – 126) indicates that the Carthage, Indian River and Watertown school districts will likely absorb the largest share of new students derived from any future growth in the region. At the same time, within these school districts, future population growth is likely to cluster closest to Fort gates and between the Fort and the City of Watertown (see Chapter 3, pages 109 – 119). For certain school districts, this may raise difficult questions about where to place new schools and whether existing, more distantly located schools should continue to operate. Because schools represent an important anchor for communities, particularly when they are located in the heart of a community, solutions will need to be approached with all stakeholders at the table.

◇ Acknowledge and Support the Role Schools Play in Stabilizing the Region
The region's schools, particularly those with large numbers of Fort affiliated students, play a critical support role in stabilizing families and children during uncertain times, such as deployments. This role of schools should be acknowledged and supported in any way possible, to ensure that schools continue to have the resources to play this very important role. Chapter 1, pages 52 – 54, offers more insight into the supportive role that schools play in the region.

Support Regional Health Care Initiatives
Health care in the Fort Drum region has benefited from a close Fort-community partnership that was initiated in the 1980s, under the umbrella of the Fort Drum Regional Health Planning Organization (FDRHPO). Chapter 1, pages 39 and 40 described current health care initiatives in more detail. Wherever possible, local communities, regional entities and Fort Drum should collaborate on improving and growing the region's health care system.

IIIE - Sustainability and "Green Planning"

Sustainability is a way of thinking and acting that reduces our impacts on the environment to ensure a healthy world for future generations. Some of the sustainability goals for the Fort Drum region include:

◇ Minimize the impacts of human development/land use on the environment
◇ Consume fewer resources and produce less waste
◇ Reduce energy consumption
◇ Reduce pollution and emissions

Many of the goals of sustainability can be achieved through good land use planning practices. For example, avoiding greenfield development (i.e., building on previously undeveloped land—farm or forest) in favor of infill and downtown investment is a sustainable policy that also makes economic sense. It consumes less land and resources and requires no extension of infrastructure. Where greenfield development is appropriate, growth should be concentrated to reduce sprawl and to protect natural resources.
New infrastructure projects such as roads and water systems should be built with sustainable, multi-purpose "green infrastructure" components. For example, roadways should be built in tangent with natural storm water systems which might also function as greenways or trail systems. Many communities

have created multi-purpose trail systems and there are regional plans (e.g., the Route 3/Black River trail) that should be completed to make the region more of a livable community.

With national priorities increasingly focused on sustainability and energy efficiency, those regions that are ahead of the curve and that demonstrate regional level collaboration are most likely to tap into support from both the private and public sectors.

Army Strategy for the Environment

Currently, Fort Drum is developing a plan to implement the Army's new sustainability initiative – the "Army Strategy for the Environment: Sustain the Mission – Secure the Future." This Army wide initiative involves a long-range vision and strategies for sustainability focused around three, interrelated core areas: Mission, Environment, and Community.

One of the key aspects of the "Army Strategy for the Environment" is the incorporation of "Sustainable Design and Development" principles into decisions affecting Army installations and the communities that surround them, with a focus on environmental planning, community operation and infrastructure projects. The Army Strategy for the Environment supports and ties into many of the concepts and goals of the Fort Drum Growth Management Strategy. As such, efforts should be made to coordinate the two efforts. Local communities have already begun to embrace green planning and sustainability techniques in their planning efforts. For example, the Town of LeRay is addressing such issues in its first ever comprehensive plan.

IIIE.1 - Coordination with the Army Strategy for the Environment Initiative

◇ Ensure that the Fort Drum Growth Management Strategy and the Army Strategy for the Environment support one another. Coordination meetings should be held between FDRLO, Fort staff and regional planning entities to examine how best to coordinate implementation of these important efforts.

◇ Army Strategy for the Environment efforts should be coordinated with local comprehensive planning efforts, so that sustainable planning ideas and concepts are implemented at the local level.

IIIE.2 - Continue Lake Bonaparte Conservation Efforts

The Fort should continue to partner with Lewis County, the Town of Diana, and the Lake Bonaparte Conservation Club on Lake Bonaparte environmental issues, such as the milfoil problem. As of June 2008, the conservation club has concluded that stocking the lake with weevils during the past several years has helped to fight milfoil.

IIIE.3 - Create a "Sustainability" Task Force

This task force could work on bringing sustainable development practices to the region. Opportunities to leverage the region's assets with respect to sustainability (renewable resources, etc.) should also be explored, with a focus on making connections between economic development in the region and sustainability. The task force could set goals, partner on pilot projects, and bring various players and stakeholders to the table. Local and regional education and awareness could also be a key component of this effort. Task force members could include local municipalities, regional organizations, counties, Fort Drum representation, and academic institutions. Some projects the task force could focus on, among others, would be recycling, household hazardous waste disposal, and composting of food or other organic waste (such as yard waste).

IIIE.4 - Implement Sustainability Pilot Projects

The three Fort Drum region counties should work with Fort Drum to identify and secure funding for sustainability "pilot projects" which can be collaboratively implemented. Three such pilot projects are identified below:

- ◇ Low-impact development guidelines and planning board training: secure funding to develop regional-based guidelines for low impact development that can be adopted by local municipalities and provide training for planning boards in reviewing developments with respect to the guidelines.

- ◇ Identify a pilot "sustainable" residential development project in one of the region's communities and work jointly to finance and implement the project. This project might work towards achieving a Leadership in Energy and Environmental Design (LEED) rating for neighborhood development. (LEED rating is a recognition/achievement program administered by the U.S. Green Building Council)

- ◇ Seek funds and develop plans for the "greening" of a planned infrastructure project, such as planned upgrades to Route 11. This pilot project would evaluate the roadway from a material and energy perspective, as well as an ecological perspective, and develop a "green infrastructure" alternative/upgrade to the project which might include, for example, the use of recycled construction materials or naturalized stormwater treatment systems.

IIIE.5 - Address Sustainability at the Local Level

Municipalities in the Fort Drum region should address sustainability at the local level through the following:

- ◇ Develop or update comprehensive plans to include a sustainability element, which supports infill development and promotes growth in areas with existing infrastructure. Plans should also address waste disposal, recycling, composting and transportation from a sustainability perspective.

- ◇ Zoning codes should be evaluated and revised to promote sustainability goals. For example, they should allow for small-scale wind power systems for farms and solar panels on residential and

commercial buildings. Zoning codes should also provide incentives for green building and low impact development practices.

- ◇ Conduct an energy audit for municipal buildings and systems and identify areas where improvements are warranted. These improvements should be considered as long-term investments in municipal budgeting. Grants and incentives are also available to implement energy efficiency improvements.

- ◇ Identify areas suitable for more intensive community/regional sustainable energy systems (hydro power, wind, solar farms, etc.) and ensure that local plans and zoning regulations support such systems.

IIIF - Take a Regional Approach to Land Use Planning and Growth Management

Over the years, numerous regional entities have evolved and been created to guide planning and development at the regional scale. First and foremost among these is the Fort Drum Regional Liaison Organization FDRLO, an organization that stands out among military communities across the nation for its involvement and participation in the regional dialogue between Fort Drum and the surrounding communities. Other regional organizations include DANC and the Tug Hill Commission, each of which play significant roles in the Fort Drum region. County governments also play significant roles, assisting local municipalities on many fronts.

Despite the many regional entities working on planning and growth management in the Fort Drum region, there is no one entity in charge of coordinated land use planning and growth management. Coordinating land use planning is important way to manage encroachment at Fort Drum; maintain and shape centered growth; and conserve natural and agricultural areas. These roles are currently being implemented on an ad-hoc basis with no long-term plan, funding source, or measure or success. Up until recently, this ad-hoc approach has been working for the Fort Drum region. However, in recent years, the Fort Drum associated growth has spurred the need for a more formal approach to regional land use planning and growth management.

A "from the ground up" approach to regional planning would involve all of the communities and stakeholders in the region in a process where local goals and land use visions can be stitched together into a regional vision that is more powerful than the individual components. Regional sub-areas such as the Route 3 growth corridor, Route 11 growth corridor, agriculture and range areas, and villages and hamlets each possess their own unique characteristics and might be treated as planning sub-units within a regional framework.

New York State is in fact actively encouraging and supporting regional planning efforts and projects across the state through the Local Government Efficiency (LGE) Program (formerly the "Shared Municipal Services Incentive (SMSI) Program").[100] This program provides funding and assistance for communities to plan and implement shared services, with a goal of improving efficiency and savings for taxpayers and encouraging good planning outcomes at the regional level. Many of the recommendations in this section might be eligible for funding through this program.

[100]NYSDOS Grant Funding Announcement for 2008-2009 Local Government Efficiency Grant Program, Secretary of State Lorraine Cortez-Vazquez, September 12, 2008

IIIF.1 - Explore Opportunities for Regional Cooperation

The growth and development in recent decades that has been largely spurred by expansions to Fort Drum has had different impacts on communities in the region. Higher growth communities have worked hard to develop visions, plans and policies to ensure that new growth is beneficial to residents, rather than a burden. Other communities have felt left out of the economic growth and have been only tangentially affected by Fort Drum expansions. While competition is always healthy, finding more ways for municipalities to work together for common regional goals can benefit everyone.

IIIF.2 - Continue Progress on Shared Services Agreements

Communities that share services, such as police and emergency services can cut costs and increase the efficiency of services. For example, the Villages of Carthage and West Carthage are currently exploring shared police services. New York State's LGE grant program provides funding for the exploration and implementation of shared services, as well as a host of other activities that involve intermunicipal cooperation.

IIIF.3 - Adopt a Regionally Shared Vision for Growth

This vision should be shared by all levels of government – County, State, Federal, Local – as well as Fort Drum, non-profit agencies and other stakeholders and decision makers to make sure that all embrace a regional vision that avoids encroachment and supports centered growth and resource preservation. An officially adopted regional vision statement (see suggested Regional Vision Statement at the close of Chapter 3 of this plan) can be a first step toward this goal. The "Memorandum for Nellis and Surrounding Communities" (Appendix K), from Nellis Air Force Base, is an example of a vision or agreement that can be mutually endorsed.

Nellis Air Force Base in Nevada adopted a memorandum of understanding focused on sustainability and public safety. Photo by Sgt. Kenny Kennemer

IIIF.4 - Explore a Fort Drum Regional "Compact"

A vision statement or "memorandum of understanding" can be taken further and developed into an official "compact" or regional agreement based around a well developed set of goals and practices. The Jefferson County Planning Board has adopted growth and development principles which might be used as a baseline for this exercise. In a number of regions across the country, regional agreements or "compacts" have been developed to help coordinate local planning and decision making within a context of shared, regional goals. A Compact can also be a strong statement to other layers of government – with a compact in place, a region has more power to demand that all players make decisions and set policy that reinforce regional goals.

Such a "Compact" style agreement between communities and the Fort could be an effective mechanism to facilitate regional cooperation on shared goals and aspirations. In the long-term, a formalized regional

framework could be established to implement the regional vision; provide regional coordination; identify or establish of funding sources for regional planning; and track progress towards the regional vision. It should be noted that this regional framework is not intended to supplant or change the current nature of land use planning which is based on home rule, rather it is intended to coordinate and communicate, as well as to improve efficiency and increase funding for land use planning. This regional framework should be established without creating complex layers of government and should take advantage of the knowledge of all of the existing local and regional planning professionals in the region by including them in the framework without taking away from services they already provide.

IV - Area Specific Recommendations

These recommendations are organized into five major areas in the Fort Drum region that share similar conditions related to encroachment, land use and growth. These recommendations are focused on municipal actions - primarily land use planning and zoning - which can be taken to address the growth management plan's two primary goals of preventing encroachment and maintaining quality of life.

The five major areas are listed below, and detailed recommendations follow.

1. Route 3 Corridor South of WSAAF
2. Route 11 Growth Corridor
3. Villages/Hamlets and City of Watertown
4. Range Areas – Agricultural
5. Range Areas – Forest

Route 3 Corridor South of WSAAF

Village of Black River, Town of Rutland, Town of Champion, Village of Herrings, Village of Deferiet, Town of Wilna

Main Issues and Opportunities:

- ◇ Higher growth potential area
- ◇ Convenient access to Fort
- ◇ Area of significant safety/noise concerns
- ◇ Future growth will lead to encroachment conflicts
- ◇ Future growth presents opportunities to increase quality-of-life, as well as challenges
- ◇ Communities affected by significant safety and noise zones: *Town of Rutland, Town of Champion, Village of Deferiet*

Numerous aircraft, including the F-16's from the Syracuse Air National Guard present noise and potential safety concerns for the Route 3 Corridor south of WSAAF.

Recommendations:

Addressing Encroachment

- ◇ The following communities should update or undertake a comprehensive plan:
  - Town of Rutland
  - Village of Deferiet (update 2000 plan)
  - Village of Black River (build on 2008 Community Visioning and Strategic Development Plan)
  - Village of Herrings (update 1967 plan)

- ◇ For the River Area Council of Governments (RACOG) communities, which are currently engaged in a planning process (*Champion, Wilna and the Villages of Carthage and West Carthage*):

- Comprehensive Plans should address land use compatibility and growth of the area near the Fort
- Fort Drum should continue to participate in comprehensive planning processes to support and ensure that land use compatibility issues are addressed
- Communities should identify opportunities for conservation and other compatible uses in encroachment concern areas
- Communities should ensure that Fort Drum has copy of the plan

◇ Adopt zoning for Wheeler Sack Army Airfield safety and noise zones to ensure that land uses in these zones are compatible.

◇ Prioritize safety and noise zones associated with the airfield for conservation efforts (such as through the ACUB (Army Compatible Use Buffer) program.

◇ In less severe noise zones, explore options for passive recreation and other compatible land uses such as commercial development. More stringent restrictions will need to be put in place in more severe noise zones and safety zones.

◇ Enact sensible sound attenuation practices in high priority sound zones (building code).

◇ Address light pollution through zoning/site plan regulations.

Leveraging Growth

◇ Identify appropriate growth areas (through Comprehensive Planning process).

◇ Develop plans for growth areas.

◇ Develop innovative tools to encourage desired growth patterns:
- Design Guidelines
- Conservation Subdivision Regulations
- Incentive Zoning

◇ Concentrate growth in serviced (water/sewer) areas.

Address Transportation Issues

◇ Address gate access issues at the following gates:
- Deferiet
- Black River

◇ Address traffic and safety issues leading into southern Fort gates.

◇ Have a long-range plan for improvements to Route 3 – should address access management; aesthetics; bike/pedestrian access; and functionality for automobiles.

Route 11 Growth Corridor

Town of LeRay, Village of Evans Mills, Town of Philadelphia, Village of Philadelphia, Town of Antwerp, Village of Antwerp, Town of Pamelia

Main Issues and Opportunities:

◇ High growth potential area
◇ Convenient access to Fort
◇ Noise concerns north of LeRay
◇ Route 81 Connector
◇ Future growth presents opportunities to increase quality-of-life, as well as challenges

Recommendations:

Addressing Encroachment

◇ Communities affected by noise zones: *Town of LeRay, Town of Philadelphia, Town and Village of Antwerp*

◇ The following communities should develop/update Comprehensive Plans:
- Town of Antwerp and Town of Pamelia
- Plans underway or recently completed:
  - Town of LeRay (2009)
  - Town and Village of Philadelphia (underway)
  - Village of Antwerp (2003)
- Comprehensive Plans should address land use compatibility and growth
- Fort Drum should continue to participate in comprehensive planning processes to support and ensure that land use compatibility issues are addressed
- Communities should identify opportunities for conservation and other compatible uses in encroachment concern areas
- Communities should ensure that Fort Drum has copy of the plan

◇ Adopt zoning to address land use compatibility within noise zones.
- Priority areas: Town of LeRay, Philadelphia, Town/Village of Antwerp

◇ Conservation efforts should focus on farming, address landowner needs.
- Northern LeRay and Town of Philadelphia are the best candidates because they have a combination of existing farms and higher growth pressures

◇ Explore habitat conservation in LeRay, in conjunction with developing areas. Partnerships with the ACUB program should be explored.

◇ The Town of LeRay should amend town-wide zoning upon completion of the comprehensive plan. These zoning amendments could be developed as a model for other communities.

◇ Address light pollution through zoning regulations.

Leveraging Growth

◇ Identify appropriate growth areas (through Comprehensive Planning process).

◇ Develop plans for growth areas.

◇ Develop innovative tools to encourage desired growth patterns:
- Design Guidelines
- Conservation Subdivision Regulations
- Incentive Zoning

◇ Concentrate growth in serviced (water/sewer) areas.

Address Transportation Issues

◇ Develop office/technology park area near Fort Drum Connector/Route 11 interchange.

◇ Limit migration of strip highway commercial development north of Town of LeRay.

◇ Address aesthetics, access management, and bike/pedestrian access along Route 11.

◇ Address Fort thru-traffic in Antwerp.

Villages/Hamlets and City of Watertown

Main Issues and Opportunities:

◇ Growth has bypassed/not fully realizing potential
◇ Unique assets to region: historic cultural, natural (river/waterfalls), housing stock, downtowns
◇ Capitalizes on prior infrastructure investments
◇ In many cases, will take pressure off sensitive Fort border areas
◇ Will take dedicated, concerted effort to revitalize
◇ Commercial highway growth management

Recommendations:

Addressing Encroachment

◇ Hamlets/Villages along Fort border with significant encroachment concerns:
- Village of Antwerp, Village Deferiet, Hamlets including Felt Mills, Great Bend, Natural Bridge, and Lake Bonaparte

The Villages of Carthage and West Carthage as seen in this 1888 illustration are an example of the many historic centers in the Fort Drum region. Source: Library of Congress, Geography and Map Division

◇ Collaborate on mutual Fort-community solutions to noise and safety. Sound attenuation can help.

◇ Address light pollution through zoning regulations.

Leveraging Growth

◇ The following villages near Fort Drum will see the most growth pressures:
- Black River
- Evans Mills
- Deferiet
- Philadelphia
- The Villages of Carthage and West Carthage

◇ Prepare to accommodate growth.
- Create or update Comprehensive Plan
  - Black River (build on 2008 Community Visioning and Strategic Development Plan)
  - Evans Mills
  - Deferiet (update 2000 plan)
  - Philadelphia and "Carthages" underway
  - Watertown: Black River Corridor Plan—Expand to City-wide/city-towns cooperative comprehensive plan
- Identify infill properties and types of growth desired

- Develop zoning to encourage development
- Leverage village/historic city qualities
- Strengthen housing stock investments/connections to military housing needs
- Fill infrastructure needs (for example, the Village of Evans Mills is in the process of replacing its water tower to increase capacity for development in the village as well as nearby areas of LeRay)
- Develop "shovel-ready/historic reuse-ready" sites
- Strengthen recreation/downtown offerings as an amenity

◇ Partner with regional entities and Fort to locate important community institutions and facilities.

Range Areas – Agricultural

Town of Rossie, Town of Gouverneur, Town of Fowler

Main Issues and Opportunities:

◇ Low growth area
◇ Incremental lot-by-lot development
◇ Avoiding encroachment in the long-term
◇ Supporting and maintaining farming and forestry uses
◇ Creative use of natural resources (energy, tourism, etc.)

Recommendations:

Addressing Encroachment

◇ Comprehensive Planning:
- Town of Fowler Comprehensive Plan Underway
- The Town of Pitcairn and Town of Rossie should undertake Comprehensive Plans

◇ Revise zoning to reflect existing lower development densities, lack of infrastructure.

◇ The Towns of Rossie and Fowler should consider zoning regulations.

◇ Address light pollution through zoning regulations.

◇ Explore farmland/forestland protection opportunities.

Develop Land Use Tools to Address Incremental Growth

◇ Large lots still have an impact on landscape.

◇ Creative solutions are needed to customize tools (modified conservation subdivisions for incremental growth).

Range Areas – Forest

Town of Pitcairn, Town of Diana

Main Issues and Opportunities:

- ◇ Low growth area
- ◇ Incremental lot-by-lot development
- ◇ Avoiding encroachment in the long-term
- ◇ Supporting and maintaining forest lands
- ◇ Key noise conflict areas: Natural Bridge and Lake Bonaparte

Recommendations:

Addressing Encroachment

- ◇ Revise zoning regulations to reflect existing lower development densities, lack of infrastructure in the Town of Diana.
- ◇ Develop zoning regulations to reflect existing lower development densities, lack of infrastructure in the Town of Pitcairn.
- ◇ Address light pollution through zoning regulations.
- ◇ Explore habitat protection opportunities.
- ◇ Further collaboration in Lake Bonaparte and Natural Bridge Areas.

Develop Land Use Tools to Address Incremental Growth

- ◇ Large lots still have impact on landscape.
- ◇ Creative solutions are needed to customize tools (modified conservation subdivisions for incremental growth).

LAND USE TOOLS

Land Use Tools to Ensure Quality Communities and Avoid Fort-Community Encroachment Conflicts:

Land Use Tools		**Gate Communities** *Towns: LeRay, Champion, Rutland, Pamelia, Philadelphia and Watertown* *Villages: Black River, Evans Mills, Deferiet, Herrings, Philadelphia, Carthage and West Carthage; and the City of Watertown*	**Range Communities** *Towns: Philadelphia, Antwerp, Rossie, Fowler, Pitcairn, Diana and Wilna* *Villages: Antwerp, Harrisville and Philadelphia*
Adopt/Update Comprehensive Plan		Highly Applicable	Highly Applicable
Zoning, Subdivision and Land Use Tools	Creative Land Use Tools (Planned Unit Development, Incentive Zoning, etc.)	Highly Applicable	Applicable
	Design Guidelines	Highly Applicable	Applicable
	Conservation Subdivisions	Highly Applicable	Applicable
	Overlay Zoning (MIZOD) for Fort-Friendly Uses and Densities	Highly Applicable	Highly Applicable
Land Conservation	Agriculture	Highly Applicable	Highly Applicable
	Natural Habitats and Resources	Applicable	Highly Applicable
Fort-Friendly Lighting Standards		Highly Applicable	Highly Applicable

Examples from other communities dealing with encroachment are included as Appendix L.

FORT FRIENDLY CHECKLIST

The following checklist was developed for communities to use in evaluating how compatible their land use regulations are with respect to Fort Drum, as well as evaluate if the communities are well positioned to accommodate new growth. For any responses of "No" the community may want to review their policies in order to become more "Fort friendly."

Is Your Community Fort Friendly?

Is Your Community Well Positioned to Reap the Benefits of Growth?

Take this test to find out!

1. Does your community have a Comprehensive Plan?

A comprehensive plan represents a community's shared vision for the future. Through the comprehensive planning process, diverse stakeholders and members of the community can come together and reach consensus on important issues. Having a comprehensive plan in place builds a strong foundation for implementing proposed projects and helps communities to access public funding and grants.

If "NO", proceed to question 2:

1.a. Is your community's comprehensive plan up-to-date?

An up-to-date comprehensive plan ensures that the community's vision and plans keep pace with changing circumstances and evolving opportunities and issues. As a rule of thumb, communities should review their comprehensive plan every 5 years to ensure that it remains relevant and consider a complete update of the plan every 5 to 15 years.

1.b. Does your community's comprehensive plan communicate a clear vision for the future of growth in the community?

One of the benefits of a comprehensive plan is that it can identify areas where the community wants to see growth and other areas where the community wants to see conservation. Growth areas may include areas currently serviced by sewer & water, existing village and hamlet centers, or areas in close proximity to major roads. A clear vision for future growth areas can set a community up for economic success. Conservation areas may include farming areas, or natural areas that possess unique habitat or recreation values. Identifying such areas in a comprehensive plan is the first step to developing land use tools and policies to ensure that future development meets community goals.

1.c. Does your community's comprehensive plan address Fort Drum issues and opportunities?

The comprehensive plan is the perfect place for a community to address the issues and opportunities that come with being a neighbor of Fort Drum. Does the comprehensive plan address land use compatibility along the borders of Fort Drum (noise and safety concerns)? Does the comprehensive plan explore opportunities and partnerships with Fort Drum – such as housing, economic development and land conservation (agricultural and natural habitat)?

1.d. Does Fort Drum have a copy of your community's comprehensive plan?

Every community that has a comprehensive plan should make sure that Fort Drum is provided with a copy. The comprehensive plan is also an opportunity to communicate the community's goals and vision for itself directly to Fort Drum.

2. Does your community utilize zoning and land use tools?

A number of communities in the Fort Drum region do not currently possess zoning regulations. Zoning and other land use regulations can be effective tools to achieve a community's vision for itself. Well designed and effective zoning regulations do not focus exclusively on what is prohibited – rather, they are a useful tool to communicate the community's land use goals and visions. Proactive zoning regulations also make it less likely for inappropriate projects to come before the Planning Board – by which time landowners and/or developers have expended significant time and effort on coming up with development plans. Well designed zoning and land use regulations can also allow for and encourage creativity and flexibility in the development process.

If "NO", proceed to question 3:

2.a. Does your community's zoning and land use regulations match your community's goals?

There is often a disconnect between a community's zoning and land use regulations, and the goals of the community for its future. For instance, a village's goal may be to encourage village character, but the village's zoning may require large setbacks and suburban scaled parking regulations that actually make it impossible to reach this goal. For communities that have an adopted comprehensive plan, there is occasionally a mismatch between the ideas and vision communicated in the plan and the community's actual zoning regulations.

2.b. Does your community's zoning set forth appropriate land uses and densities to avoid encroachment conflicts at the Fort border?

Addressing land use compatibility at the Fort border through zoning helps to ensure that inappropriate land uses do not encroach on sensitive areas (noise and safety concern areas). Proactively avoiding land use conflicts at the community-Fort border minimizes the chances for community residents to be negatively impacted by Fort activities and helps to ensure the long-term viability of Fort Drum.

2.c. Is your community utilizing creative approaches to zoning and development?

Many communities rely on basic zoning regulations that depend exclusively on minimum requirements, such as minimum lot size, setbacks, etc. More creative zoning and land use tools can yield better results for both the community and developers. Planned Unit Development regulations, Incentive Zoning and Conservation Design are just some of the tools that communities can use achieve positive results from future growth.

2.d. Does your community have lighting standards that ensure lighting levels are not excessive and that light sources are shielded and do not create glare?

Manufacturers offer lighting products specifically designed to minimize glare and excessive light pollution, while providing adequate light levels for the land uses and activities they illuminate. Light pollution – glare and excessive lighting directed towards the sky – can affect Fort Drum's ability to conduct nighttime training exercises. Plus, sensible lighting standards lead to lower energy usage, keep the skies dark for sleeping and star-gazing, and are also friendly to the environment – light pollution can interfere with the activities and behavior of a number of nocturnal creatures.

3. Does your community collaborate with the Fort Drum community planner on land use and development decisions along the Fort border?

4. Does your community have a clear understanding of where the most sensitive noise and safety areas are along the Fort-community border?

5. Does your community have a copy of the Fort Drum Growth Management Strategy and are your town staff, boards and officials familiar with it?

IMPLEMENTATION TABLES

The following series of implementation tables identify a time frame, lead entities, and anticipated cost level for each of the recommendations contained in Chapter 4. A separate table is provided for each "class" of recommendations (IIA, IIB, IIIA, etc.). The tables are meant to be used as benchmarks for tracking progress with respect to recommendations. The following is a guide to interpreting the specific contents of the tables:

Timeframe

Timeframes for undertaking recommendations are classified as: Immediate, Short-Term (1 - 3 years), Mid-Term (3 - 5 years), Long-Term (5+ years) and Ongoing. The timeframes should be used loosely as a preliminary guide to prioritizing recommendations relative to one another. To this end, the "year horizon" associated with each timeframe should not be interpreted too literally. Lastly, in many cases, the evolving circumstances and events of the real world will, more than anything else, determine when a given recommendation will be acted upon.

Lead Entity or Entities

For each recommendation, one or more "lead entities" are identified. Once again, this should not be taken too literally. Many of the recommendations in this plan require the cooperation and participation of multiple entities. Rather, the entities identified in the table should be viewed as a preliminary evaluation of those who are in a position to most directly undertake a given recommendation. For many recommendations, coordination and cooperation between multiple entities will need to occur for full and effective implementation.

Costs

Like the estimated Timeframes (discussed above), costs indicated in the table are conceptual and meant more to illustrate relative costs from recommendation to recommendation. In reality, costs for particular recommendations will vary widely depending on many factors, such as how far a particular recommendation is implemented or where in the region it is being implemented.

II Ensuring the Long-term Viability of Fort Drum

IIA Recommendations - Strengthening Communication Between Fort Drum and Communities

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIA.1 - Establish Protocol to Share and Update Fort-Community Mapping	Immediate and Ongoing	Fort Drum County Governments	Low - Staff time and resources
IIA.2 - Designate Information "Gatekeepers "	Immediate and Ongoing	Fort Drum County Governments FDRLO	Minimal
IIA.3 - Develop an Informational Website Accessible to the Public	Short-Term and Ongoing	Fort Drum County Governments FDRLO	Variable Staff time and resources Consultant Services
IIA.4 - Regularly Issue a Newsletter briefing communities on Fort Drum Activities/ Changes	Mid-Term and Ongoing	Fort Drum	Staff time and resources
IIA.5 - Utilize Counties/Regional Entities to Provide Information to Local Municipalities	Short-Term and Ongoing	Fort Drum FDRLO County Governments Tug Hill Commission	Minimal
IIA.6 - Land Use Training Sessions/Focus Groups	Short-Term and Ongoing	Fort Drum Tug Hill Commission County Governments	Low - Staff time and resources
IIA.7 - Track Regional Land Use and Growth Patterns	Short-Term and Ongoing	Fort Drum County Governments	Low - Staff time and resources
IIA.8 - Hold Periodic Fort-Community Meetings	Short-Term and Ongoing	Fort Drum Local Municipalities	Staff time and resources
IIA.9 - Continue to Hold Public Events on Fort Drum	Ongoing	Fort Drum	Variable
IIA.10 - Coordinate with the Governor's Northern New York Military Airspace Committee (NNY MAC)	Ongoing	Fort Drum Regional Members of NNY MAC	Minimal

II Ensuring the Long-term Viability of Fort Drum (continued)

IIB Recommendations - Utilize Tools to Avoid Encroachment

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIB.1 - Pursue Land Conservation	Immediate and Ongoing	Fort Drum (ACUB Program) Willing/Interested Landowners County Governments Local Municipalities	Variable
IIB.2 - Undertake Comprehensive Planning	Short-Term and Ongoing	Local Municipalities	Variable
IIB.3 - Develop Fort-Friendly Zoning and Development Regulations	Short-Term to Mid-Term (in most cases, subsequent to completing rec. IIB.2)	Local Municipalities	Variable
IIB.4 - Encourage Early Disclosure	Mid-Term	Local Municipalities	Minimal
IIB.5 - Pursue Sound Attenuation in Noise Sensitive Areas	Short- to Mid-Term	Enforcers of Building Code Local Municipalities County Governments	Variable
IIB.6 - Address Light Pollution	Immediate to Short-Term	Local Municipalities Fort Drum	Variable
IIB.7 - Fort-Oriented Strategies for Reducing Land Use Conflicts	Immediate and Ongoing	Fort Drum	Minimal

III Leveraging Growth for Long-term Community Success

IIIA Recommendations - Municipalities Develop a Vision for Growth

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIIA.1 - Develop and Update a Comprehensive Plan	Short-Term and Ongoing	Local Municipalities	Variable Staff time and resources Consultant Services
IIIA.2 - Develop Zoning and Land Use Regulations	Short-Term to Mid-Term (in most cases, subsequent to completing rec. IIIA.1)	Local Municipalities	Variable
IIIA.3 - Develop Design Guidelines	Short-Term to Mid-Term (in most cases, subsequent to completing rec. IIIA.1)	Local Municipalities	Variable
IIIA.4 - Undertake Infrastructure Policies and Plans that Support Centered Growth	Short-Term and Ongoing	Local Municipalities DANC	Minimal

IIIB Recommendations - Encourage "Centered" Growth

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIIB.1 - Develop Land Use Tools and Regulations that Foster Centered Growth	Short-Term and Ongoing	Local Municipalities	Variable
IIIB.2 - Encourage High Quality New Development	Immediate and Ongoing	Local Municipalities DANC County Governments	Variable
IIIB.3 - Maintain a Comprehensive Housing Guide	Short-Term and Ongoing	Fort Drum	Minimal
IIIB.4 - Encourage the Re-use and Rehabilitation of Historic Structures	Short-Term and Ongoing	Local Municipalities	Variable
IIIB.5 - Pursue Grant Funding Opportunities for Rehabilitation and Revitalization	Short-Term and Ongoing	Local Municipalities County Governments Regional Agencies	Variable

III Leveraging Growth for Long-term Community Success (Continued)

IIIC Recommendations - Take a Regional Approach to Transportation

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIIC.1 - Explore the Creation of a Metropolitan Planning Organization (MPO) or Rural Planning Organization (RPO)	Short- to Mid-Term	County Governments DANC	Minimal
IIIC.2 - Assess Feasibility of Regional Solutions to Public Transit	Immediate and Ongoing	County Governments Fort Drum	Variable
IIIC.3 - Address Fort Drum Gate/Access Issues and Opportunities	Short- to Mid-Term	Local Municipalities Fort Drum	Minimal
IIIC.4 - Accommodate Bicyclists and Pedestrians	Short-Term and Ongoing	Local Municipalities County Governments	Variable
IIIC.5 - Proactively Address Transportation Needs	Short-Term and Ongoing	County Governments Local Municipalities NYSDOT	Variable

IIID Recommendations - Economic Development Initiatives

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIID.1 - Continue to Build on County Comprehensive Economic Development Strategy Plans	Immediate and Ongoing	County Governments	Minimal
IIID.2 - Utilize the Gap Analysis to Target Economic Development	Immediate and Ongoing	County Governments County Economic/Industrial Development Agencies, DANC Empire State Development Corporation	Variable
IIID.3 - Take Steps to Address Perception and Reality of Fort-Community Economic Competition	Short-Term and Ongoing	Fort Drum County Economic/Industrial Development Agencies	Minimal
IIID.4 - Continue to Utilize Local Contractors for Jobs and Broaden their Scope of Involvement	Short-Term and Ongoing	Procurement Technical Advisory Center (PTAC), FDRLO County Economic/Industrial Development Agencies	PTAC supported through 2012, *(after which funding is uncertain.)*
IIID.5 - Marketing for Jobs and Quality of Life	Mid-Term and Ongoing	County Economic/Industrial Development Agencies	Variable
IIID.6 - Invest in the Region's Economic Development "Support" Infrastructure	Short- to Mid-Term	Local Municipalities, Fort Drum, Regional Agencies/Counties	Variable

III Leveraging Growth for Long-term Community Success

IIIE Recommendations - Sustainability and "Green Planning"

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIIE.1 - Coordination with the Army Strategy for the Environment Initiative	Short- to Mid-Term	Fort Drum County Governments	Minimal
IIIE.2 - Continue Lake Bonaparte Conservation Efforts	Short-Term and Ongoing	Fort Drum Lake Bonaparte Conservation Club	Variable
IIIE.3 – Create a "Sustainability" Task Force	Short-Term and Ongoing	Fort Drum, FDRLO DANC, County Governments Academic Institutions	Variable
IIIE.4 - Implement Sustainability Pilot Projects	Short-Term and Ongoing	Fort Drum County Governments	Variable
IIIE.5 - Address Sustainability at the Local Level	Short-Term and Ongoing	Local Municipalities	Variable

IIIF Recommendations - Take a Regional Approach to Land Use Planning and Growth Management

Recommendations	Timeframe	Lead Entity or Entities	Costs
IIIF.1 - Explore Opportunities for Regional Cooperation	Short-Term	Fort Drum Regional Agencies County Governments	Minimal
IIIF.2 - Continue Progress on Shared Services Agreements	Short-Term and Ongoing	Local Municipalities	Variable
IIIF.3 - Adopt a Regionally Shared Vision for Growth	Short- to Mid-Term	Local Municipalities, Fort Drum, Regional Agencies/Counties	Variable
IIIF.4 Explore a Fort Drum Regional "Compact"	Mid- to Long-Term	Fort Drum Local Municipalities	Variable
IIIF.5 - Explore Opportunities for Regional Planning Frameworks	Mid- to Long-Term	FDRLO DANC County Governments	Variable

MOVING FORWARD TOGETHER: NEXT STEPS

One thing is clear as a result of this project: the Fort and the communities continue to improve communication and are working together to solve problems. In terms of managing growth, the issues are complex and varied, the stakeholders and perspectives are diverse, and both the Fort and the communities will continue to evolve and experience new challenges and opportunities as the future unfolds. While the local governments are doing all that they can given current resources, the need for a more coordinated effort has been thoroughly demonstrated in this analysis.

Key Next Steps

Develop a Fully Supported Community Planning Arm of Fort Drum

There are many success stories and examples of collaboration between the Fort and the communities. The current Community Planner at Fort Drum has established many relationships and protocols for information sharing and collaboration. However, to play a more proactive role, more resources and people-power are needed. Key expanded functions of this role would be:

- ◇ On-going and Sustained Partner for Community Planning.
- ◇ Ensure Quality and Timeliness of Important Information.
- ◇ Work with Fort Drum on Addressing Community Opportunities and Issues (e.g., enhanced connections for housing needs and housing markets in villages/city).
- ◇ Assist in Developing Shared Vision for Growth that is Communicated "Inward" to Entire Fort Hierarchy.

Create a Working Group to Implement Plan

This working group should consist of representatives from both the Fort and community side. Meetings should be held only to make progress on tangible projects as recommended herein. The size of this group should be large enough to get important stakeholders to the table, but small enough to function as a bona-fide working group. Smaller sub-groups may potentially be useful for working on particular projects. Without such a group, many of the recommendations of this plan will fall through the cracks. The most important function the group can play is to assist local communities in implementing projects and tools set forth in this plan, and finding the resources to help them do so.

Pursue Priority Projects

While there are many action steps to be taken, the following is a list of priority projects for the working group:

- ◇ Pursue Planning and Fort-Friendly Zoning in Highest Priority Areas (Route 3 and Route 11 Corridors).

◇ Develop Notification Requirements for all Development within +/- 3,000 feet of the Fort boundary, and within Noise and Safety zones.

◇ Work with Villages and City of Watertown to Encourage and Accommodate Future Growth.

◇ Maintain and Update List of Priority Projects.

◇ Develop a 5 Year Goal to Include:
- Comprehensive Plans for all Gate Communities (Towns and Villages)
- Updated zoning for:
  - LeRay
  - RACOG Communities
  - Town and Village of Philadelphia
  - Black River
  - Evans Mills
  - City of Watertown

◇ Create a Fort Drum-Community structure to share and maintain GIS coverage layers to facilitate effective long term planning with regard to development and operational impacts.

◇ Complete ACUB and Farmland Protection Projects in Gate Communities.

◇ Address Light Pollution Regionally.

Empower Communities

Through the course of this project, the amount of community support and positive feeling for Fort Drum has truly stood out. This characteristic sets the community apart from many of its peers across the nation. It is clear that individual citizens and communities around Fort Drum are ready to take action through a meaningful partnership. Working with communities in groups with similar themes (example highway growth corridors or agricultural range areas), and then individually, is the best way forward.

Invest in the Plan—Implement the Plan

Implementation of the plan will require a significant investment by the region and stakeholders. Current staffing alone is inadequate to execute this strategy. Sustained action on the ideas contained in this plan and the people-power to see them through will take not only time, but funding. A lot of hard work has gone into this plan—including significant county, community, and Fort staff and stakeholder time and resources. This effort will not be wasted if this strategy is executed. The result will be a sustainable and successful future for the Fort and the communities—the people of the region.

CONCLUSION

The Fort Drum region is blessed with natural resources and attractions, charming villages and historic neighborhoods, working farms and forests, and a portfolio of amenities and community infrastructure that few regions of similar size, let alone larger metropolises, can top. Throughout the course of this planning process, it became evident that residents of the Fort Drum region – both longtime residents and recent arrivals – are proud of their communities and treasure their high quality of life. A common denominator for the region is Fort Drum itself. While the Fort's influence is felt differently across the region, the groundswell of support, appreciation and pride of the Fort is a common thread from community to community. This in itself sets Fort Drum apart from many military installations, particularly those located in larger metropolitan areas. Perhaps this is so because so many of the Fort's personnel live and work in the communities that surround the Fort; and so many civilians in the region either work directly for the Fort or indirectly receive an economic benefit from the Fort's presence.

As such, it becomes hard to look at the Fort and the communities that surround it as wholly separate entities. The boundaries that divide the Fort and communities, while necessary from a security standpoint, are almost meaningless in the context of the shared interests and destiny of each. Thus, much of this project is about planning for the region as a whole, recognizing the close and binding relationship between the Fort and the communities, and finding ways to make the boundary disappear when it comes to effective land use planning.

This plan is also about cooperation between communities – because planning at a regional scale demands a regional perspective. Recommendations for collaboration between the region's municipalities build on a solid foundation that exists today. The planning process for the Town of LeRay's Comprehensive Plan (adopted in early 2009) has included outreach and coordination with the Villages of Evans Mills and Black River. West Carthage and Carthage are currently studying the feasibility of combining police services to streamline costs. The more the region's municipalities can work together to achieve shared goals, the stronger the region will be as a whole. Similarly, the plan also addresses cooperation and communication within Fort Drum. The more that the various entities that make up Fort Drum can speak with one voice when it comes to encroachment and quality of life issues, the better the Fort and the communities will be able to meet future challenges and opportunities proactively and collaboratively.

Implementation of the recommendations contained in this plan will not fall to one person or entity. Rather, implementation will take the concerted effort of many entities, from local governments, to regional entities and organizations (county governments, FDRLO, DANC, Tug Hill, etc.) to the Fort itself. What is needed most is leadership and cooperation. While local governments ultimately will make the decisions and set the policies that will affect land use and quality of life for years to come, larger entities, such as the counties and regional organizations can help to coordinate planning within a regional context. To this end, ample information will need to be shared between the Fort and its community partners – starting with knowledge of where encroachment conflicts are most likely to arise and to pose the biggest problems.

Many of the recommendations in this plan are about turning issues and challenges into opportunities. For instance, the Fort's need to minimize development in noise and safety zones dovetails in some cases with community goals for preserving and supporting agriculture (a "Fort friendly" use). The "Army Strategy for the Environment" initiative, just getting off the ground at Fort Drum, suggests some exciting opportunities for Fort-Community collaboration. The Fort Drum region, relatively undeveloped, has a unique and exciting opportunity to explore sustainable, "green" techniques for development and economic growth as it looks to the future – techniques that are not only good for the health of the environment and people, but that can lead to long-term cost savings and development of new industries and opportunities.

The Fort Drum region is well poised today to proactively meet the challenges posed by encroachment, as well as the opportunities presented by the presence of Fort Drum and its recent growth. Shaping this growth and development in a positive way that leads to the long-term fiscal health of communities and enhanced quality of life for residents is a win-win scenario. Fort Drum will never exist in a vacuum – it needs the communities that surround it more than ever to provide places for its personnel to live, schools to educate its children and environments in which to shop, recreate and socialize. Likewise, it is almost impossible to imagine the communities of the Fort Drum region without the presence of the Fort. By working together, the Fort and communities can ensure that each remains healthy, vibrant and mutually supportive for generations to come.