FLINT HILLS/ FORT RILEY JLUS UPDATE

August 2017

FLINT HILLS/ FORT RILEY J.L.U.S.

PREPARED FOR:

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Acknowledgements

The Joint Land Use Study was completed with the involvement of a number of individuals and agencies in the community. Special thanks should be paid to the Flint Hills Regional Planning Council, which administrated the study, particularly Gary Stith.

Two steering committees guided the JLUS process and developed the final report – the Policy Committee and Technical Working Group. The committees are made up of the following members:

POLICY COMMITTEE

Representative	Organization
Ben Bennet	Geary County Commission
Tony Davis	Wakefield City Council
Mike Dodson	City of Manhattan City Commission
Honey Grant	Grandview Plaza Vice-Mayor
Jonny Groves	Wakefield City Council
Tim Livsey	Fort Riley Deputy Garrison Commander
Mick McAllister	City of Junction City Mayor
Dee McKee	Pottawatomie County Commission
Darci Pottroff	City of Riley City Council
Eladio Reid	City of Ogden City Council
Brandy Riggs	Wakefield City Council
Marvin Rodriguez	Riley County Commission
Brad Roether	City of Milford Mayor
Jim Sands	City of Junction City Commission
Tim Sharp	City of Riley Mayor
David Thurlow	Clay County Commission
Perry Wiggins	Governor's Military Council Executive Director

TECHNICAL WORKING GROUP

Representative	Organization
Herbert Abel	Fort Riley
John Adam	City of Manhattan
Jack Allston	Pottawatomie County Economic Development Corporation
Trent Armbust	Manhattan Area Chamber

Representative	Organization
Dennis Beson	Junction City Area Chamber of Commerce
Chad Bunger	City of Manhattan
Lyle Butler	City of Manhattan
Eric Cattell	City of Manhattan
Peter Clark	Pottawatomie County
Brad Claussen	City of Manhattan
Steve Crusinberry	Fort Riley
Karen Davis	City of Manhattan
Allen Dinkel	Junction City
Bob Everdeen	Fort Riley
Mickey Fornard-Dean	Junction City Chamber
Doris Fritz	City of Riley
Vernon Hay	Morris County
Tim Himelick	City of Milford
Lori Huber	Clay County
Bob Isaac	Riley County
Troy Livingston	Geary County
Jeff Mataruso	Fort Riley
Troy Mattingly	Fort Riley
Stephen Metzger	Pottawatomie County
Clay Nauman	Fort Riley
John Pagen	Manhattan Area Chamber
Kelley Paskow	Fort Riley
William Raymann	Fort Riley
Angela Schnee	City of Ogden
Heather Stewart	Fort Riley
Benjamin VanBecelaere	Fort Riley
BJ Watson	Fort Riley
Gregg Webster	Pottawatomie County
Monty Wedel	Riley County
Jeff Williamson	Fort Riley
Dave Yearout	Junction City Geary County

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OVERVIEW AND PURPOSE

1 OVERVIEW AND PURPOSE

The Joint Land Use Study (JLUS) is the result of a partnership consisting of hard work and coordination among a team of dedicated stakeholders, community leaders, residents, and Fort Riley military personnel; seeking to identify opportunities for their community and the military to continue to work together to ensure the mission of Fort Riley. The JLUS was funded by the Department of Defense (DoD) Office of Economic Adjustment (OEA) and administered by the Flint Hills Regional Council (FHRC).

This Joint Land Use Study focuses on the areas surrounding Fort Riley including portions of the counties of Clay, Geary Pottawatomie, and Riley, and the cities of Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, and Wakefield, which sit within the broader Flint Hills Region, approximately 65 miles west of Topeka. The area is noted for its scenic prairie landscape, recreation opportunities, ranching, agriculture, and education and research associated with Kansas State University.

1.1 JLUS OVERVIEW

A JLUS is a collaborative study conducted by city and county officials, local residents, key stakeholders and the military installation to identify compatible land uses and growth management guidelines near the installation. Through the study process, a relationship is established between the installation and the community. The process encourages them to act as a team in order to prevent or limit any encroachment issues caused by future mission expansion or local growth. The Study is funded primarily through the Department of Defense (DOD) Office of Economic Adjustment (OEA) but is created by the community and for the community.

Figure 1 The beautiful Flint Hills region of Kansas

From the community perspective, the primary objectives of a JLUS are:

- protect the health, safety, and welfare of residents and maintain their quality of life.
- Manage development in the vicinity of military installations that would interfere with the continued operation of the facilities.
- Provide for sustainable growth in an economically, environmentally, and socially conscious manner.
- Maintain the economic vitality of the community.
- Enhance communication between the community and the military.

From the military perspective, the primary objectives of a JLUS are:

- Promote the health, safety, and welfare of the military and civilian personnel living and working at or near the military installation.
- Ensure the ability of the installation to achieve its mission, maintain military readiness, and support national defense objectives.
- Preserve the ability of the installation to adjust or expand its mission.

It is important to note that the JLUS is not to be a study that rests on the shelf, but a set of recommendations and strategies that are implemented through local jurisdictions. The recommendations from the JLUS are used to help local jurisdictions guide community development that protects and preserves military readiness and defense capabilities while supporting continued economic development and public health, safety, and general welfare of those living and working near an active military installation.

Throughout the process, municipalities, stakeholders, residents, and businesses have been providing their input and support. Through the acceptance of the report, they are stating their continued community-based support for future implementation efforts. The implementation measures may involve revisions to the community's comprehensive plan and traditional land use and development controls, such as zoning, subdivision regulations, and structural height restrictions. The intent is to continually ensure that future public and private development around the military installation will be compatible with both the military mission and the needs of the community.

1.2 Flint Hills / Fort Riley JLUS Overview

The military has been a long-standing presence in the Flint Hills region. The Army established Fort Riley as a 24,000-acre cavalry outpost in 1853 to protect westward travelers on the Oregon-California and Santa Fe trails. With over a century and a half of operations, the post's mission, equipment, and weaponry have continually evolved. Factors such as the realignment of tanks, aircraft and weapons systems at fewer

installations, the use of more powerful weapons systems, and the increased importance of night training all affect Fort Riley's interactions with its physical surroundings.

Similarly, the cities and counties around Fort Riley have grown over the years, reinforcing the close relationship between the military and the nearby community. This interdependence, however, raises the challenge that is central to the Joint Land Use Study effort. As military installations grow, they bring new people and economic activity to an area. The communities then build houses, schools and infrastructure, and create new jobs to support soldiers, installation workers, and their families. More people begin to live and work in proximity to the noise and accident risks generated by military installations. The presence of such civilian uses can, in turn, place pressure on installations to modify their operations, possibly compromising the overall military mission.

Figure 2 The 1st Infantry Division was withdrawn from Germany and moved back to Fort Riley in 2006.

A JLUS was conducted for Fort Riley in 2005; however, since that time, major changes in the mission and operating environment have occurred. The restationing of the 1st Infantry Division to Fort Riley lead to a significant increase in personnel, training hours, and number and type of training missions. Population growth in Junction City and Manhattan as well as major business development increased the potential for land use conflict. Both Fort Riley and the Flint Hills Region are positioned for continued future growth – the JLUS will assist in ensuring that growth continues to be compatible with the mission of Fort Riley.

1.2.1 Fort Riley Study Area

The Flint Hill JLUS focuses primarily on Fort Riley, a 101,733-acre installation, and the cities and counties of the Flint Hills region. The post is surrounded by the City of Manhattan and the City of Ogden to the east; unincorporated Riley County and the City of Riley to the north; the City of Milford, Milford Lake, the City of Wakefield, and unincorporated Geary County to the west; and to the south the City of Junction City and the City of Grandview Plaza.

The JLUS study area boundary includes a broad area around the post to ensure that the study team collected sufficient data for the analysis of compatibility issues on all lands that could either affect or be

affected by installation activities. Major features that were incorporated in the Study Area include: noise contours, training routes, and growth areas. The City of Leonardville was not included as part of the study due to the physical distance from the Fort. It was determined that the noise contours and training routes did not directly impact the city. The Study Area encompasses a total of 267,126 acres, not including the 101,733 acres of Fort Riley. The Study Area boundary ranges from 56,700 feet at its largest distance from Fort Riley to 7,500 feet.

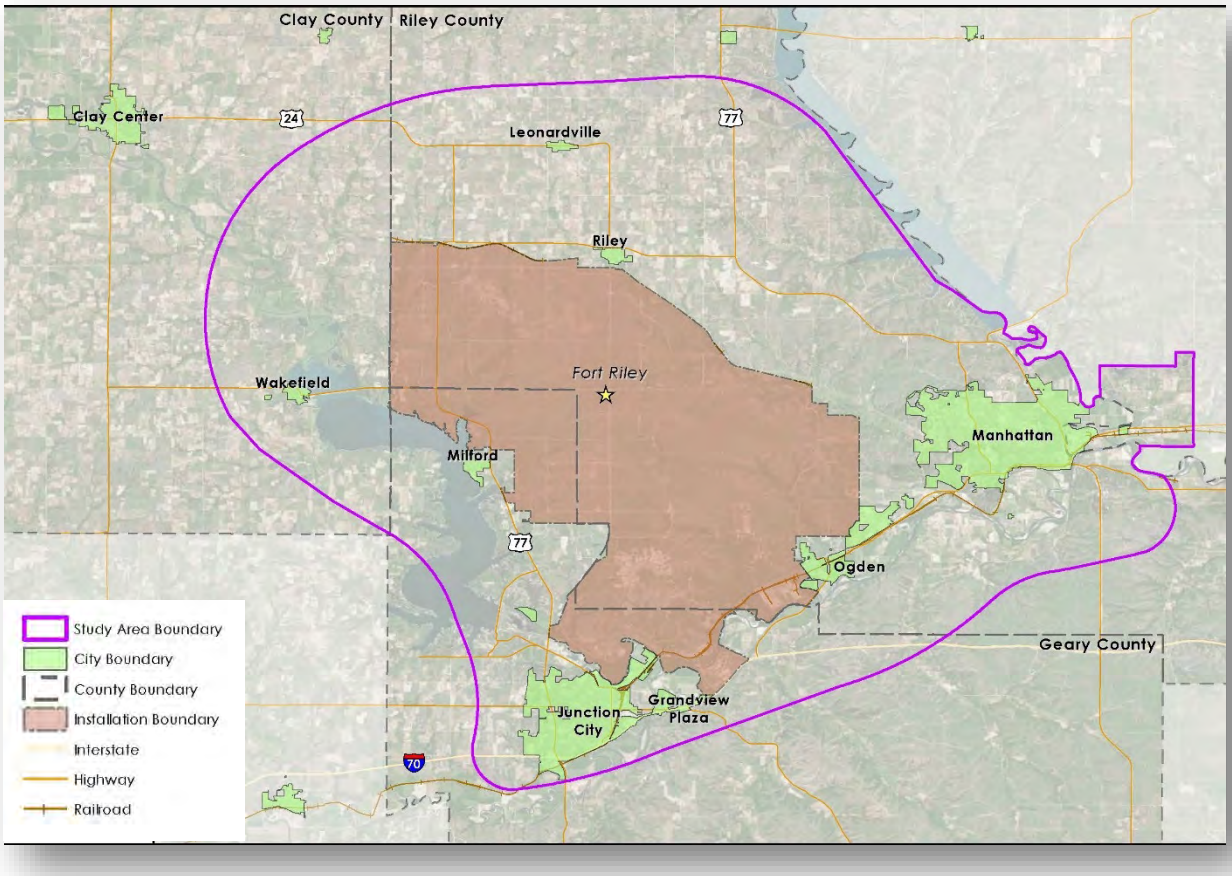


Figure 3 Flint Hills / Fort Riley JLUS Study Area

PUBLIC INVOLVEMENT

2 PUBLIC INVOLVEMENT

Public involvement is the backbone of the JLUS, without which, the study would be unsuccessful. The community engagement process for the Flint Hills / Fort Riley JLUS is focused on the following goals:

- Develop a strategy that will allow all of the individuals and groups interested in the future of Fort Riley and the process to help by:
  - Providing initial input on the issues and concerns of the study that will need to be addressed.
  - Offering frequent, timely and meaningful input throughout the study in ways that will help the analysis.
  - Staying informed about, and having multiple opportunities to provide comment on, the study findings.
  - Offer an easy-to-access and attractive multi-level approach tailored to the needs of the entire community, ranging from the FHRC, the military, and officials to stakeholders and other members of the public.
- Provide a variety of engagement venues that range from hands-on meetings and workshops to interactive online tools in order to provide options for learning about and having input into the study process.

There are four components to the public involvement process including committee collaboration, stakeholder and public outreach, public information tools, and InReach Plan.

2.1 COMMITTEE COLLABORATION

The Policy Committee and Technical Working Group have been identified to help facilitate the JLUS. Each will participate directly with the project team to provide feedback and decision-making throughout the planning process. Each committee met multiple times, both as a joint group and individually, throughout the study process. They served as the liaison between their organization and members of the JLUS Team. It was through their relationships that ideas,

Figure 4 Policy Committee workshop held at the CL Hoover Opera House in Junction City.

opportunities, strengths, and strategies were compiled to form the JLUS.

Policy Committee (PC)

The Policy Committee provides policy direction, study oversight, and ultimately will adopt the final report. The PC consists of decision-makers, executive directors, and elected officials.

Policy Committee participants include representatives of the following:

- Clay County
- City of Junction City
- City of Manhattan
- City of Milford
- City of Ogden
- City of Riley
- City of Wakefield
- Geary County
- Grandview Plaza
- Governor's Military Council
- Flint Hills Regional Council
- Fort Riley
- Pottawatomie County
- Riley County

Technical Working Group (TWG)

The Technical Working Group provides technical expertise through identification of issues and provides feedback to the JLUS team. The TWG includes subject experts from surrounding jurisdictions, military planners, business and development representatives, and special organizations.

Technical Working Group participants include representatives of the following:

- City of Junction City
- City of Manhattan
- City of Milford
- City of Ogden
- Geary County
- Grandview Plaza
- Governor's Military Council
- Junction City Area Chamber of Commerce

Figure 5 Technical Working Group meeting held at the Manhattan City Hall.

- City of Riley
- City of Wakefield
- Clay County
- Flint Hills Regional Council
- Fort Riley
- Manhattan Area Chamber
- Morris County
- Pottawatomie County
- Pottawatomie County Economic Development Corporation
- Riley County

2.2 General Public Outreach

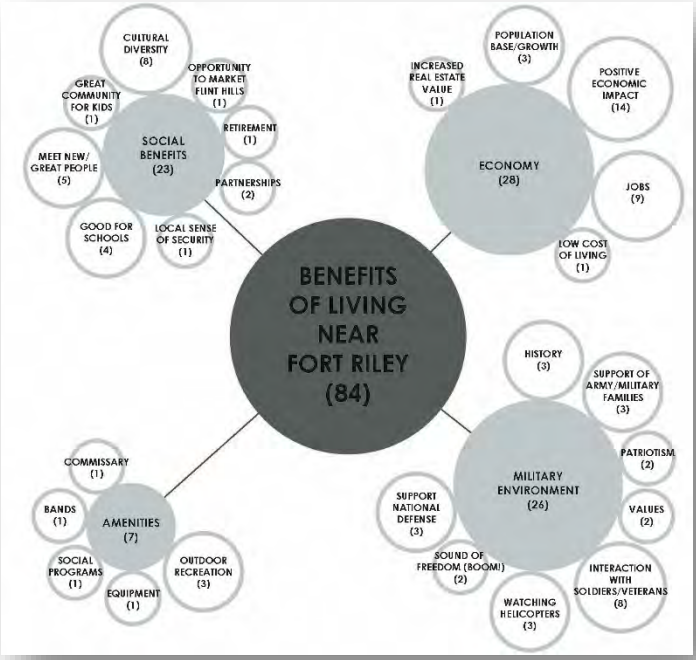
A series of public and stakeholder meetings were hosted to obtain feedback and inform the public. Three rounds of public workshops and forums were held throughout the study area. The meetings were scheduled to afford the community information at integral parts along the study process. Stakeholder meetings were also held throughout the planning process to obtain individualized information from the community.

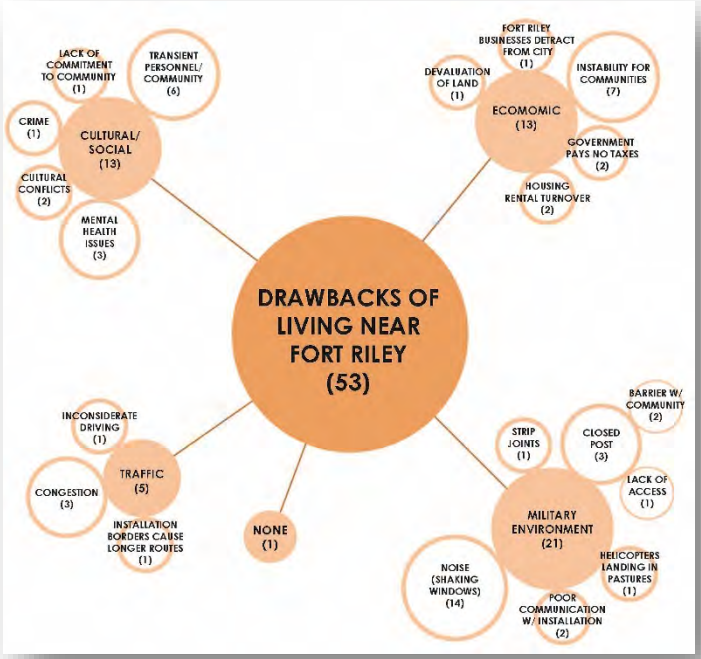
2.2.1 Kick-Off Workshops

The meeting served as a project kick-off and introduced the general public to the purpose of the JLUS. In order to offer convenience to the community and provide the study with the most amount of participation, two meetings were held – one in Junction City and one in Manhattan.

- January 31, 2017 Manhattan City Hall City Commission Chambers, City of Manhattan
- February 1, 2017 CL Hoover Opera House, Junction City

Figure 6 The Kick-Off workshop at Manhattan City Hall.





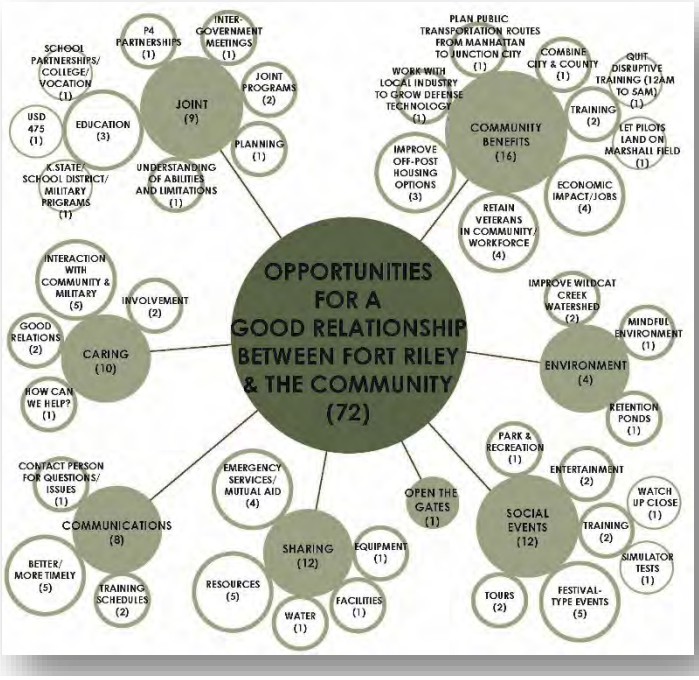


Figure 7 Results from the exercise conducted at the Kick-Off community workshop.

The meetings had a great turnout with over 45 participants. A short presentation was given followed by questions and discussions with attendees. The attendees were interested and engaged in the process offering suggestions, clarifying issues, and posing concerns.

As part of the workshops, participants were asked a series of questions about living near Fort Riley. Each person used slips of paper to record specific thoughts on the question—one idea per slip of paper. The results of the questions are represented on these diagrams. The large circle in the center of the diagram indicates the question asked, and the number of answers to the question. The smaller circles show the general categories of the answers, and the number of responses in each category. Overall, these diagrams show us how stakeholders feel about living near Fort Riley, and the relationship between the installation and the surrounding communities.

Figure 8 Above: The second community workshop was held at the Grandview Plaza City Hall and was well attended. Below: Herb Abel from Fort Riley provided clarification on the noise contour discussion

2.2.2 Mid-Term Workshops

The mid-term workshops provided an opportunity to receive feedback on the compatibility analysis and offered an overview of the results. The meeting was held at the Grandview Plaza City Hall on May 4th at 7:00 p.m. A presentation was given followed by a discussion with the community. The presentation covered the results of the community survey, the compatibility analysis discussion that took place with the TWG and PC, and the next steps of the process.

2.2.3 Final Workshops

The final workshops provided an opportunity to wrap-up the study and offer an overview of the results. These meetings were held on July 19th and 20th, 2017 in Manhattan and Junction City, respectively. The workshop provided a final overview of the study and future steps for implementation.

2.3 STAKEHOLDER OUTREACH

Stakeholder interviews occurred throughout the data and analysis portion of the study. Recommendations were made from the PC and TWG to ensure that as many stakeholders as necessary were contacted to fully understand the opportunities available to the community and Fort Riley. Stakeholders offered data, forecasts, and opinions to solidify the Study. Stakeholders included representatives of the following:

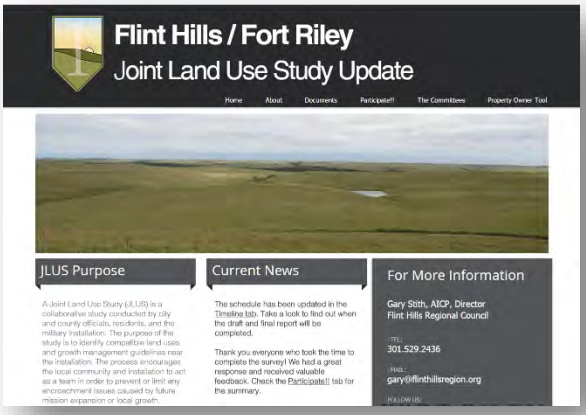
- Action Pact Design
- Back 9 Development
- Bartlett & West
- BBN Architects
- Ben Moore Studio, LLC
- Benesch
- BG Consultants
- City of Milford
- City of Ogden
- City of Riley
- City of Wakefield
- Clay County
- ERA High Point Realty and Carson Agency
- Farmers
- Flint Hills MPO
- Fort Riley
- Geary Co
- Governor's Military Council
- Junction City
- Kansas State University
- Kansas State Bank
- Large Land Owners
- Manhattan
- Manhattan Area Chamber of Commerce
- Manhattan Association of Realtors
- McMillan Architects
- Michael Carson & Assoc.
- Olsson Associates
- Pottawatomie County
- Pottawatomie County Economic Development Commission
- Riley County
- Riley County Conservation District
- Riley County Livestock Association
- Riley State Bank
- Schultz Construction
- Schwab-Eaton
- SMH Engineers Surveyors
- Sunflower Bank
- The Ebert Mayo Design Group
- Timber & Stone Architecture & Design LLC
- Visser Farms
- Wakefield City

2.4 Public Information Tools

Reiterated throughout the process, the study could not be successful without the public – the individuals who are affected daily. In an effort to stay in contact with the community and provide information to those that may not have been able to attend meetings, an interactive website, and Facebook page were created.

Figure 9 Fort Riley Facebook page (@fortrileyjlus) and website (www.fortrileyjlus.com).

The website and Facebook page were utilized for sharing information with the general public as well as receiving important feedback on the findings and results of the overall plan recommendations. The webpage included maps, a survey, draft reports, handout materials, photos, and contact information. The webpage was created at the inception of the project and will be utilized through the implementation.



2.5 Survey Results

As part of the public outreach effort for the Flint Hills / Fort Riley JLUS, an eleven-question survey was distributed to the Flint Hills community. The intent of the survey was to provide information to the JLUS including a demographic overview, insight into the publics opinion of Fort Riley and their existing relationship.

A total of 155 surveys were completed through the project website or direct email. The survey questions can be divided into the following categories:

- Demographics
- Perception of Fort Riley in the Community
- Relationship with Fort Riley
- Communication Between Fort Riley and the Community
- Impacts of Fort Riley in the Community

Additionally, survey participants were given the opportunity to provide specific comments suggesting what issues should be included within the JLUS.

2.5.1 Demographics

The majority of the survey respondents were from the City of Manhattan (69%) and Junction City (18%). The remaining 13% of respondents were from Fort Riley, Clay Center, Milford, Riley, Ogden, and the counties of Clay, Geary, and Riley. The majority of the respondents lived within Clay, Geary, or Riley counties for 10-years or less (43%) and were 46 years old or older (69%). However, a large percentage of residents (40%) have lived within the three counties for 20 years or more.

2.5.2 Perception of Fort Riley in the Community

The community overall believes Fort Riley provides multiple benefits to the community. The respondents found the following to be the most beneficial aspects of living near or at Fort Riley:

86% of the respondents agree on the importance of the Fort for the **economy**

- Positive economic impact (22%)
- Supporting the Army and military families (20%)
- Interaction with soldiers / veterans (18%)
- Cultural diversity (16%)

The biggest worry of respondents was their concern for instability due to possible military downsizing. Ranking second, third, and fourth, respectively, were the concern over transient personnel in the community, lack of communication with the surrounding communities, and noise from training.

The community as a whole believes strongly in the economic reliance on Fort Riley with approximately 86% of respondents stating that they strongly agree or agree on the importance of the Fort for the economy.

2.5.3 Relationship with Fort Riley

Respondents are supportive of the Army and the role they play in the community but there are opportunities for improvement. The community was fairly evenly distributed looking for improvement in the following areas:

- Joint programs such as school partnerships, emergency assistance and community programs (30%)
- Community events including entertainment, festivals, and tours (25%)
- Intergovernmental meetings between Fort Riley and community governments (23%)
- Provide more information to the community such as training schedules (19%)

59% of respondents think surrounding communities should be **better neighbors** to the Fort

Respondents agree or strongly agree that the surrounding communities should be better neighbors to the Fort (59%). There are a significant number of respondents (34%) who are neutral on the topic. However, 86% of respondents believe Fort Riley is a good neighbor to the surrounding communities.

Respondents are interested in participating in more activities at Fort Riley (52%). A large portion (39%) are neutral on the subject.

2.5.4 Communication Between Fort Riley and the Community

The community received the majority of their information regarding the Fort via newspaper, radio, and / or television. Following closely behind, communication methods include sources directly from people who work or train there or from social media. Only 5% of respondents use local government websites as a source of information for Fort Riley.

2.5.5 Impacts of Fort Riley in the Community

Noise is a concern that is heard frequently from community discussions; however, the survey resulted in only 14% of respondents feeling that noise from training greatly impacts their family. In fact, 71% of the responses strongly agree or agree that noise does not greatly impact their family. Respondents noted that they wanted to be informed of the Fort's training schedule (34%). Although, 39% remained neutral on the topic.

14% of respondents feel that **noise** from training greatly impacts their family

2.5.6 Critical Issues or Concerns

At the end of the survey, respondents were given the opportunity to provide information regarding the critical issues or concerns that should be reviewed for the study. Of the 155 respondents, 65 provided a response. The graph below divides the comments into subject categories. They include:

- Noise
- Economic Concerns
- Events and Access to Post
- Community Coordination (including shared emergency services, relationships between municipalities and the Fort, community collaboration, etc.)
- Development
- Military and Civilian Cooperation (including shared use of training facilities, support for transitioning from military to civilian, shared resources, etc.)
- Housing
- Post Closure

2.6 INREACH PLAN

An InReach Plan consists of a tailored local government engagement plan created specifically for the municipalities surrounding Fort Riley. Each municipality is impacted by Fort Riley in a different way and it is important that each municipality is able to share equally in the formulation of the Study. The Plan was put together based on recommendations from the Policy Committee. The Policy Committee was tasked with designating a representative that would be responsible for sharing information with their elected officials and would be the voice for the Joint Land Use Study.

Participating Communities

- Clay County
- Geary County
- Pottawatomie County
- Riley County
- Grandview Plaza
- Junction City
- Manhattan
- Milford
- Ogden
- Riley
- Wakefield

The JLUS team moved forward with individual or small group meetings with each designated representative. The meetings provided the JLUS team and the local government representative an opportunity to discuss strengths, opportunities, and concerns relating to Fort Riley and the community growing around it. Additionally, briefings to the City Councils and County Commissioners were provided at regular intervals to keep the communities abreast of the study. Through these conversations each municipality was offered an equal partnership leading to a vested interest in the implementation of the plan.

COMMUNITY PROFILE

3 COMMUNITY PROFILE

The Flint Hills Region has a unique relationship with Fort Riley. They appreciate one another and respect the benefits each can offer. Military and civilian members alike are integrated into the community and form long lasting relationships through on post events and volunteer activities.

- Barton Community College
  - Agreements to teach 22 Military Courses, 10 OSHA Courses, Leader Skills Enhancement Course, & Basic Skills Education Programs.
- Central Flint Hills Area Superintendent Coalition
  - Provides updates and discussions of current legislation, military changes that may affect school districts and Fort Riley information.
- Day in the life of a Soldier
  - Fort Riley School Support Services event for area educators and school personnel.

Figure 10 Fort Riley soldiers at the Sundown Salute.

- Fort Riley and 1ID Adopt-A-School Program
  - Partnered with Central Flint Hills School Districts since 2010.
  - 77 schools have Fort Riley units as their Adopt A School Partners.
  - Contributes to schools in order to nurture the intellectual, emotional, social and physical growth of children in the Central Flint Hills Region.
- Kansas State University (K-State)
  - Over 50 Fort Riley partnership programs exist.
  - Athletic Department partners with units to exchange experiences "day in the life."
  - Scholarship Fund funded by K-State for military high school seniors.
  - Research and outreach programs studying the impact of deployments to military and families.
  - ROTC partnership matches senior cadets with Fort Riley officers.
- Unified School District (USD)
  - Principals Breakfast provides an opportunity for USD 475 administrators to discuss issues with Garrison Command Group and CYSS Leadership.
  - Garrison CSM is a non-voting member of the USD 475 Board of Education. The CSM provides insight and support to the Board of Education.
- University of Kansas (KU)
  - KU / "Big Red 1" Partnership Resolution signed November 2015.
  - KU selected to conduct the Army Strategic Broadening Program 2015-2021; Twelve Leaders participated summer 2015.
  - Portuguese speaking 1st ID soldiers attended special conference on Brazil.
  - 1st ID leaders attended the Mount Oread Leadership Symposium co-hosted with the Command and General Staff College Foundation and the Marine University Foundation.
  - Life Skills for Single Soldiers leader development day was conducted at KU.
  - Certificate of Entrepreneurship education program for transitioning soldiers at Fort Riley.
  - Fort Riley leaders participate in the Advanced Leadership Seminar in June 2016.

3.1 COMMUNITY OVERVIEW

The study participants consist of portions of four counties and seven cities. Each community provides a unique history and a variety of assets to the region.

3.1.1 Clay County

Founded in 1857 and named for the Kentucky statesman Henry Clay, Clay County was settled in north-central Kansas by sturdy farmers who were drawn to the area's fertile soil, picturesque Republican River Valley and numerous creeks and streams. Agriculture remains a primary industry to this day; however, the area has begun to diversify with other industries.

Clay County is home to numerous industries, a thriving retail sector, and solid public infrastructure. Clay County views themselves as a member of a larger regional community. They represent one of the few growing and thriving rural areas in a state where populations are increasingly shifting to larger cities and suburbs.

Clay County consists of eight cities, 13 unincorporated communities, and eighteen townships.

Figure 11 Clay County courthouse.

City of Wakefield

The City of Wakefield is located in the south-eastern portion of Clay County and consists of approximately 0.50 square miles, all of which is land. The City is full of attractions and activities including a city park, camp sites, fishing on Milford Lake, hunting, the Kansas Landscape Arboretum, the Wakefield Museum, St John and George Episcopal Church, and the Republican Valley Farm House.

3.1.2 Geary County

Geary County was one of the first 33 counties organized by the Territorial Legislature. The establishment of Fort Riley in 1852, has been the major influence on the county since its inception. Most of the earliest settlers were soldiers and officers at Fort Riley.

Geary County contains three cities – Grandview Plaza, Junction City, and Milford – as well as eight townships.

Figure 12 Geary County courthouse.

Grandview Plaza

Grandview Plaza is a friendly community in Geary County located between the Smoky Hill River and Interstate-70. Grandview Plaza was established on March 4th 1963. Independence, hospitality, personal caring concern, and accepted diversity of its citizens has been the driving force behind the founding and growth of the city. The city has grown into a thriving community with approximately 40% permanent residents or retirees and the balance being predominately military families.

Junction City

Named for its location at the junction of the Republican and Smoky Hills rivers, Junction City was founded in 1857 on the site of an old Kansa Indian Village. The town prospered as the junction of three railroads,

the Kansas Pacific (east-west); the Missouri-Kansas and Texas (south), and the Junction City-Fort Kearney (north). With the establishment of Fort Riley to protect travelers to the west in 1853 the population climbed from 75 people in 1860 to 3,100 in 1870. Population continued to rise over the next 140 years and continues today to be the self-proclaimed home of Fort Riley and the 1ST Infantry Division.

Junction City is the county seat of Geary County. It is located in the heart of Kansas and offers small town atmosphere with big city pleasure. It is minutes from Fort Riley and Milford Lake.

Milford

The City of Milford is a thriving community with lots to offer. It is located 12 miles from Junction City and 8 miles from Fort Riley making it a convenient place to live.

3.1.3 Pottawatomie County

Pottawatomie County is an expansive county of 551,692 acres or 862 square miles. The northern portion of the county is largely agricultural while many southern areas consist of existing and planned developments.

Pottawatomie County is a growing county, population of 23,298 (KS Secretary of State 2016), with a continued expansion of new construction in the housing markets and business sectors.

The county is diversified in its businesses and industry and boasts an active Economic Development Program. It is home to several excellent school systems including a High School nationally recognized for academics, two state lakes and Tuttle Creek Reservoir.

The county contains several cities and towns including: Belvue, Blaine, Duluth, Emmett, Fostoria, Havensville, Louisville, East Manhattan, Olsburg, Onaga, St George, St Marys, Wamego, Westmoreland and Wheaton.

Blue Township Urban Growth Area

The Blue Township Urban Growth Area was added to *Manhattan's Urban Area Comprehensive Plan* with the 2015 update. The growth area along the East US-24 corridor, working in collaboration with Pottawatomie County, significantly expands long-term opportunities for commercial and urban residential development and supporting uses within the Manhattan Urban Area, addressing workforce housing and land supply considerations.

Figure 13 Pottawatomie County Justice Center.

The area is expected to serve as a significant growth area for the Manhattan Urban Area over the next ten to twenty years and beyond, providing opportunities for a mix of housing and support services located within close proximity to major employment centers in the City of Manhattan, at Kansas State University and Fort Riley, and in neighboring

communities. Urban development is intended to be focused within the Blue Township Urban Growth Area, where it may be connected to public water and sanitary sewer systems. The balance of the county will retain rural densities over the next fifteen years. Maximizing the long-term potential of the area and its sustainability over time is contingent upon a shared commitment on behalf of Pottawatomie County, the City of Manhattan, Riley County, and other regional stakeholders to conduct the more detailed planning needed to identify and determine the most effective means of implementing the full spectrum of improvements needed to serve both existing and future residents.

3.1.4 Riley County

According to the U.S. Census Bureau, the county has a total area of 622 square miles, of which 98% is land and 2% is water. The eastern border of the county follows the former course of the Big Blue River. The river was dammed in the 1960s and Tuttle Creek Lake was created as a result. The county falls within the Flint Hills region of the state.

Riley County is home to two of Kansas' largest employers – Fort Riley and Kansas State University.

Riley County contains five cities, 5 unincorporated communities, and fourteen townships.

Figure 14 Riley County courthouse.

City of Manhattan

Manhattan is a city in northeastern Kansas in the United States at the junction of the Kansas River and Big Blue River. It is the county seat of Riley County, although it extends into Pottawatomie County. The city was founded by settlers from the New England Emigrant Aid Company as a Free-State town in the 1850s, during the Bleeding Kansas era. Nicknamed "The Little Apple" as a play on New York City's "Big Apple", Manhattan is best known as the home of Kansas State University and has a distinct college town atmosphere.

City of Ogden

Ogden is a 1.6 square mile city located within Riley County. It was founded in 1857 and incorporated into a city in 1870. It is a small close-knit, growing community nestled in between Manhattan and Fort Riley.

City of Riley

The City of Riley, Kansas is a quiet community nestled in the Flint Hills on the northern border of Fort Riley.

3.2 ENVIRONMENTAL FEATURES

Major natural features in the Flint Hills Ecoregion, include critical habitat, prime soils, wetlands, slopes, parks and trails, areas of conservation interest, the 100-year floodplain, and locally designated sensitive resources. The region is also part of the unique tallgrass prairie ecosystem. Only 4% of North America's pre-settlement tallgrass prairie still exists today and the State of Kansas contains 80% of this dwindling landscape.

An important component of this unique environment is Fort Riley and the stewardship that it offers the land. Fort Riley's ecosystem is dominated by grassland interspersed with wooded areas of varying sizes and densities, which provides a variety of terrain types that are useful for both mounted and dismounted training activities. This ecosystem generally facilitates Fort Riley's mission now and is projected to continue. Fort Riley recognizes the importance of their environment and established policies within the *Integrated Natural Resources Management Plan* that embodies their vision.

- Fort Riley will sustain its testing and training lands' natural resource base in quantity, quality, and configuration to meet current and future requirements.
- Fort Riley will manage range activities to maintain the resiliency and buffering needed to protect the environment and the surrounding communities from impacts of training.
- Fort Riley will apply an ecosystem-based approach to manage natural resources and will collaborate with stakeholders to protect ecosystems.
- Fort Riley will strengthen and build community partnerships to achieve sustained and sound environmental stewardship and a ready military force through communication, coordination, consultation, and collaboration. It will foster open relationships to increase understanding by all. It will communicate the Army's readiness requirements and environmental initiatives, while at the same time, listening to our neighbors' needs and concerns to build win-win situations together.
- Fort Riley will apply adaptive ecosystem management strategies when making natural resources management decisions. The ecosystem management strategy will strive to achieve the potential natural vegetation of the region. Adaptive ecosystem management on Fort Riley will take into account changes in military mission and associated training requirements, and the nature and extent of managed natural resources. Adaptive management will adjust management practices to enable accomplishment of military training requirements and to provide for ancillary uses of the installation's natural resources where and when such uses are compatible with the military training requirements.

3.2.1 Air Quality

The main air quality concern in the JLUS Study Area is from spring agricultural burning of vegetation such as grass, woody species, crop residue, and other dry plant growth for the purpose of crop, range, pasture, wildlife or watershed management. It is widely recognized that burning is a necessary component to the maintenance of the Flint Hills' natural prairies and agricultural resources. The Kansas Department of Health and Environment (KDHE) has Air Quality Regulations that address agricultural open burning in the

state. Open burning for these purposes is allowed providing the person conducting the burn notifies the local fire authority and supervises the burn until the fire is extinguished and that the burn does not create a traffic or airport safety hazard without adequate notification to the appropriate authorities. KDHE also published a *State of Kansas Flint Hills Smoke Management Plan* to coordinate the burning in the region. The document describes a method for minimizing the air quality impacts associated with open agricultural burning while recognizing the importance of the practice.

3.2.2 Surface Waters

The JLUS Study Area primarily lies within the watersheds of the Lower Republican and the Upper Kansas with smaller portions within the Lower Big Blue and Lower Smoky Hill. The study area is bounded by the Delaware River to the west, the Kansas River to the south, and the Big Blue River to the east. Kings Creek, Three Mile Creek, Elk Creek, Sand Creek, and Wildcat Creek are perennial streams within the study area. Numerous intermittent and ephemeral streams originate within the study area.

The JLUS Study Area includes portions of two federal reservoirs. The United States Army Corps of Engineers (USACE) operate and maintain the Tuttle Creek Reservoir and the Milford Reservoir for flood risk management mission for both the Kansas and Missouri Rivers. These reservoirs also provide water supply and recreation to the surrounding communities.

According to the National Wetland Inventory (NWI), over 22,000 acres of wetland area occur throughout the JLUS Study Area. The wetlands identified by NWI do not imply jurisdictional wetland as defined by Section 404 of the Clean Water Act, nor is it all inclusive of the wetlands that may occur within the study area. The NWI indicated wetlands should be used as a guideline to determine the location of potential wetland resources within the study area. Most of the study area NWI wetlands are lake and riverine wetlands from portions of the Milford Reservoir, Tuttle Creek Reservoir, Blue and Kansas River. The rest of the NWI wetlands include freshwater ponds, freshwater emergent wetlands, and freshwater forested/shrub wetlands. The freshwater ponds occur throughout the study area and are likely used as water sources for cattle, but often include fringe wetlands and associated wildlife. The freshwater emergent wetlands are associated with streams, tributaries, and impoundments. Wetland delineation surveys would be necessary to completely understand the extent of wetlands in the study area. Direct impacts on wetlands can be avoided during siting of development, however, if impacts on jurisdictional wetlands are unavoidable, a permit from the USACE will be required pursuant to the *Clean Water Act*.

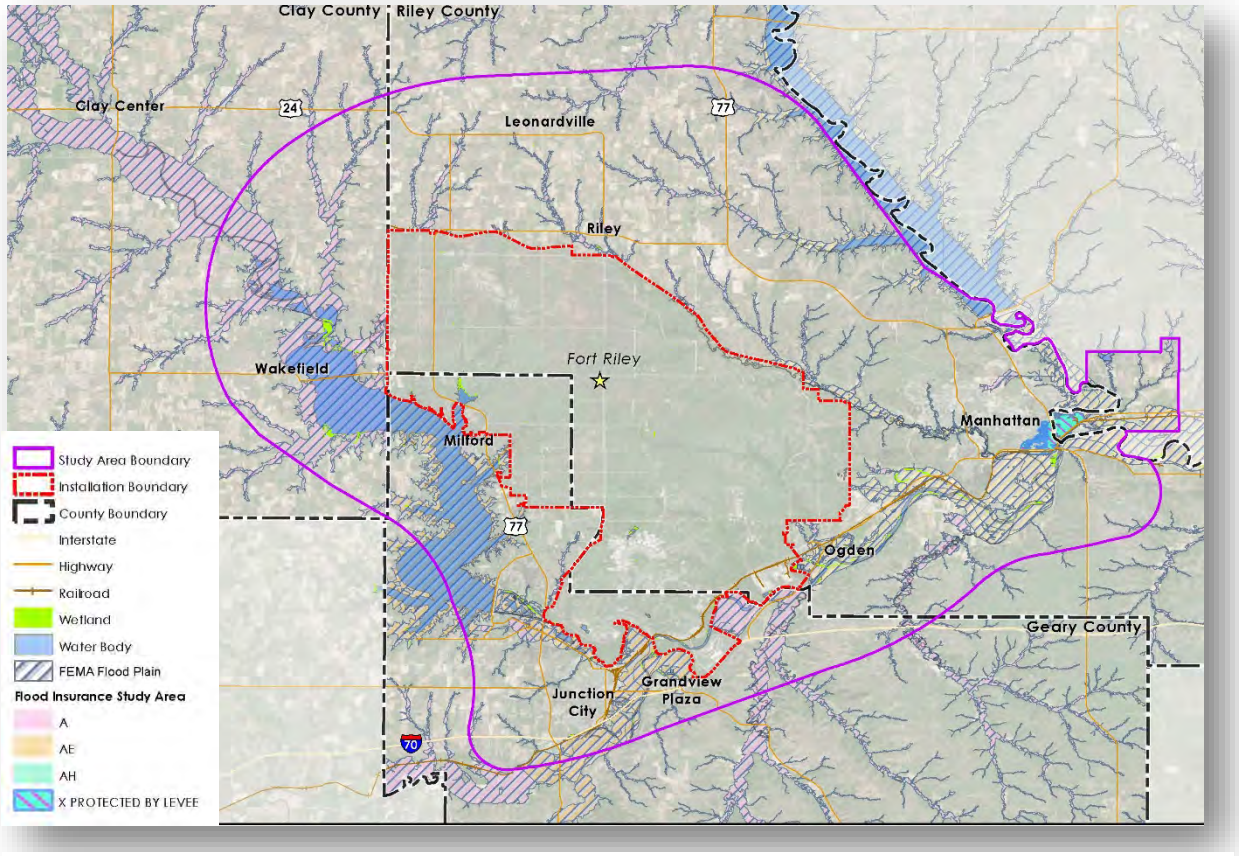


Figure 15 Surface Waters within the JLUS study area.

3.2.3 Flood Hazard Mitigation

The Federal Emergency Management Agency (FEMA) has mapped the 1-percent-annual-chance floodplain for the surrounding counties of Clay, Riley, Pottawatomie, and Wabaunsee. Approximately 100 square miles of floodplain are identified in the JLUS Study Area. Fort Riley is depicted as an Area Not Included on FEMA's Flood Insurance Rate Maps (FIRMs) although flood hazards may exist within the Fort's boundaries. The FIRMs identify the flood hazard zones for flood insurance rating and floodplain management purposes. Floodplains are typically located along stream channels and low lying land adjacent to the channels. Primary flooding sources to the JLUS Study Area include the Kansas River, Republican River, Big Blue River, Wildcat Creek, and several smaller streams. Wildcat Creek and the smaller streams have steep gradient watersheds and are prone to have flash floods which pose a significant threat to human safety and loss of property.

Flood hazard mitigation is the long-term effort to reduce the loss of life and property by lessening the impact of a flood disaster. Flood hazard mitigation actions primarily include structural mitigation measures such as the construction of levee systems and flood control dams, or non-structural mitigation such as removal or elevating buildings from high flood risk areas and flood risk awareness outreach

programs. The City of Manhattan, Kansas has completed a levee rehabilitation project certifying the data to comply with FEMA's regulations to show the levee as providing flood risk reduction to the land areas behind the levees. The Tuttle Creek Reservoir and the Milford Reservoir provide flood control downstream of their dams. Wildcat Creek Watershed working group was formed to bring together the watershed community producing a floodplain management plan to reduce flood hazards along Wildcat Creek and for maintaining and enhancing natural floodplain assets. This plan was adopted into the *Manhattan Urban Area Comprehensive Plan*.

The Kansas Department of Agriculture Division of Water Resources, as well as the local jurisdictions, regulate development within identified special flood hazard areas. Any development within these areas requires a floodplain development permit through the city or county.

3.2.4 Terrain

The JLUS Study Area occurs in the Flint Hills and within the Central Lowlands physiographic province, and is comprised of gently rolling grasslands, deciduous woodlands confined to riparian areas and slopes, Limestone rocky outcroppings, aptly named Fort Riley limestone, and floodplains associated with the Kansas River. Milford Reservoir is owned by the USACE and is managed by KDWPT and occurs along the Republican River. The reservoir backs water into several tributaries of the river, which also contain floodplain wetlands (see section 3.2.2). Large valleys and slopes are associated with the transition from the upland slopes to the floodplains of the Kansas River.

3.2.5 Flint Hills Ecoregion

The Flint Hills Ecoregion extends from southeastern Nebraska through Kansas into northern Oklahoma and marks the western edge of the tallgrass prairie ecosystem. The area can be characterized as gently rolling grasslands with a few rocky outcroppings of cherty limestone and shale. The rocky surface is difficult to plow and thus the region supports very little cropland agriculture. Typical vegetation within the ecoregion includes a mixture of native species such as Indian Grass (*Sorghastrum nutans*), Big Bluestem (*Andropogon gerardi*), Switchgrass (*Panicum vergatum*), Heath Aster (*Symphyotrichum ericoides*), and Canada Goldenrod (*Solidago canadensis*) as well as non-native species such as Field Brome *(Bromus arvensis*), Bermuda grass, (*Cynodon dactylon*), Sericea Lespedeza (*Lespedeza cuneata*), Eastern Red Cedar (*Juniperus virginiana*), and Honey Locust (*Gleditsia triacanthos*). Tallgrass prairies throughout the JLUS Study Area contain intact grasslands with relatively low human induced change and remain intact relative to the surrounding landscape. The Flint Hills Ecoregion in Kansas remains as the largest intact tallgrass prairie ecosystem in the U.S.

To preserve dwindling prairie resources, Fort Riley has formed the Fort Riley Tallgrass Prairie Partnership, a cooperative and voluntary program that works with landowners in the area to conserve the landscape. Participating landowners are eligible for an inventory of grassland resources on their property, technical

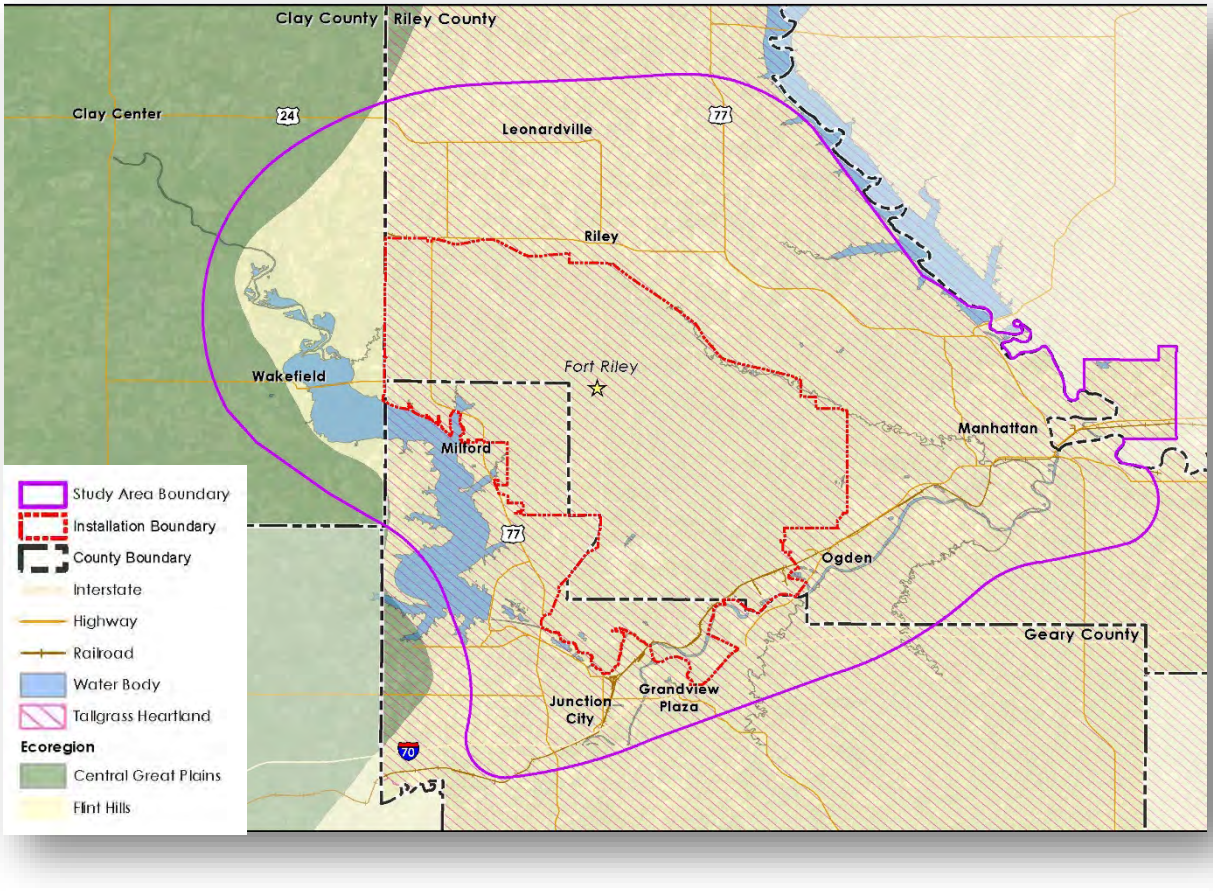


Figure 16 Flint Hills Ecoregion.

assistance to maintain and enhance habitat, and cost-sharing assistance for habitat improvement projects. Cooperating partners in the program include:

- The US Fish and Wildlife Service
- The US Department of Agriculture
- Kansas State and Extension
- Kansas Farm Bureau
- Kansas Livestock Association
- The US Department of Army
- Kansas Department of Wildlife, Parks and Tourism

The history of Fort Riley has largely been a positive one for tallgrass prairie. Due to their deep root system, the tallgrass prairie plants are resilient and can withstand the significant training load that takes place. Additionally, Fort Riley has made a concerted effort in recent years to delineate sensitive habitats, including high quality native prairie, so that military exercises can be adjusted to minimize ecological damage. Their overall strategy is to protect, propagate, and conserve the native tallgrass prairie where it

occurs on and off of the installation, and the fauna species associated with it. Native prairie evolved under the influences of fire and grazing, and these or similar disturbances are required to maintain the grasslands. Fire is especially effective in retarding the spread of woody vegetation into the prairie. The overall goal is to integrate prescribed burning, hayfield cutting, mechanical control, herbicide application and land rehabilitation actions to sustain the training mission, enhance Soldier safety, maintain, enhance or reclaim native prairie, reverse or control undesirable invasive plants, and provide suitable habitat for the potential natural fauna typically associated with tallgrass prairie.

Buffered lands around Fort Riley are protected by the Army Compatible Use Buffer Program (ACUB), which allows military facilities to partner with other organizations. Fort Riley established the ACUB in 2006 and partnered with the Kansas Land Trust. Three priority areas are identified consisting of native prairie, forest, and working farmland to be protected from development.

Non-profit conservation organizations such as The Nature Conservancy are also targeting the remaining contiguous areas of prairie for preservation. The Nature Conservancy has identified areas of intact and fragmented native vegetation near the post. In addition, the Kansas Department of Wildlife, Parks and Tourism (KDWPT) has developed priority areas throughout the study area that would be important habitats for the Greater Prairie Chicken.

3.2.6 Habitat

Fort Riley and the surrounding grasslands of the Flint Hills communities form a core habitat area for many species of plants and animals. Inventories at Fort Riley have documented the presence of four Federally-listed and eight State-listed species, and 23 rare species including the Bald Eagle, which is protected by the US Fish and Wildlife Service (USFWS). However, the state has designated critical habitat on and around the Fort for several species. Species listed by the USFWS and the state are identified in Table 3.2.5

TABLE 3.2.5.A USFWS AND KANSAS STATE LISTED SPECIES

Species	Description
Bald Eagle	The USFWS protects the Bald Eagle (Haliaeetus leucococephalus) under the Bald and Golden Eagle Act, and the species has been protected under the Kansas Nongame and Endangered Species Conservation Act, but was removed from the list in 2009. Nests occur throughout the Study Area and are abundant along the Kansas River.
Topeka Shiner	The USFWS has not designated critical habitat for the Topeka Shiner (Notropis topeka) in Kansas; however, it is also listed as a threatened species for the state of Kansas and designated critical habitat has been identified by KDWPT. The Topeka Shiner may have suitable habitat within the Project. Suitable habitat for the Topeka Shiner includes streams with low turbidity, clean sand, gravel, and bedrock substrates, and low width to depth ratios. There are known occurrences of the Topeka Shiner within the JLUS Study Area along Mill Creek, Sevenmile Creek, and Wildcat Creek.

Species	Description
Piping Plover	Suitable habitat for the Piping Plover (Charadrius melodus) includes open sandbars along the Kansas River. There are known occurrences of Piping Plovers along the Kansas River, but as of the date of this document, none have been located within the Study Are).
Least Tern	The KDWPT lists the Interior Least Tern (Sterna antillarum) as a species that could occur within Riley and Geary counties. One source listed the Interior Least Tern in Riley and Geary counties and breeding populations have been noted along the Kansas River.

Source: KDWPT 2017, KNRP 2017

Though not documented, studies also indicate that an additional nine listed or rare species could exist on the Fort and the surrounding JLUS Study Area.

TABLE 3.2.5.B ADDITIONAL LISTED OR RARE SPECIES

Species	Description
Plains Minnow	The Plains Minnow (Hybognathus placidus) are pelagic-spawning cyprinids that inhabit sandy streams. They have been documented within the Study area along the Republican River and Smoky Hill River.
Shoal Chub	The Shoal Chub (Macrhybopsis hyostoma) are small pelagic-spawning (eggs that develop as they drift downstream) cyprinids that inhabit shallow riffles in sandy streams. They have been documented within the Study area along the Republican River.
Silver Chub	The Silver Chub (Macrhrybopsis storeriana) are pelagic-spawning cyprinids that inhabit large sandy rivers. They have not been captured in the Kansas River since 1980.
Sturgeon Chub	The Sturgeon Chub (Macrhybopsis gelida) prefers large sandy river systems in Kansas. Critical habitat for the state of Kansas includes the main stem of the Kansas River at the confluence of the Republican and Smoky Hill Rivers to its confluence with the Missouri River. Sturgeon Chubs have been collected from the Smoky Hill River within the Study Area.

Source: KDWPT 2017, KNRP 2017

Numerous additional protected species including Species in Need of Conservation (SINC), which are protected under the Kansas Nongame and Endangered Species Conservation Act, occur within the JLUS Study Area. Several, such as the Timber Rattlesnake (*Crotalus horridus*), have documented occurrences near Fort Riley.

In addition, KDWPT develops a Wildlife Action Plan, which prioritizes landscapes and habitats into Ecological Focus Areas (EFAs) and identifies Species of Greatest Conservation Need (SGCN), throughout the Tallgrass Prairie Region. The dominant EFA within the JLUS Study Area is the Flint Hills EFA. SGCN species that rely on the prairie habitats within the Flint Hills EFA, including the Greater Prairie-Chicken

(*Tympanuchus cupido*), represent valuable wildlife resources that are important for conservation. The primary threats within the EFA are management, fragmentation, and invasive species.

The Wildlife Action Plan also identifies aquatic EFAs. The only aquatic EFA within the JLUS Study Area is the Kansas Lower Republican EFA. The Kansas Lower Republican EFA includes the Republican River, the Smoky Hill River, and the Kansas River. The streams within the system have sandy substrates, and channelization has degraded the habitats for wildlife. The Kansas-Lower Republican EFA contains habitats for several SGCN species such as the Blue Sucker (*Cycleptus elongates*) in the Smoky Hill River.

A complete list of species and their habitats within the JLUS Study Area can be found in the Kansas Wildlife Action Plan.

Along with the protection of threatened or endangered species, Fort Riley has cooperated with the KDWPT to reintroduce huntable populations of elk and eastern wild turkey on post lands.

3.2.7 Environmentally Sensitive Areas

Critical habitats for state and federally-listed species (T,E) are considered environmentally sensitive areas within the JLUS Study Area. Critical habitats include the Republican River, Smoky Hill River, Kansas River, Wildcat Creek, Sevenmile Creek, Walnut Creek. The Kansas-Lower Republican watershed is also sensitive to development, pollutants, and invasive species. In addition, the Tallgrass Prairie is a declining habitat throughout the US and the Flint Hills is a valuable EFA that is sensitive to development and invasive species. Woody encroachment is an ongoing challenge facing the Flint Hills and regular prescribed burning programs are implemented throughout the JLUS Study Area and on Fort Riley to continue controlling the invasive trees and brush threatening the prairie ecosystem.

3.2.7.1 Tallgrass Heartland

The "Tallgrass Heartland" (2013), formerly known as the "Heart of the Flint Hills" (2004) was designated by the Kansas governor and a team of wildlife/environmental advisors as an important natural area in Kansas in 2004. The Tallgrass Heartland was delineated to protect the tallgrass prairie habitat in Kansas by discouraging further development of commercial wind farms in the Flint Hills Ecoregion. The Kansas Governor has asked wind companies to voluntarily abstain from further development in the Tallgrass Heartland.

3.2.7.2 Managed and protected lands

Several managed and protected lands occur within the JLUS Study Area, which include state and federally managed properties, and properties owned and managed by The Nature Conservancy. Milford Reservoir and the associated Milford State Wildlife Area and Milford State Park are west of Fort Riley. The reservoir is owned by USACE, but is managed by the state of Kansas. The reservoir is primarily used for recreation.

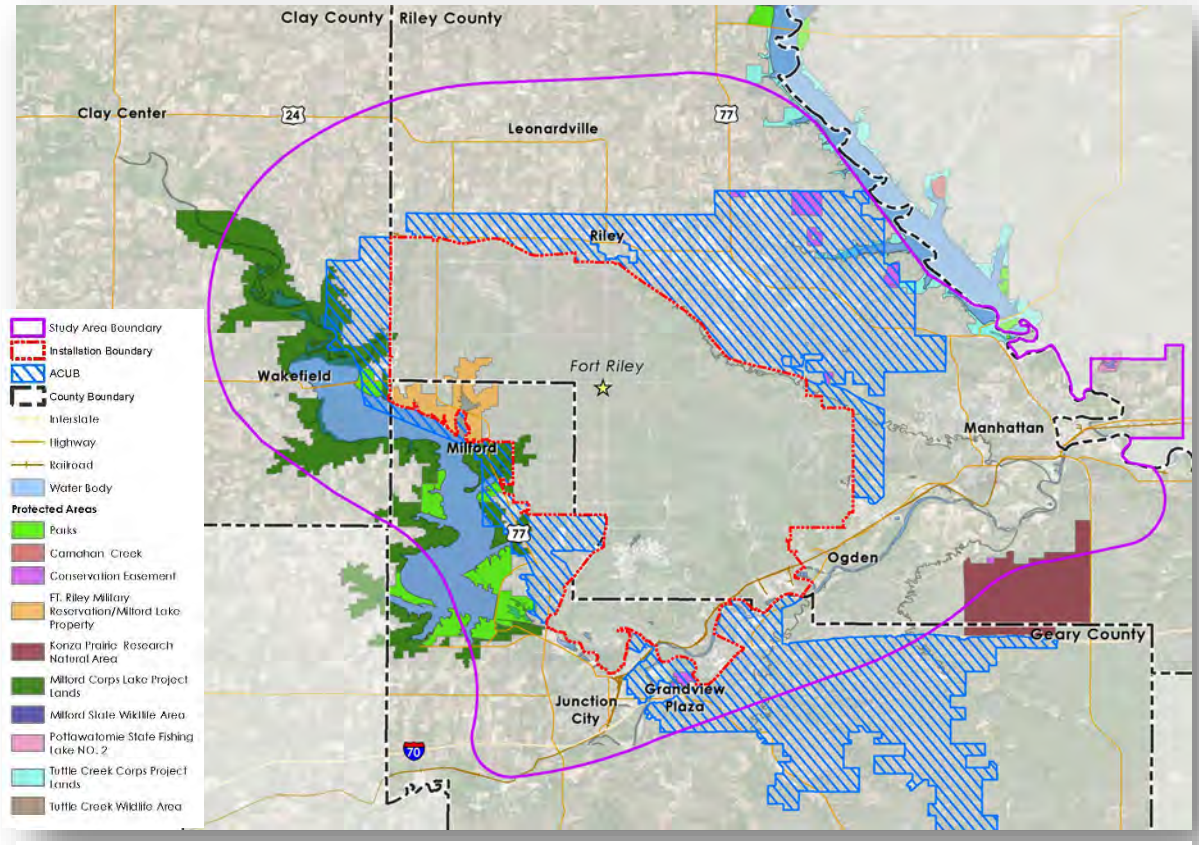


Figure 17 Conservation and protected areas adjacent to the study area.

Camping and facilities are provided within the Wildlife Area and State Parks. Wildlife resources are abundant in the reservoir and Wildlife Area associated hunting and fishing activities contribute to the economics of the region. The Nature Conservancy (TNC) and Kansas State University jointly own the KONZA Prairie Preserve, a 8,616 acre native prairie preserve located southeast of Fort Riley. In addition, TNCs long-term easement program preserves native areas throughout the JLUS Study Area.

3.2.8 Agricultural Conservation

Agricultural conservation is also a critical issue in the region. Fort Riley currently has approximately 1,300 acres that may be used for row crop production, restricted to the fire breaks around the post. Agricultural leases are in place for many of these areas. Fort Riley also leases about 40,000 acres for hay production,

Figure 18 Farm lands in the region.

scattered around the Fort. No lease options exist for grazing on installation lands due to the lack of fencing and water.

The Farm Bill is the primary source of funding for the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) agricultural conservation Programs. Dominant programs include Agricultural Conservation Easement Program (ACEP), which includes Farm and Ranch Lands Protection Program (FRPP), Grassland Reserve Programs (GRP), Wetland Reserve Programs (WRP), and the Environmental Quality Incentives Program (EQIP), which includes the former Wildlife Habitat Incentive Program(WHIP). Both ACEP and EQIP provide incentives to deliver environmental benefits.

Permanent conservation easements, funded through the ACEP occur within the Study Area around the Fort. The easements were a result of several programs including FRPP and GRP, and protect approximately 2,450 acres of habitat. The program provides financial assistance to local landowners to protect working agricultural lands and limit non-agricultural uses of the lands.

EQIP provides technical and financial assistance to agricultural producers for conservation activities such as improved water quality, reduce soil erosion or create wildlife habitat; and the Conservation Stewardship Program, which helps agricultural producers maintain and improve their existing conservation systems. The WHIP, now in EQIP, provides a program that offers assistance to qualified landowners to provide environmental benefits to their properties.

The Study Area occurs in the Kansas Administrative Area 4 of the Kansas NRCS. The predominant resource concerns are:

- Cropland soil erosion from continuous crop production
- Invasive species in pasture and rangeland
- Surface water quality degradation due to sediment and nutrients
- Pasture use rates
- Decline of grassland wildlife species

To combat these concerns, the major NRCS practices include ponds, brush management, pasture and rangeland management, erosion control on cropland, pest management, terraces, waterways, tile outlets, diversion, sediment basin, and nutrition management.

3.3 Growth and Development

The Flint Hills Economic Development District (FHEDD) located in the heart of Kansas cattle country, consists of Chase, Geary, Lyon, Morris, Pottawatomie, Riley, and Wabaunsee counties. The residents of the FHEDD have worked together to create a Comprehensive Economic Development Strategy (October 2014) with the goal to "improve the economy in all parts of the Flint Hills." The FHEDD gathered growth and economic trends to create a vision for their future. A summary of that analysis is included in sections 3.3.1 and 3.3.2.

Figure 19 The Potential Keats Sewer District, outlined in red, will help alleviate environmental concerns caused by septic tanks in the area.

TABLE 3.3.1 2010 POPULATIONS

County	Population
Chase	2,790
Geary	34,362
Lyon	33,690
Morris	5,923
Pottawatomie	21,604
Riley	71,115
Wabaunsee	7,053

Metropolitan Statistical Area	Population
Manhattan Metropolitan Area	127,081
Emporia Micropolitan Area	36,480

Largest Cities	Population
Alma	832
Cottonwood Falls	903
Council Grove	2,182
Emporia	24,916
Junction City	23,353
Manhattan	52,281
Wamego	4,372

Source: US Census Bureau, Census 2010

3.3.1 Regional Growth Trends

The Flint Hills region is primarily rural with the exception of two larger population centers at Junction City and Manhattan. The city of Manhattan in Riley County is the largest in the FHEDD with a population of 52,281. Manhattan is the center of the Manhattan-Junction City Metropolitan Statistical Area (MSA), an area that includes Geary and Pottawatomie counties as well as Riley. 72% of the 176,537 people living in the FHEDD live in the Manhattan-Junction City MSA. Many of those people attend or work at Kansas State University or Fort Riley (located in Geary and

Riley County). At the other end of the region is the Emporia Micropolitan Statistical Area, consisting of Lyon and Chase counties with 36,480 people.

While some places in the FHEDD have declined slightly in population in recent years, other places are experiencing a population boom. Geary County was the second fastest growing county in the nation with a population under 50,000 between 2011 and 2012. The Manhattan MSA was the tenth fastest growing MSA in the nation during that same time period. Much of the population change in this area is tied to personnel decisions at Fort Riley.

Riley County is pursuing a sanitary sewer line extension to service the Potential Keats Sewer District. The sewer line extension is intended to address environmental concerns from the septic tanks within the district, not to promote additional growth in the Keats area.

Utilizing the information gathered by FHEDD, the JLUS team formulated a Growth and Constraints map based on an understanding of growth in the region and stakeholder feedback on likely development patterns and issues in the local communities. The map organizes the study area into a series of land use

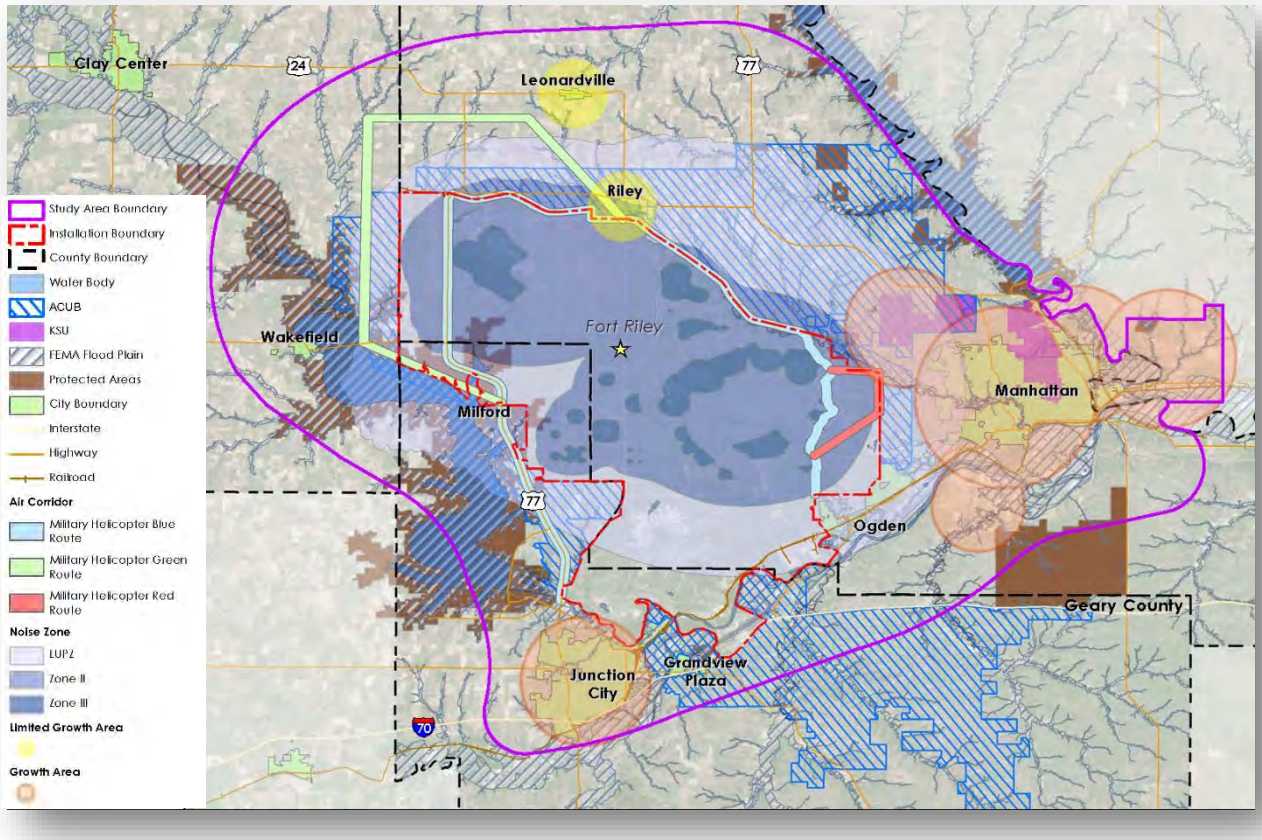


Figure 20 Growth and Constraints map based on an understanding of growth in the region and stakeholder feedback on likely development patterns and issues in the local communities.

categories that reflect operational and environmental issues, current growth patterns, and existing community communities that experience impacts from the post, and highlight those areas around the post that may warrant conservation due to noise or safety effects.

3.3.2 Regional Economic Trends

The economy of the FHEDD is unique for many reasons. Over a third of all personal income comes from local, state, or federal government. In addition, over a quarter comes from nonwage sources such as interest on investments or social security (investment income refers to things like interest on savings, dividends paid on investments, and rent on personal and intellectual property; income transfers are income from Social Security, Temporary Assistance for Needy Families, and other social safety net programs). That leaves only 28% of all personal income coming from private industry (and 1% from farms). This has fluctuated over the years as military staffing policies have changed and international missions have evolved. Many private employers are dependent upon the students, the soldiers or the institutions for their business.

The economy has been mildly affected by the most recent national recession. The considerable reliance on external money has meant that the economy has remained quite steady. Historically, the region maintains a lower unemployment rate than the nation. The downside of this reliance is that the region has little control over the institutions and businesses that contribute to the economy. There is a strong desire to build on the strengths of the region and diversify the industries in the area.

Three industries have been central to this region since its settlement and continue to be the drivers of the economy: Education, Beef Cattle, and the Military.

Three industries have been central to this region since its settlement and continue to be the drivers of the economy:

Education, Beef Cattle, and Military.

Education

The Education sector is dominated by Kansas State University (Manhattan) and Emporia State University (Emporia). They have drawn institutions to the area and inspired excellence in other areas of education. In addition to these two schools, the region hosts two private colleges, St. Mary's Academy and College and Manhattan Christian College as well as a branch of Southwestern College at Fort Riley. Two technical colleges reside in the region: Flint Hills Technical College and Manhattan Area Technical College. Three community colleges have branch campuses here: Barton Community College (at Fort Riley), Cloud County Community College (in Junction City) and Highland Community College (in Wamego).

Higher education contributes to the economy in several ways. First, employment by state and local governments accounted for 20,433 jobs, or 17% of the jobs in the seven-county area. Most of these employees are university or school district employees. Second, the universities in the FHEDD enroll approximately 30,000 students every fall. Third, this increase in the population adds a consumption market that requires relatively few public services.

Figure 21 In Geary County, 25% of agricultural sales are for cattle and calves and 50% of the land is dedicated rangeland.

Beef Cattle

Many different agricultural products are grown in the region, but beef cattle have historically been dominant and continue to be the major regional agricultural product. In 2007, 65% of the revenue from agricultural sales in the region were solely from cattle. Agricultural sales for beef varied between 25 and 90% of all agricultural sales among the seven counties. The industry also dominates land use in the counties: 50% of the land is permanent range-land. In addition, a portion of cropland is annually rotated to range uses.

Like the other industries, the cattle industry is not distributed evenly throughout the FHEDD. Chase County is highly concentrated in the Beef industry with 90% of agricultural sales coming from cattle and calves and 75% of its farmland dedicated rangeland. In Geary County, on the other hand, only 25% of agricultural sales are for cattle and calves and 50% of the land is dedicated rangeland.

Military

The Military Cluster is as old as the region. Fort Riley was originally a military outpost to protect migrants traveling to the West. It is now home to the First Infantry Division, also called "The Big Red One." The base spans Riley and Geary Counties and soldiers and their families live on base in the two counties as well as in the surrounding towns across the entire region.

Figure 22 The federal government is the largest employer in the 7-county area.

In 1969, 39% of employees in the FHEDD were employed by the Federal Government either as soldiers or as civilian workers. This declined to a low of 13% in 2002 and has since climbed back up to 21%. The federal government is not quite as dominant as it once was, but it is still by far the largest employer in the 7-county area. The changes in international missions and training priorities of the nation affect the staffing levels far more than any regional factors. The move of the Big Red One from Germany to Fort Riley around 2006 was the cause of the most recent change in employment levels. While the region cannot control the national security needs of the nation, it can continue to work with the military to anticipate and plan for changes in those levels.

The cluster is not confined to Fort Riley. Many businesses contract with the Fort to provide construction work, education, health care and other services and supplies. In 2016, a study conducted by Matrix Design Group, estimated Fort Riley's direct economic impact as $1.7 billion. With a generally accepted economic multiplier of $2.2 per $1 of direct expenditures, Fort Riley's full economic impact would be more than $3.8 billion.

The cluster's impact is not solely through employment and commerce. The military recruits educated people and trains them well. In the FHEDD, 96% of veterans are high school graduates (compared to 90% of nonveterans in the FHEDD). Some soldiers serve until retirement, but many more serve four to eight years and are honorably discharged. These discharged soldiers are highly skilled and could potentially contribute greatly to the local economy. Of those who retire from Fort Riley, around 40% choose to stay in Kansas, many in the Flint Hills region. Their skills and experience are assets to the community.

Future Industries

With such a large impact coming from government and quasi-governmental organizations, economic diversification is necessary for the future of the region. The FHEDD is focusing on four new industries in the region including tourism, retirement destination, manufacturing, and high-tech agriculture.

These emerging industries connect with our existing strengths: agriculture and our nationally significant history draw tourists; retirees are attracted by the opportunities created through the presence of local institutions and the quality of life; manufacturing is diversifying and developing new niches, and high-tech agriculture is developing around the construction of the National Bio and Agro-Defense Facility at Kansas State University.

The FHEDD is focusing on four new industries in the region including tourism, retirement destination, manufacturing, and high-tech agriculture.

3.4 COMMUNITY FEATURES

3.4.1 National Bio and Agro-Defense Facility

Figure 23 A rendering of the National Bio and Agro-Defense Facility.

The National Bio and Agro-Defense Facility (NBAF) will be a state-of-the-art, biocontainment laboratory located in the City of Manhattan, for the study of diseases that threaten both America's animal agricultural industry and public health. NBAF will play a leading role in protecting the nation's health and food supply as part of an integrated, advanced bio/agro security innovation system. This system is designed to materially enhance public/ private sector cooperation and collaboration, leverage stakeholder knowledge and capabilities, accelerate the transition of technologies and products into the marketplace, and enable skilled training, talent development, and regional economic growth. BASIS is strengthened by NBAF's proximity to a network of organizations with veterinary, agricultural, and animal pharmaceutical expertise.

Animal disease research is currently performed at the Plum Island Animal Disease Center (PIADC). However, the aging facility is nearing the end of its lifecycle. It is also too small to meet research needs in relation to emergent and foreign animal disease threats. An overlap in services from PIADC to NBAF will ensure no interruption of the critical science mission and operational capabilities. Construction activities are underway, facility commissioning will be completed in May 2021, and the facility will be fully operational in December 2022. Current operations at PIADC will continue until the mission is transitioned to the NBAF in 2023.

3.4.2 Manhattan Regional Airport

Manhattan Regional Airport provides Commercial Airline and General Aviation services to customers in the Flint Hills region. The region encompasses an area within a 60-minute drive of the airport, touches 12 counties and contains an approximate population base of 250,000 people. Daily scheduled airline service connects passengers to Dallas/Fort Worth International Airport and Chicago-O'Hare International Airport. The Airport records over sixty-thousand passenger enplanements annually and there are over 40 aircraft based at the airport. General Aviation Services include air charter, air cargo, flight instruction, air photo, major aircraft maintenance, aircraft refueling, tie-down, and aircraft storage. Jet charters supporting Fort Riley and Kansas State University frequent the airport. A federal contract Air Traffic Control Tower safely separates over 20,000 aircraft operations each year. These operations include light airplanes, military training aircraft, and Commercial Jet Airliners. The Airport is classified by the FAA as a Primary Commercial Service, non-hub airport in the National Plan of Integrated Airport Systems (NPIAS).

Figure 24 Manhattan Regional Airport.

The airside infrastructure features four runways (3-21 and 13-31), seven taxiways, and four aprons. This infrastructure regularly supports commercial aircraft that range from an ERJ-140 to a CRJ-700; charter aircraft that range from a B-737 to a B-757; and military aircraft that range from an AH-64 to an occasional C-17. There is a dedicated military entrance from Skyway Drive that leads to the military staging area and military ramp which is 650' x 520'.

Air safety zones around the airport reflect Part 77, Federal Aviation Administration (FAA) Regulations, which are established to protect the airspace and runway approaches from hazards that could interfere with aircraft operations. The zones are a series of imaginary surfaces defining the airspace around the airport. These surfaces include:

- a primary surface immediately surrounding the runway;
- an approach surface that continues from the primary surface but widens and rises upward; and
- the transitional surface (horizontal and conical), which begins at the outside edge of the primary surface.

Transitional zones are subject to height restrictions and any object that penetrates the surface requires FAA review to determine any possible air navigation hazards.

3.4.3 Freeman Field

Freeman Field sits on a 205-acre site approximately one-mile northwest of Junction City's downtown. Facilities include a primary north-south runway at 3,495 feet in length and two cross-wind runways. A variety of small general aviation aircraft use the airport. As of 2000, the airport accommodated an estimated 26,500 annual general aviation operations and 28 based aircraft, along with an estimated 500 military operations.

Figure 25 The National Biplane Fly In is held at Freeman Field in Junction City.

Air safety zones around the airport reflect Part 77, Federal Aviation Administration (FAA) Regulations, which are established to protect the airspace and runway approaches from hazards that could interfere with aircraft operations. The zones are a series of imaginary surfaces defining the airspace around the airport. These surfaces include:

- a primary surface immediately surrounding the runway;
- an approach surface that continues from the primary surface but widens and
- rises upward; and
- the transitional surface (horizontal and conical), which begins at the outside
- edge of the primary surface.

Transitional zones are subject to height restrictions and any object that penetrates the surface requires FAA review to determine any possible air navigation hazards. The transitional zones for Freeman Field travel southeast and southwest from the runways, covering portions of Junction City. The Master Plan for Freeman Field calls for runway improvements and construction of hangars and aircraft parking aprons to accommodate the full mix of small aircraft that could use the airport in the future.

3.4.4 Kansas Landscape Arboretum

The Kansas Landscape Arboretum, a 193-acre non-profit arboretum, lies just south of Wakefield on the west side of Milford Reservoir. Over 1,000 species of native and exotic woody plants adapted to the Kansas environment are found here. There are four short trails, a pond, and prairie meadows.

3.4.5 Flint Hills Discovery Center

Located in the heart of downtown Manhattan, Kansas, the Flint Hills Discovery Center celebrates the importance of the geology, ecology, and cultural history of the Flint Hills. The facility opened to the public on April 14, 2012, with exhibits designed to encourage visitors to explore firsthand the many special places within the 22 county Flint Hills region of Kansas. The family-focused, informal learning center explores the science and history of the Flint Hills and the ongoing role of Kansans to act as stewards for this diverse and ecologically complex place.

Figure 26 Flint Hills Discovery Center is located in the heart of Manhattan, Kansas.
Source: http://www.hilferty.com

3.4.6 Kansas State University

Kansas State University, commonly shortened to Kansas State or K-State, is a public doctoral university with its main campus in Manhattan. Kansas State was opened as the state's land-grant college in 1863 – the first public institution of higher learning in the state of Kansas. It had a record high enrollment of 24,766 students for the Fall 2014 semester.

Branch campuses are in Salina and Olathe. The Kansas State University Polytechnic Campus in Salina is home to the College of Technology and Aviation. The Polytechnic Campus is coordinating with Fort Riley on unmanned aircraft. The Olathe Innovation Campus is the academic research presence within the Kansas Bioscience Park, where graduate students participate in research bioenergy, animal health, plant science and food safety and security.

Figure 27 Kansas State University's logo.

The university is classified as a research university with highest research activity by the Carnegie Classification of Institutions of Higher Education. Kansas State's academic offerings are administered through nine colleges, including the College of Veterinary Medicine and the College of Technology and Aviation in Salina. Graduate degrees offered include 65 master's degree programs and 45 doctoral degrees.

3.4.7 Milford Lake

Figure 28 Milford Lake is considered the fishing capital of Kansas.

Located in the Heart of the Kansas Flint Hills and just west of Junction City is the Fishing Capitol of Kansas - Milford Lake. Milford Lake is the largest man-made lake in Kansas with 15,700 acres of water, 163 miles of shoreline, and over 33,000 acres of land resources managed for quality recreational experiences and for the protection of natural and cultural resources. Approximately 70% of the land resources are available for public hunting.

The construction of Milford Lake was authorized by the *Flood Control Act of 1954* to provide flood control, water supply, water quality, navigation, and recreation/wildlife. Multipurpose lake projects such as Milford are authorized by Congress only when the anticipated benefits are substantially greater than the costs. Since the Milford Lake and dam began

operating in 1967, it has prevented an estimated $165 million in flood damages, over 3 times the initial cost of the project's construction.

While most of the lake's tangible benefits are credited to its ability to prevent flood damages in the Kansas and Missouri River basins, the lake also releases water for municipal and industrial needs, navigation and downstream water quality. The Kansas Water Office and the Corps work together to regulate water releases through the dam.

The lake provides excellent habitat for many types of wildlife, a fact that contributes to its reputation as one of the prime hunting and fishing areas in Kansas.

Each year the lake attracts over one million visitors who enjoy and take advantage of the many recreational opportunities available.

MILITARY PROFILE

4 MILITARY PROFILE

4.1 REGIONAL INFLUENCE

Fort Riley is the only FORSCOM installation in the Midwest with modern, state-of-the-art, full-spectrum training capability including live maneuver areas, virtual, constructive, gaming in Integrated Training Environment (ITE) to support "Total Army," Joint, Inter-organizational, and Multinational (JIM) training. In Fiscal Year 2016, Fort Riley provided training support to 25,736 US Army Reserve and National Guard Soldiers, Marines, Airmen, ROTC Cadets, and JIM partners. Agreements are also in place with the National Guard to use the Great Plains Joint Training Center as well as the Smoky Hill Weapons Range.

The Great Plains Joint Training Center affords both military and civilian organizations an unprecedented opportunity to function jointly using real world technology to train and respond to missions both here and abroad. It is the backbone of the Kansas Army National Guard's ability to conduct pre-mobilization training for its soldiers at home prior to deployment overseas. It is an essential part of the National Guard's training certification.

Located 10 miles west of Salina, Kansas, the Smoky Hill Weapons Range is the largest and busiest ANG bombing range in the nation, encompassing 51 square miles, and has more than 100 Tactical targets and an electronic warfare range. The complex provides approximately 36 thousand acres for combined arms training, allowing Active and Reserve component military organizations to train jointly in a realistic environment that combines ground and air assets in operational training in a way that's possible at only a few sites throughout the United States. The Smoky Hill range provides airspace within an FAA sanctioned

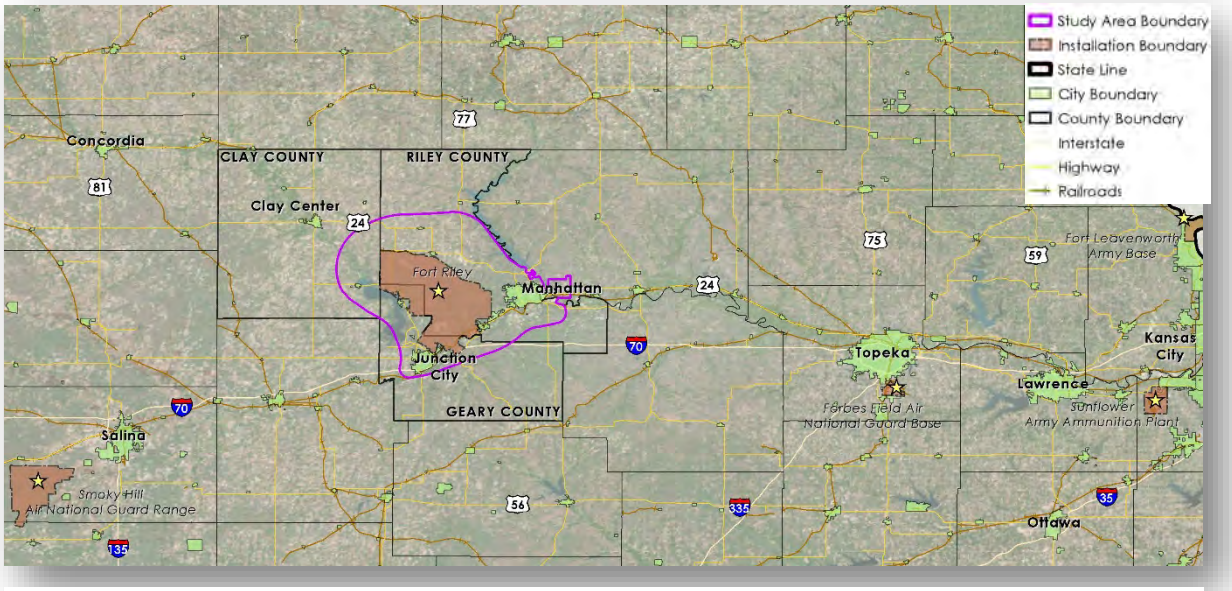


Figure 29 Military installations across Kansas

Figure 30 Fort Riley Headquarters

Military Operational Area, which permits active and reserve units to operate both piloted and unmanned aircraft in training scenarios. Fort Riley has established a 60-mile air corridor to Smoky Hill for the Gray Eagle Unmanned Air Vehicle (UAV) training.

4.1.1 Population Impact

In addition to sharing training resources, Fort Riley's population also has a big impact on the community. Military personnel, veterans, retirees, and civilian employees come from counties throughout the region including Geary, Riley, Dickinson, Clay, Morris, Saline, and Shawnee. The post's estimated daily population is more than 67,000 people.

TABLE 4.1.1 POPULATION COMPOSITION

Population Composition	Population
Military	15,417
Family Members	19,686
Veterans	22,249
Retirees	4,610
Civilian Employees (Including Contractors)	5,363
Total Population	**67,325**

Source: Fort Riley Annual Economic Impact Summary for Fiscal Year 2016

Fort Riley authorized troop strength numbers have reduced slightly as a result of mandated DoD force reductions. Assigned strength numbers are expected to remain stable, slightly above 15,000 in FY17/18. Soldier "boots on ground" rates will fluctuate in the foreseeable future as 1st Infantry Division units remain on constant deployment cycles and remain ready to support unforeseen contingency operations. The number of families accompanying their Soldiers at Fort Riley is expected to remain stable. Civilian and contractor employee numbers will correlate with assigned service member population numbers.

4.1.2 Economic Impact

Fort Riley is a major economic force in the Flint Hills region. In 2016, a study conducted by Matrix Design Group, estimated Fort Riley accounted for 45% of the local Flint Hills region economy with a direct economic impact of $1.7 billion. With a generally accepted economic multiplier of $2.2 per $1 of direct expenditures, Fort Riley's full economic impact would be more than $3.8 billion. Table 4.1.1 demonstrates the economic significance of post operations on the surrounding communities.

FIGURE 4.1.2 ECONOMIC IMPACT

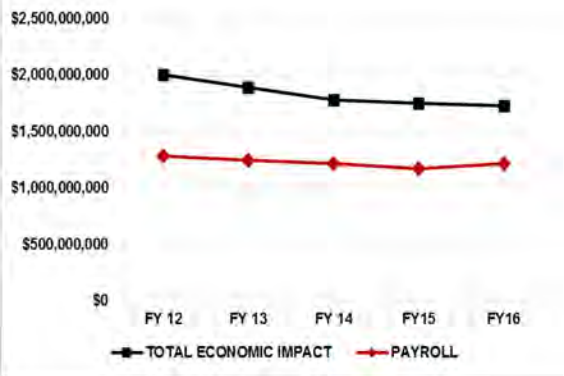


TABLE 4.1.2 ECONOMIC CONTRIBUTION

Payroll	$1,212,078,235
Contracts-Service-Supply	$160,606,228
Construction	$64,612,049
Education: Federal Impact Aid	$26,713,288
Veteran Expenditures	$183,682,000
Health Care	$80,434,650
Total Direct Economic Impact	**$1,728,126,450**

Source: Fort Riley Annual Economic Impact Summary for Fiscal Year 2016

4.2 FORT RILEY

Fort Riley is a 101,733-acre army installation located in the central portion of northeastern Kansas and occupies portions of Geary, Riley, and Clay counties. The installation's southern boundary is at the confluence of the Smoky Hill and Republican rivers, which combine to form the Kansas River. Milford Lake, a 15,000-acre impoundment of the Republican River, is located at the installation's western boundary. Tuttle Creek Lake is approximately eight miles northeast of the installation. Portions of the installation are bounded by the city limits of Riley, Milford, Junction City, unincorporated town site of Keats and Ogden. The City of Manhattan is located approximately two miles east of the installation, although the Manhattan Regional Airport and Manhattan Corporate Technology Park are located adjacent to the installation boundary. Fort Riley is approximately 95 miles west of Kansas City and 90 miles northeast of Wichita.

The population estimate for those supporting Fort Riley is 67,325 people based on the Economic Impact Summary (Oct 2015 – Sept 2016). Of those 15,417 are military, 19,686 are family members, 22,249 are veterans, 4,160 are retirees, and 5,363 are civilian employees. The population supporting Fort Riley live in the following counties: Clay County, Dickinson County, Geary County, Morris County, Pottawatomie County, Riley County, Saline County, and Wabaunsee County.

4.2.1 History

Fort Riley was established in 1853 to protect westward moving pioneers on the Santa Fe Trail. Soldiers rode to famous campaigns such as Beecher's Island, Washita River Fight, and the Battle of Little Big Horn. At the end of the Indian Wars, this frontier post became the home of the Army's Cavalry and Light Artillery Schools in 1893. The Cavalry School was deactivated in 1946 when all horse units in the Army were replaced by mechanized Cavalry and Armor units. Fort Riley has served as a major training and mobilization site, deploying units to fight in the Spanish American War, both World Wars, the Korean Conflict, Vietnam, Desert Storm, and the Global War on Terrorism.

The headquarters of the 1st Infantry Division was transferred from Fort Riley to Germany in 1995. The 1st Brigade of the 1st Infantry Division, along with the 3rd Brigade of the 1st Armored Division and the 937th Engineer Group remained at Fort Riley. Fort Riley once again became a Division Headquarters in 1999 when the 24th Infantry Division was reactivated at the installation, to consolidate Active components and Reserve components into one Division. The 24th Infantry Division served as the Headquarters element for three Enhanced Separate Brigades of the Army National Guard.

A result of the 2005 Base Realignment and Closure (BRAC) decisions and additional mission requirements resulting from the Integrated Global Presence and Basing Strategy was the return of the 1st Infantry Division Headquarters to Fort Riley, as well as the stationing of a third brigade (4th Brigade of the 1st Infantry), a Combat Aviation Brigade, and various additional units to the installation. In March, 2008, the 3rd Brigade of the 1st Armored Division was reflagged as the 2nd Brigade of the 1st Infantry.

Figure 31 History plays an important role at Fort Riley.

Figure 32 Top Left: The Command Building at Fort Riley. Top Right: On-base housing; Bottom: US Air Force C-17 plane landing at Fort Riley.

In 2015, the 4th Infantry Brigade Combat Team was inactivated as part of the Army's restructuring process. Also, announced in 2015 was the Army plan to cut approximately 615 Soldiers from Fort Riley as to reduce overall troop numbers. Fort Riley is reduced to a four-brigade installation with a mix of heavy, aviation and sustainment brigades.

4.2.2 Fort Riley Land Uses and Facilities

Fort Riley encompasses 101,773 acres. Of this, approximately 70,000 acres separated into 103 training areas are available for maneuver training. Cantonment areas that provide housing, community / recreation, and industrial and transportation operations are mostly in the southern portion of the installation in six distinct areas.

TABLE 4.2.2 FORT RILEY LAND USES AND FACILITIES

Land Use and Facilities	Description
Land Use Areas	
Training Areas	One hundred three designated training areas, 76 of which are combined into 17 larger maneuver areas, comprise approximately 70,000 acres;
Impact Area	The main impact area and the surrounding training live-fire ranges in the eastern portion cover approximately 16,200 acres. These areas are off-limits to maneuver training, public use, and most management activities.
Douthit Gunnery Complex	The Douthit Gunnery Complex in the northwestern portion includes approximately 2,000 acres. Training and maneuvers that usually occur within the Douthit Gunnery Complex Safety Fan cease when either the DMPRC or DMPTR is active. The Douthit Gunnery Complex live-fire danger fan covers approximately 30,500 acres and includes Training Areas
Cantonment Land Use Areas	Cantonment (or developed) areas total approximately 12,000 acres and are Main Post, Camp Forsyth, Camp Funston, Camp Whitside, Custer Hill, and Marshall Army Airfield.
Improved Grounds	Improved grounds include improved and semi-improved areas. Improved grounds contain many native and non-native trees, shrubs, and groundcovers on approximately 5,613 acres. Improved areas are maintained as mowed turf and planted with ornamental and native trees and shrubs. Semi-improved areas are grassy fields and larger groves of trees that receive periodic mowing and maintenance.
Outdoor Recreational Facilities	Three parks/picnic areas totaling approximately 60 acres are maintained in a semi-natural condition; they are Moon Lake and McCormick and Wyman parks.
Borrow Areas	Soil borrow is used for two major purposes on Fort Riley; as fill material and as topsoil, and is generally associated with construction projects. Borrow sites on Fort Riley are controlled under a National Pollutant Discharge Elimination Program (NPDES) permit authorized under the Clean Water Act.

Land Use and Facilities	Description
Transportation Systems	
Marshall Army Air Field	Marshall Army Airfield (MAAF) is Fort Riley's on-post airfield. It consists of a 4,503-feet long runway (100 feet wide with 25 feet paved shoulders), 50-feet wide taxiways (with 25 feet paved shoulders), and 148,000 square yards of parking aprons. It is primarily designed to accommodate rotary-winged aircraft.
Roadways	Fort Riley has approximately 241 miles of paved roads and 124 miles of graveled tank trails. In addition, the installation's training areas are threaded with a vast network of dirt roads and trails. Fort Riley is served by an extensive, well-maintained, off-post, roadway system. Seven principal roadways access the installation: Grant Avenue (from Junction City, at West Huebner); K18 Highway (at 12th Street, Camp Funston and via Riley Avenue, Ogden, at East Huebner); I-70, Exit 301 (Henry Drive at Marshall Army Airfield); Washington Street (from Junction City at Trooper Drive); US77 Highway (Range Road, into Camp Forsyth); and old US77 Highway (Estes Road, into Custer Hill).
Railways	Fort Riley has 12 miles of track located in three areas: Camp Funston, Camp Whitside, and Main Post. The Army owns the track on the installation, with the exception of the main line, which is owned by the Union Pacific Railroad. Camp Funston is the primary location for rail loading activities. This area contains adequate open land for staging, new dock facilities, good rail access, and night lighting for 24-hour operations. The Camp Funston area has a capacity of 340 rail cars.
Water Supply	Groundwater is the water source for domestic and industrial use at Fort Riley. The groundwater for most of Fort Riley is withdrawn from aquifers recharged by the Republican and Kansas rivers
Wastewater	Ft. Riley is served by a wastewater treatment plant (WWTP) constructed in 2005.

Source: Fort Riley Integrated Natural Resources Management Plan (July 2016)

4.2.3 Fort Riley Unit Information

Fort Riley is a Four-Brigade installation with a mix of armor, infantry, aviation, and combat support capabilities.

Division Headquarters and Headquarters Battalion, 1st Infantry Division

The Division Headquarters and Headquarters Battalion (DHHB) consists of four Companies whose mission is to support the 1st Infantry Division.

1st Armored Brigade Combat Team, 1st Infantry Division

The 1st Armored Brigade Combat Team (ABCT) consists of: 1st Battalion, 16th Infantry Regiment; 2nd Battalion, 34th Armor Regiment; 3rd Battalion, 66th Armor Regiment; 1st Squadron, 4th Cavalry Regiment; 1st Battalion, 5th Field Artillery Regiment; 1st Brigade Engineer Battalion; and 101st Brigade Support Battalion.

2nd Armored Brigade Combat Team, 1st Infantry Division

The 2nd Armored Brigade Combat Team (ABCT) consists of: 1st Battalion, 18th Infantry Regiment; 1st Battalion, 63rd Armor Regiment; 2nd Battalion, 70th Armor Regiment; 5th Squadron, 4th Cavalry Regiment; 1st Battalion, 7th Field Artillery Regiment; 82nd Brigade Engineer Battalion; and 299th Brigade Support Battalion.

Division Artillery, 1st Infantry Division

Activated at Fort Riley on October 16, 2016, 1ID Division Artillery (DIVARTY) receives attachment of all 1ID fires elements in order to standardize gunnery and fire support procedure, integrate and fires in support of maneuver operations, and synchronize the effects of Joint fires to ensure combat ready forces for the 1st Infantry Division.

1st Sustainment Brigade, 1st Infantry Division

The 1st Sustainment Brigade consists of: HHC, 1st Sustainment Brigade; Special Troops Battalion, 1st Sustainment Brigade; 541st Combat Sustainment Support Battalion.

Combat Aviation Brigade, 1st Infantry Division

The Combat Aviation Brigade (CAB) consists of HHC, CAB; 1st Attack Reconnaissance Battalion, 1st Aviation Regiment; 2nd General Support Aviation Battalion, 1st Aviation Regiment; 3rd Assault Helicopter Battalion, 1st Aviation Regiment; 601st Aviation Support Battalion;1st Squadron, 6th Cavalry Regiment.

10th Air Support Operations Squadron (10 ASOS)

Provides combat-ready Tactical Air Control Party assets for combat maneuver units of the 1st Infantry Division. Advises the Army on U.S./Allied air capabilities. Coordinates attack/reconnaissance air assets in support of the joint battle plan.

United States Army Garrison (USAG), Fort Riley

USAG, Fort Riley is under the direction of Installation Management Command (IMCOM). USAG consists of the HQ and HQ Company; Garrison Directorates of Emergency Services; Family, Morale, Welfare and Recreation; Human Resources; Plans, Training, Mobilization and Security; Public Works; Equal Employment Opportunity; Internal Review and Audit Compliance; Garrison Safety; Plans, Analysis and Integration; Public Affairs; Resource Management; Staff Judge Advocate; and partner organizations (Network Enterprise Center, Logistics Readiness Center, Mission and Installation Contracting Command, and Civilian Personnel Advisory Center, Army Field Support Battalion, Civilian Human Resource Agency).

U.S. Army Medical Department Activity (MEDDAC)

Irwin Army Community Hospital (IACH) provides quality healthcare to the Soldiers, Families, and Retirees of the Central Flint Hills Region. The hospital operates Farrelly, Custer Hill and Aviation Health Clinics on Fort Riley, and the Flint Hills Medical Home in Junction City. IACH is a facility staffed for 47 beds and delivers a variety of outpatient services including a 24/7 emergency room.

U.S. Army Dental Activity (DENTAC)

The U. S. Army Dental Activity provides a full range of dental services to Soldiers assigned to or mobilized at Fort Riley through three dental clinics, an in-processing clinic and a Soldier Readiness Processing (SRP) dental area.

Mission and Vision Statement

The 1st Infantry Division and Fort Riley build and maintain combat ready forces; on order deploys these forces to conduct Decisive Action to fight and win in complex environments as members of a Joint Inter-organizational, and Multi-national team.

4.2.4 Existing Mission Operations

Fort Riley is classified as a Tier 1 installation (installation with significant training value to the Major Commands and having high range and land capability) that has an Army-wide strategic and enduring training capability. The principal, currently-stationed units at Fort Riley are 1st Infantry Division Headquarters, 1st and 2nd Armored Brigade Combat Teams, Division Artillery, a Sustainment Brigade, and a Combat Aviation Brigade. Due to reassignment and attrition, Soldier strength at Fort Riley is projected to decrease from approximately 18,000 Soldiers to approximately 16,000 Soldiers by the end of 2017. Fort Riley supports National Guard and Reserve components.

Fort Riley facilities provide year-round support for live-fire exercises, maneuver training for mechanized/armored vehicles, attack helicopter gunnery, operation of rotary-winged aircraft, drone aircraft, small arms firing, mortar, artillery and tank firing exercises, engineer obstacle and demolition training and maneuver training. These training activities are expected to remain stable. Current Fort Riley military assets include approximately 180 tanks, 110 Bradley Fighting Vehicles, 640 other tracked vehicles, 3,985 wheeled vehicles, and 115 Rotary Wing Aircraft.

Fort Riley encompasses 101,773 acres including 103 training areas for maneuver training. Every unit assigned to Fort Riley conducts rotational training. The most heavily used Maneuver Areas are occupied between 160- 210 days per year. Fort Riley aircraft have access to 432 square miles of airspace. Flight operations occur daily, with approximately 21,000 helicopter flight hours annually logged.

The Artillery and Mortar Impact Area and its associated training live-fire ranges consist of 16,200 acres. Cantonment areas total approximately 11,000 acres, including Marshall Army Airfield (MAAF). The Douthit Gunnery Complex, an approximately 2,000-acre site, houses the Digital Multi-Purpose Range Complex (DMPRC) and Digital Multipurpose Training Range (DMPTR). The Gunnery Complex has averaged as high as 230 days of use per year. Live-fire exercises involving mortars, artillery, and tanks occur throughout the year. These firing ranges for large caliber weapons are used extensively by units assigned to Fort Riley, active Army units assigned to other installations, Army Reserve units, National Guard units, and U.S. Air Force units.

Use of the DMPTR and DMPRC has increased the number of training exercises that can be supported at any one time and throughout a typical training year by approximately one-third. This has allowed more personnel and units to train simultaneously at the installation. Munitions fired at these facilities do not generate any louder noises. However, the additional range capacity allows for a higher throughput of training units, increasing the intensity of the noises that are generated when both ranges are active.

4.2.5 Proposed Expansions and Operational Changes

Fort Riley will continue to upgrade facilities and ranges as resources permit. The opening of the new hospital and the Gray Eagle hangar in 2016 marked the completion of a 10-year, $1.8 billion capital improvement program. Sustainment, Restoration and Modernization (SRM) will be the focus of construction efforts in the coming years. SRM construction will modernize unit operations and

maintenance facilities to support Army Force Restructuring (ARSTRUC), repair road networks and perform building infrastructure upgrades.

Additionally, the Total Army, Joint expeditionary training will continue to see growth. An estimated 25,000+ Total Army partners in the National Guard and Army Reserve train on Fort Riley annually and these numbers are expected to remain constant for the foreseeable future.

Due to development of the dirt forward landing strip and drop zones on the western side of the training area, an increase in the numbers of partners in the USAF, Special Operations communities is anticipated. Lastly, growth in the emerging Unmanned Aerial Systems (UAS) field mandates additional on post facilities and off post air corridors linking Fort Riley with Smoky Hill and Fort Carson, Colorado.

Figure 33 Training taking place within the Artillery and Mortar Impact Area

COMPATIBILITY TOOLS

5 COMPATIBILITY TOOLS

5.1 FEDERAL PROGRAMS AND PLANS

5.1.1 Army Compatible Use Buffer (ACUB) Program

The Army Compatible Use Buffer (ACUB) program supports the Army's mission to fight and win the nation's wars. Winning wars requires a trained and ready force. Trained and ready Soldiers require land for maneuver exercises, live fire training, equipment and soldier skill testing, and other operations. Training restrictions, costly workarounds, and compromised training realism can result from incompatible development surrounding the installation (external encroachment) and from threatened and endangered species on the installation (internal encroachment). Title 10, Section 2684a of the United States Code authorizes the Department of Defense to form agreements with non-federal governments or private

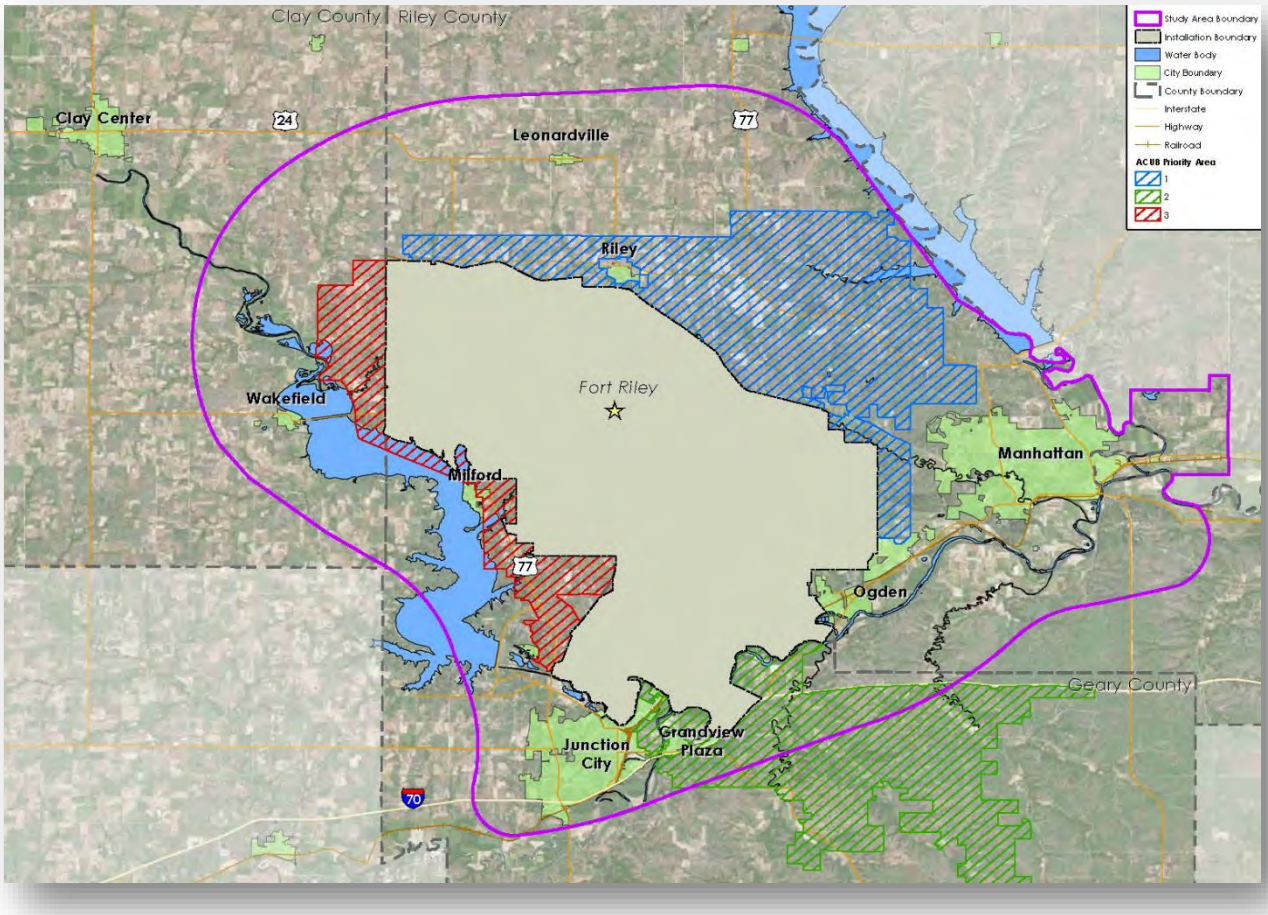


Figure 34 In partnership with the Kansas Land Trust, an ACUB for Fort Riley was approved in 2006. The three priority areas identified include 82,403 acres and over 650 individual land owners.

organizations to limit encroachments and other constraints on military training, testing, and operations by establishing buffers around installations. The Army implements this authority through the ACUB program, which is managed overall at Army Headquarters level.

The ACUB program allows installations to work with partners to encumber off-post land to protect habitat and buffer training without acquiring any new land for Army ownership. Through ACUB, the Army reaches out to partners to identify mutual objectives of land conservation and to prevent development of critical open areas. The Army can contribute funds to the partner's purchase of easements or properties from willing landowners. These partnerships preserve high-value habitat and limit incompatible development in the vicinity of military installations. Establishing buffer areas around Army installations limits the effects of encroachment and maximizes land inside the installation that can be used to support the installation's mission.

In partnership with the Kansas Land Trust, an ACUB for Fort Riley was approved in 2006. The three priority areas identified include 82,403 acres and over 650 individual land owners. At the end state, all large parcels capable of supporting industrial-size wind turbines in Priority Area 1 will be protected from such development due to the threats that spinning turbines pose to digital RADAR operations. Because these parcels are typically native prairie, the installation may receive added benefit of protecting vanishing grassland-dependent species, both from precluding a listing, or negotiation to avoid future restrictions if a listing were to occur. Priority Area 2, which encompasses the area most primed for urban development and most impacted by gunnery and munition-related training, and Priority Area 3, which receives heavy helicopter traffic but is less affected by gunnery training and development, will have a mosaic of protected lands that will limit large-scale housing projects from potentially impacting training. As of February 2017, about 32% of the overall priority areas have been protected. The Department of Defense has expended approximately $7.6 million.

5.1.2 Department of Defense Sustainable Ranges Program

UNITED STATES DEPARTMENT OF DEFENSE
SUSTAINABLE RANGES INITIATIVE ★ ★ ★

The Department of Defense Sustainable Ranges Initiative ensures the long-term viability and continuity of military training and testing ranges while providing good stewardship for the land. Through a framework of continuing, cooperative and coordinated efforts within government, and partnerships with groups beyond installation boundaries, the Sustainable Ranges initiative is safeguarding America and sustaining our lands and resources for years to come.

5.1.3 Forest Legacy Program (FLP)

The Forest Legacy Program (FLP) was authorized by the *Food, Agriculture, Conservation, and Trade Act of 1990* to identify and protect environmentally important, private forestlands threatened with conversion to non-forest uses. The FLP is a USDA Forest Service Program, in partnership with the state, that will help support local efforts to protect environmentally sensitive, privately owned forest lands threatened by conversion to non-forest use through land acquisition and conservation easements.

5.1.4 Installation Operational Noise Management Plan (IONMP)

This *Installation Operational Noise Management Plan (IONMP)* contains the noise impact assessment and the noise complaint process. The primary focus of this IONMP is to quantify the noise environment from military training sources and recommend the most appropriate uses of noise-impacted areas.

The IONMP assessment for Fort Riley was last conducted in 2015. It updates the October 2000 Fort Riley Installation Environmental Noise Management Plan and provides information that reflects the most accurate picture of the activities as of 2013.

5.1.5 Range Compatible Use Zone (RCUZ) Program

The Range Compatible Use Zone (RCUZ) program helps protect the public's health, safety, and welfare by minimizing both local community and on-base exposure to noise and potential safety hazards resulting from military training activities, while protecting the operational capacity of the range training complex. The RCUZ program seeks to achieve compatibility between military training range installations and neighboring communities by working in partnership with local governments. It seeks to achieve, to the extent practical, compatible development of lands adjacent to the range complex by providing compatible land use recommendations to local communities for their consideration in local planning.

5.1.6 Readiness and Environmental Protection Initiative (REPI) Program

The pattern of development has changed over the years and where installations were once isolated, urban and suburban development is now abutting military facilities. The DoD created the REPI Program in 2003 in response to this type of incompatible development and loss of habitat around its installations. The program offers a way to not only conserve land, but to also prevent any restrictions imposed by local jurisdictions that might diminish the goals of the military mission or lead to inadequate training and testing. The program utilizes buffer projects, landscape partnerships, and stakeholder engagement to provide problem solving and decision-support tools for the community. According to the March 2016 REPI Buffer Fact Sheet, over 437,000 acres of buffer land at 88 locations in 30 states across the country have been protected.

Fort Riley has received $5.6M in REPI funding (FY06-11), while the USDA and the installation have provided $1.2M and $1.59M, respectively. Additionally, Fort Riley's REPI partners have secured $3.6M in funds. Negotiations are underway to protect an additional 3,500 acres using existing funding.

5.1.7 Sentinel Landscapes

The U.S. Departments of Agriculture (USDA), Defense (DoD), and the Interior (DOI) established the Sentinel Landscapes Partnership through a Memorandum of Understanding in 2013. The Partnership is a nationwide Federal, local and private collaboration dedicated to promoting natural resource sustainability and the preservation of agricultural and conservation land uses in areas surrounding military installations. Agencies from the three Departments coordinate the Partnership at the national level through the Sentinel Landscapes Federal Coordination Committee.

Sentinel Landscapes are working or natural lands important to the Nation's defense mission – places where preserving the working and rural character of key landscapes strengthens the economies of farms, ranches, and forests; conserves habitat and natural resources; and protects vital test and training missions conducted on those military installations that anchor such landscapes.

The Sentinel Landscapes Partnership seeks to recognize and incentivize landowners to continue maintaining these landscapes in ways that contribute to the nation's defense. Where shared interests can be identified within a Landscape, the Partnership coordinates mutually beneficial programs and strategies to preserve, enhance or protect habitat and working lands near military installations in order to reduce, prevent or eliminate restrictions due to incompatible development that inhibit military testing and training.

A Sentinel Landscape application has been considered for Fort Riley; however, criteria supporting Army funding in support of a Sentinel Landscape's establishment are not currently in place.

5.2 State and Regional Programs and Plans

5.2.1 Flint Hills Economic Development District

The Flint Hills Economic Development District is a collaborative effort among seven counties that cover the Flint Hills region. A major focus of this district is the Flint Hills Frontiers Project. The project provides an opportunity for area interests to come together to coordinate resources, integrate programming and develop a Comprehensive Economic Development Strategy (CEDS) that enhances and encourages economic opportunities while preserving the area's natural and cultural resources.

5.2.2 Flint Hills Regional Council (FHRC)

The expansion of Fort Riley provided the most recent impetus for launching the Flint Hills Regional Council (FHRC) through the Regional Planning Organization (RPO) Project process. The RPO project was a collaborative effort of the Flint Hills Region to design a new organization, a "Regional Planning Organization", to address common challenges. This effort produced the FHRC.

The FHRC is a voluntary service association of local Kansas governments from Chase, Lyon, Geary, Morris, Riley, Pottawatomie, and Wabaunsee counties and their respective municipalities and unincorporated areas to provide service of mutual benefit to the region best gained from cooperation and partnership. It was incorporated as a Kansas nonprofit cooperation on January 27, 2010. Its members are made up of general purpose local governments. The board of directors is made up of elected officials from those general purpose local government FHRC members and advisory directors including Fort Riley, Kansas State University, and the Governor's Military Council.

Through open communications, excellent data resources, and professional expertise of the highest standards, the FHRC provides leadership support and technical assistance across all government and civic sectors of these counties and beyond, as requested. The FHRC achieves success through equitable, cost efficient sharing of resources, mutual efforts to bring new resources, and added value for benefit to the region as a whole.

FHRC Vision is "The Flint Hills region including Chase, Lyon, Geary, Morris, Riley, Pottawatomie, and Wabaunsee counties are flourishing with an exceptional Heartland lifestyle, world-class knowledge economy, and inspiring tallgrass prairie environment. The accomplishments of the individual and distinct communities of the region have been through an extraordinary level of trust, cooperation, and mutual support. The achievements have been gained with the vision, leadership, assistance, and expertise of the FHRC including the contributions of partners such as Kansas State University, Ft. Riley, and local chambers of commerce".

5.2.3 Governor's Military Council

The mission of the Governor's Military Council is to grow and protect major military activities located in Kansas; to leverage this significant military activity in the state into creating additional defense related jobs; and to help local units of government in the state improve the quality of life for men and women in uniform, and their families, and veterans and their families, that live and work in the state.

Governor Sam Brownback serves as the Chairman. Lieutenant Governor Jeff Colyer serves as the Vice Chairman. LTG (R) Perry Wiggins serves as the Executive Director. The council consist of 26 members. Each member is nominated and serves at the pleasure of the governor. Members of the council include: the governor of the state of Kansas, Lt. Governor of the state of Kansas, Kansas congressional delegation, four state legislators, the Kansas adjutant general, business/community leaders from the five major installation communities, full-time executive director, installation commanders as ex-officio members supported by a Washington DC consulting firm.

The governor's military council was shaped from the governor's strategic military planning commission an organization which spearheaded efforts to protect and grow Kansas installations during the BRAC process. It was initially established by Executive Order 98-5 and has been extended through additional Executive Orders.

LTG (R) Perry Wiggins sits on the Policy Committee and will serve as a liaison between the Council and the JLUS.

5.2.4 Military Installations (Kan. Stat. Ann. §12-772 - 775)

Kansas statutes promote communication, cooperation and collaboration between military instillations and the municipalities surrounding them. State regulations require that if you are within one of the designated areas, it is classified as a "a state area of interest vital to national security and the economic well being of the state." Those designations include the following:

- Military air installation compatible use zone (AICUZ) study area,
- Joint land use study (JLUS) area,
- Army compatible use buffer (ACUB), or
- An environmental noise management plan (ENMP) of an active duty, national guard, or reserve military installation

If located within the state designation, military installations and the surrounding communities are required to communicate, cooperate, and collaborate.

The following is required for the military installation:

A. Notify and coordinate with each municipality adjacent to or surrounding the military installation regarding any development, project or operational change on the military installation which will alter or amend a JLUS, ACUB, AICUZ or ENMP or any element therein.

B. Notify each municipality adjacent to or surrounding the military installation of any change in the name of any contact person, and any related information thereto, who is used for the purpose of communication between the military installation and the municipality.

C. Meet and coordinate at least annually with representatives of each municipality adjacent to or surrounding military installations for the purpose of determining any critical area within the state area of interest. A critical area of interest is any portion of the state area of interest where future use of such area is determined in a coordinated manner between the military installation and the municipality and should be monitored or managed to reduce any potential conflict with any military operation and the economic well being of the municipality.

The following is required for each municipality adjacent to or surrounding a military installation:

A. Meet and coordinate at least annually with the commander of the active duty, national guard or reserve military installation associated with the state area of interest in which the municipality is located to jointly determine what portion, if any, of that state area of interest is a critical area.

B. Notify the commander of each military installation located adjacent to or surrounded by a municipality of any change in the name of any contact person, and any related information thereto, who is used for the purpose of communication between the military installation and the municipality.

C. Provide notice to the commander of each military installation located adjacent to or surrounded by a municipality of the adoption of any regulation, including any amendment thereof, or any amendment to any comprehensive planning document which affects any mutually agreed upon critical area. Such notice shall be provided at least 30 days prior to the adoption of any such regulation, or amendment thereof, or any such amendment to a comprehensive planning document. Failure of an installation commander to respond after receiving notification under this subparagraph shall be deemed to indicate such commander's approval of the regulation, or amendment thereof, or amendment to the comprehensive planning document.

D. Provide written notice to the commander of each military installation located adjacent to or surrounded by a municipality of each development proposal which affect any agreed upon critical area to provide the commander of any military installation affected an opportunity to assess any impact and coordinate issues with planning staff. Such an assessment shall not be unreasonably withheld, but shall be offered within the statutorily required notice for public hearing. Such notice shall be provided concurrently with any statutorily required notice for public hearing.

E. Consider the impact of each of the following factors, based upon information provided by the installation, before making a decision regarding a development proposal located within an agreed upon critical area:

   i. The potential for release into the air of any substance such as steam, dust or smoke unless such substance is generated by agricultural use, that would impair visibility or otherwise interfere with military operations, including ground operations.

   ii. The potential for production of any light emission, either directly, or indirectly or by reflective light, that would interfere with pilot vision, and aerial or ground based night vision training.

   iii. The potential for the production of electrical emissions that would interfere with military ground and aircraft communications and navigation equipment.

   iv. The potential to attract birds or waterfowl including, but not limited to, operation of any sanitary landfill and the maintenance of any large scale feeding station.

   v. Whether or not structures are proposed within 10 feet of any defined aircraft approach, departure, or transitional surface; or within 100 feet beneath any low-level military aircraft training route as provided by the federal aviation administration.

   vi. The potential to expose persons to noise greater than 65 DNL.

vii. The potential for obstructed visibility or surveillance, or both, of direct fire weaponry platforms into permanently populated or operational areas of military installations.

viii. Whether or not there will be a violation of any federal aviation administration height restriction in title 14 of the code of federal regulations (14 CFR) part 77 entitled "Objects Affecting Navigable Airspace" or Department of Defense Instruction (DoDI) Number 4165.57 entitled "Air Installations Compatible Use Zones."

F. Review and coordinate all comprehensive plans or zoning ordinances or regulations affecting any mutually agreed upon critical area of a state area of interest and consider the most current jointly developed community — military JLUS or AICUZ, or both, recommendations sponsored by the United States air force installation located at McConnell air force base located in Sedgwick county, Kansas, sponsored by the United States department of the army installations located at Fort Riley in or adjacent to Clay, Geary and Riley counties, Kansas, and Fort Leavenworth in Leavenworth county, Kansas, or sponsored by the Kansas adjutant general for Forbes Field in Shawnee county, Kansas, or the Smoky Hill facility located in Saline county, Kansas. All such comprehensive plans or zoning ordinances or regulations shall also consider the presence of any ACUB and the findings of any AICUZ or ENMP.

G. For such plans, ordinances or regulations, consider the recommendation or study provided by the military with a view to protection of public health, safety and welfare and maintenance of safe military and aircraft operations, and the sustainability of installation missions.

H. Consider the adoption of a mandatory disclosure requirement for any property within any agreed upon critical area of a state area of interest, which would inform a buyer of the potential for impact from noise, smoke, dust, light, electromagnetic interference and aircraft safety zones on the landowner produced by normal military operations.

I. Provide the following written notice to individuals receiving a construction permit for improvements within the agreed upon critical area:

"The property for which this permit is issued is situated in an area that may be subjected to conditions resulting from military training at a nearby military installation. Such conditions may include the firing of small and large caliber weapons, the over flight of both fixed-wing and rotary-wing aircraft, the movement of vehicles, the use of generators and other accepted and customary military training activities. These activities ordinarily and necessarily produce noise, dust, smoke and other conditions that may not be compatible with the permitted improvement according to established federal guidelines, state guidelines or both."

5.2.5 Planning and Zoning (Kan. Stat. Ann. §12-7)

Chapter 12, Article 7 of the Kansas state statutes offers one of the most effective ways to manage growth in the community. The chapter authorizes legislations to enact planning and zoning laws for the protection of public health, safety and welfare.

The statute allows for the creation of a comprehensive plan that is to be reviewed and reconsidered at least once each year. The proposed plan should include the following:

A. The general location, extent and relationship of the use of land for agriculture, residence, business, industry, recreation, education, public buildings and other community facilities, major utility facilities both public and private and any other use deemed necessary;

B. Population and building intensity standards and restrictions and the application of the same;

C. Public facilities including transportation facilities of all types whether publicly or privately owned which relate to the transportation of persons or goods;

D. Public improvement programming based upon a determination of relative urgency;

E. The major sources and expenditure of public revenue including long range financial plans for the financing of public facilities and capital improvements, based upon a projection of the economic and fiscal activity of the community, both public and private;

F. Utilization and conservation of natural resources; and

G. Any other element deemed necessary to the proper development or redevelopment of the area.

The zoning ordinance, authorized by the same statute, is used to attain the objectives of the comprehensive plans. Regulations within the zoning ordinance may include provisions restricting and regulating the height, number of stories and size of buildings; the percentage of each lot that may be occupied; the size of yards, courts and other open spaces; the density of population; the location, use and appearance of buildings, structures and land for residential, commercial, industrial and other purposes; the conservation of natural resources, including agricultural land; and the use of land located in areas designated as flood plains and other areas, including the distance of any buildings and structures from a street or highway. The regulations are required to define the boundaries of each zoning district on a map or within the regulations themselves.

While zoning defines the land uses permitted within the municipality, Subdivision Regulations guide the pattern of development (i.e., the division of a parcel of land for sale, development, or long-term lease). Traditionally, Subdivision Regulations have been used to ensure the efficient development of a community's built environment, focusing on the configuration of building lots to be served by municipal or private roads and infrastructure. Subdivision regulations include the following: (1) Efficient and orderly location of streets; (2) reduction of vehicular congestion; (3) reservation or dedication of land for open spaces; (4) off-site and on-site public improvements; (5) recreational facilities which may include, but are not limited to, the dedication of land area for park purposes; (6) flood protection; (7) building lines; (8) compatibility of design; (9) stormwater runoff, including consideration of historic and anticipated 100-year rain and snowfall precipitation records and patterns; and (10) any other services, facilities and improvements deemed appropriate.

These tools used in conjunction with one another provide a valuable way to influence growth in a way that decreases encroachment and incompatibility issues with installations. When innovative planning tools are used as part of the state authorized tools – such as overlay districts, special zoning or future land use districts, Transfer of Development Rights, or other similar programs – the growth pattern can be substantially altered.

5.2.6 Strong Military Bases Program (Kansas Economic Development Initiatives Fund) (Kan. Stat. Ann. §79-4804)

This program supports ongoing efforts of the Governor's Military Council to prevent the closure or downsizing of the state's military bases, which play an important role in the state's economy. This program also focuses on growing private sector industries in areas around the state's military bases and is required to provide a local or private match to equal the state's commitment.

The program is funded by state gaming revenues from the Kansas State Lottery. An economic development initiatives fund (EDIF) was established to provide, encourage and implement capital development and formation in Kansas. The Strong Military Bases Program is a component of that. The Governor recommended $194,836 from the EDIF in FY 2018 and $194,793 in FY 2019 based on the Governor's Budget Report, Volume 1, Fiscal Year 2018.

5.2.7 Memorandum of Understanding Between Fort Riley, Kansas and Municipalities Adjacent to or Surrounding Fort Riley, Kansas Regarding Communication and Potential Land Use Changes

The counties of Clay, Geary, and Riley and the cities of Grandview Plaza, Junction City, Manhattan, Milford, Ogden and Riley entered into a Memorandum of Understanding (MOU) with Fort Riley in March of 2015. The MOU was drafted in an effort to meet the requirements of KSA 12-773 to address issues related to communication, cooperation and collaboration between military installations and surrounding municipalities regarding planning for growth and development.

Through collaborative discussions in 2014 and early 2015, the MOU was created to establish the "Fort Riley State Area of Interest Map", which includes the "Critical Area" and the Fort Riley "Army Compatible Use Buffer" area.

The MOU directs Fort Riley and the representatives of each municipality adjacent to or surrounding it to meet annually for the purpose of reviewing the State Area of Interest Map and more specifically the "Critical Area" within the state area of interest. The Critical Area is a combination of several boundaries, including: the most recently identified Land Use Planning Zone (LUPZ) which is a noise impact area, per Army Public Health Center Report, associated with explosives and large arms operations/training; the area within one statute mile of the installation boundary; the area within a portion of the helicopter flight route

buffer near the northwest corner of Fort Riley; and, the area between such helicopter flight route buffer and the installation boundary of Fort Riley.

The boundaries established by the MOU will be monitored by Fort Riley and adjacent municipalities to reduce potential conflicts between military operations and the economic well-being of the surrounding communities. If no changes to the map are desired by any of the participating entities, it will remain in force as set forth in the MOU. If there are changes to the map that are mutually agreed to by the entities, a new MOU will be executed at that time to reflect the agreement.

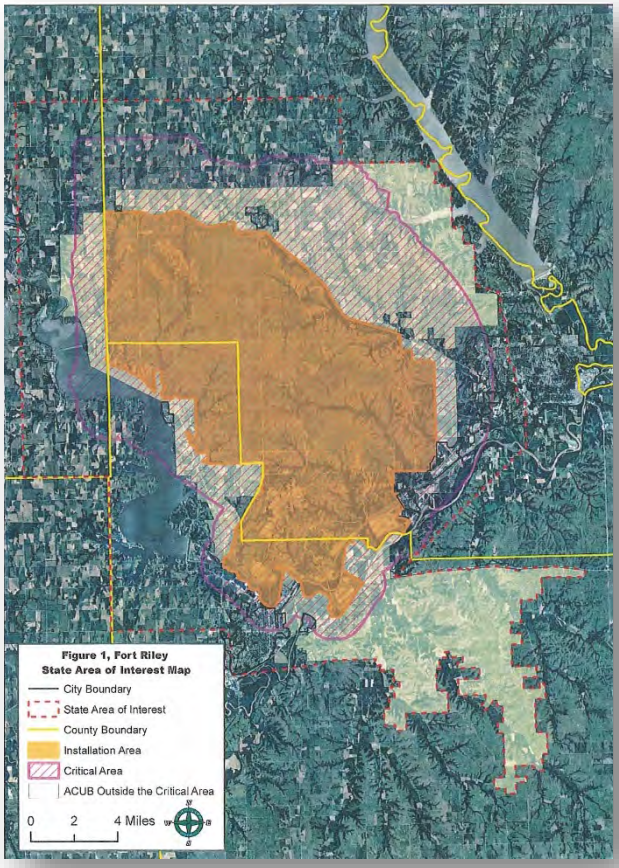


Figure 35 Critical Area Map adopted as part of the MOU

The MOU outlines responsibilities for each of the parties as follows:

Responsibilities of the Municipalities

1. Each municipality shall provide notice to the commander of Fort Riley of the adoption of any regulation, including any amendment thereof, or any adoption of or amendment to any comprehensive planning document which affects any portion of the Critical Area or any portion of the Fort Riley Army Compatible Use Buffer area outside of the Critical Area.
2. Each municipality shall provide written notice to the commander of Fort Riley of each development proposal which affects any portion of the Critical Area or any portion of the Fort Riley Army Compatible Use Buffer area outside of the Critical Area to provide the commander of Fort Riley an opportunity to assess any impact and coordinate issues with planning staff. (Note: The statute defines Development Proposal as: "Any development requiring a review process prior to approval including, but not limited to, platting, rezoning, conditional use, special use, variance or any other similar action.")
3. Each municipality shall provide a "Notice of Potential Impact" to each individual receiving a construction permit for improvements within the Critical Area.

Responsibilities of Fort Riley

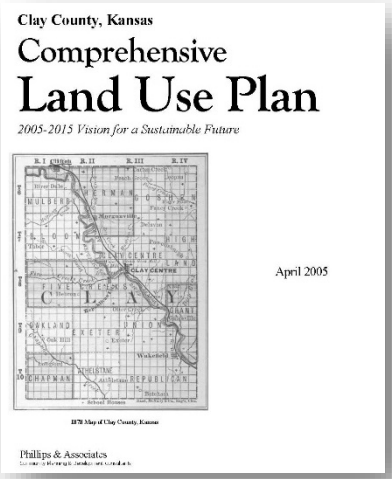
1. Fort Riley shall respond to each municipality within thirty (30) calendar days of providing the commander of Fort Riley notification under paragraph 1 above, with its evaluation of whether the adoption of the regulation or amendment to the planning document would be likely to increase any potential conflict with any military operation of Fort Riley.
2. Fort Riley shall respond to each municipality within twenty-one calendar days of providing the commander of Fort Riley notification, with its evaluation of:
    a. The potential for release into the air of any substance such as steam, dust or smoke unless such substance is generated by agricultural use that would impair visibility or otherwise interfere with military operations, including ground operations.
    b. The potential for production of any light emission, either directly, or indirectly or by reflective light, that would interfere with pilot vision, and aerial or ground based night vision training.
    c. The potential for the production of electrical, electromagnetic, radioactive or other similar emissions that would interfere with military ground and aircraft communications and/or navigation equipment.
    d. The potential to attract birds or waterfowl including, but not limited to, operation of any sanitary landfill and the maintenance of any large scale livestock feeding station.
    e. Whether or not structures are proposed within 10 feet of any defined aircraft approach, departure, or transitional surface; or within 100 feet beneath any low-level military aircraft training route as provided by the federal aviation administration.
    f. The potential to expose persons to noise greater than 65dB DNL (Day-Night Sound Level based on sound levels measured in decibels).
    g. The potential for obstructed visibility or surveillance, or both, of direct fire weaponry platforms into permanently populated or operational areas of military installations.
    h. Whether or not there will be a violation of any federal aviation administration height restriction in title 14 of the code of federal regulations (14 CFR) part 77 entitled "Objects Affecting Navigable Airspace" or DoDI Number 4165.57 entitled "Air Installations Compatible Use Zones."

5.3 LOCAL PROGRAMS AND PLANS

Individual municipalities maintain Comprehensive Plans and Zoning Regulations allowing them to formulate the regulations that work best for them. The following provides a brief overview of the regulatory document and the implication it has for development around Fort Riley.

5.3.1 Clay County Comprehensive Land Use Plan: 2005-2015 Vision for a Sustainable Future

The Clay County Comprehensive Land Use Plan addresses several critical issues facing the county and identifies a framework to guide decisions about where development should take place. The future land use plan outlines the proposed general distribution of various uses of land within the county. It consists of a set of goals, objectives, policies and programs to direct future development to guide decision-makers about future land use.



The Comprehensive Plan was drafted in a year long process beginning in December of 2003 and receiving adoption by the County Commission in March 2005. The Plan covers a 2005 – 2015 planning timeframe and is divided into five chapters consisting of: Introduction, 2005-2015 Plan Goals, Future Land Use Objectives Policies and Programs, County Planning Issues and Trends, and Plan Implementation.

Application to Fort Riley Joint Land Use Study

The Fort Riley installation is not located within Clay County but the Post abuts the county line and the northwest portion of the study area is within the county boundary. In short, the county feels the impacts from the installation. The Comprehensive Plan notes that changes to personnel at Fort Riley can impact not only Clay County, but also the cities of Wakefield and Clay Center. The plan goes on to say that military households make up a segment of the homebuyer moving into the County.

The plan does not contain specific goals, objectives, and/or policies that directly apply to Fort Riley. However, it does contain several generic and broad based goals and objectives that would indirectly provide for land use compatibilities measures for development within the Fort Riley study area. The goals and objectives that were identified during the analysis consist of the following:

Preservation of Rural Character and Farmland

Objective 5. Minimize the impact of non-farm development on farm operations.

Policies and Programs: Support the use of quarter-quarter based agricultural zoning to limit the number of non-farm houses to two, five-acre minimum sell-offs per quarter-quarter

Compact Town Growth and Rural Growth

Goal Statement. Support the cities of Clay County in their efforts to attract new households and businesses.

Policies and Programs: Encourage infill development within the cities on vacant or underdeveloped parcels.

Preservation of Historic Structures and Places

Policies and Programs: Investigate how heritage tourism could play a role in Clay County and work in partnership with the history of Fort Riley and the settling of Kansas.

The Plan does contain goals and policies related to wind power facilities that if not modified could be detrimental for the Fort Riley radar systems within portions of the Study Area if large scale wind turbine facilities were sited there. The Goals and Policies that are of concerning were identified during the analysis consist of the following:

Wind Power

Goal Statement. Support the development of wind as an alternative source of energy in appropriate locations that have been carefully evaluated based on the impact on public safety, public services and infrastructure, soil erosion and water quality, natural and biological resources, noise, cultural and archaeological resources, construction impact, and visual impact assessment.

1. Investigate modifying the zoning codes to allow wind power generating facilities subject to a conditional use permit within the agricultural zoning districts.
2. Adopt siting guidelines for wind power projects in Clay County that are incorporated by reference as part of the county zoning regulations.
3. Investigate requiring that each new wind energy project must complete an environmental resource survey to be submitted as part of the project's zoning application.
4. Investigate how to permit individual wind generators for homeowners.

The County's Comprehensive Plan could be amended and strengthened to incorporate goals and objectives associated with providing existing and long-term compatibility measures for the areas in close proximity to Fort Riley. Section 7: Recommendations contains specific recommendations and implementation strategies for suggested amendments to Clay County's Comprehensive Plan.

5.3.2 Clay County Zoning and Master Plan

The intent of the Master Plan is to provide for orderly planned land use, to protect values, promote the general health, safety, morals, comfort and general welfare of the general public. The Plan divides the unincorporated areas into five classification districts – Agricultural, Business and Commercial, Residential, Light Industry, and Heavy Industry.

Application to Fort Riley Joint Land Use Study

The zoning designation abutting the Fort Riley boundary consists primarily of the Agricultural District. There are small pockets of Industrial and Residential designations within the Clay County portion of the study area.

The use regulations for the Agriculture District state "No regulation or restriction shall apply to the use of land for agricultural purposes nor for the erection or maintenance of buildings thereon for as long as such

buildings are used strictly for agricultural purposes." Residential structures are permitted within the Agricultural District but they must be occupied by persons engaged in farming or agriculture.

The Residential District is for residential dwelling units, churches and community buildings, public parks and playgrounds, schools, administrative buildings, or auxiliary buildings and lands for the cultivation of plants. The maximum allowable height in the district is 35 feet for residential uses and 60-75 feet for non-residential uses.

Light Industrial uses are permitted up to 55 feet or four stories, whichever is less and Heavy Industrial uses are permitted up to 125 feet in height.

The Zoning Plan mentions lighting and requires that electrical interference should not be created that makes it difficult for flyers to distinguish between airport lights and others, result in glare in the eyes of flyers using the airports, impair visibility in the vicinity of the airports, or otherwise endanger the landing, taking off, or maneuvering of aircraft at any airports. Buildings are also required to observe height regulations of the FAA.

5.3.3 Comprehensive Plan Junction City and Geary County (May 2017)

The Comprehensive Plan is made with the general purpose of guiding and accomplishing coordinated development of the City of Junction City and Geary County, which will promote the general welfare, efficiency, and economy in the process of development. The Plan's policies, strategies, and recommendations are organized into eight chapters – Demographic and Economic Profile, Land Use and Development, Public Facilities and Infrastructure, Land Use Element, Transportation Element, Housing and Neighborhoods Element, Community Building Element and Implementing the Plan. The Comprehensive Plan recognizes Fort Riley's contribution to the community by providing a diverse population and helping to sustain the area economically

Application to Fort Riley Joint Land Use Study

The categories within the Plan incorporate Goals/Objectives to address the connection to Fort Riley. Some Goals include:

> *Housing & Neighborhoods Element*
>
> Principle: The county will direct new residential developments toward existing communities and subdivisions and away from areas that conflict with agricultural operations and operations related to Fort Riley.
>
> *Transportation Element*
>
> Coordinate with Fort Riley to monitor congestion near the entrances to the base and evaluate whether improvements will be required

5.3.4 Geary County Zoning Regulations (November 2011)

Zoning districts are established within the Geary County Zoning Regulations that are sensitive to the permitted uses and designed to protect and enhance the values inherent in each zone while encouraging

the redevelopment and revitalization of the cities within the County. The Zoning Regulations establish five zoning districts in order to regulate and restrict the use of land and the location of buildings erected or altered for specific uses, to regulate and limit the height and bulk of buildings hereafter erected or structurally altered, to regulate and limit population density and the intensity of the use of lot areas, and to regulate and determine the areas of yards, courts, and other open spaces surrounding such buildings.

At the time of initial adoption in 2011, all lands within the unincorporated portion of Geary County, were granted zoning consistent with the size of the property as specified within the zoned districts (i.e. All properties over 40 acres shall be zoned "AG" Agricultural; properties between 1 acre and 40 acres shall be zoned "SR" Suburban Residential, etc.).

Application to Fort Riley Joint Land Use Study

Lands within the Fort Riley JLUS Study Area include Agricultural District (AG), Suburban Residential District (SR) and Single-Family Residential District (R-1). Additionally, an Airport Overlay District (AO) is established for Marshall Army Airfield.

The purpose of the Agriculture District is to provide for a full range of agricultural activities on land used for agricultural purposes, including processing and sale of agricultural products raised on the premises; and at the same time offer protection to land used for agricultural purposes from the depreciating effect of objectionable, hazardous, incompatible and unsightly uses. The District is also intended to protect watersheds and water supplies; to protect forest and scenic areas; to conserve fish and wildlife habitat; to promote forestry; and to prevent and/or discourage untimely scattering of suburban residential, non-residential and/or more dense urban development. All lands used for agricultural purposes are exempt from any and all restrictions or limitations.

The Single Family Residential District provides for platted single-family residential development of a more urban character where public sanitary sewers and water, and other necessary public utilities and services are present to support the development, or where such infrastructure can be included within the development of the property as provided by the Geary County Subdivision Regulations. The District is also designed to protect and preserve existing development of a similar character. Structures are limited to 35 feet in height or 2 ½ stories.

The Suburban Residential District is intended for platted development of low-density residential neighborhoods that retain the character of the basically rural area and yet allow an influx of residential development. Structures are limited to 35 feet in height or 2 ½ stories.

Additionally, an Airport Overlay District is established surrounding Freeman Field Municipal Airport and Marshall Army Airfield. The Overlay is intended to protect the airport from hazards that might be erected or constructed on surrounding properties. Airport zones are established within the Overlay District and height is regulated accordingly based on the zones. Uses are restricted so that no electrical interference may be created nor a sanitary landfill established within two miles of the airport boundary.

Only the Airport Overlay District provides any measures to specifically address redevelopment or future development adjacent to or within close proximity to Fort Riley, in particular Marshall Army Airfield. Additional strategies are included in Section 7: Recommendations to strengthen regulations regarding redevelopment or future development within the Zoning Ordinance.

5.3.5 Grandview Plaza

The Comprehensive Plan and Zoning Ordinance are out dated and in need of revisions, therefore, the documents were not reviewed

5.3.6 Junction City Zoning Ordinance

The Junction City zoning regulations are intended to restrict the use of buildings and land for agricultural, dwelling, business, industry, conservation, and other purposes; to promote the health safety, morals, comfort, and general welfare throughout the City of Junction City.

The Zoning Regulations establish twenty-one zoning districts in order to regulate and restrict the height, number of stories and size of structures; the percentage of lots that may be occupied by buildings and other structures; size of yards, courts and other open spaces; and the density of population.

Application to Fort Riley Joint Land Use Study

The entirety of Junction City is within the Joint Land Use Study area and the northern portion of the city directly abuts Fort Riley. Directly adjacent to Fort Riley includes Planned Unit Developments (PUDs), Duplex Residential, Special Commercial Districts, Light Industrial, Mobile Home, and Multiple Family Residential districts.

An Airport Overlay District is established that applies solely to the Freeman Airfield located within Junction City. The requirements of the overlay are similar to those requirements outlined in Geary and Riley counties and the City of Manhattan. The regulations include restrictions relating to airspace consistent with the requirements of the Federal Aviation Administration and prohibit future development or expansion of incompatible uses.

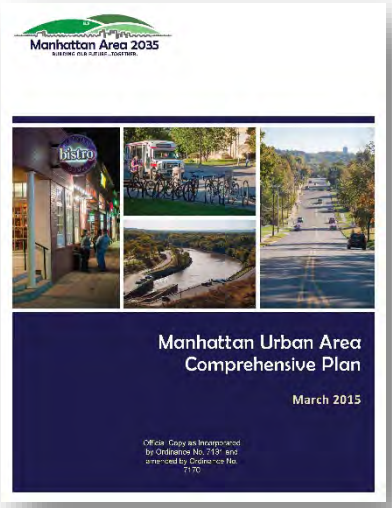
5.3.7 Manhattan Urban Area Comprehensive Plan (March 2015)

The Manhattan Urban Area Comprehensive Plan was adopted in March 2015 to reflect the changing needs and aspirations of the community since their adoption of the previous comprehensive plan in 2003. The purpose of the Comprehensive plan is to provide guidance for future growth to ensure future needs can be accommodated without negatively impacting the quality of life for the community.

The Comprehensive Plan provides the future vision for development for the city of Manhattan and the surrounding areas. The plan includes provisions for future areas for growth where infrastructure and urban services will be provided, and areas for preservation, open space and agricultural uses.

Application to Fort Riley Joint Land Use Study

The comprehensive plan includes the unincorporated areas between the City of Manhattan and Fort Riley. This area is planned to be used primarily for agricultural uses and is located outside of the Manhattan city limits and the future urban services boundary.



The plan also covers the area adjacent to the southeast corner of Fort Riley, including the Manhattan Regional Airport and surrounding area. The plan provides for the future growth and expansion of the airport and related complimentary, non-aviation industrial development.

Although there are no specific policies relating to noise generated by the operations occurring at Fort Riley, the plan does include a Development Constraints Map which includes the noise contours that were adopted as part of the previous Fort Riley Joint Land Use Study in 2005 and the following Policies that directly apply to Fort Riley:

GM-1.1A: Urban Service / Growth Area Boundaries
The Urban Service Area Boundary and Blue Township Urban Growth Area (as shown on the Future Land Use map) define areas within the Manhattan Urban Area suitable for urban development based on physical characteristics, service capability and the community's vision for future growth. Consider the following when evaluating development within or proposed expansions of either boundary: Fort Riley and Airport noise impact areas as they relate to noise sensitive land uses.

NRE-3.1B: Integrated Planning and Decision-Making
Integrate hazard mitigation considerations into supporting plans and policies at the city, county, and regional level to increase awareness of the associated risks and costs, identify strategies to minimize threats for existing development in high risk areas, and to promote informed decision making when future development within high risk areas is proposed for consideration. Participate in periodic updates to and the implementation in the Multi-Jurisdiction Hazard Mitigation Plans for Riley and Pottawatomie County, as needed. Coordinate planning of new developments located in identified critical noise impact areas with Fort Riley and implement applicable recommendations in the Flint Hills Joint Land Use Study.

RC-1.1A: Local and Regional Planning
Coordinate the principles, goals, and policies contained in the Comprehensive Plan with those set forth by other governmental agencies within the region, such as the Flint Hills Metropolitan Planning Organization, Flint Hills Regional Council, Kansas State University, Flint Hills Economic Development District, Flint Hills Regional Transit Administration, Fort Riley, Manhattan Urban Area Planning Board, Riley County Planning Board, Pottawatomie County Planning Commission, area service providers, and others in the region. Actively participate in area-specific or issue-

specific plans and studies led by others, with a particular emphasis on plans that address issues of shared significance, such as land use, transportation, the provision of infrastructure and services, housing, economic development, conservation of natural resources, and hazard mitigation.

RC-1.1D: Fort Riley Coordination
Work closely with Fort Riley to coordinate on issues of mutual concern, particularly as it relates to growth and development issues in the western portions of the Planning Area, to minimize land use conflicts and encroachments, and ensure that development is mutually compatible with the goals and objectives of this Comprehensive Plan and the mission of Fort Riley. Ensure that land use and development policies of the City and Riley County are consistent with the Joint Land Use Study for Fort Riley to protect it from incompatible development encroachment.

MATS-1.1J: Manhattan Regional Airport
Leverage transportation and economic-development potential of the Manhattan Regional Airport (MHK) by providing convenient and economical commercial air service and promote general aviation growth, and by providing access and intermodal connections to MHK for all passenger modes. Ensure compatible land uses within 5 miles of the airport, and support use of MHK as Fort Riley's official Aerial Port of Embarkation (APOE).

MATS-1.1K: Regional Coordination
Participate in regional transportation decision-making by providing active, meaningful membership and leadership in the Flint Hills Metropolitan Planning Organization and Flint Hills Regional Transit Administration; and by coordinating Kansas State University and Fort Riley transportation planning efforts with those of the City and Counties.

HN-1.1E: Balance Housing Supply with Employment/Student Base
Ensure that the Manhattan Urban Area housing supply reflects to the extent possible, existing and planned employment concentrations, projected industrial/commercial development sites, KSU student population projections and spin-off research projections, Fort Riley troop levels, and the demand such uses bring for housing.

EC 1.1F: Regional Partnerships
Continue to coordinate with Fort Riley, Kansas State University, and other major institutions and employers to plan for future growth and population fluctuations and collaborate on joint planning initiatives.

EC-2.1B: Specialized Industry
Promote land uses in the manufacturing, scientific, professional, specialized industrial service, and education and specialized training sectors that can take advantage of the unique opportunities offered by the presence of Fort Riley, Kansas State University and its Global Food Systems Initiative, the Animal Health Corridor, and NBAF, to attract new capital and promote the creation of primary sector market wage jobs.

Special Planning Area Policies:

Blue Township/East US-24 Corridor (BT/US-24*)*

Background and Intent
The Blue Township/East US-24 Corridor will be planned and developed in a coordinated fashion, in accordance with this Comprehensive Plan, the US-24 Corridor Management Plan, and other area-specific plans, as adopted. The area is expected to serve as a significant growth area for the Manhattan Urban Area over the next ten to twenty years and beyond, providing opportunities for a mix of housing and support services located within close proximity to major employment centers in the City of Manhattan, at Kansas State University and Fort Riley, and in neighboring communities. Urban development is intended to be focused within the Blue Township Urban Growth Area, where it may be connected to public water and sanitary sewer systems. Outside of the Blue Township Urban Growth Area, residential development is presumed to remain at rural densities. Maximizing the long-term potential of the area and its sustainability over time is contingent upon a shared commitment on behalf of Pottawatomie County, the City of Manhattan, and other regional stakeholders to conduct the more detailed planning needed to identify and determine the most effective means of implementing the full spectrum of improvements needed to serve both existing and future residents. The policies below are intended to serve as a foundation for ongoing coordination and planning for the area.

WUS-24-7: Regional Coordination
Continue collaborative efforts between Riley County, Riley County Rural Water District #1, Riley County Fire District #1, the City of Manhattan, Flint Hills Metropolitan Planning Organization (FHMPO), Fort Riley, and other stakeholders and service providers to plan and develop the West US-24 Corridor in a coordinated fashion.

5.3.8 Manhattan Zoning Regulations (October 2016)

The City of Manhattan adopted zoning regulations with the intent to provide for the health, safety, morale, comfort and general welfare of the community by regulating and restricting the location, type, and character of development within the city. The adopted zoning regulations include several zoning categories for specific types of uses including residential, commercial, and industrial. Each category includes multiple districts with separate restrictions on permitted uses, lot area, height, etc.

Application to Fort Riley Joint Land Use Study

The northeastern portion of Manhattan is located within the Fort Riley 115dB Peak Noise Level Contour. This area is zoned for residential uses and is primarily developed with single-family and multi-family dwelling units and a golf course.

The land development regulations include an Airport Overlay District (Article XI) which provides for specific protections for the Manhattan Regional Airport. The overlay is intended to promote the use and development of land in a manner that is compatible with the continued operation and utility of the

Manhattan Regional Airport so as to protect the public investment in, and benefit provided by the facility to the region. The overlay includes regulations to prohibit new uses or structures within the overlay which may be incompatible with the existing or planned operations at Manhattan Regional Airport. The overlay includes protections to minimize incompatible uses related to the noise generated from Manhattan Regional Airport.

Article XII Telecom Structures provides regulations of the "placement, construction and modification of telecom structures and antenna support structures in order to protect the health, safety and welfare of the public, while at the same time not unreasonably interfering with the development of the competitive wireless telecommunications marketplace in the City."

There are no other specific regulations or restrictions in place directly related to Fort Riley.

5.3.9 Milford

The Comprehensive Plan and Zoning Ordinance are out dated and in need of revisions, therefore, the documents were not reviewed

5.3.10 Ogden Comprehensive Plan 2020

The Ogden Comprehensive Plan was created to meet the needs of all those served by the City. The goals, objectives, and strategies described within this plan were based on information gathered from public meetings, a community survey, several meetings with staff and the Comprehensive Plan Advisory Committee. The Ogden Comprehensive Plan describes a future vision of the community and also recommends a method in which this vision can be attained.

Application to Fort Riley Joint Land Use Study

Due to the City's location, adjacent to Fort Riley, the City is directly impacted by the existing and future operations conducted there. The areas adjacent to Fort Riley are primarily designated for future residential growth, with the exception of the existing Ogden Wastewater Treatment Facility being designated for Government and Public Facilities.

The Future Land Use section of the Comprehensive plan includes language encouraging the collaborative effort of the public, private and military sectors to examine ways to minimize conflicts between the interest of Fort Riley and adjacent residents and land owners. The section includes references to the Flint Hills Joint Land Use Study adopted in 2005 and includes recommendations that future development should comply with the FAA's guidance on airport compatibility.

5.3.11 Ogden Zoning Regulations (April 2003)

The Ogden zoning regulations are intended to provide for efficiency and economy in the process of development, for the appropriate and best use of land, for convenience of traffic and circulation of people and goods, for the use and occupancy of structures, for healthful and convenient distribution of population, and for adequate public utilities and facilities.

The zoning regulations outline the permitted uses and development regulations for the zoning designations within the City of Ogden. The City has different zoning categories for various uses such as residential, commercial and industrial uses, each of which have individual categories for each sub type.

Application to Fort Riley Joint Land Use Study

The entirety of Ogden is located within the Fort Riley JLUS Study Area. The zoning designations directly adjacent to Fort Riley include Agriculture, Mixed Use, R-2, R-1, and Manufactured Home Park. A portion of Ogden is also within the 115dB Peak Noise Level Contour from Fort Riley and is developed predominantly with residential uses.

The zoning regulations provide protections for the future growth of Manhattan Regional Airport, but stop short of including specific regulations to address compatibility concerns for Fort Riley Military Reservation.

Article 23 of the zoning regulations provides development standards for wireless transmission facilities including wireless communication towers. A monopole tower located in an Agricultural zoning category may be permitted up to 150' in height, but may only be 80' high in a residential zoning category. Other new wireless transmission facilities are required to comply with the height regulations as outlined in the regulations, none of which are above 75' high. Prior to filing a permit for a new communication tower, the applicant must have a meeting with City staff and representatives from Manhattan Regional Airport and Fort Riley Military Reservation. The regulations require any new tower facilities to comply with the FAA airspace standards.

5.3.12 City of Riley Comprehensive Plan 2030

The plan is an update to the City of Riley's 1977 Comprehensive Plan with a focus on helping the community capitalize on its strengths and opportunities as well as reduce the burden of its weaknesses and mitigate its threats. A number of community elements in the plan including the City's history, population characteristics and trends, housing needs, economic resources, facilities and infrastructure, land uses, business district, and citizen concerns are assessed and provide an overall picture of the current status of the community.

The City of Riley Comprehensive plan divides the city into the following 4 Future Land Use categories: Future Industrial, Future Commercial, Future Residential, and the City of Riley. The primary focus of the comprehensive plan is to set forth policies to encourage responsible growth of residential, commercial, and industrial development to minimize public facilities expenditures while accommodating the growing community.

The Comprehensive Plan outlines the future growth pattern for the City of Riley through the year 2030. The Future Land Use designations promote the future growth of industrial uses to the south of the city adjacent to the Fort Riley boundary. Future Commercial uses are encouraged to locate north of the city limits along Highway 24 / 77, while residential uses are shown along the edges of the existing city limits.

Application to Fort Riley Joint Land Use Study

The City of Riley is located entirely within the Joint Land Use Study study area. It is completely within the Land Use Planning Zone (LUPZ) of the Fort Riley noise contours.

The City's land limitations for growth include Wildcat Creek and its tributaries floodplain, the possession of property to the south of the City by Fort Riley, and the increase in elevation to the north, requiring more costly water and wastewater infrastructure improvements. The policies within the Comprehensive Plan focus primarily on encouraging more diverse development in the city and don't provide specific details on the compatibility issues associated with Fort Riley.

5.3.13 City of Riley Zoning Regulations (1977)

The adopted zoning regulations provide the specific development standards for each of the zoning categories and related sub districts. The categories are generally divided between single-family residential, multi-family residential, commercial, industrial and agricultural designations.

The majority of the property within the Riley City Limits is designated for single-family residential uses. A commercial district is located in the center of the city along South Broadway Street, while industrial uses are located in the southern portion of the City closer to Fort Riley.

Application to Fort Riley Joint Land Use Study

The existing zoning regulations do not provide for specific regulations to address compatibility with the operations at Fort Riley. The zoning regulations could be updated to include requirements to minimize concerns relating to the noise levels generated from Fort Riley.

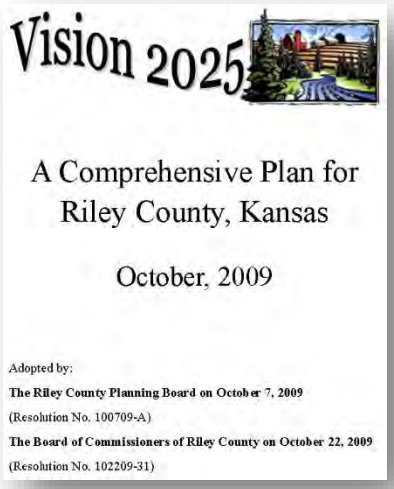
5.3.14 Vision 2025 A Comprehensive Plan for Riley County (October 2009)

The Riley County Comprehensive plan outlines the future vision for the unincorporated areas of the County by providing a set of goals, objectives, policies and programs to direct future growth in an efficient and compatible manner. The intent and focus of Vision 2025 is not to regulate agricultural land uses, but to support and preserve opportunities for a sustainable farm economy, while ensuring opportunities for industrial, commercial, and residential components of municipal economies to grow and expand.

Application to Fort Riley Joint Land Use Study

The plan places an emphasis on preserving the agricultural activities within Riley County, while balancing the need for a diverse and stable economy for all County citizens. Several of the adopted goals, objectives, and policies provide for the protection of the existing agricultural operations within Riley County and discourage the encroachment of residential uses into agricultural areas. The plan directs new residential uses to develop in areas adjacent to existing residential uses where public services are provided. Objective

A4 of the Comprehensive Plan includes several policies to direct residential growth to existing urban and suburban areas and minimalize the conversion of agricultural lands to residential.



The comprehensive Plan includes a background of the critical role Fort Riley plays in the community. The plan includes references to the 2005 Fort Riley Joint Land Use study and includes references to the Noise Zones and Land Use Planning Zone adopted at the time. Although not regulatory in nature, Objective E5 and the related policies provides guidance to ensure future development is consistent with the existing and future operations at Fort Riley.

Objective E5:

Promote development that is compatible with the noise zones surrounding Fort Riley.

Policies:

E5.1 Require noise disclosures in all existing noise zones.

E5.2 Require noise attenuation building techniques in all noise-sensitive structures within the existing Noise Zone II.

E5.3 Direct more concentrated development to locations outside of the existing noise zones.

Chapter 12: Development Guidance System

This Chapter describes the Development Guidance System (DGS) for Riley County. The DGS provides a uniform and consistent method of evaluating all development requests. In order to make good decisions regarding developments in the County, the Board of County Commissioners and the Riley County Planning Board members need a tool that is descriptive and definitive. The DGS combines all of the decision-making elements of the Plan into one system for consistent comparative analysis to provide a rational basis for determining the appropriateness of any given development.

Development Guidance System Elements:

1. Conformance to all applicable Goals, Objectives and Policies within specific Chapters;
2. Conformance with Chapter 11, Future Land Use;
3. The score generated by the Land Evaluation/Site Assessment (LESA) system described in this Chapter; and
4. The hardship on the landowner by denial of the rezoning as outlined in this Chapter.

The Development Guidance System considers and applies a weighted factor to the location of a rezoning request to Proximity of Site to Fort Riley Noise Zones.

The Comprehensive Plan provides protections to ensure the compatibility of future development with Fort Riley, but could be strengthened by including the most current noise contours to ensure compatibility with the future of Fort Riley and the surrounding community along with a Military Influence Overlay District (MIOD).

5.3.15 Zoning Regulations of Riley County (April 2016)

The purpose of Riley County's zoning regulations is to promote the health, safety, morals, economy and general welfare throughout the unincorporated areas of Riley County, Kansas. Toward that purpose, the regulations divide the County into districts to regulate the height, number of stories, size of buildings and other structures, the parts of a lot that may be occupied, the size of yards, courts and other open spaces, the density of population, the preservation of features of historical significance, the preservation of natural resources, the preservation of agricultural lands, the location and use of buildings, structures and land for trade, industry and residence or other purpose; the erection, construction, reconstruction, alteration, repair or use of buildings, structures or land; and to conserve and protect property values throughout the County.

Riley County is currently undergoing a rewrite to their Land Development Regulations.

Application to Fort Riley Joint Land Use Study

The portion of unincorporated Riley County adjacent to Fort Riley is used primarily for agricultural purposes and is zoned Agricultural. The existing zoning regulations provide protections to limit the intrusion of residential uses in the areas around Fort Riley which may be subject to noise generated by the operations on Post.

The zoning regulations restrict commercial wind energy conversion systems to the Agricultural Zoning district and small wind energy conservation systems to all zoning districts as an allowable use pursuant to specific regulations.

Communication Facilities are regulated through use specific standards and include design standards and a detailed application process. However, height limitations are not identified.

Riley County established an Airport Noise Hazard District (N-1) within the zoning regulations. The N-1 district has a maximum building height of 50 feet and requires no structure to violate the height restrictions established by FAA Regulations Part 77. Uses are limited within the district to municipal airport and related accessory facilities, agricultural uses, specified commercial uses, and industrial uses with some exceptions. Residential uses are prohibited.

5.3.16 Wakefield

The Comprehensive Plan and Zoning Ordinance are out dated and in need of revisions, therefore, the documents were not reviewed.

COMPATIBILITY AND ENCROACHMENT ANALYSIS

6 COMPATIBILITY AND ENCROACHMENT ANALYSIS

The intent of the JLUS is to increase compatibility and reduce encroachment – an interrelated concept with both military and civilian implications.

Encroachment "runs both ways" and it takes many forms. Encroachment, as defined by the US Department of Defense, referring to incompatible uses of land, air, water, and other resource is "the cumulative impact of urban and rural development that can hamper the military's ability to carry out its testing and training mission." For the civilian community, encroachment can affect quality of life from noise and smoke to traffic and housing. Land use controls that can help sustain mission capability can also be seen as encroaching on the rights of property owners, affecting property values, and leading to a potential loss of income from development.

Compatibility can be described as the balance between the goals and needs of the community and the mission requirements of the military. Twenty-four compatibility factors were identified and analyzed in order to assess Fort Riley's impact on the local community as well as the community's impact on Fort Riley's operations.

TABLE 6 COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors		
	Land Use	Comprehensive growth policy plans and zoning ordinances
	Land Suitability Analysis	A comprehensive inventory and assessment of development conditions and features
	Safety Zones	Restricted areas due to higher risks to public safety
	Vertical Obstructions	Features such as buildings and trees that can lead to frequency interference and flight obstructions
	Housing Availability	Adequate supply of and access to housing
	Infrastructure Extensions and Capacity	The extension or provision of infrastructure including transportation, solid waste, water, etc.
	Anti-Terrorism / Force Protection	Safety of personnel, facilities, and information from outside threats
	Noise and Vibration	Unwanted levels of noise and vibrations

	Dust / Smoke / Steam	Dust, smoke, or steam in sufficient quantity to disrupt flight operations or quality of life
	Light and Glare	Manmade lighting or excessive glare
	Energy Development	Alternative energy sources can cause glare, vertical obstructions, or radar interference
	Frequency Spectrum	Frequency Spectrum capacity is a limited resource that is critical for military and civilian communications
	UXO and Munitions	Potential for unexploded ordnances and munitions

PEOPLE FACTORS		
	Coordination / Communication	Collaboration and communication between military installations, jurisdictions, land and resource agencies, conservation authorities, and other regulatory agencies
	Public and Military Safety	Issues such as public trespassing could compromise the safety of the military and the civilians
	Legislative Initiatives	Federal, state, or local regulations that may impact the military mission or civilian interaction
	Cultural Resources	Cultural resources in the community or on the military installation may require development constraints or prevent development from occurring

NATURAL RESOURCE FACTORS		
	Land / Air / Water Spaces	Land, air, and water spaces must be available and of sufficient size to meet the needs of both the military and the community
	Air Quality	Pollutants that may limit visibility and non-attainment of air quality standards that may restrict future operations
	Scarce Natural Resources	The location of valuable natural resources can impact land utilization
	Climate Adaptation	The effect of climate change may result in storm frequencies (i.e. tornadoes), extreme temperatures, drought, and flooding
	Threatened and Endangered Species	Sensitive biological resources may require special development considerations

	Marine Environment	Regulatory or permit requirements protecting marine and ocean resources
	Water Quality / Quantity	The availability of quality water with an adequate supply

Each of the compatibility factors were informed by available data and pertinent documents, reports, and studies; input from Technical Working Group and Policy Committee members and key stakeholders, including local government staff; and input received during public meetings. These factors represent the primary land use compatibility challenges used to assess impacts from the perspective of both the surrounding community and Fort Riley. All of the factors were reviewed, however, not all of the factors were applicable. If a factor was deemed unnecessary, it was removed from the following discussion. Several of the factors were grouped together under "Areas of Interest" in order to streamline the analysis and reduce duplication.

Each Area of Interest was presented to the Technical Working Group and Policy Committee in meetings held May 2nd and May 3rd 2017, respectively. The Technical Working Group reviewed each Area of Interest and provided revisions to the language, removed those unnecessary, and then ranked them based on priority. A discussion of the Areas of Interest, their impact on the community and the military, their priority ranking, and the compatibility factors considered can be found in the following section.

6.1 IMPLEMENTATION COMMITTEE

Area of Interest

Communication, outreach, and coordination are critical tools in building and maintaining relationships among elected officials, stakeholders, and citizens in order to mitigate compatibility issues.

Applicable Compatibility Factors

TABLE 6.1 IMPLEMENTATION COMMITTEE COMPATIBILITY AND ENCROACHMENT FACTORS

People Factors
Coordination / Communication

Priority Ranking

The Implementation Committee Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Compatibility Review

Without implementation, a JLUS is just a document on a shelf. The implementation is the key to the process and the only way to promote compatibility and defend against encroachment. The formation of a JLUS Implementation Committee continues the momentum that was established throughout the JLUS process. They are able to be the driving force to carry the process through the implementation phase and ultimately complete the goal the JLUS set out to accomplish.

Figure 36 The Technical Working Group working together to identify compatibility issues.

6.2 LAND USE

Area of Interest

Fort Riley affects multiple jurisdictions and local regulations are not in place within every municipality, or are in need of strengthening, in order to provide protection standards for the military and continued community growth.

Applicable Compatibility Factors

TABLE 6.2 LAND USE COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors	
	Land Use

Priority Ranking

The Land Use Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Background

Military installations were traditionally established in rural areas with little development outside of the gates. However, as cities and counties have grown, development surrounding the installation has blossomed. Communities found that siting residential and non-residential uses in proximity to installations provided an economic boom for the community and fulfilled a need for the military personnel and their dependents. Without the proper tools in place, growth surrounding the installation can actually harm the mission of the military by encroaching on the facility leading to reduced or restricted trainings, altered missions, and / or closure.

Due to the dynamic nature of the military operations and training exercises, many different types of development can qualify as encroachment. For example, tall structures, such as residential and/or office high-rise buildings, cell towers or wind turbines, or a manufacturing plant – if not appropriately regulated. Incompatible uses adjacent to the military installations, particularly when located within noise contours or safety zones include the following:

- Uses that concentrate people in small areas;
- Sensitive land uses such as hospitals, schools, or day cares;
- Uses that attract birds;
- Uses that emit electrical emissions;
- Uses that produce excessive lighting; and
- Uses that release smoke, dust, or steam.

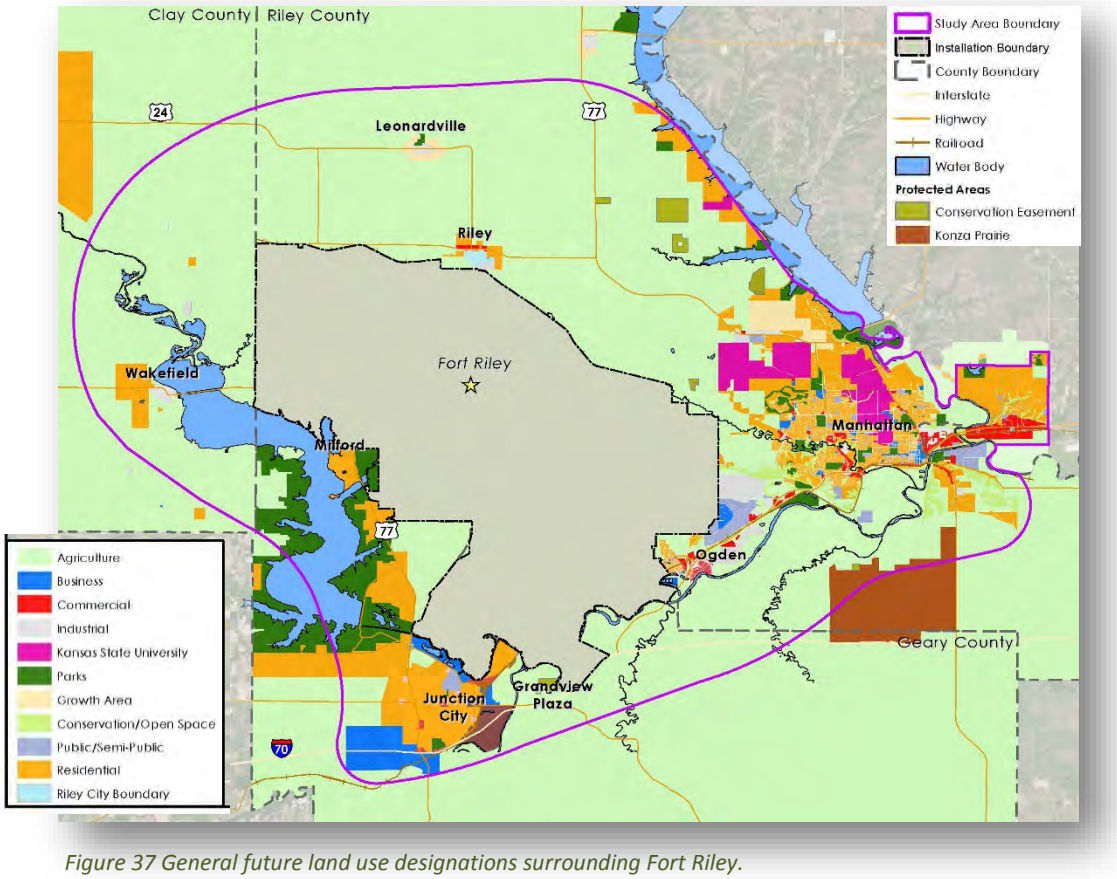


Figure 37 General future land use designations surrounding Fort Riley.

Specific to Fort Riley, the following land uses would have the most detrimental impacts:

- Increase the density of people in settings or participating in activities sensitive to noise generated on the installation;
- Increase the degree of loss that would be suffered in the event of wildfire generated on and leaving the confines of the installation; or
- Adversely impact the effectiveness of the installation's radars or otherwise impede ability to aviate over the installation or in support of activities on the installation from wind turbines or vertical obstructions.

Compatibility Review

In order to understand the lands surrounding the installation, the municipalities Comprehensive Plans, Zoning Ordinances, Future Land Use maps, and Zoning maps were collected and reviewed. For graphical purposes, land use categories were generalized to more easily depict similar land use and zoning categories. The overall analysis was conducted on the adopted Future Land Use Map and Zoning Map.

In addition to the thorough documentation review, discussions with stakeholders, local officials, and residents identified that the area is experiencing steady growth due to the availability of land, new businesses coming to the area, a good education system, and adequate infrastructure including roadways, water and sewer. It is anticipated that this trend in development will continue with steady growth in the communities surrounding Fort Riley.

A review of the local Comprehensive Plan and Zoning Ordinances did not identify adequate tools to address compatibility surrounding the Fort. The inclusion of military compatibility tools within the regulatory documents could mitigate potential safety concerns while maintaining the growth in the area.

6.3 GROWTH AREA

Area of Interest

The Blue Township area offers development opportunities away from the impacts of Fort Riley and is currently experiencing significant growth. Regulations need to be put in place to guide future development.

Applicable Compatibility Factors

TABLE 6.3 GROWTH AREA COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors	
	Land Use
	Land Suitability Analysis

Priority Ranking

The Growth Area Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Compatibility Review

The Blue Township Urban Growth Area is located within Pottawatomie County, on the eastern side of the City of Manhattan. Although located within Pottawatomie County, it is within Manhattan's comprehensive planning area. The area is the focus of extensive growth after the influx of soldiers from the restationing of the 1st Infantry Division. Specifically, the Blue Township / East US-24 corridor has been targeted as a growth area due to its proximity to employment centers and Kansas State University, as well as its favorable terrain outside of the floodplain. It also provides diverse new housing opportunities away from the impacts of Fort Riley, while still close enough for a daily commute to the Fort.

Figure 38 Housing construction taking place in the Blue Township Urban Growth Area

The US-24 Corridor Management Plan, adopted in August 2009, estimates that 3,150 residential lots and 65 commercial lots have been developed along the US-24 corridor over the four-year period (2005-2009). The significant increase in residential and commercial development requires the City of Manhattan and Pottawatomie County continue their efforts to ensure existing and planned infrastructure meets the

needs of development. Appropriate planning needs to be done in the Blue Township/Highway 24 Corridor to ensure that this area can continue to develop and thrive in a manner that is efficient and sustainable. The *Manhattan Urban Area Comprehensive Plan* states: "Maximizing the long-term potential of the area and its sustainability over time is contingent upon a shared commitment on behalf of Pottawatomie County, the City of Manhattan, and other regional stakeholders to conduct the more detailed planning needed to identify and determine the most effective means of implementing the full spectrum of improvements needed to serve both existing and future residents." Policies follow that emphasize the need for ongoing coordination and planning for the area.

6.4 SAFETY ZONES

Area of Interest

Airport Safety Zones for Marshall Army Airfield extend off Post.

Applicable Compatibility Factors

TABLE 6.4.A SAFETY ZONES
COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors	
	Safety Zones
Natural Resource Factors	
	Land / Air / Water Spaces

Priority Ranking

The Safety Zones Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Background

In the 1970s the military conducted a tri-service study of earlier accident and operations data, known as the Air Installations Compatible Use Zone (AICUZ) Study. The study showed that most aircraft mishaps occur on or near the runway or along the centerline of the runway, diminishing in likelihood with distance. Using the study, the DoD has identified Clear Zones (CZ) and Approach Zones (APZ) as areas where an aircraft accident is most likely to occur (if one were to occur); the APZs do not reflect the probability of an accident. They are based upon analysis of historical data and are designed to minimize the potential harm if a mishap does occur by limiting activities in the designated APZ areas. APZs follow departure, arrival, and pattern flight tracks and are based upon analysis of historical data.

- ***Clear Zone (CZ).*** The Clear Zone is an area 1,000 feet wide by 3,000 feet long at the immediate ends of the runway. The accident potential in this area is sufficient to recommend the prohibition of any structures in this zone.
- ***Accident Potential Zone I (APZ I).*** APZ I is less critical than the CZ, but still possesses significant potential for accidents. A wide variety of industrial, manufacturing, transportation, open space and agricultural uses can exist safely within this 1,000-foot wide by 2,500-foot long area just beyond the CZ. However, uses that concentrate people in small areas, such as higher density housing pose a conflict with the safety risks of this zone.
- ***Accident Potential Zone II (APZ II).*** APZ II is the least critical of the three air safety zones, but still carries some risk of an accident. APZ II is also 1,000 feet wide and extends 2,500 feet beyond APZ I. Compatible land uses include those of APZ I, as well as low density single family residential, and

lower intensity commercial activities. High density functions such as multi-story buildings and places of assembly (e.g., theaters, schools, churches and restaurants), however, raise compatibility issues.

An accident is more likely to occur in APZ I than in APZ II, and is more likely to occur in the CZ than in APZ I or APZ II. An APZ II area is designated whenever APZ I is required. APZs extend from the end of the runway, but apply to the predominant arrival and departure flight tracks used by the aircraft. Therefore, if an airfield has more than one predominant flight track, to or from the runway, APZs can extend in the direction of each flight track.

Although the likelihood of an accident is remote, the AICUZ guidelines recommend that certain land uses that concentrate large numbers of people, such as apartments, churches, and schools, be avoided within the APZs. Within the CZ, most uses are incompatible with military aircraft operations. Within APZ I and APZ II, a variety of land uses are compatible; however, people-intensive uses such as schools, shopping malls, and theaters, should be restricted because of the greater risk in these areas. Certain land uses are considered compatible under certain conditions. For example, recreational uses, such as parks, are considered compatible under APZ I provided that the recreational use does not include a high density of people (e.g., spectator sports).

Compatibility Review

It is important to regulate land use near military airfields to minimize damage from potential aircraft accidents and to reduce navigation hazards. As is currently designated by the applicable zoning maps, the predominantly agricultural character of the area is compatible with the Clear Zones and Approach Zones.

Within the CZ, the predominate zoning category is Agriculture. This is considered a compatible use within the CZ. However, there is also a small amount of Suburban Residential within the CZ, approximately 0.26 acres. Based on aerials, it does not appear that the property is being used as a residential use – but, a single-family home could be permitted on the property.

The zoning designations within APZ I are similar to those of CZ – Agriculture and Suburban Residential. Agriculture is considered a compatible use within APZ I but residential uses are not. Based on aerials, it does not appear that the property is being used as a residential use – but, a single-family home could be permitted on the property.

APZ II contains a large portion of the Agriculture designation as well as Residential zoning designations. Again, Agriculture is compatible within APZ II. Residential land uses can also be considered compatible within APZ II but, it is recommended at a maximum density of two dwelling units per acre.

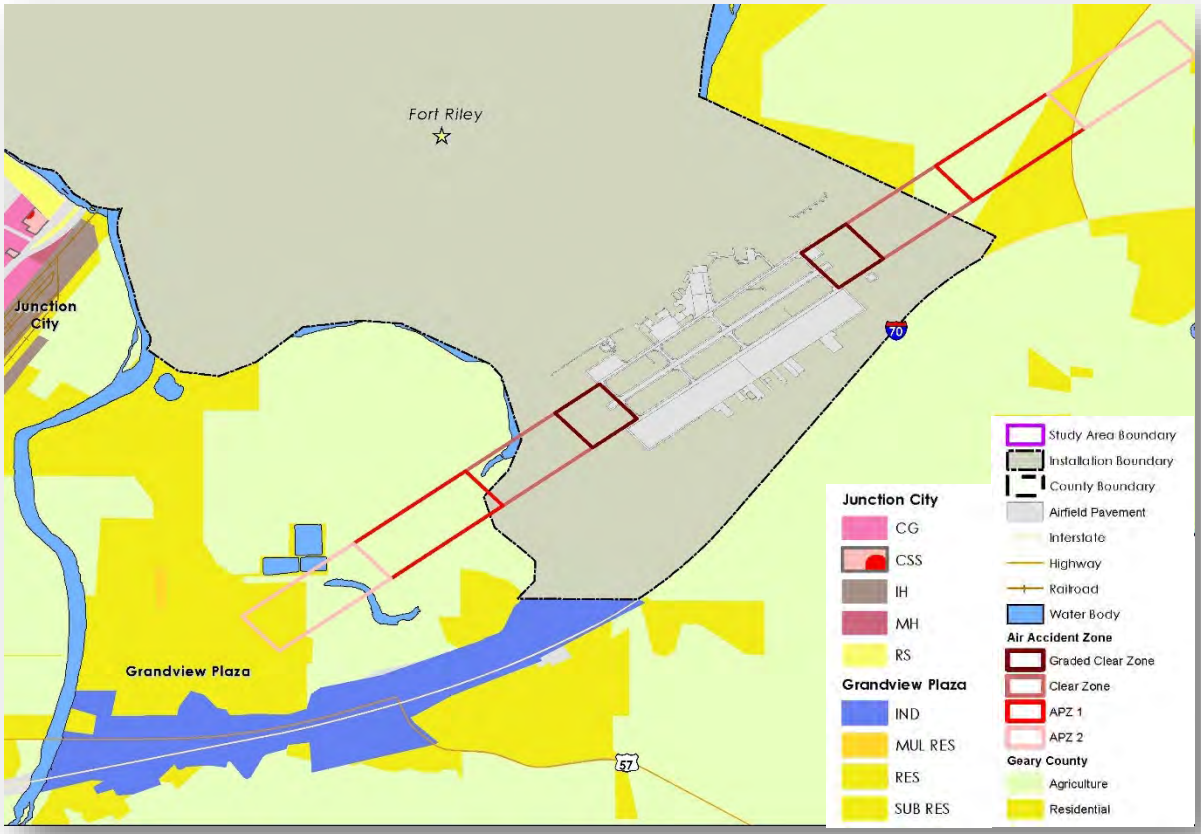


Figure 39 Zoning Designations within the Clear Zone and Approach Zones

TABLE 6.4.B ZONING DESIGNATIONS WITHIN THE CLEAR ZONE AND APPROACH ZONES

Zoning Designation	Acreage Within CZ	Acreage Within APZ I	Acreage Within APZ II
Agriculture (Geary County)	25	92	80
Suburban Residential (Geary County)	0.26	21	28
Residential 1 (Geary County)	-	-	0.26
Residential (Grandview Plaza)	-	-	9

6.5 VERTICAL OBSTRUCTIONS

Area of Interest

The introduction of vertical obstructions can interfere with the success of training missions as well as the safe operations of the airport. The vertical obstructions can include not only trees and buildings but also telecommunication towers and wind turbines.

Applicable Compatibility Factors

TABLE 6.5 VERTICAL OBSTRUCTIONS COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors
Land Use
Frequency Spectrum
Vertical Obstructions

Priority Ranking

The Vertical Obstructions Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Background

Tall structures such as buildings, construction cranes, wind turbines, and cell towers within the vicinity of an airport can be hazardous to the navigation of airplanes. They encroach into the navigable air space or line of sight of radar transmission. The FAA, through Federal Aviation Regulations (FAR) Part 77, established a method of identifying surfaces that should be free from penetration by obstructions in order to maintain sufficient airspace around airports. FAR Part 77 identifies the maximum height at which a structure would be considered an obstacle at any given point around an airport. The extent of the area needing to be evaluated for tall structure impacts can extend miles from an airport facility. Tall structure impacts have historically involved the height of buildings and the height of cranes used in construction. However, antennae, telecommunication towers, and wind turbines also need careful review for future sitings. The location of tall structures within local airspace can significantly affect the ability of FAA's Air Traffic Control to route aircraft into and out of an airport and can also reduce an airport's capacity.

Aviation electronic navigation aids (such as radar facilities, and instrument landing systems) are necessary to provide for the safe movement of aircraft. Although many of the navigation systems are located on the airport, some systems are located off airport property. Such electronic systems have the potential of being interfered with if non-aviation related electronic sources are placed in proximity or if structures are constructed which could block the navigation aid signals. Where off-airport electronic navigation facilities

occur, any development proposed to be located near these facilities needs to be reviewed by the FAA to determine if any interference to the use of the navigation aid would occur.

Compatibility Review

Two municipal airports – Freeman Field Airport and Manhattan Regional Airport – and one military airfield – Marshall Army Airfield (MAAF) are located within the study area. All three facilities are located in the southern portion of the study area.

Freeman Field Airport is owned by the City of Junction City and is located just south of Fort Riley in the City of Junction City. It consists of three runways – one asphalt and two grass runways – and is home to the National Biplane Fly-In event.

Figure 40 Telecommunication towers can interfere with the safe navigation of airplanes if proper regulations aren't in place

The Manhattan Regional Airport is owned by the city of Manhattan and is about five miles southwest of downtown Manhattan. American Airlines serves the airport with five daily flights. The airport is also used for general aviation and for planes chartered by the military and college sports teams.

MAAF is Fort Riley's on-post airfield consisting of a 4,503-feet long runway, 50-feet wide taxiways, and 148,000 square yards of parking aprons. It is primarily designed to accommodate rotary-winged aircraft. Fort Riley Air Traffic Controllers and ASR-11 Radar provide radar surveillance and airspace deconfliction in a 60-mile, 360-degree arc around the installation and are responsible for all air traffic within that 60-mile area.

During the 2016 session of the Kansas legislature, the Kansas New Wireless Deployment Act was adopted. The bill grants wireless providers, subject to certain local regulatory control mechanisms, the statutory right to use county right-of-way to locate wireless structures and facilities. This could potentially allow vertical obstructions within flight paths or training areas.

Geary County, Junction City, Riley County, and Manhattan have established Airport Overlay districts or Airport Zoning districts within their zoning ordinances to limit height and regulate the uses in the areas surrounding the airports and airfields. Grandview Plaza has yet to adopt any similar requirements. Separate from the airport overlays, additional regulations are also in place regulating telecommunication tower heights and placement.

Geary County established an Airport Overlay (AO) District surrounding Freeman Field Municipal Airport and Marshall Army Airfield. The Overlay establishes zones based on the airports approach surfaces, transitional surfaces, horizontal surfaces, and conical surfaces. Each zone has specific height limitations. Uses are also restricted to include "electrical interference with navigational signals or radio communication between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff or maneuvering of aircraft intending to use the airport." And, sanitary landfills are prohibited within two miles of any airport boundary.

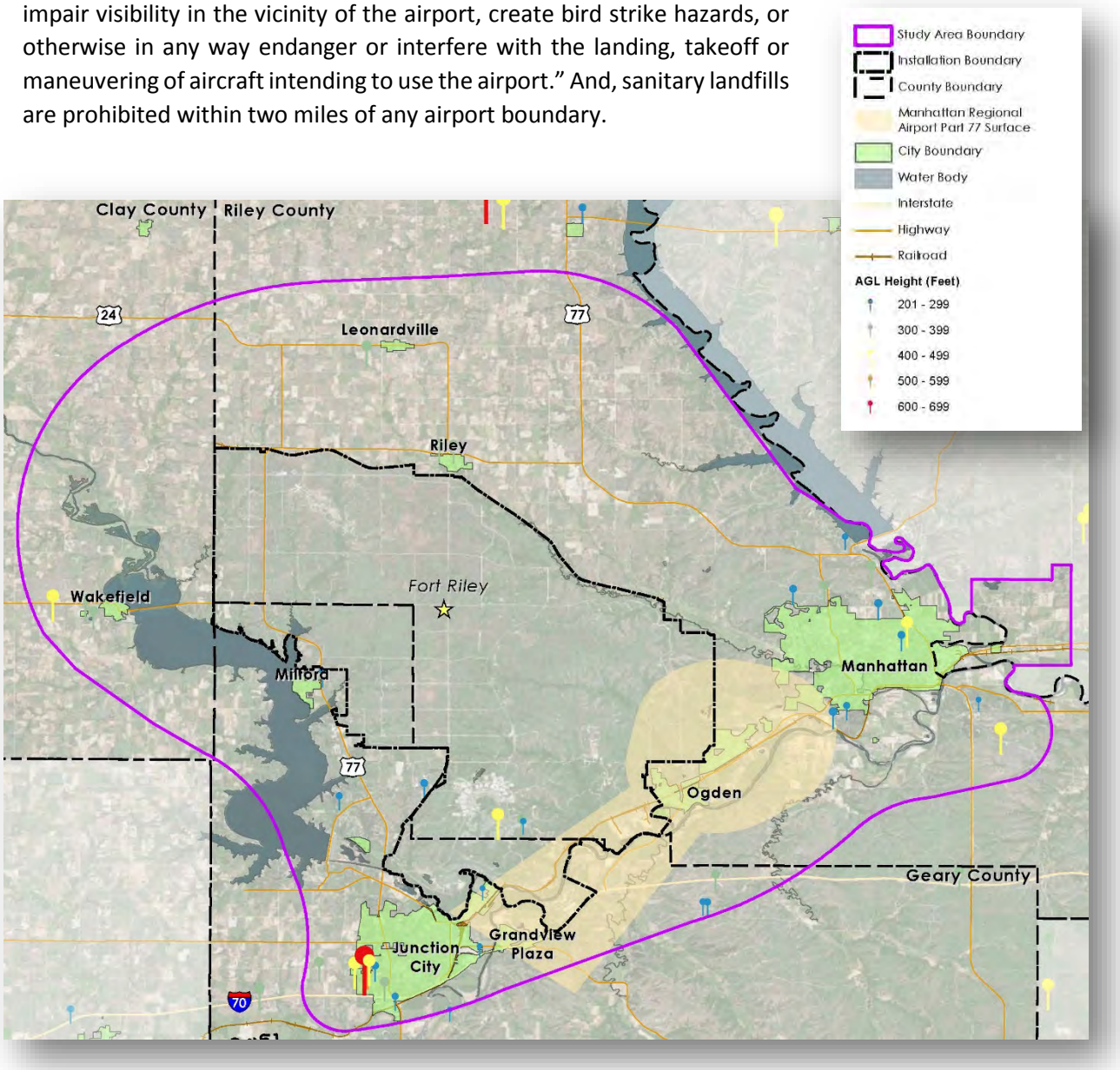


Figure 41 FAA Height Constraints located within the Study Area.

Junction City established an Airport Zone (AP) District similar to that of Geary County. The zones are based on the airport approach zones, horizontal zone, and conical zone. Height limitations are based on each of the established zones. Uses are limited so as to not create electrical interference with radio communication between the airport and aircraft, make it difficult for flyer to distinguish between airport lights and others, results in glare in the eyes of flyers using the airport, impair visibility in the vicinity of the airport or otherwise endanger the landing, taking off, or maneuvering of aircraft.

Article 23 of the City of Ogden zoning regulations provides development standards for wireless transmission facilities including wireless communication towers. A monopole tower located in an Agricultural zoning category may be permitted up to 150' in height, but may only be 80' high in a residential zoning category. Other new wireless transmission facilities are required to comply with the height regulations as outlined in the regulations, none of which are above 75' high. Prior to filing a permit for a new communication tower, the applicant must have a meeting with City staff and representatives from Manhattan Regional Airport and Fort Riley Military Reservation. The regulations require any new tower facilities to comply with the FAA airspace standards.

Riley County established an Airport Noise Hazard District (N-1) within the zoning regulations. The N-1 district has a maximum building height of 50 feet and requires no structure to violate the height restrictions established by FAA Regulations Part 77. Uses are limited within the district to municipal airport and related accessory facilities, agricultural uses, specified commercial uses, and industrial uses with some exceptions. Residential uses are prohibited.

The City of Manhattan established an Airport Overlay (AO) District to include lands within the vicinity of the Manhattan Municipal Airport. It also establishes zones which include approach surfaces, transitional surfaces, horizontal surfaces, and conical surfaces, and within the mapped boundaries of the Airport Noise Exposure Zone. Height is limited varyingly based on the zone. Uses are also restricted to include "electrical interference with navigational signals or radio communication between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff or maneuvering of aircraft intending to use the airport." Prohibited land uses include residential uses and manufactured home parks.

In addition to the Airport Overlay District, the Manhattan Zoning Regulations set-up specific requirements relating to "the placement, construction, and modification of telecom structures." Towers and stealth monopoles have a maximum height of 150' and 50', respectively, unless located within the Airport Overlay in which case the Airport Overlay height restrictions apply.

It is an essential proactive step that these municipalities have taken to establish overlay and zoning districts to protect the functions of the airports. However, the average layperson may have some difficulty interpreting the height restrictions within the zoning ordinance potentially leading to incompatible development. As can be seen in Figure 37, although regulations are in place, some structures exceed the established height standards. Additionally, steps should be taken to consider the impacts on not just the

airports, but also the helicopter routes and flight paths that are used to train in and around Fort Riley. Although this is likely not an issue for existing structures as they are not within the Part 77 Surface Areas, it is an issue that should be carefully considered.

6.6 UNMANNED AIR SYSTEMS

Area of Interest

The Unmanned Air Systems (UAS) corridor was established to provide a flight path from Fort Riley to Smoky Hill and serves as a significant training resource.

Applicable Compatibility Factors

TABLE 6.6 UNMANNED AIR SYSTEMS COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors	
	Land Use
	Land Suitability Analysis
Natural Resource Factors	
	Land / Air / Water Spaces

Priority Ranking

The Unmanned Air Systems Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

Background

Due to the relatively new, but prolific presence of UAS, the rules are still evolving. The UAS are subject to regulation by the FAA to ensure safety of flight and safety of people and property on the ground. Many states and local jurisdictions are also beginning to incorporate policies into their regulations. State and local restrictions affecting UAS operations must be consistent with federal statutory and regulatory framework pertaining to the following:

- control of the airspace,
- flight management and efficiency,
- air traffic control,
- aviation safety,
- navigational facilities, and
- the regulation of aircraft noise at its source.

According to the *"FAA's State and Local Regulation of Unmanned Aircraft Systems Fact Sheet,"* on February 15, 2015, the FAA proposed a framework of regulations that would allow routine commercial use of certain small UAS within the aviation system, while maintaining flexibility to accommodate future technological innovations. The FAA's Notice of Proposed Rulemaking offered safety rules for small UAS

Figure 42 The Grey Eagle UAS

(under 55 pounds) conducting non-recreational or non-hobby operations. The proposed rule defines permissible hours of flight, line-of-sight observation, altitude, operator certification, optional use of visual observers, aircraft registration and marking, and operational limits.

Consistent with its statutory authority, the FAA is requiring Federal registration of UAS in order to operate a UAS. Registering UAS will help protect public safety in the air and on the ground, aid the FAA in the enforcement of safety-related requirements for the operation of UAS, and build a culture of accountability and responsibility among users operating in U.S. airspace. No state or local UAS registration law may relieve a UAS owner or operator from complying with the Federal UAS registration requirements. Because Federal registration is the exclusive means for registering UAS for purposes of operating an aircraft in navigable airspace, no state or local government may impose an additional registration requirement on the operation of UAS in navigable airspace without first obtaining FAA approval.

Compatibility Review

Fort Riley provides unique installation capabilities to support UAS which include Gray Eagle, Raven and Shadow. Fort Riley has a state of the art Gray Eagle Hanger, dedicated Shadow facility, three separate locations to launch/land UAS and the Army's first FAA approved UAS corridor in the National Airspace linking two separate installations (Fort Riley and Smoky Hill Air National Guard Range). Fort Riley is also an Army Pilot Program for utilizing commercial UAS in support of Integrated Training Area Management (ITAM).

Fort Riley is an active participant in the Kansas UAS Consortium consisting of regional universities (Kansas State University, Kansas University, Wichita State, others) and private industry. Kansas is a leading National innovator in UAS initiatives and technology. They closely partner with Kansas State University and the University of Kansas Unmanned Aerial Systems programs, two of the first and largest National collegiate UAS programs.

Fort Riley is postured well to support 1st Infantry Division's emerging UAS operations and initiatives. The UAS programs receive unmatched support from both state and FAA agencies enabling Fort Riley to provide the Army with a model for UAS flights, operations and sustainment.

In order to help preserve and facilitate growth of this important program, there is the need to protect the compatibility of the land within the recently approved 60-mile air corridor between Fort Riley and Smoky Hill Air National Guard Range. The air corridor was issued a Certificate of Authorization by the FAA January 7, 2015, but a thorough analysis has yet to be conducted for the underlying lands within the corridor. With the majority of the UAS flying at 7,000 feet or below, it is important to regulate land uses and heights to ensure continued compatibility. Additionally, from the community's perspective, land uses within the corridor should not concentrate large populations of people as it could be considered a safety concern.

6.7 FREQUENCY INTERFERENCE

Area of Interest

Frequency interference from the community can cause a disruption to training taking place on Fort Riley. Likewise, training on Fort Riley may impact the use of the frequency spectrum within the community.

Applicable Compatibility Factors

TABLE 6.7.A FREQUENCY INTERFERENCE COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors
Land Use
Frequency Spectrum

Priority Ranking

The Frequency Interference Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Background

The electromagnetic (EM) spectrum is the range of all types of EM radiation. Radiation is energy that travels and spreads out as it goes. An example is the visible light that comes from a lamp in your house and the radio waves that come from a radio station. The other types of EM radiation that make up the electromagnetic spectrum are microwaves, infrared light, ultraviolet light, X-rays and gamma-rays.

TABLE 6.7.B.: ELECTROMAGNETIC SPECTRUM

Electromagnetic Spectrum	Description	Examples
Radio	Clock radios capture radio waves emitted by radio stations.	AM Radio Amateur Radio Aircraft Communication
Microwave	Microwave radiation is used to heat items in the microwave and also used by astronomers to study the galaxy.	Microwave Oven
Infrared	Night vision goggles pick up the infrared light emitted by our skin and objects with heat. In space, infrared light helps us map the dust between stars.	Television Remote Night Vision Goggles

Electromagnetic Spectrum	Description	Examples
Visible	Our eyes detect visible light.	Fireflies, Light Bulb Star
Ultraviolet	Ultraviolet radiation is emitted by the Sun and are the reason skin tans and burns.	Sun
X-Ray	A dentist uses X-rays to image your teeth, and airport security uses them to see through your bag.	Airport Security Scanner
Gamma-Ray	Doctors use gamma-ray imaging to see inside your body. The biggest gamma-ray generator of all is the Universe.	PET Scan

Source: http://imagine.gsfc.nasa.gov/science/toolbox/emspectrum1.html

Two federal agencies regulate the use of the EM: the Federal Communications Commission (FCC) and the National Telecommunications Information Administration (NTIA). The NTIA manages the federal government's use of spectrum, ensuring that America's domestic and international spectrum needs are met while making efficient use of this limited resource. The FCC regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia, and U.S. territories.

Figure 43 The FAA has overall responsibility for ensuring safe military and commercial flights, Fort Riley Air Traffic Controllers and ASR-11 Radar contribute to the effort by providing radar surveillance and airspace deconfliction in a 60 mile, 360 degree arc around the installation.

Compatibility Review

The Army relies on a range of frequency spectrum for effective and safe command and control of units. The Army uses the frequency spectrum for military radios, radar, and navigations. These are in direct competition with civilian uses leading to incompatible sources of electromagnetic interference, frequency interference, and competition for available frequencies. Concerns include the placement of a telecommunication tower or microwave site near Fort Riley, wind turbines placed within the line of sight of a radar, or increased competition for frequency spectrum. Although not currently an issue at Fort Riley, the potential for increased development leads to increased competition and the possibility for frequency interference in the future.

6.8 NOISE

Area of Interest

Noise generated from small arms weapons firing, demolition, large arms weapons firing, and rotary-wing aircraft training can be heard throughout the study area and often interferes with resident's daily lives.

Applicable Compatibility Factors

TABLE 6.8.A NOISE COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors
Noise and Vibration

Priority Ranking

The Noise Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Background

Noise is generally described as unwanted sound. Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound can also be sensed by sight and touch – when it vibrates buildings and other objects. Unwanted sound can be based on objective effects (such as hearing loss and speech interruptions) or subjective judgments (such as noise complaints and annoyance).

Noise is measured using several metrics that reflect different noise characteristics. There are differences in continuous (e.g., aircraft flying) versus impulsive (e.g., weapons firing) types of noise, variations in frequency, and duration of noise exposure. Duration of noise exposure also dictates how a person perceives noise; a relatively long steady noise, like a train, aircraft passing, or traffic, "feels" different than a rapid loud gunshot-type noise.

The threshold of human hearing is approximately 0 dB and human speech has a sound level of approximately 60 dB. Sound levels above 120 dB are typically when discomfort begins in the human ear. Sound levels between 130 to 140 dB and above are felt as pain and may cause permanent damage if the noise is sustained.

Noise Metrics

When measuring sound, the levels are often filtered (i.e. frequency weighted) to accommodate how the human ear functions. This process is known as "A-weighting." Military impulsive sounds (e.g., explosions,

artillery blasts) can be felt as well as heard and utilize "C-Weighting" where the low-frequency components of these sounds are not de-emphasized to the same extent as A-weighting. Explanations of noise assessment metrics are listed below.

- **Concussion-Weighted-Day-Night Average Sound Level (CDNL).** The CDNL metric describes the average weighted noise levels generated by firing and other loud blasts during a specific period of time, i.e. the period during which the records used to calculate the CDNL metric were collected. To take into account that noise created by firing and blasts is more noticeable during evening hours, the noise generated at night (10 p.m. – 7 a.m.) is weighted more heavily than that generated during the day when calculating the CDNL for any period of record. The CDNL is used to produce maps of zones where various categories of land use are considered to be compatible with the noise created by military activities during the specific period of record.
- **PK15(met).** PK15(met) describes the peak noise level that is exceeded only 15% of the individual (single) events of the loudest munitions type detonated. This metric accounts for variations caused by weather conditions favoring noise propagation. The PK15(met) metric does not communicate any information about how often the loudest munitions type is detonated. PK15(met) is used to create maps of the most frequently expected peak noise levels experienced in areas surrounding locations where large caliber weapons have been fired on military installations during a specific period of record.

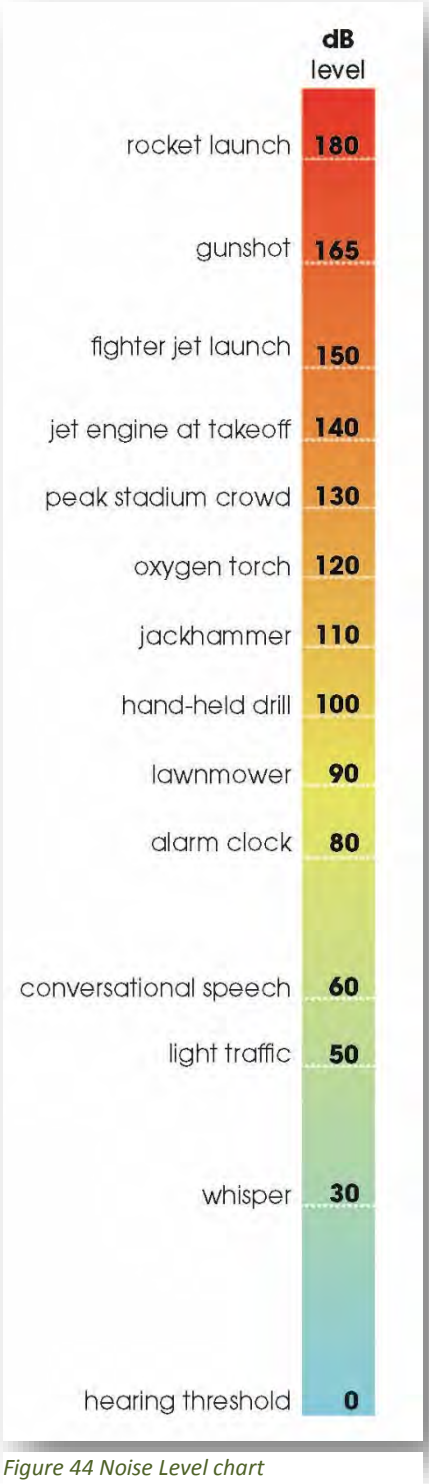


Figure 44 Noise Level chart

Sound Propagation

One of the principle effects on sound propagation is the day-to-day weather conditions. Wind and temperature significantly influence how far sound travels from a source and how loud it will be at the receiver's location. As sound travels through air, a receiver downwind of the source will be subjected to higher sound levels than a receiver upwind; in effect the wind is actually helping move the sound to the downwind receiver, while

upwind the sound must "swim against the current." If wind direction and temperature variation are combined (as a rule, sound usually travels farther in cold temperatures) one may observe the phenomena of atmospheric refraction. This is the process by which atmospheric conditions actually bend and/or focus sound waves toward some areas and away from others.

When a temperature inversion is present, military operations may sound much louder than normal, or be heard at greater distances. The inversion layer acts as a boundary for the sound, trapping it close to the ground. This can create areas of high intensity sound far from the sound's source. As a result, on most days it may be possible to detonate 10 pounds of explosives without disturbing a community (neutral weather conditions), while on another day with a temperature inversion, the detonation of 1 pound at the same location may be disruptive (unfavorable weather conditions).

The sound waves from the explosion initially travel upward, but the inversion reflects the sound back downward toward the ground, generating high noise levels many miles away. Under normal conditions the Noise levels at that distance would otherwise be much lower.

Based on these phenomena it's easy to see how predicting sound travel can be very difficult, but the Explosives Research Group (ERG) and the University of Utah developed guidelines to help determine what constitutes "good" or "bad" firing times.

TABLE 6.8.B UNIVERSITY OF UTAH CRITERIA FOR "GOOD" AND "BAD" FIRING CONDITIONS

"Good" Firing Conditions	"Bad" Firing Conditions
Clear skies with billowy cloud formations, especially during warm periods of the year. A rising barometer immediately following a storm.	Days of steady winds (5-10 mph) with gusts of greater velocities (above 20 mph) in the direction of nearby residences. Clear days on which "layering" of smoke or fog are observed. Cold, hazy, or foggy mornings. Days following a day when large extremes of temperature (about 36°F) between day and night are observed. Generally high barometer readings with low temperatures.

Source: Fort Riley IONMP 2015.

Noise modeling results change depending on the types of weapons fired; location from where, direction in which, frequency, and time of day (and night) they are fired; weather conditions during the reporting period; and some of those inputs must be assumed by the modeler or are input per the modeler's discretion.

Noise Modeling

Noise assessments are conducted in accordance with the DoD Instruction Directive 4715.13 subject: DoD Noise Program (DoD 2005) and Army Regulation (AR) 200-1, Environmental Protection and Enhancement, Chapter 14, Operational Noise (U.S. Army 2007).

Operational data is input into computer software models which calculate noise exposure levels associated with the multiple types of military operations. Operational data includes the types of weapons and ammunitions fired, number of rounds fired, time of day in which rounds are fired, and the location of firing areas and targets.

- **Small Arms Range Noise Model.** The computer model used to create the noise contours for small arms (.50 caliber and below) ranges is the Small Arms Range Noise Assessment Model (SARNAM). SARNAM incorporates the latest available information on weapons noise source models, directivity, sound propagation, and the effects of noise mitigation and safety structures such as berms, wall, and ricochet barriers. The SARNAM calculation algorithms assume weather conditions or wind direction that favors sound propagation.
- **Large Arms Noise Model.** The BNOISE2 modeling program calculates noise levels generated by the firing of large arms (20mm and greater) and high-explosive charges. The sounds from large arms, demolitions, and other impulsive sounds generally create the largest complaint issues because the sound can travel so far, it is so difficult to mitigate and it can be accompanied by vibration that may increase the public's annoyance.
- **Aircraft Noise Model.** Aircraft flight data were obtained to derive average daily operations by runway and type of aircraft. Analysis of Fort Riley's aircraft operations included the types of aircraft, flight patterns, variations in altitude, number of operations, ground run-up information, and hours of operations. The data were input into NOISEMAP, to produce a map of noise levels. NOISEMAP is a suite of computer programs and components developed by the Air Force to predict noise exposure in the vicinity of an airfield due to aircraft flight, maintenance, and ground run-up operations.

Noise modeling results change depending on the types of weapons fired; location from where, direction in which, frequency, and time of day (and night) they are fired; weather conditions during the reporting period; and some of those inputs must be assumed by the modeler or are input per the modeler's discretion.

Land Use Compatibility Planning

Through Army regulations, noise exposure on communities is translated into Noise Zones. Regulation guidelines state that for land use planning purposes, noise-sensitive land uses range from "acceptable" to "not recommended" within the Noise Zones. The program defines the following four Noise Zones:

- **Zone I.** The calculated CDNL was less than 62 dB during the period of record. This zone is generally considered to be suitable for all types of land use activities and does not appear as a specific noise zone on most CDNL Zones maps. However, military operations may be loud enough to be heard or even judged loud on occasion and during periods of increased military operations, noise in the **Land Use Planning Zone** area of Zone I can reach levels of noise normally present in **Zone II**.
- **Land Use Planning Zone (LUPZ).** The calculated CDNL was between 57 dB and 62dB during the period of record in the LUPZ. While residential and other noise sensitive land uses are generally compatible with the typical noise levels present within a LUPZ, potential increased annoyance during periods of increased military operations may warrant the utilization of design and structural measures to reduce interior noise levels in structures used for noise sensitive activities. Additionally, low residential densities are warranted within the LUPZ to reduce the likelihood of land use conflicts.
- **Zone II.** The calculated CDNL was between 62 and 70 dB during the period of record. Limiting the use of land in this zone to activities that are not noise-sensitive – such as industry, manufacturing, transportation and agriculture – is frequently recommended.
- **Zone III.** The calculated CDNL exceeded 70 dB during the period of record. That average level of noise is considered to conflict with almost all land uses. Noise-sensitive land uses are not recommended in Zone III.

Table 6.7.c lists the noise zones in tabular format, presents the noise levels encompassed within the particular noise zone, and identifies whether sensitive land uses such as homes, schools, hospitals, places of worship are compatible with that zone.

TABLE 6.8.C NOISE ZONES AND SENSITIVE LAND USE COMPATIBILITY

Noise Zone	Noise Limits			Land Use Compatibility Level
	Aviation	Impulsive	Small Arms	
LUPZ	60-65 dB	57-62 dB	N/A	Compatible
Zone I	<65 dB	<62 dB	<87 dB	Compatible
Zone II	65-75 dB	62-70 dB	87-104 dB	Normally Incompatible
Zone III	>75 dB	>70 dB	>104 dB	Incompatible

Compatibility Review

Noise originates from the 103 training areas on Fort Riley, two designated impact areas (dudded and non-dudded) and the aircraft operations at MAAF. Individual troop qualifications as well as larger scale training exercises (Brigade Battle Simulation Exercises, Company/Team/Platoon Situational Training Exercises and National Guard Bureau Annual Training) are scheduled year-round. Rotary-wing aircraft on Fort Riley utilize the tactical training areas to conduct Landing Zone (LZ) operations and Nap of the Earth (NOE) flight operations, among others. Aircraft also conducts live-fire gunnery exercises on the Douthit Gunnery Complex Screening Range.

The Army Public Health Center, through Army Medical Command, has conducted many noise analyses over the years to determine how their training impacts the community. Two major studies have been conducted in recent years – one in 2006 and one in 2014. Other intermediate studies have been conducted as well but were analyzed on a smaller scale – not for all weapons firing and explosions during a particular period. It is important to note that the results of noise modeling change based on the reporting period, weapons fired, weather conditions, and the modelers' data manipulations. The noise contours are to be used as an aid in planning, but with the understanding that they are not static, unmoving lines on a map.

Average Noise

The contours around the post reflect an annualized noise measure that converts noise varying from peak bursts to relative quiet into a steady measure of acoustic energy over a 24-hour period. The contours essentially take all operations that occur at Fort Riley and divide by 250 days, producing the C-weighted Day-Night average sound Level (CDNL). Average noise levels may be the best tool for long-term land use planning, but they may not adequately assess the probability of community noise complaints.

TABLE 6.8.D ZONING DESIGNATIONS OFF-POST WITHIN THE AVERAGE NOISE ZONES

	LUPZ	Zone II	Zone III
Ogden			
AG	26	-	-
C-1	19	-	-
C-2	223	-	-
I-1	9	-	-
MHP	17	-	-
MU	11	-	-
P	28	-	-
PU	152	-	-
R-1	167	-	-
R-2	12	-	-
R-3	65	-	-
R-S	5	-	-
Riley City			
A-1	16	48	-
A-2	25	74	-
B-1	31	1	-
B-2	1	-	-
C-1	-	6	-
C-2	0	1	-
C-3	-	1	-
D-1	2	-	-
D-2		0	-
G-1	-	5	-
Geary County			
AG	11,014	31	-
R1	46	-	-
SR	1,204	-	-
Clay County			
AG	9,385	-	-

**table continued on next page*

According to Army guidelines, the noise from demolition and large arms weapons operations are considered compatible with the majority of surrounding land uses. Although the LUPZ is expansive, covering several municipalities, noise-sensitive land uses within this zone are considered primarily compatible. The zoning designations within each municipality are identified in Table 6.7.D with the most abundant designation being Agriculture composing 75% of the land. Zone II extends off-post primarily in Riley County and Riley City – the majority of the land is also designated as Agriculture. A small portion, 31 acres, occurs within Geary County. This land is attributed to the MAAF and is discussed in the "Aircraft Noise Zones" section. Lastly, a small portion, nine acres, of Zone III extends into the Agricultural zoning designation of Riley County.

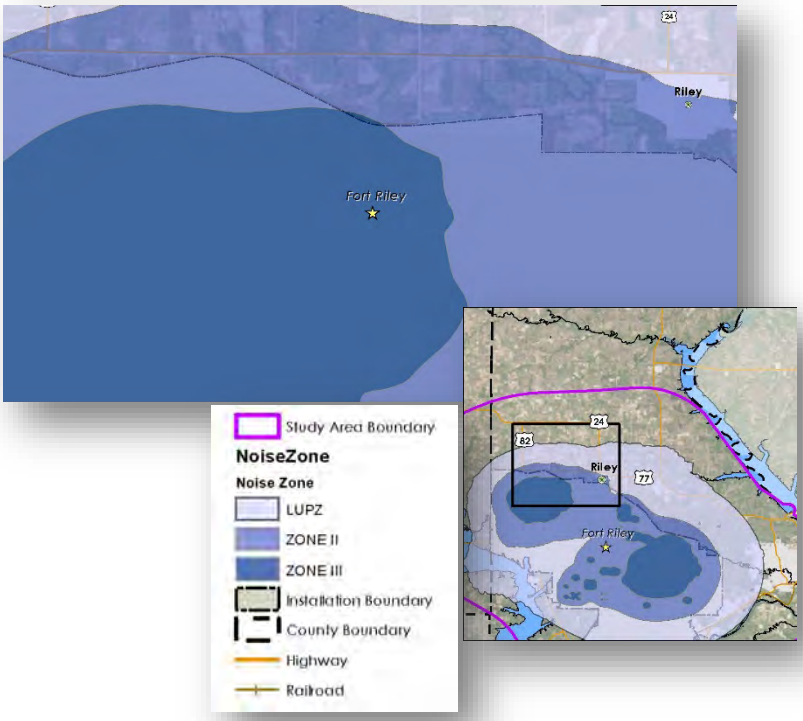


Figure 45 Approximately 9 acres of Zone III extends into Riley County.

TABLE 6.8.D (CONT.) ZONING DESIGNATIONS OFF-POST WITHIN THE AVERAGE NOISE ZONES

	LUPZ	Zone II	Zone III
Riley County			
AG	39,688	6,050	9
AG-R	47	28	-
B-1	1	2	-
C-3	4	-	-
C-4	307	25	-
D-1	4	-	-
D-2	29	-	-
D-3	548	-	-
N-1	216	-	-
PUD	434	39	-
ROW	67	-	-
SF-1	41	14	-
SF-2	107	2	-
SF-3	10	0	-
SF-4	264	97	-
SF-5	602	62	-
U	293	-	-
Manhattan Area			
AO	679	-	-
C-1	89	-	-
C-2	42	-	-
C-5	9	-	-
C-6	10	-	-
I-2	21	-	-
I-3	152	-	-
I-5	127	-	-
PUD	145	-	-
R	433	-	-
R-1	393	-	-
R-2	97	-	-
R-3	131	-	-
R-M	7	-	-
R-S	324	-	-
U	20	-	-

Average Noise Changes

As previously mentioned, two noise studies – for planning purposes – have been completed in recent years, one in 2006 and one in 2014. As can be expected, the average noise zones have shifted slightly from study to study. Some changes are expected each time the model is run unless

the training that is conducted is identical in both study periods. In addition to standard fluctuations, there are a number of variances attributable to the change in the average noise zones including:

- The construction of a new multi-purpose training range (DMPTR);
- Fluctuations in training with some periods of intense training followed by large deployments and little on-post training;
- Training activities that were taking place at the time; and
- Assumptions made by the modeler such as type of weapon used, location of weapon fired, or type of rounds used (training rounds versus fully charged rounds).

Figure 43 identifies the previously used average noise zones from 2006 compared to the currently used contours from the 2014 study. Due to the factors listed above, the shape of the zones have shifted and expanded. The overall size of the LUPZ has grown from 51,762 acres off-post to 70,634 acres off-post – a 36% increase.

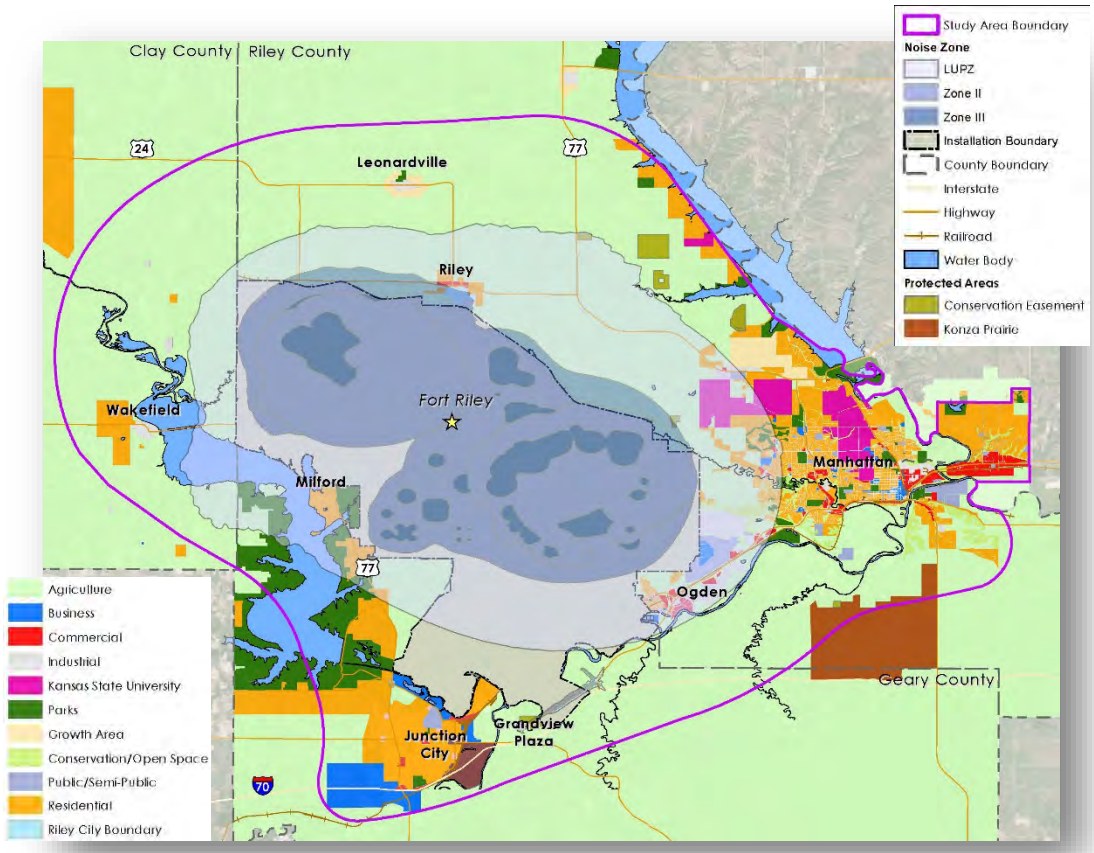


Figure 46 Average Noise Zones and generalized future land use designations

Peak Noise

Noise complaints typically are attributable to a specific event rather than annual average noise levels. Peak levels are useful for estimating the risk of receiving a noise complaint as they correlate with the receiver's perception of noise levels.

Peak Noise of 115 dB extends off-post in Riley County, Riley City, a small portion to the west in Clay County, and near Milford in Geary County. The Peak Noise of 130 dB area extends beyond the eastern boundary near Riley City into unincorporated Riley County. Table 6.7.E provides the acreage of each zoning designation within the 115 dB and 130 dB contours. Approximately 93% of the 115 dB noise contours that extend off-post are within the agriculture zoning designations.

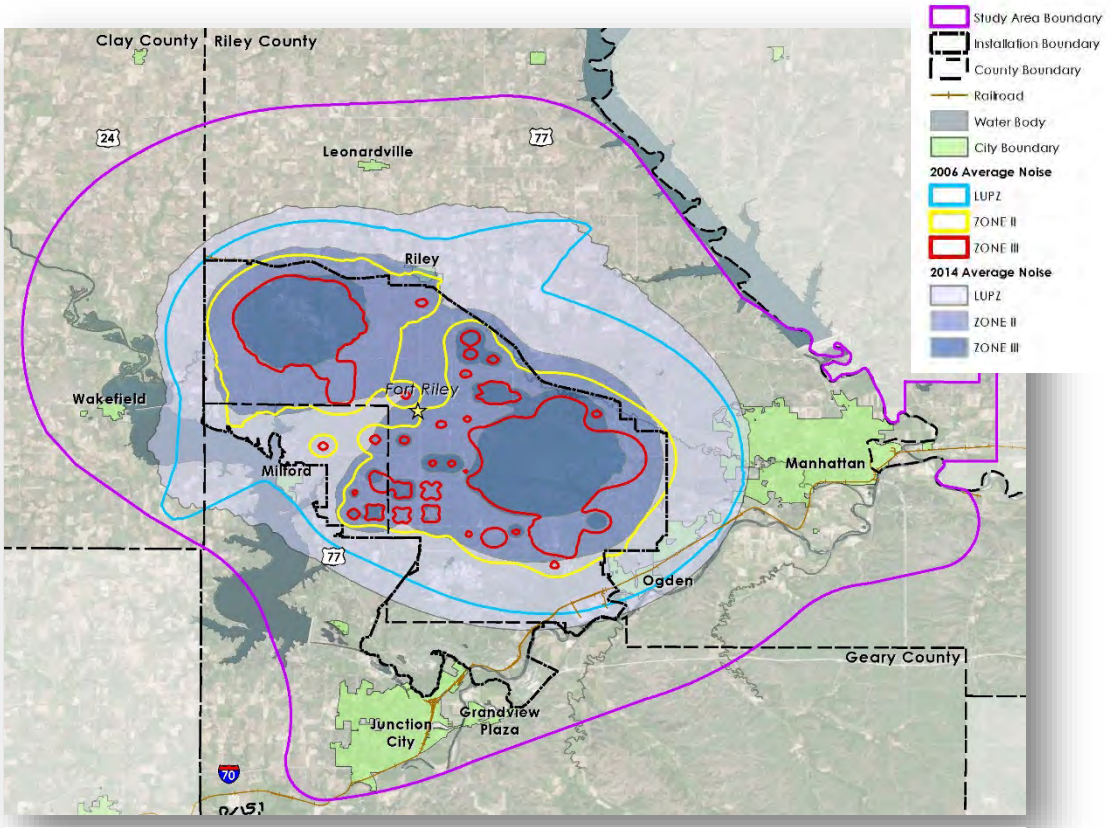


Figure 47 2006 and 2014 Army Public Health Noise Report Comparison

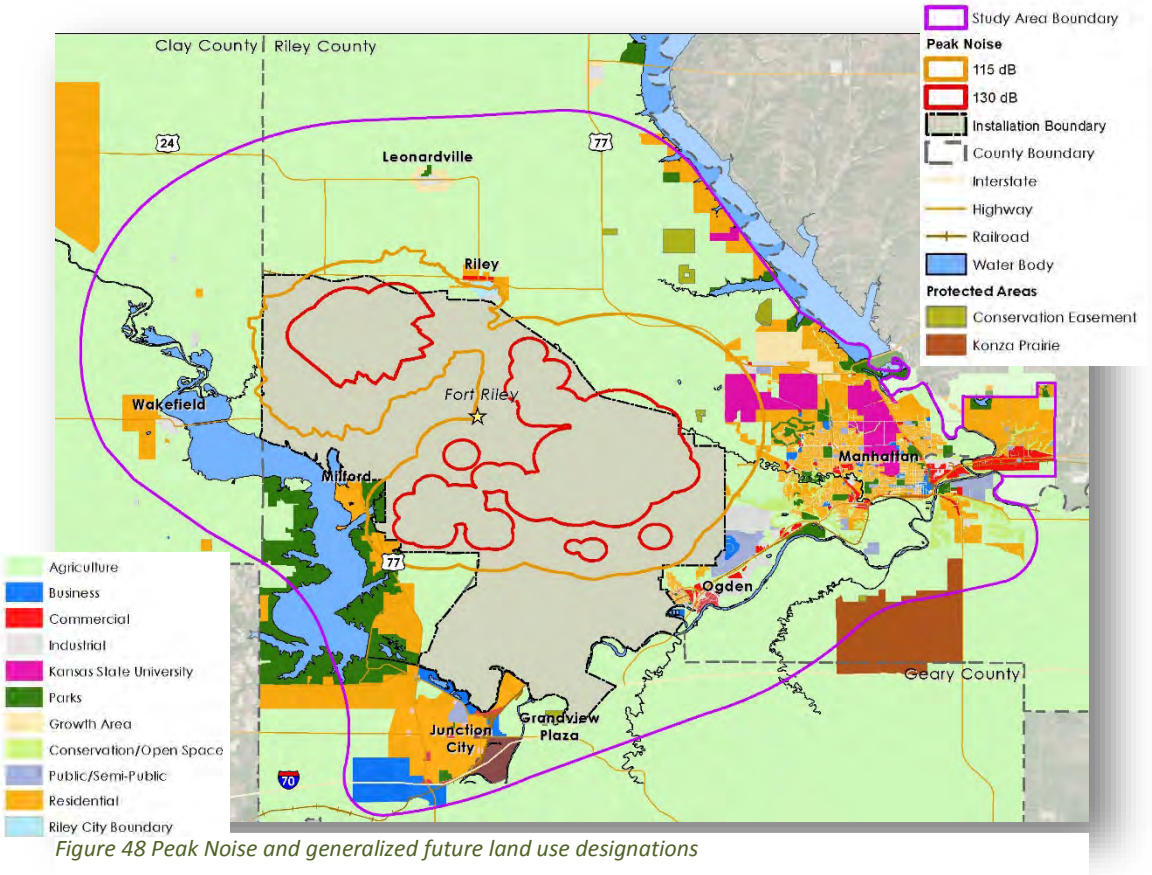


Figure 48 Peak Noise and generalized future land use designations

TABLE 6.8.E ZONING DESIGNATIONS OFF-POST WITHIN THE PEAK NOISE CONTOURS

	115dB Acres	130 dB Acres
Clay County		
AG	475	-
Vacant	5	-
Geary County		
AG	1,871	-
R1	6	-
SR	391	-

	115dB Acres	130 dB Acres
Riley City		
A-1	21	-
A-2	52	-
B-1	26	-
B-2	0	-
C-1	6	-
C-2	1	-
C-3	0	-
D-1	11	-
G-1	2	-
ROW	0	-

	115dB Acres	130 dB Acres
Riley County		
AG	17,691	694
AG-R	52	-
B-1	2	-
C-4	24	5
D-3	18	-
PUD	224	10
ROW	13	-
SF-1	31	-
SF-2	7	-
SF-3	3	-
SF-4	257	-
SF-5	361	-
U	31	-
SF-4	257	-

In addition to standard fluctuations, there are a number of variances attributable to the change in the average noise zones including:

- The construction of a new multi-purpose training range (DMPTR);
- Fluctuations in training with some periods of intense training followed by large deployments and little on-post training;
- Training activities that were taking place at the time; and
- Assumptions made by the modeler such as type of weapon used, location of weapon fired, or type of rounds used (training rounds versus fully charged rounds).

Aircraft Noise Zones

A total of 24,128 aircraft operations occurred at MAAF during the 12-month assessment period of January 1, 2013 through December 31, 2013. An aircraft operation is defined as one takeoff/departure, one approach/landing, or half of a closed pattern. A closed pattern consists of two portions, a takeoff/departure and an approach/landing, i.e., two operations. A sortie is a single military aircraft flight from the initial takeoff through the termination landing. The minimum number of aircraft operations for one sortie is two operations; one takeoff (departure) and one landing (approach).

The LUPZ extends beyond the installation boundary to the northeast approximately 1.4 miles and southwest 1.3 miles, bordering the town of Grandview Plaza. Zone II extends beyond the boundary in similar fashion but to a lesser degree (approximately 0.6 miles northeast and 0.9 miles southwest). On the north end, the T-formation in the LUPZ and Zone II is the effect of aircraft following the closed traffic pattern. Zone III extends beyond the boundary only to the northeast for approximately 0.4 miles

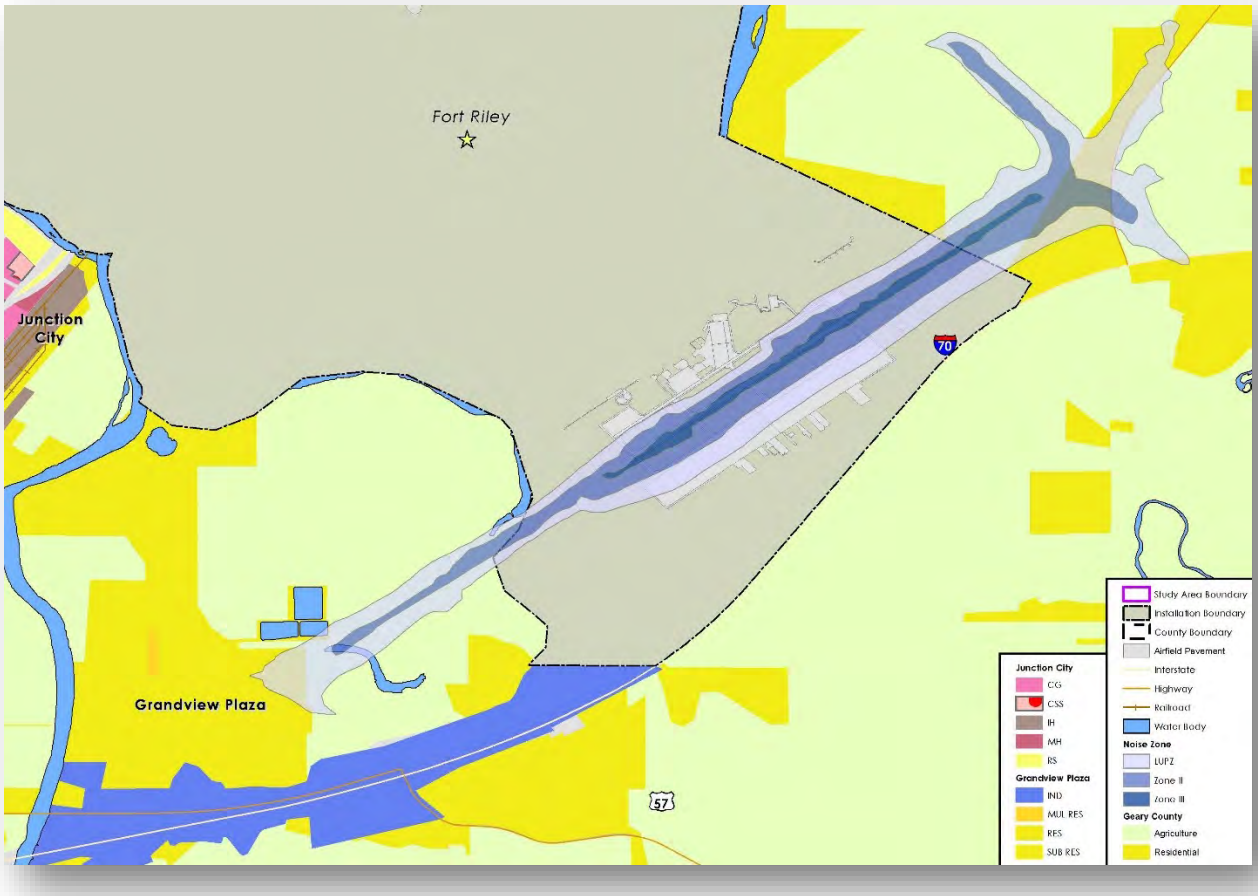


Figure 49 MAAF Average Noise Zones and Zoning designations

6.9 REGIONAL GIS DATABASE

Area of Interest

Municipalities would benefit from a regional database clearinghouse to share relevant GIS-based data.

Applicable Compatibility Factors

TABLE 6.9 REGIONAL GIS DATABASE COMPATIBILITY AND ENCROACHMENT FACTORS

People Factors
Coordination / Communication

Priority Ranking

The Regional GIS Database Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Compatibility Review

The first steps of the JLUS process began with contacting local governments within the study area to gather GIS data. The data was used to analyze the area, compare facts, and graphically display information. The municipalities within the study area have varying levels of data and in some situations, the JLUS team was able to create new data where none previously existed. Moving forward with the implementation of the JLUS, the local governments in the study area would benefit from a regional database to share relevant GIS-based data that has already been gathered and / or created during the JLUS process. The establishment of a data repository, in particular for GIS data, can save time and money when moving forward with the implementation of the study.

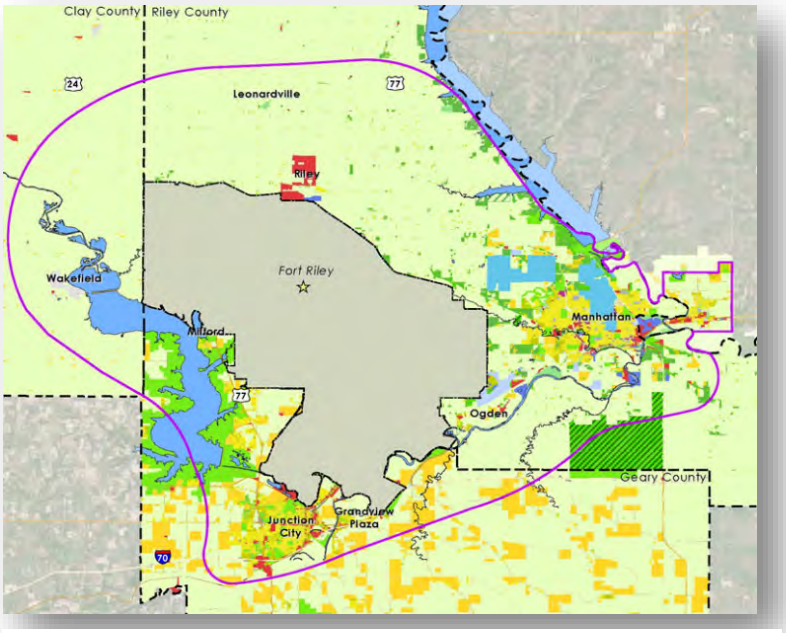


Figure 50 Land Use Map of the communities surrounding Fort Riley.

6.10 AIR SPACE

Area of Interest

Multiple entities use the airspace around Fort Riley and the competition is only increasing.

Applicable Compatibility Factors

TABLE 6.10 AIR SPACE COMPATIBILITY AND ENCROACHMENT FACTORS

Natural Resource Factors	
	Land / Air / Water Spaces

Priority Ranking

The Air Space Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Background

In the U.S., airspace is categorized as regulatory and non-regulatory. Within these categories exist: controlled (classes A, B, C, D, and E) and uncontrolled (class G) airspace, based on which air traffic control service is provided to instrument flight rules (IFR) flights and some visual flight rules (VFR) flights. Class F is not used in the U.S. Besides controlled and uncontrolled airspace, other types of airspace include "special use" and "other airspace."

Class D and Class E airspace is located within the southeastern portion of the study area near Marshall Army Airfield and Manhattan Regional Airport. Class D airspace is typically established around any airport with a functioning control tower. Class D airspace is generally cylindrical in form and normally extends from the surface to 2,500 feet above the ground. The outer radius of the airspace is variable, but is generally 4 nautical miles. Class E airspace extends from 1,200 feet AGL up to but not including 18,000 feet MSL, the lower limit of class A airspace. Most airspace in the United States is class E.

Special use airspace is an area designated for operations, primarily military, that may impose limitations on aircraft not participating in the operations. Special use air space includes the following:

- Restricted Airspace,
- Military Operations Area,
- Warning Area,
- Alert Areas,

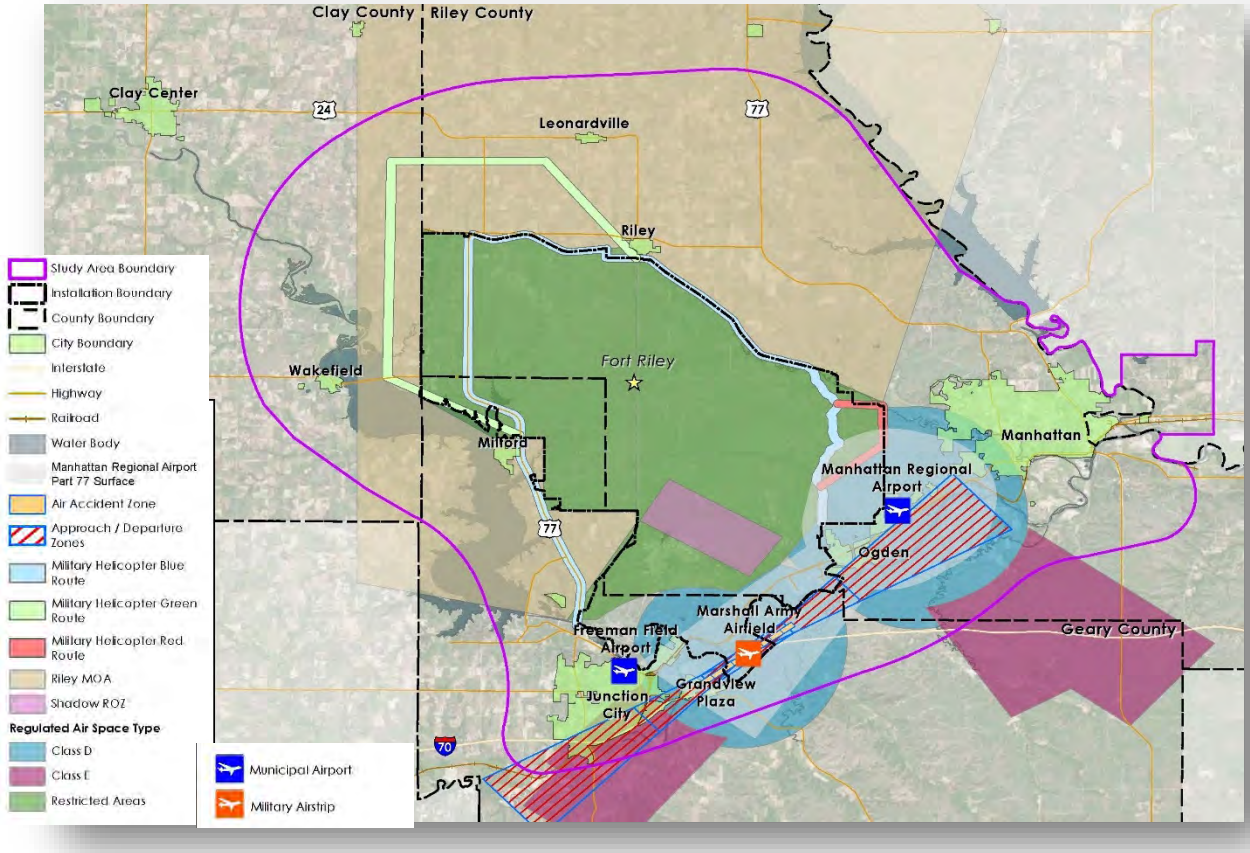


Figure 51 Aviation Operations and Air Space

- Temporary Flight Restrictions,
- National Security Areas, and
- Controlled Firing Areas.

Restricted airspace is an area within which the operation of aircraft is subject to restriction. Restricted airspace is established to separate activities considered to be hazardous to other aircraft, such as artillery firing or aerial gunnery. Restricted airspace may not be active at all times in which case a schedule of dates and times when aviation may occur is posted.

Military operation areas (MOA) are areas in which military activities are regularly conducted. No clearance is required to enter MOAs, but pilots should verify that no hazardous activity is underway before entering an MOA. In the United States, civilian and military pilots have equal rights to MOA airspace, and both have equal responsibility to see and avoid other air traffic. MOAs serve as a warning, since military aircraft often fly at high speeds and are intentionally difficult to see.

Compatibility Review

Figure 52 Helicopters have specific routes in and around Fort Riley

Airspace within the Central Flint Hills Region is complex and can be congested. With four regional airports (Marshall Army Airfield, Manhattan Regional, Junction City and Salina) all within close proximity, Air Traffic Control is critical. While the Federal Aviation Administration has overall responsibility for ensuring safe military and commercial flights, Fort Riley Air Traffic Controllers and ASR-11 Radar contribute to the effort by providing radar surveillance and airspace deconfliction in a 60-mile, 360-degree arc around the installation. Fort Riley restricted airspace over the training area ensures commercial pilots do not fly within the danger area created by artillery, small arms, tanks, Bradley Fighting vehicles, attack aviation and UAS.

6.11 HABITAT

Area of Interest

Fort Riley and the surrounding grasslands of the Flint Hills communities form a core habitat area for many species of plants and animals, including state and federally threatened, endangered, and protected species.

Applicable Compatibility Factors

TABLE 6.11 HABITAT COMPATIBILITY AND ENCROACHMENT FACTORS

Natural Resources Factors	
	Threatened and Endangered Species
	Land / Air / Water Spaces

Priority Ranking

The Habitat Area of Interest received a high priority ranking meaning the recommendations should be implemented between one and three years upon completion of the JLUS.

HIGH

Background

Endangered Species Act

The *Endangered Species Act (ESA)* provides a law enacted for the conservation of threatened (T) or endangered (E) plants and animals and their habitat (16 USC 1531–1544). Federally-listed T&E species and their designated critical habitat are governed by the ESA of 1973, as amended, and the USFWS implementing regulations at 50 CFR Parts 13 and 17. The USFWS is authorized to identify T&E species and provide for their management and protection. The ESA defines critical habitats as "specific geographic areas that contain features essential for the conservation of a threatened or endangered species and that may require special management and protection." Federal agencies are required to determine if their actions adversely modify critical habitat to the point that it will no longer aid in a species' recovery. Section 3(18) of the ESA defines "take" as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Any impacts on federally-listed T&E species or their designated critical habitat may require a take permit, which is authorized under Section 10 of the ESA. However, listed plants species are not protected from take unless they occur on federal land or the action has a federal nexus.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects all migratory bird species by prohibiting the take of any migratory bird, nest, egg, or part thereof by any means or in any manner and is not limited to species that are listed as T&E under the ESA. The MBTA authorizes the USFWS to promulgate regulations allowing take of migratory birds in certain situations (i.e., hunting) (50 CFR Part 21). Currently, the MBTA has no provisions for allowing unauthorized take; however, on May 26, 2015 the USFWS issued a Notice of Intent (NOI) that initiated environmental review of a proposal to regulate the incidental take of migratory birds (USFWS 2015d). In the meantime, the USFWS has handled MBTA-related issues by recommending individuals and companies identify and implement all reasonable, prudent, and effective measures to avoid take (USFWS 2014).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) protects Bald Eagles (Haliaeetus leucocephalus) and Golden Eagles (Aquila chrysaetos), and provides these species with additional protections not covered by the MBTA. In the BGEPA, "Take" is defined as, "To pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" (50 CFR 22.3).

Kansas Nongame and Endangered Species Conservation Act of 1975

The Kansas Department of Wildlife, Parks and Tourism (KDWPT) is responsible for determining conservation measures necessary for sustaining nongame species in Kansas. Regulatory authority is provided by the Kansas Nongame and Endangered Species Conservation Act of 1975 (KSESCA) K.S.A. 32-957 to 963, 32-1009 to 1012 and 32-1033. The KDWPT is responsible for adopting rules and regulations to maintain lists of nongame species deemed to be Species in Need of Conservation (SINC), threatened, or endangered, and "shall develop conservation programs designed to insure the continued ability of the nongame species to perpetuate themselves successfully" (KSA 32-959. KDWPT maintains a list of state threatened and endangered species and develops critical habitats for those species.

Compatibility Review

T&E species potentially present in the JLUS area of interest are discussed in Table 6.11.A. State-listed species potentially present in the Project area are discussed in Table 6.11.B.

TABLE 6.11.A USFWS ENDANGERED, THREATENED, AND CANDIDATE SPECIES

Species	Group	Critical Habitat within the Project?	Potential to Occur Within the Project	Notes
Endangered				
Whooping Crane (*Grus americana*)	Bird	No	Yes	Low potential for occurrence only during migration

Species	Group	Critical Habitat within the Project?	Potential to Occur Within the Project	Notes
Topeka Shiner (*Notropis topeka*)	Fish	Yes	Yes	Occurrence records from streams that originate within the JLUS study area
American Burying Beetle (*Nicrophorus americanus*)[1]	Insect	No	No	Low potential for occurrence within the JLUS study area.
Interior Least Tern (*Sterna antillarum*)[1]	Bird	Yes	Yes	Potential for occurrence only during migration, may nest along the Kansas River and Republican River
Eskimo Curlew	Bird	No	No	Presumed extinct across Kansas, habitat may occur within the JLUS study area.
Threatened				
Northern Myotis (*Myotis septentrionalis*)	Mammal	No	Yes	Low potential for occurrence, but may roost in woodlands and buildings
Piping Plover (*Charadrius melodus*)	Bird	Yes	Yes	Potential for occurrence during migration, may nest along the Kansas River and Republican River
Red Knot (*Calidris canutus rufa*)	Bird	No	Yes	Low potential for occurrence only during migration
Sturgeon Chub (*Macrhybopsis gelida*)	Fish	No	Yes	High potential for species to occur in the Kansas River.

Sources: USFWS 2015b, 50 CFR Part 17; KDWPT 2017a, 2017b

[1]Species identified by KDWPT as potentially ranging within the Project, but has not been identified as a potential occurrence by USFWS

TABLE 6.11.B. KANSAS-LISTED SPECIES IN CLAY, RILEY AND GEARY COUNTIES

Species	Group	Critical Habitat within the County?	Potential to Occur Within the Project	Notes
Endangered				
Least Tern (*Sterna antillarum*)	Bird	Yes	Yes	High potential for occurrence during migration, potential for nesting along the Kansas and Republican Rivers.
Shoal Chub (*Macrhybopsis gelida*)	Fish	Yes	Yes	Potential for occurrence in the Kansas and Republican Rivers

Species	Group	Critical Habitat within the County?	Potential to Occur Within the Project	Notes
Silver Chub (*Macrhybopsis storeriana*)	Fish	Yes	Yes	Potential for occurrence in the Kansas and Republican Rivers
Whooping Crane (*Grus americana*)	Bird	No	Yes	Low potential for occurrence only during migration
American Burying Beetle (*Nicrophorus americanus*)	Insect	No	No	Low potential due nearest occurrence record 95 miles from the Project.
Threatened				
Piping Plover (*Charadrius melodus*)	Bird	Yes	Yes	Low potential for occurrence during migration and potential for nesting along the Kansas and Republican Rivers
Snowy Plover (*Charadrius alexandrinus*)	Bird	No	yes	Low potential for occurrence during migration, and potential for nesting along the Kansas and Republican Rivers
Sturgeon Chub (*Macrhybopsis gelida*)	Fish	Yes	No	Potential for occurrence in the Kansas and Republican Rivers
Topeka Shiner (*Notropis topeka*)	Fish	Yes	Yes	Occurrence from streams within the JLUS Study area including: Wildcat Creek, Sevenmile Creek, Walnut Creek, Carnahan Creek, Mill Creek, Wind, Honey, Silver, Threemile, Forsyth, Fourmile, and Little Arkansas
Eastern Spotted Skunk (*Spilogale putorius*)	Mammal	No	Yes	Low potential for occurrence in native habitats
Plains Minnow (*Hybognathus placitus*)	Fish	Yes	Yes	Potential for occurrence in the Kansas and Republican Rivers
Shoal Chub (*Macrhybopsis gelida*)	Fish	Yes	Yes	Potential for occurrence in the Kansas and Republican Rivers
Species in Need of Conservation				
Black Tern (*Chlidonias niger)*	Bird	NA	Yes	Low potential for occurrence during migration
Bobolink *(Dolichonyx oryzivorus)*	Bird	NA	Yes	Low potential for occurrence during migration, records from Riley County
Black Rail (*Laterallus jamaicensis*)	Bird	NA	Yes	Low potential for occurrence during migration

Species	Group	Critical Habitat within the County?	Potential to Occur Within the Project	Notes
Eastern Whip-poor-will *(Antostromas vociferus)*	Bird	NA	Yes	Low potential for occurrence in woodlands
Ferruginous Hawk *(Buteo regalis)*	Bird	NA	Yes	Low potential for occurrence during migration
Golden Eagle *(Aquila chrysaetos)*	Bird	NA	Yes	Low potential for occurrence during migration
Cerulean Warbler (Setophaga cerulean)	Bird	NA	Yes	Low potential for occurrence during migration
Henslow's Sparrow *(Ammodramus henslowii)*	Bird	NA	Yes	Occurrence records from Riley and the JLUS Study Area
Long-billed Curlew *(Numenius americanus)*	Bird	NA	Yes	Low potential for occurrence during migration
Short-eared Owl *(Asio flammeus)*	Bird	NA	Yes	Low potential for occurrence during migration in grassland habitats
Yellow-throated Warbler (*Setophaga dominica*)	Bird	NA	Yes	Low potential for occurrence during migration
Common Shiner *(Luxilus cornutus)*	Fish	NA	Yes	Occurrence records from Riley County
Johnny Darter *(Etheostoma nigrum)*	Fish	NA	No	Occurrence records from streams in Riley County.
Blue Sucker (*Cycleptus elongates)*	Fish	NA	No	Occurrence records from the Kansas River
Greenside Darter (*Etheostoma blenniodes)*	Fish	NA	No	The majority of records are from southeastern Kansas.
Highfin Carpsucker (*Carpiodes velifer)*	Fish	NA	No	Occurrence records from Riley County.
Southern Redbelly Dace (*Chrosomus erythrogaster*)	Fish	NA	No	High potential for occurrence with the JLUS Study Area
Ozark Emerald Dragonfly (*Somatochlora ozarkensis*)	Insect	NA		Low potential for occurrence along riparian habitats
Prairie Mole Cricket (*Gryllotalpa major*)	Insect	NA		High potential for occurrence in grassland habitats within the JLUS study area

Species	Group	Critical Habitat within the County?	Potential to Occur Within the Project	Notes
Southern Bog Lemming *(Synaptomys cooperi)*	Mammal	NA	No	High potential from grassland and wet meadow habitats within Riley County
Franklin's Ground Squirrel (*Poliocitellus franklinii)*	Mammal	NA	No	Low potential for occurrence due to restricted range in northern Kansas
Western Hognose Snake *(Heterodon nasicus)*	Snake	NA	Yes	Occurrence records from within Riley and Geary County.
Eastern Hognose Snake (*Heterodon platirhinos*)	Snake	NA	Yes	Occurrence records from within Riley County and Geary Counties.
Timber Rattlesnake (*Crotalus horridus)*	Snake	NA	Yes	Occurrence records from within Riley and Geary Counties.

Sources: KDWPT 2017a, 2017b, 2015c, NRP 2016

Threatened and endangered species are primarily managed through U.S. Fish and Wildlife Service and Kansas Department of Wildlife Parks and Tourism. National Environmental Policy Act (NEPA) coordination and oversite will require evaluating projects and development for impacts on threatened and endangered wildlife. Management of the habitats important for T&E species should be coordinated with the wildlife agencies and continued involvement of the surrounding communities would be valuable in maintaining suitable habitat throughout the installation. Continued inventories and monitoring of populations of T&E species could be coordinated with the agencies and surrounding communities to identify habitats important for the continued persistence of T&E species and to promote biodiversity throughout the JLUS study area.

6.12 PRESCRIBED BURNING

Area of Interest

The side effects of wildfires and prescribed burns can impact both the military and civilians in the area.

Applicable Compatibility Factors

TABLE 6.12 PRESCRIBED BURNING COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors	
	Dust / Smoke / Steam
Natural Resource Factors	
	Air Quality
	Climate Adaptation

Priority Ranking

The Prescribed Burning Area of Interest received a medium priority ranking meaning the recommendations should be implemented between four and six years upon completion of the JLUS.

Medium

Background

Beginning with the Native Americans, prescribed fires have been used in Kansas to improve and maintain the natural and agricultural resources within the state. In recent years emissions related to prescribed fires, particularly in the Flint Hills, have contributed to air quality problems within the state and in downwind states.

The Flint Hills region of Kansas is the last, large expanse of unplowed tallgrass prairie in North America. A long tradition of fire management by private ranchers to improve rangeland productivity has prevented the intrusion of woody and other undesirable plants into the prairie. Burning of the tallgrass prairie in the Flint Hills generally occurs in early to late-April to stimulate warm season grasses and to control undesirable woody species. With the majority of prescribed fire activities occurring during this time period, a large amount of particulate matter and ozone precursors are released into the air during a relatively short time period.

In April 2003, air quality monitors that measure ozone in the Kansas City area recorded very high ozone. Three monitors in Kansas City, Missouri recorded readings that exceeded the federal 8-hour ozone standard. Kansas Department of Health and Environment (KDHE) received numerous complaints from cities and states as far away as Tennessee about poor air quality and high ozone readings.

Compatibility Review

Fire is well documented as a key ecological driver in grassland communities and is utilized by environmental organizations as an ecological management tool. Tallgrass prairie requires fire on a relatively frequent basis to prevent the encroachment of woody species and maintain the integrity of plant communities. Wildfires occur within the Study Area from two primary sources – military activities and controlled burning both at Fort Riley and by large land owners.

Controlled burns at Fort Riley are used to maintain the area for military training, reduction of wildfire potential, reduction and suppression of woody plant encroachment onto the prairie, maintenance of wildlife resting and breeding cover, and sericea lespedeza control. Wildfires are occasionally started by military activities such as live fire gunnery, use of flares and smoke grenades, and vehicle exhaust mechanisms in grasslands.

Prescribed burns will usually be conducted at Fort Riley from approximately September 1 through April 30 annually. The most common exception for conducting prescribed burns from May 1 through July 31 will be to directly support the military mission, to damage woody vegetation in an over-run area, or to reduce air attainment issues by spreading out the burning season.

A firebreak system has been established around the installation's perimeter to delineate installation boundaries and minimize wildfire spread off the installation onto adjacent privately-owned lands. Nearly 1,300 acres along approximately 44 miles of the boundary are leased for crop production. Leased firebreak fields are maintained as agricultural croplands where soil conditions allow. In areas where the

Figure 53 Prescribed burns are usually conducted yearly September through April at Fort Riley and during the month of April in the region

soil is not arable because of severe slopes or rocky conditions, a crawler tractor-pulled disc accomplishes that tillage. The firebreak varies in width from approximately 150 feet to in excess of 300 feet.

The air attainment issues that first began in 2003 have continued to be a concern to citizens within the study area. Many are uneducated as to where burning is taking place, who is responsible and the reasoning behind it.

Regulations for burning within the agricultural community can be found in Kansas Administrative Rule 28-19-645 to 648. In addition to the state regulations, the state of Kansas, with the assistance of many stakeholders, developed a smoke management plan to address air quality concerns caused by the annual burning of the tallgrass prairie in the Flint Hills of Kansas. The Kansas Flint Hills Smoke Management Plan attempts to balance the need for prescribed fire in the Flint Hills with the need for clean air in downwind communities, but is a voluntary program. The Smoke Management Plan is the first step in educating the community but additional resources need to be created to continue the education and communication process with both the community and Fort Riley.

6.13 Alternative Energy Sources (Solar)

Area of Interest

Solar panel farms have the potential to create adverse effects on military operations.

Applicable Compatibility Factors

Table 6.13 Alternative Energy Sources (Solar)
Compatibility and Encroachment Factors

Development Factors	
	Energy Development
	Light and Glare

Priority Ranking

The Alternative Energy Sources (Solar) Area of Interest received a medium priority ranking meaning the recommendations should be implemented between four and six years upon completion of the JLUS.

Background

Kansas is among the 10 sunniest states in the country, with the same solar power potential as Florida. The Solar Energy Industry Association has determined that there are currently 4.7 megawatts of solar energy installed in Kansas – enough to power 630 homes, making it the 43rd in the country in installed solar capacity.

In May 2009, the Kansas Legislature enacted the Renewable Energy Standards Act (H.B. 2369), creating a state renewable portfolio standard (RPS). The Kansas RPS required the state's investor-owned utilities and electric cooperatives to generate or purchase 20% of the affected utility's peak demand from eligible renewable resources for each calendar year beginning in 2020. In May 2015, S.B. 91 was enacted, changing the RPS from a standard to a voluntary goal. This voluntary goal leads to an increase focus on renewable energies within the state.

A solar photovoltaic system is made up of multiple components that collect the sun's radiated energy, convert it to electricity and transmit the electricity in a usable form. The main component is the solar panel, which is comprised of a group of individual solar cells that convert sunlight energy to electricity.

Figure 54 Kansas is among the 10 sunniest states in the country

Construction materials used in the development of solar energy infrastructure may employ reflective surfaces causing visual impairment or communication systems interference for pilots in training. The reflective surfaces create glare which can vary depending on type, location, angle and direction, resulting in a reduction of a pilot's view, even at a very high altitude. Visual impairment can decrease pilot and aircraft safety and ultimately the safety of the general public.

Due to the increased use of solar systems, including solar systems in and around airports, the FAA has created policy guidance to aid in the review and placement of the systems. The FAA guidance is primarily focused on solar systems within airport bounds but the information can be extrapolated and used as guidance for areas outside of the airport property.

Compatibility Review

The Kansas Energy Information Network (KEIN) identifies 206 solar projects within the state of Kansas, including one in Geary County at Fort Riley and 18 in Riley County. The vast majority of which are small or residential systems producing less than 10 kilowatts. These types of systems have minimal impacts to pilots as the glare is not substantial. However, large industrial solar fields could cause a significant amount of glare, compromising the training missions taking place. At this time, regulations are not in place within most municipalities zoning ordinances in the study area to regulate large scale solar fields, or to provide guidance for small scale solar panels.

6.14 Alternative Energy Sources (Wind)

Area of Interest

The use of large scale wind turbines on agricultural lands has significantly increased as the profitability has grown. Regulations need to be put in place to establish siting standards to minimize interference with military training and operation.

Applicable Compatibility Factors

Table 6.14 Alternative Energy Sources (Wind) Compatibility and Encroachment Factors

Development Factors	
	Energy Development
	Vertical Obstructions
People Factors	
	Legislative Initiatives

Priority Ranking

The Alternative Energy Sources (Wind) Area of Interest received a medium priority ranking meaning the recommendations should be implemented between four and six years upon completion of the JLUS.

Background

The wide plains of Kansas have lead it to be among the leading states in both wind energy generation and wind energy potential. Almost all of Kansas's renewable net electricity generation comes from wind, and, in 2015, the state ranked among the top five states in the nation in generation from wind energy and among the five states with the highest wind energy potential.

In May 2009, the Kansas Legislature enacted the Renewable Energy Standards Act (H.B. 2369), creating a state renewable portfolio standard (RPS). The Kansas RPS required the state's investor-owned utilities and electric cooperatives to generate or purchase 20% of the affected utility's peak demand from eligible renewable resources for each calendar year beginning in 2020. According to the American Wind Energy Association, Kansas generated 21.7% of its electricity from wind energy in 2014. In May 2015, S.B. 91 was enacted, changing the RPS from a standard to a voluntary goal. This voluntary goal leads to an increase focus on renewable energies within the state.

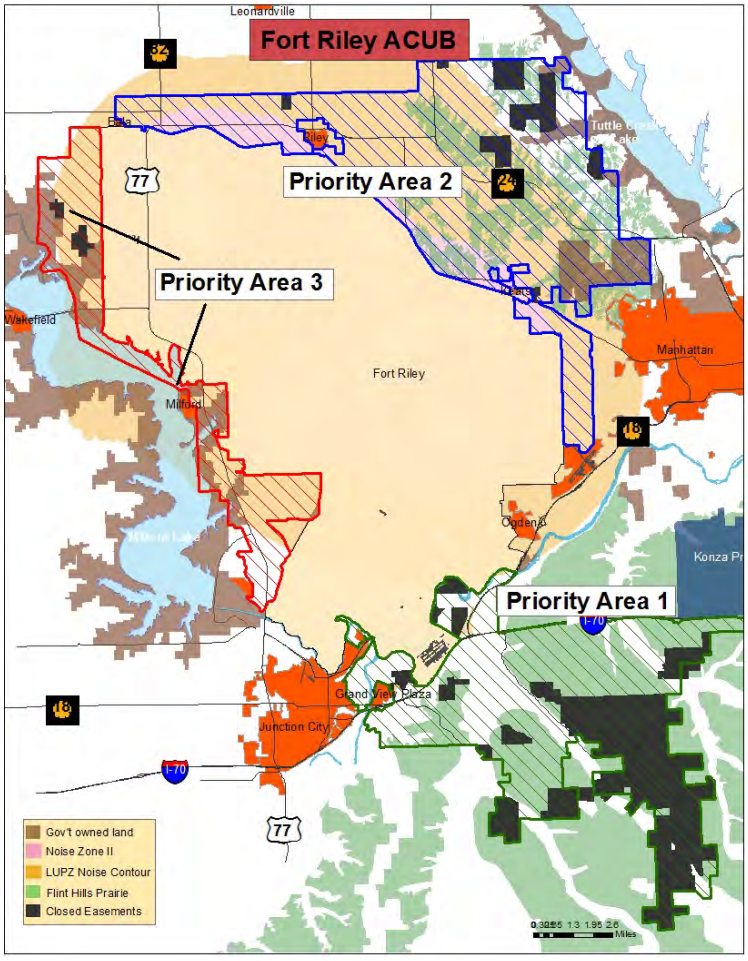
The moving blades of a wind turbine create a Doppler effect that can interfere with radio transmissions between air traffic controllers and aircraft and other types of communications, such as satellites. Recent studies indicate that large numbers of wind turbines located between five and eight miles from a radar

system can have a negative impact on the system and interfere with readings. The impacts on radar are increased with the height, number, and clustering of turbines. The greatest impact is caused by their location proximate to the radar system. Although research is still being conducted, it is not fully known how tall, large, or how many wind turbines must be present to compromise radar operations.

In addition to the frequency interference impact, wind farms can have a negative impact on the tallgrass prairie within the Flint Hills. Governor Sam Brownback established a voluntary prohibition on new wind turbines within the Tallgrass Heartland. The designated area covers 10,895 square miles and includes the entirety of the study area. Existing wind farms within the area are permitted to operate but may not be expanded and new wind farms will not be permitted.

Compatibility Review

The use of large scale wind turbines on agricultural lands has significantly increased as the profitability has grown. As long as a wind turbine is not within the line of sight (LOS) for a particular radar, there is no affect. Fort Riley's ASR-11 radar LOS is 360 degrees at 60 miles. There are currently a bank of wind turbines in Concordia, Kansas that are within this LOS perimeter. Air Traffic Controllers are aware of the obstructions and have developed processes to account for aircraft disappearing within the electrical interference band.



Fort Riley has established an ACUB Program plan to preserve 82,403 acres surrounding the Post. The buffer area is divided into three priority areas to protect against unforeseeable incompatible land uses outside of the Fort Riley boundary. Priority Area 1, approximately 33,327 acres, consists of large parcels of primarily prairie lands that is primed for industrial-sized wind

Figure 55 The moving blades of a wind turbine create a Doppler effect that can create communication interference

turbines. Fort Riley has targeted this area for conservation due to the threats that the spinning turbines pose to the radar operations.

Regulations are currently in place within the zoning ordinances of Geary County and Riley County. Geary County currently limits wind energy conversion systems to accessory uses (Sec. 14-102) within the Agriculture, Suburban Residential, and Residential-1 zoning designations. It may also be permitted as a Conditional Use under Sec. 15-105.13.

Riley County is currently undergoing a rewrite to their Land Development Regulations but also restricts commercial wind energy conversion systems to the Agricultural Zoning district and small wind energy conservation systems to all zoning districts as an allowable use pursuant to specific regulations.

Other municipalities within the study area have yet to establish regulations regarding wind energy conversion systems.

6.15 FORMALIZED COMMUNICATION

Area of Interest

The community has a great working relationship with the military. A more formalized communication process will only aid in solidifying the relationship.

Applicable Compatibility Factors

TABLE 6.15 FORMALIZED COMMUNICATION COMPATIBILITY AND ENCROACHMENT FACTORS

People Factors	
	Coordination / Communication

Priority Ranking

The Formalized Communication Area of Interest received a medium priority ranking meaning the recommendations should be implemented between four and six years upon completion of the JLUS.

Compatibility Review

Fort Riley has an outstanding relationship with the communities in which they are located. It is evident that each is dependent on the other, but appreciative of the role that they play. It is important to solidify that relationship and maintain the current standard for the future.

In fact, the counties of Clay, Geary, and Riley and the cities of Grandview Plaza, Junction City, Manhattan, Milford, Ogden and Riley entered into a Memorandum of Understanding (MOU) with Fort Riley in March of 2015. The MOU was drafted in an effort to meet the requirements of KSA 12-773 to address issues related to communication, cooperation and collaboration between military installations and surrounding municipalities regarding planning for growth and development.

The MOU directs Fort Riley and the representatives of each municipality adjacent to or surrounding it to meet annually for the purpose of reviewing the State Area of Interest Map and more specifically the "Critical Area" within the state area of interest. The Critical Area is a combination of several boundaries, including: the most recently identified LUPZ which is a noise impact area associated with explosives and large arms operations/training; the area within one statute mile of the installation boundary; the area within a portion of the helicopter flight route buffer near the northwest corner of Fort Riley; and, the area between such helicopter flight route buffer and the installation boundary of Fort Riley.

The boundaries established by the MOU will be monitored by Fort Riley and adjacent municipalities to reduce potential conflicts between military operations and the economic well-being of the surrounding communities. If no changes to the map are desired by any of the participating entities, it will remain in force as set forth in the MOU. If there are changes to the map that are mutually agreed to by the entities, a new MOU will be executed at that time to reflect the agreement.

Figure 56 Formalized communication will benefit both the community and Fort Riley.

Although this process is in place for local governments, the community is not usually as well educated on current mission changes, training schedules, on-post activities and other areas that are of interest. Based on the community survey results conducted as part of the JLUS, a more standardized communication process needs to be put into place specifically for the community.

6.16 Post Access

Area of Interest

Fort Riley has a significant amount of history and cultural resources that are interesting to civilians.

Applicable Compatibility Factors

Table 6.16 Post Access Compatibility and Encroachment Factors

People Factors	
	Coordination / Communication
	Cultural Resources

Priority Ranking

The Post Access Area of Interest received a medium priority ranking meaning the recommendations should be implemented between four and six years upon completion of the JLUS.

Medium

Background

Fort Riley policy regarding public access, as stated in FR 210-15, is consistent with the Sikes Act, as amended (P.L. 105-85), DoD Instruction 4715.3, and AR 200-1. The access procedures protect Soldiers and recreationists and minimize interference with the military mission by limiting recreationists' access and munitions based upon scheduled training and security considerations.

Natural resources-based outdoor recreational activities on Fort Riley take place only in areas authorized by the Conservation Branch in coordination with the Directorate of Planning, Training, Mobilization and Scheduling (DPTMS), Range Safety Office. The authorized areas can change daily, depending on the schedule of the installation's military trainers. Access to any area that is not listed as open for hunting, fishing, trapping, non-consumptive outdoor recreation, or fuelwood cutting is prohibited. Outdoor recreationists may learn of open areas via iSportsman. iSportsman is an automated check-in-out system by which recreationists are able to view open areas and check-in/check-out via the world-wide web, smart phones and other compatible electronic devices. Individuals can register at the Fort Riley iSportsman webpage www.fortriley.isportsman.net.

A form of government issued photo identification is required to obtain an access pass or badge. Additionally, any non-DoD person entering the installation, regardless of affiliation, must pass a criminal background check. Vehicle registration and proof of insurance are required for every vehicle that is driven on the installation.

Figure 57 Fort Riley has a significant amount of outdoor recreational activities, cultural and historical sites, and on-post activities.

Privately-owned vehicle access to Fort Riley for recreational activities is allowed. All vehicles operated on Fort Riley for recreational purposes must display a Fort Riley Recreation Motor Vehicle Permit. These permits are free of charge and may be picked up at the Conservation Branch office or at any of the ten Hunter Check Stations.

In addition to outdoor recreational activities, patrons visit Fort Riley for its history. Fort Riley's Main Post Historic District and the First Territorial Capitol of Kansas are listed on the National Register of Historic Places (NRHP). The district contains 294 historic buildings, structures, and monuments (282 of which are buildings), and 118 historic military archeological sites. Included within the district are three museums: the US Cavalry Museum, the 1st Infantry Museum, and the Custer House. The US Cavalry Museum is located in the original Fort Riley Hospital. Visitors may enjoy exhibit galleries that take them on a historic tour of the cavalry's material culture - from the Revolutionary War through the branches inactivation in 1950. A temporary gallery also chronicles special phases in the history of this colorful branch. In the 1st Infantry Division Museum there are exhibits relating to the Big Red One's history from 1917 to the present. Exhibits include World War I, II, Cold War, Vietnam, Desert Storm and current operations. Constructed in 1855 of native limestone, the Custer House is one of two surviving sets of quarters from Fort Riley's establishment. It depicts military life on the Western frontier and features displays that show the living conditions of a typical military family.

Compatibility Review

Fort Riley has a significant amount of outdoor recreational activities, cultural and historical sites, and on-post activities. Throughout the community workshops, stakeholder interviews, and survey questionnaire, comments were made begrudging the ability to access Fort Riley. In some instances, civilians complained of it taking more than 30 minutes to get through the guard gate and parents having difficulty accessing their children's sporting events. Other concerns were noted that community activities were not widely advertised and civilian citizens had difficulty entering the Post when they were made aware of functions.

It is important to note that the military mission takes priority over all outdoor recreation. Fort Riley is not a public recreation area but is instead a military training installation that allows natural resources-based recreation and other activities on post only when it is compatible with the military mission and security.

6.17 FLOODPLAIN MANAGEMENT

Area of Interest

Long term solutions are needed to manage floodplains within the study area.

Applicable Compatibility Factors

TABLE 6.17 FLOODPLAIN MANAGEMENT COMPATIBILITY AND ENCROACHMENT FACTORS

Natural Resource Factors
Climate Adaptation

Priority Ranking

The Floodplain Management Area of Interest received a medium priority ranking meaning the recommendations should be implemented between four and six years upon completion of the JLUS.

Medium

Background

The 99-square mile Wildcat Creek watershed lies between the two USACE reservoirs of Milford and Tuttle Creek. The creek flows through the western portion of the City of Manhattan and the southern portion of Riley County, emptying into the Kansas River. On the western edge of the watershed is a 34-square mile portion of the Fort Riley Military Base. The area within the basin is primarily rural and agricultural.

Wildcat Creek has a long history of flooding, negatively impacting the City of Manhattan. The creek had severe flooding in 2007, 2010, and again in June 2011. The 2011 event resulted in the evacuation of over 200 people. As a result of these flood events, the Wildcat Creek Watershed Working Group was formed. The Wildcat Creek Floodplain Management Plan was produced as a culmination of their efforts to study and develop strategies to reduce flooding in the watershed.

Effective flood risk reduction requires upstream investments that protect streambanks and streambeds and increase absorption and detention of runoff. These efforts should be paired with downstream investments in buying out flood prone properties, equitably relocating households, and transforming acquired lands into productive greenspace that lend further flood protection and social, economic, and recreational values. Also, the natural retention and detention of rainwater to reduce downstream flows provides ancillary benefits such as erosion reduction and water quality improvement.

The Wildcat Creek Floodplain Management Plan recommends an action for a comprehensive flood hazard mitigation plan to address a wide variety of structural solutions to reduce the risk of flooding along Wildcat Creek. The range of structural solutions includes:

- Detention basins located in the upper reaches of tributaries to Wildcat Creek to the west of the City.
- Added or enlarged stormwater infrastructure, such as stormwater sewers, culverts and swales to divert stormwater runoff.
- Flood-proofing of existing structures to reduce damages from flooding.
- Purchasing and removing structures that are at high risk of repetitive flooding to create additional open space that should improve the stream's functionality.
- Stream bank improvements to minimize or prevent significant erosion.
- Stream channel restoration to improve river functions.

Compatibility Review

The Wildcat Creek watershed drainage and flood hazards are anticipated to remain the same for the next five years with the potential for minor reduction from adoption of stormwater policies. The long-term reduction of the flood hazard is expected to occur through the continued involvement of the Wildcat Creek Watershed Working Group to produce a comprehensive flood hazard mitigation plan that investigates the feasibility of flood control dams in the Fort Riley portions of the Wildcat Creek watershed, as well as identify areas for wetland creation/restoration providing increased absorption and detention of rainfall runoff. Leveraging the previous HUD Grant competition efforts to further enhance the identification and prioritization of significant stream bank erosion locations will be necessary. Continued searching and evaluation of funding sources to implement the actions identified in the floodplain management plan will also be necessary.

Despite having similar flood hazards, the risks to the community from the hazard are being reduced. The adoption of higher ordinance standards, creation of a flood warning system, joining the FEMA Community Rating System, and increased community engagement for more flood risk awareness have high benefit to the City, county, and Fort Riley's resilience to flooding.

6.18 WATER RESOURCES

Area of Interest

Lakes and rivers are important resources in the region that need to be protected.

Applicable Compatibility Factors

TABLE 6.18 WATER RESOURCES COMPATIBILITY AND ENCROACHMENT FACTORS

Natural Resource Factors
Water Quality / Quantity

Priority Ranking

The Water Resources Area of Interest received a medium priority ranking meaning the recommendations should be implemented between four and six years upon completion of the JLUS.

Medium

Background

Pursuant to the *Clean Water Act,* all states are required to monitor the physical, chemical and biological condition of their surface water resources and are strongly encouraged to monitor groundwater quality. States also are required to update water quality information annually, to comprehensively report on water quality conditions on a biennial basis, to develop and maintain a list and priority ranking of water quality-limited surface waters.

Kansas Department of Health and Environment (KDHE) is responsible for water quality monitoring and assessment. KDHE is to "investigate and report upon all matters relating to water supply and sewerage and the pollution of the waters of the state" (Kansas Statutes Annotated (K.S.A.) 65-170). Waters of the state are legally defined as "all streams and springs and all bodies of surface and subsurface water within the boundaries of the state" (K.S.A. 65-161(a)). Water pollution is defined, in part, as "contamination or other alteration of the physical, chemical or biological properties of any waters of the state...likely to create a nuisance or render such waters harmful, detrimental or injurious to public health, safety or welfare, or to the plant, animal or aquatic life of the state or to other designated beneficial uses" (K.S.A. 65-171d(c)).

In the project boundary, Wildcat Creek is listed by KDHE as an impaired stream with a very poor ranking for total phosphorus, poor ranking for E. coli, and moderate rankings for total nitrogen and total suspended solids.

IN 2013, KDHE has also designated six streams as Kansas Heritage Streams. These streams serve as representatives of healthy watersheds. Sevenmile Creek on Fort Riley is one of those streams.

Compatibility Review

Due to the unique mix of ownership and management of streams in the project area, collaboration between the various stakeholders is likely to produce the most effective results in improving water quality in Wildcat Creek and protecting streams like Sevenmile Creek. Expansion of programs like the Integrated Training Area Management (ITAM) program at Fort Riley would also be beneficial. Continued ITAM research into non-point source pollution control, data dissemination, gully erosion, stormwater best management practices, and similar topics by Kansas State University and others is encouraged.

Figure 58 Due to the unique mix of ownership and management of streams in the project area, collaboration between the various stakeholders is likely to produce the most effective results.

6.19 HOUSING

Area of Interest

There is an adequate supply of housing; however, the community is concerned that the price of the housing market is out of line with the community's needs.

Applicable Compatibility Factors

TABLE 6.19.A HOUSING COMPATIBILITY AND ENCROACHMENT FACTORS

Development Factors
Housing Availability

Priority Ranking

The Housing Area of Interest received a low priority ranking meaning the recommendations should be implemented within ten years upon completion of the JLUS.

Low

Background

The US Department of Housing and Urban Development (HUD) prepares Market at a Glance Reports for every Region, State, Metropolitan Statistical Area, Metropolitan Division and County in the country. Each report contains the most up to date data from the BLS (Bureau of Labor Statistics), American Community Survey, and the U.S. Census Bureau. The Manhattan Core Base Statistical Area (CBSA) includes Geary County, Pottawatomie County, and Riley County.

TABLE 6.19.B MANHATTAN CBSA HOUSING INVENTORY BY TENURE

	2010 Decennial	2015 ACS
Total Housing Units	14,517	15,009
Occupied	12,690	12,723
Owners	5,944	5,442
% Owners	46.8%	42.8%
Renters	6,746	7,281
% Renters	53.2%	57.2%
Total Vacant	1,827	2,286
Available for Sale	196	194
Available for Rent	1,041	990
Other Vacant	590	1,102

Source: 2010 Census and 2015 American Community Surveys (5 - Year)

The Manhattan CBSA has a strong rental market with over 57% of the occupied units consisting of renters. The number of vacant rental units has decreased between 2010 and 2015; however, in more recent years there has been an increase in rental vacancies. The median gross rent in 2015 was estimated to be $930. The gross mortgage was estimated at $1,382 for the same time.

On a yearly basis, Fort Riley tracks the housing choices of their military families and the Department of Army (DA) civilians. Fort Riley is attributable to a total of 6,360 residents – 3,777 are military and 2,853

are DA civilians. The Army reports that military and DA civilians account for 3,734 families and 1,450 soldiers in the community. They are found to be living in the following counties: Geary, Riley, Dickinson, Clay, Morris, Saline, Shawnee, Pottawatomie, and Wabaunsee.

Figure 59 Examples of various housing choices within the region.

Compatibility Review

Based on the survey, community meetings, and advisory committee meetings, many residents of the community believe the price points of the housing market is out of tune with the needs of the community. A regionwide study could provide the basis to determine if the current price point is appropriate for the community.

6.20 Fenceline / Boundary Protection

Area of Interest

Approximately 28% of Fort Riley is fenced. The other 72% of unfenced areas may allow for unauthorized people to either intentionally or unknowingly enter the Post.

Applicable Compatibility Factors

Table 6.20 Fenceline / Boundary Protection Compatibility and Encroachment Factors

Development Factors	
	Safety Zones
	Anti-Terrorism / Force Protection
People Factors	
	Public and Military Safety

Priority Ranking

The Fenceline / Boundary Protection Area of Interest received a low priority ranking meaning the recommendations should be implemented within ten years upon completion of the JLUS.

Low

Compatibility Review

Approximately 22 miles (28%) of the 78 miles of Fort Riley's perimeter is fenced. The majority of the fenced area is located on the cantonment portion of the installation. It has been noted that people have been accessing the installation through porous sections of the property. So much so, that there are clear paths created by vehicles showing specific access routes.

Figure 60 Approximately 22 miles (28%) of the 78 miles of Fort Riley's perimeter is fenced.

In addition to people accessing the Fort, citizens have noted that elk herds previously located on Post have left Fort Riley and damaged private property. The elk herd are owned by the State of Kansas, as is all wildlife. The elk utilize food plots primarily on Fort Riley but may have subdivided to create additional habitat off Post. Citizens have had a mixed response to the elk herds – some find it a unique attraction others find it to be a destructive nuisance.

6.21 Light and Glare

Area of Interest

Lighting controls and standards for new development are not codified by existing regulations. There is potential for new development impacting flight paths and training missions caused by glare or lighting

Applicable Compatibility Factors

Table 6.21 Light and Glare Compatibility and Encroachment Factors

Development Factors	
	Land Use
	Light and Glare

Priority Ranking

The Light and Glare Area of Interest received a low priority ranking meaning the recommendations should be implemented within ten years upon completion of the JLUS.

Background

The inappropriate or excessive use of artificial light – known as light pollution – can have serious environmental consequences for humans, wildlife, and our climate. Components of light pollution include:

- Glare – excessive brightness that causes visual discomfort
- Skyglow – brightening of the night sky over inhabited areas
- Light trespass – light falling where it is not intended or needed
- Clutter – bright, confusing and excessive groupings of light sources

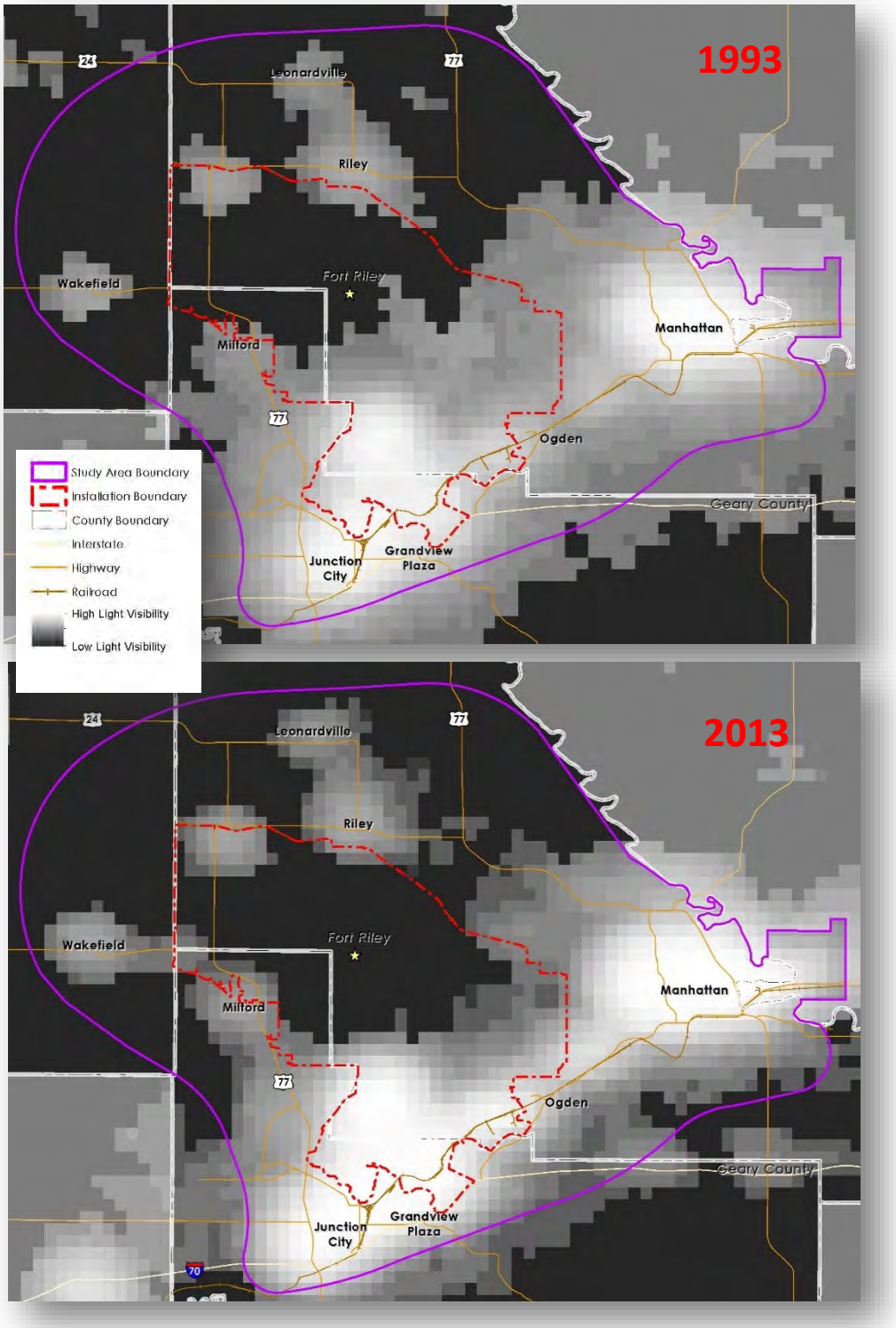
Light pollution is a side effect of industrial civilization. Its sources include building exterior and interior lighting, advertising, commercial properties, offices, factories, streetlights, and illuminated sporting venues.

Compatibility Review

Night testing and training is an essential element of the military mission that takes place at Fort Riley. Light pollution can interfere with the night time training missions as well as flight operations and training. Conversely, lighting from Fort Riley can negatively impact the community and possibly the wildlife environment.

Street lights, building lights, outdoor sports fields, factories, rail spurs and commercial uses can cause light pollution if not properly regulated. Commercial and retail developments usually require the most outdoor lighting for urban land uses because of the business advertising needs and the associated parking areas. Fort Riley noted that the rails spurs on post cause a significant lighting issue within their own training.

As can be seen on the graphics – light patterns have shifted over the 20-year period from 1993 to 2013. Light intensity has significantly increased around Manhattan, Junction City, Grandview Plaza, and the cantonment area of Fort Riley. Design standards and specific dark sky lighting requirements can aid in creating a standard practice to reduce light pollution both at Fort Riley and within the community.



RECOMMENDATIONS

7 RECOMMENDATIONS

The Recommendations portion of the report provides a list of strategies and actions that can be used to resolve, prevent, and mitigate Areas of Interest identified within the Compatibility Analysis. The recommendations are intended to be general so that each local government has the ability to tailor them to their needs during the implementation phase. Some of the recommendations provide multiple strategies to achieve the same objective. Therefore, if one recommendation is implemented there may be another that is no longer necessary. Through the tailored implementation phase, each local government will be able to determine the methodology that best suits their community.

Each section lists the Area of Interest (in green) and the Recommendation (in grey). If additional details are necessary to fully understand the recommendation, they are provided immediately following. Lastly the responsible entity is listed. Because the implementation plan is tailored for each government, not every jurisdiction will be required to implement every recommendation. The primary responsible entity is the one that will take the lead role in implementation. The partner entity will assist the primary entity in implementation.

A summary table at the end of chapter lists the recommendation and the responsible entity. The black diamond (◆) denotes the entity that will be primarily responsible for implementing the recommendation. The white diamond (◇) denotes the partner entity that will be necessary to assist with the implementation.

7.1 IMPLEMENTATION COMMITTEE

Area of Interest

Communication, outreach, and coordination are critical tools in building and maintaining relationships among elected officials, stakeholders, and citizens in order to mitigate compatibility issues.

Implementation Timing
Within 1 – 3 years

7.1.1 Implementation Committee (IMP1)

The Flint Hills / Fort Riley JLUS Technical Working Group should transition to a JLUS implementation committee and be responsible for monitoring the implementation of the recommended JLUS strategies and act as a forum for continued communication and sharing of information and current events associated with JLUS.

The Technical Working Group is familiar with the JLUS process as well as the strategies that have been formulated. Their familiarity would allow them to transition to an implementation committee and carry the program through to application.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, Wakefield, Fort Riley, and others. Other entities would include those already appointed to the Technical Working Group such as the FHRC, Manhattan Area Chamber of Commerce, Pottawatomie County Economic Development Corporation, Junction City Area Chamber of Commerce.

7.2 LAND USE

Area of Interest

Fort Riley effects multiple jurisdictions and local regulations are not in place within every municipality, or are in need of strengthening, in order to provide protection standards for the military and continued community growth.

Implementation Timing
Within 1 – 3 years

7.2.1 Land Use Recommendation 1 (LU1)

Establish a Military Influence Overlay District (MIOD) and Military Influence Areas (MIA), or other similar alternative.

The MIOD should consist of the Fort Riley State Area of Interest Map, at a minimum. The MIAs should consist of the following:

- Noise MIA. The Noise MIA is established to notify residents of the potential for noise impacts due to their proximity to Fort Riley.
- Renewable Energy Development MIA. The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of solar farms and large-scale wind farms.
- Vertical Obstructions MIA. The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and Unmanned Air System (UAS) flight corridors utilized by Fort Riley.
- Safety Zone MIA. The Safety Zone MIA is established to protect underlying land uses from impacts of Marshall Army Airfield's Clear Zones (CZ) and Accident Potential Zone I (APZI) and Zone II (APZII).
- Frequency MIA. The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas.

The boundary for each MIA will be determined through coordination with Fort Riley and the applicable local government during the implementation phase. Refer to Appendix 2 for a model overlay zoning ordinance.

Responsible Entities

The primary responsible entities include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, and Wakefield.

7.2.2 Land Use Recommendation 2 (LU2)

Update the comprehensive plans to incorporate the MIA, MIOD, and other military compatibility policies. Update and adopt future land use maps, and supporting goals, objectives, and policies.

Once the MIA and MIODs have been determined, the comprehensive plan must be updated to incorporate the new overlay district(s) and associated policies. Sections that need to be updated include the future land use map as well as implementing policies.

Responsible Entities

The primary responsible entities include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, and Wakefield.

7.2.3 Land Use Recommendation 3 (LU3)

Update zoning regulations to incorporate MIA and MIOD.

Similar to the updates needed for the Comprehensive Plan, the zoning ordinance and zoning map must be updated to implement the newly drafted MIA and MIOD.

Responsible Entities

The primary responsible entities include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, and Wakefield.

7.2.4 Land Use Recommendation 4 (LU 4)

Create a Military Compatibility Element in the Comprehensive Plan.

The Military Compatibility Element will help to ensure that the continually changing mission of Fort Riley remains compatible with the growth that is occurring in the region, and vice versa. Components of the element may include such items as land use compatibility, coordination and communication, community involvement, and other subjects deemed relevant.

Responsible Entities

The primary responsible entities include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, and Wakefield.

7.2.5 Land Use Recommendation 5 (LU5)

Update and/or draft Comprehensive Plans, Zoning Ordinances, and applicable studies for the cities of Grandview Plaza, Ogden, Milford, Riley, and Wakefield.

Many of the jurisdictions within the region have adopted Comprehensive Plans, Zoning Ordinances, and supporting documents. Most have been updated within the last 10-years. However, a few of the jurisdictions do not have comprehensive plans, zoning ordinances, or the supporting data and analysis in place. Without these regulatory documents and data and analysis, it is difficult to provide guidance to provide predictable standards for land owners and future developers.

Responsible Entities

The primary responsible entities include Grandview Plaza, Milford, Ogden, Riley, and Wakefield.

7.2.6 Land Use Recommendation 6 (LU6)

Develop and distribute property owner information to provide details on applicable regulations that govern development within the MIOD.

New regulations applicable to the MIOD can be confusing to land owners and community developers unfamiliar with the process. Through the development and dissemination of brochures, website, and pamphlets, the public can become educated on the new changes and how they apply to their property.

Responsible Entities

The primary responsible entities include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, and Wakefield.

7.2.7 Land Use Recommendation 7 (LU7)

Establish by policy or regulation, within the land development regulations, a formal requirement that provides Fort Riley an opportunity to engage in discussion and is given formal notification of new development located adjacent to the installation. This should include providing the installation with detailed site plans, project build out descriptions, elevations and construction plans, where appropriate.

This is currently required as part of the MOU but needs to be established by policy within the land development regulations. Wakefield is not part of the existing MOU and would need to be included in the process. The regulation should be incorporated into the MIOD.

Responsible Entities

The primary responsible entities include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, and Wakefield.

The supporting entity consists of Fort Riley. Fort Riley is integral to the review process but the local jurisdictions are the primary responsible entities because they are responsible for incorporating it within their regulations.

7.2.8 Land Use Recommendation 8 (LU8)

Seek regular input from Fort Riley representatives for technical assistance (i.e. code updates, comprehensive plan updates, and development review processes).

Representatives from Fort Riley are great resources to help local governments when drafting policies that may have an impact to the military. It is important to set-up a system that allows an easy exchange of ideas and feedback on a regularly occurring basis. The Coordination Committee, proposed through the implementation process (Recommendation FC4), could facilitate the exchange necessary to determine the appropriate technical expert.

Responsible Entities

The primary responsible entities include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, Wakefield, and Fort Riley.

7.3 GROWTH AREA

Area of Interest

Fort Riley effects multiple jurisdictions and local regulations are not in place within every municipality, or are in need of strengthening, in order to provide protection standards for the military and continued community growth.

Implementation Timing
Within 1 – 3 years

7.3.1 Growth Area Recommendation 1 (GA1)

The Blue Township/Highway 24 Corridor, while alleviating growth pressures adjacent to Fort Riley, is experiencing rapid growth without the detailed planning that is necessary to maximize the long-term potential of the area. A planning study/analysis should be conducted in this area to develop a long-term strategic growth plan.

Needed studies include, long-range planning, neighborhood plans, infrastructure plans, access management planning and corridor planning.

Responsible Entities

The primary responsible entity would consist of Pottawatomie County. The supporting entity would be the City of Manhattan

7.4 SAFETY ZONES

Area of Interest

Airport Safety Zones for Marshall Army Airfield extend off Post.

Implementation Timing
Within 1 – 3 years

7.4.1 Safety Zone Recommendation 1 (SZ1)

Evaluate the feasibility of encroachment partnering agreements (allowed pursuant to Title 10 USC 2684a) with eligible entities to protect lands within the APZs that extend off of Fort Riley.

Title 10 USC 2684a allows the Secretary of Defense or the Secretary of a military department to partner with an eligible entity to acquire real property in the vicinity of, or ecologically related to, a military installation to limit incompatible development, preserve habitat, or protect the mission of the installation from encroachment. Eligible entities include the state, a political subdivision of the state, or a private entity that has the goal of conservation, restoration, or preservation of land and natural resources.

Responsible Entities

The primary responsible entities include Geary County, Grandview Plaza, and Fort Riley. Supporting entities could include the State of Kansas, Nature conservancy, Kansas Land Trust, or other similar organizations.

7.4.2 Safety Zone Recommendation 2 (SZ2)

Consider drafting an Air Installation Compatible Use Zone (AICUZ) study to determine noise and hazards associated with the airport environment.

A Clear Zone and Approach Zones have been identified for MAAF, however, an AICUZ study has not been completed. The AICUZ analyzes the effects of aircraft noise, accident potential, and land use compatibility and provides planning guidelines for neighbors of MAAF.

Responsible Entities

The primary responsible entity would be Fort Riley. The supporting entities would consist of Geary County and Grandview Plaza.

7.4.3 Safety Zone Recommendation 3 (SZ3)

Update local regulations (comprehensive plans and zoning ordinances) to incorporate standards relating to the Clear Zone, and Approach Zones I and II.

The Department of Defense identifies guidelines and recommended compatible land uses within the Clear Zones and Approach Zones. These recommendations should be considered and incorporated into the appropriate local regulations.

Responsible Entities

The primary responsible entities would be Geary County and Grandview Plaza. The supporting entity would be Fort Riley.

7.5 VERTICAL OBSTRUCTIONS

Area of Interest

The introduction of vertical obstructions can interfere with the success of training missions as well as the safe operations of the airport. The vertical obstructions can include not only trees and buildings but also telecommunication towers and wind turbines.

Implementation Timing
Within 1 – 3 years

7.5.1 Vertical Obstruction Recommendation 1 (VO1)

Identify/map areas of concern for vertical obstructions.

Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Milford, Ogden, Riley, and Fort Riley.

7.5.2 Vertical Obstruction Recommendation 2 (VO2)

As part of the Vertical Obstruction MIA, include Fort Riley on the telecommunication tower siting and approval processes.

Establish within the local regulations, procedures for Fort Riley to review and comment on proposed telecommunication towers.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Milford, Ogden, Riley and Fort Riley.

7.5.3 Vertical Obstruction Recommendation 3 (VO3)

Increase public awareness of the issues resulting from vertical obstructions and the impacts to the airport, the aircraft, training exercises and routes.

Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Milford, Ogden, Riley, and Fort Riley.

7.5.4 Vertical Obstruction Recommendation 4 (VO4)

Develop height restrictions for compatibility within the Vertical Obstruction MIA.

It is important to ensure development surrounding the installation is compatible – both for the safety of the civilians and the military. Utilizing the established MIA, and receiving input from Fort Riley, height restrictions need to be established and implemented in the comprehensive plan and zoning ordinance for structures with significant height requests (i.e. telecommunication towers, wind turbines, etc.) to minimize interference with military flights and training.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Milford, Ogden, Riley, and Fort Riley.

7.6 UNMANNED AIR SYSTEMS

Area of Interest

The Unmanned Air Systems (UAS) corridor was established to provide a flight path from Fort Riley to Smoky Hill and serves as a significant training resource.

Implementation Timing
Within 1 – 3 years

7.6.1 Unmanned Air Systems 1 (UAS1)

A land use analysis should be conducted to determine existing compatibility conflicts of the approved FAA UAS corridor and other future corridors.

The land use analysis would consider such items as existing land use zoning, and future land use and would analyze the compatibility of each use with the UAS corridor.

Responsible Entities

The primary responsible entities would be Others including FHRC. The Supporting responsible entities would include North Central Regional Planning Commission, the communities underneath the UAS corridor, and Fort Riley.

7.6.2 Unmanned Air Systems 2 (UAS2)

An encroachment analysis should be conducted for the approved UAS corridor, as well as future corridors, to ensure community growth and increased UAS training remain compatible.

An encroachment analysis would include land use factors, existing and future development factors, and environmental factors to determine encroachment impacts on the corridor and provide recommendations.

Responsible Entities

The primary responsible entities would be Others. Other entities would include the FHRC. The Supporting responsible entities would include North Central Regional Planning Commission, the communities underneath the UAS corridor, and Fort Riley.

7.7 FREQUENCY INTERFERENCE

Area of Interest

Frequency interference from the community can cause a disruption to training taking place on Fort Riley. Likewise, training on Fort Riley may impact the use of the frequency spectrum within the community.

Implementation Timing
Within 1 – 3 years

7.7.1 Frequency Interference Recommendation 1 (FI1)

Prepare and execute a Frequency MOU between Fort Riley and adjacent municipalities to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment.

An MOU between the impacted local governments would provide a clear understanding of the activities that could potentially lead to frequency interference. Discussions with Fort Riley would be required to determine where the greatest interference may occur.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Milford, Ogden, City of Riley, Wakefield and Fort Riley.

7.7.2 Frequency Interference Recommendation 2 (FI2)

Mitigate frequency spectrum impedance and interference issues associated with development through the review process.

Development review coordination procedures need to be put into place in the zoning ordinance or through the development review process to determine coordination procedures for projects that could emit frequencies that are under the FCC threshold that may interfere with Fort Riley training exercises. Fort Riley would need to assist in determining the frequency emission threshold.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Milford, Ogden, City of Riley, and Wakefield. Supporting entities would include Fort Riley.

7.8 NOISE

Area of Interest

Noise generated from small arms weapons firing, demolition, large arms weapons firing, and rotary-wing aircraft training can be heard throughout the study area and often interferes with resident's daily lives.

Implementation Timing
Within 1 – 3 years

7.8.1 Noise Recommendation 1 (N1)

Where not already present, incorporate noise contour maps into municipal planning documents.

To help clarify the noise contours around the installation, use the Army provided Average Noise Zones and incorporate them into the adopted Comprehensive Plan and Zoning Ordinances. Update the Future Land Use Map and Zoning Map to include the Average Noise Zones.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Manhattan, Milford, Ogden, and Riley.

7.8.2 Noise Recommendation 2 (N2)

Include noise compatibility policies within local planning documents for jurisdictions within the Noise MIA.

Incorporate policies and guidelines that address noise impacts. Policies and guidelines may include suggested uses, noise attenuation standards, and/or notification procedures. The information would be included in the Noise MIA as well as supporting documents in an appendix.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Manhattan, Milford, Ogden, and Riley.

7.8.3 Noise Recommendation 3 (N3)

Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA.

Coordinate with the Kansas Association of Realtors to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. Provide education to the realtors on the importance of disclosing the information. Consider the possibility of lobbying to update Kansas Stat. Ann. 58-30.106 to require noise disclosures for lands within the Noise MIA and / or Fort Riley Average Noise Contours.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Manhattan, Milford, Ogden, Riley, and Other. Other would include the Kansas Association of Realtors and other realty groups.

7.8.4 Noise Recommendation 4 (N4)

Create a uniform noise disclosure real estate process.

In order to ensure that new land owners are notified of potential noise impacts due to their location within the Average Noise Zones of Fort Riley, the property must be identified during a title search. Each county government within the Noise MIA would need to record the boundary of the Noise MIA and draft a Notice of Potential Noise Impacts. Refer to Appendix 3 for an example of a Notice of Potential Noise Impacts.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, and Riley County.

7.8.5 Noise Recommendation 5 (N5)

Provide current and adequate information to facilitate informed decisions by jurisdictions, developers and interested citizens relative to a property's location and nearby military impacts.

Provide training to local officials and municipal departments in order to provide educated response to the community in regards to military impacts. Additionally, on an annual basis, at a minimum, hold open houses where interested citizens are able to gather information.

Responsible Entities

The primary responsible entities would be Fort Riley and Other. Other would include the FHRC. The supporting entities would include Clay County, Geary County, Riley County, Grandview Plaza, Manhattan, Milford, Ogden, and Riley.

7.8.6 Noise Recommendation 6 (N6)

Conduct a study using an acoustic consultant to determine appropriate methods of noise attenuation or other minimization strategies.

By contracting with an acoustic consultant, the local governments will receive the most current acoustic and attenuation trends for the area. The consultant will be able to tailor the data and analysis to match the unique qualities of the region. FHRC will lead process while Clay, Geary, and Riley counties and the cities of Grandview Plaza, Manhattan, Milford, Ogden, and Riley will provide support and input.

Responsible Entities

The primary responsible entity would be Other such as FHRC. Supporting entities would include Clay, Geary, and Riley counties and the cities of Grandview Plaza, Manhattan, Milford, Ogden, and Riley, and Fort Riley.

7.8.7 Noise Recommendation 7 (N7)

Within the Noise MIA, update and adopt sound attenuation standards specific to each jurisdiction, using the results from the noise attenuation study.

Utilizing the results of the study from Noise Recommendation 6, detailed procedures and requirements can be developed for adoption within the MIA.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Manhattan, Milford, Ogden, Riley.

7.8.8 Noise Recommendation 8 (N8)

Educate local builders on the benefits and opportunities of sound attenuation.

Work with local builders and development organizations to ensure they are familiar with noise attenuation measures, how to incorporate them in a cost-effective manner, and how to market them as a benefit to clients.

Responsible Entities

The primary responsible entities would be Other. Other would include the FHRC. Supporting entities would include Clay County, Geary County, Riley County, Grandview Plaza, Manhattan, Milford, Ogden, Riley.

7.8.9 Noise Recommendation 9 (N9)

Educate the community regarding noise frequency and intensity.

Increase community awareness of training schedules and military operations through the use of local media sources, websites, newsletters, and outreach functions.

Responsible Entities

The primary responsible entities would be Fort Riley and Other. Other would include the FHRC. Supporting entities would include Clay County, Geary County, Riley County, Grandview Plaza, Manhattan, Milford, Ogden, Riley.

7.8.10 Noise Recommendation 10 (N10)

Coordinate future noise assessment studies with local governments to keep them apprised of future changes in the noise contours.

Local governments are often not aware that an installation-wide noise impact assessment is being conducted by the Army Public Health Center and that the associated noise contours may change. Utilizing the Implementation Committee or another designated working group, Fort Riley could keep the local jurisdictions up to date on any assessments or resulting changes to the noise contours.

Responsible Entities

The primary responsible entities would be Fort Riley. Supporting entities would include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, and Riley.

7.9 REGIONAL GIS DATABASE

Area of Interest

Municipalities would benefit from a regional database clearinghouse to share relevant GIS-based data.

Implementation Timing
Within 1 – 3 years

7.9.1 Regional GIS Database Recommendation (GIS1)

Establish a GIS Database Clearinghouse that includes Fort Riley and the municipalities that fall within the study area.

Flint Hills/Fort Riley JLUS GIS Database Clearinghouse would incorporate all the JLUS GIS data layers as well as other regional, state and federal data sets to be utilized by city and county governments during the development approval process. One entity, such as the FHRC, would be primarily responsible for the database while all of the municipalities and Fort Riley would supply the data.

Responsible Entities

The primary responsible entities would be Other which would consist of an entity such as FHRC. The supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, City of Riley, Wakefield, and Fort Riley.

7.10 AIR SPACE

Area of Interest

Multiple entities use the airspace around Fort Riley and the competition is only increasing.

Implementation Timing
Within 1 – 3 years

7.10.1 Air Space Recommendation 1 (AS1)

Develop a coordination and communication process that involves educating military helicopter pilots of the importance of the farming community and educates the farming community of the importance of the training on Fort Riley.

A communication process needs to be put into place to allow information to be shared between the farming community and Fort Riley. The two parties can have significant impacts on one another and through a coordinated process, the impacts can be shared, discussed, and mitigated. At a minimum, an annual meeting will be required for discussion.

Responsible Entities

The primary responsible entities would be Fort Riley and Others. Others would include FHRC. Supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, and others. Other entities may include farming organizations such as Kansas Livestock Association, and Farm and Ranch Land Protection.

7.10.2 Air Space Recommendation 2 (AS2)

Develop a coordination manual for the surrounding farming community that provides contact information for Fort Riley personnel and the large land owners and farmers.

A coordination manual, to be handed out or shared electronically, would provide contact information for Fort Riley personnel, large land owners, and farmers to reach each other should the need arise.

Responsible Entities

The primary responsible entities would be others. Other entities may include organizations such as the FHRC to facilitate production of the documentation. Supporting entities would include Fort Riley, Clay County, Geary County, Pottawatomie County, and Riley County to provide data.

7.10.3 Air Space Recommendation 3 (AS3)

Conduct, at a minimum, meetings annually between the Fort and the farming communities.

By facilitating meetings consistently, stakeholders will be able to discuss concerns on a regularly basis in an effort to mitigate any issues.

Responsible Entities

The primary responsible entities would be Fort Riley. Supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Fort Riley, and others. Other entities may include the FHRC, and farming organizations such as Kansas Livestock Association, Riley County Livestock Association, Riley County Farm Bureau, and Farm and Ranch Land Protection.

7.10.4 Air Space Recommendation 4 (AS4)

Coordination between Fort Riley and individual airports within the Study Area is required to maintain air space management.

Coordination already takes place between MAAF, Manhattan Regional Airport, Freeman Field Airport, and Salina Airport Authority and with overall responsibility falling to the FAA. However, with increased air traffic in the area, additional coordination measures will only help to ensure safety of those using air space.

Responsible Entities

The primary responsible entities would be Fort Riley and Other. Other would include Manhattan Regional Airport, Freeman Field Airport, Salina Airport Authority and the FAA.

7.11 HABITAT

Area of Interest

Fort Riley and the surrounding grasslands of the Flint Hills communities form a core habitat area for many species of plants and animals, including state and federally threatened, endangered, and protected species.

Implementation Timing
Within 1 – 3 years

7.11.1 Habitat Recommendation 1 (HAB1)

Provide assistance to the Army and municipalities to ensure NEPA as well as other state and federal regulations are met.

The municipalities within the Study Area can provide support to the Army when completing the NEPA review process and other regulatory processes. Support can include the sharing of data and resources.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, Fort Riley, and Other.

7.11.2 Habitat Recommendation 2 (HAB2)

Coordinate with the US Fish and Wildlife Services to identify potential habitat for species.

Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, Fort Riley, and Other.

7.11.3 Habitat Recommendation 3 (HAB3)

Educate the public regarding the existing partnerships with natural resources and conservation groups to identify methods of protection.

Create pamphlets, brochures, and website materials that can easily be shared with the public regarding the natural resources in the area and the importance of protecting the resources. Partners to team with conservation organizations could also create increased exposure to residents.

Responsible Entities

The primary responsible entities would be Fort Riley and Other entities. An entity such as the FHRC should take the lead in crafting the materials and teaming with other organizations including municipalities within the study area. Supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, and Fort Riley.

7.11.4 Habitat Recommendation 4 (HAB4)

Coordinate with US Fish and Wildlife Services to investigate presence/absence of Northern Long-eared bats in the study area.

Northern Long-eared bats roost in forested areas. Their range includes the study area. Verification of presence in the study area would make healthy forested areas more important. Verification of presence would have impacts on developments according to the 4(d) rule under the *Endangered Species Act*. Initial presence/absence could be conducted using acoustic detectors in areas identified through habitat assessments.

Responsible Entities

The primary responsible entities would be Other. Other would consist of the US Fish and Wildlife Service. Supporting entities would include Geary County, Riley County, Clay County, and Fort Riley.

7.11.5 Habitat Recommendation 5 (HAB5)

Investigate opportunities to improve fish passage on streams with records of Topeka Shiner presence.

The Topeka Shiner is a federally endangered species occurring in the area. It's habitat availability is negatively affected by stream sedimentation and obstructions such as culverts.

Responsible Entities

The primary responsible entities would be Geary County, Riley County, Clay County, Manhattan, Junction City, and Fort Riley.

7.11.6 Habitat Recommendation 6 (HAB6)

Continue to pursue funding through the Army Compatible Use Buffer (ACUB) Program, Readiness and Environmental Protection Initiative (REPI), and Sentinel Landscape Program to provide opportunities for habitat.

Federal programs provide opportunities for additional funding sources in an effort to preserve lands and habitat.

Responsible Entities

The primary responsible entities would be Fort Riley. Supporting entities would be Other and would include USDA, DoD, and DOI.

7.11.7 Habitat Recommendation 7 (HAB7)

Expand partnerships with existing environmental organizations, state and federal agencies, conservation groups, academic groups, and local farm organizations.

Partnerships could provide opportunities for funding, education, or community engagement. Potential partners could include Nature Conservancy, the USFWS, Kansas State University, University of Kansas, Kansas Livestock Association, Kansas Land Trust, Riley County Livestock Association, Riley County Farm Bureau, or Farm and Ranch Land Protection.

Responsible Entities

The primary responsible entities would be Other. Other entities could consist of Nature Conservancy, the USFWS, Kansas State University, University of Kansas, Kansas Livestock Association, Kansas Land Trust, Farm and Ranch Land Protection, or local farming organizations.

7.12 Prescribed Burning

Area of Interest

The side effects of wildfires and prescribed burns can impact both the military and civilians in the area.

Implementation Timing
Within 4 - 6 years

7.12.1 Prescribed Burning 1 (PB1)

Provide an educational system to the community explaining the wildfire burning system used within the region and potential fire hazards from training on Fort Riley.

An educational system could include community meetings, pamphlets, brochures, mobile app, and websites to explain the wildfire burning method used by the farming community and Fort Riley.

Responsible Entities

The primary responsible entities would be Others. Other would consist of an organization such as the FHRC to take the lead of drafting the materials and sharing them with the adjacent communities. The supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, Fort Riley.

7.13 Alternative Energy Sources (Solar)

Area of Interest

Solar panel farms have the potential to create adverse effects on military operations.

Implementation Timing
Within 4 - 6 years

7.13.1 Alternative Energy Sources (Solar) Recommendation 1 (AES1)

Develop solar siting guidelines to include: updating zoning ordinances to specify non-reflective panels for non-residential applications and requiring review and coordination by an Army representative.

Municipalities containing lands within the Renewable Energy MIA would need to update their zoning ordinance and development review process to incorporate solar siting guidelines.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, and Wakefield. The supporting entity would be Fort Riley.

7.14 Alternative Energy Sources (Wind)

Area of Interest

The use of large scale wind turbines on agricultural lands has significantly increased as the profitability has grown. Regulations need to be put in place to establish siting standards to minimize interference with military training and operation.

Implementation Timing
Within 4 - 6 years

7.14.1 Alternative Energy Sources (Wind) Recommendation 1 (AEW1)

Conduct a study to determine effects of the siting of wind turbines within the JLUS Study area.

An analysis to determine the potential impacts from wind turbines on the Radars located at Fort Riley as well as any impacts to flight paths for MAAF and helicopter paths would determine appropriate locations and siting opportunities for new turbines as well as areas where they should be prohibited.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County. Supporting entities would be Fort Riley.

7.14.2 Alternative Energy Sources (Wind) Recommendation 2 (AEW2)

Coordinate with State Legislators to restrict wind turbines in the region.

Discussions are needed at a state level to determine the appropriate methods of wind turbine restriction within the region. Currently wind turbines are voluntarily restricted within specific areas.

Responsible Entities

The primary responsible entities would be Other – an organization such as FHRC to facilitate the discussion. The supporting entity would be Fort Riley.

7.14.3 Alternative Energy Sources (Wind) Recommendation 3 (AEW3)

Amend local regulatory planning documents (i.e. Comprehensive Plans, Zoning Ordinances, etc.) to incorporate procedures for coordinating alternative energy development applications with the DOD Siting Clearinghouse.

Title 32, Code of Federal Regulations, Part 211 advises and guides the process to facilitate early submission of renewable energy project proposals for military mission compatibility review. Local governments within the Renewable Energy MIA will need to update their review and approval process within the land development regulations to include the DOD Siting Clearinghouse for renewable energy projects.

Responsible Entities

The primary responsible entities would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, and Wakefield. The supporting entity would be Fort Riley and Other. Other would include the DOD Siting Clearinghouse.

7.15 FORMALIZED COMMUNICATION

Area of Interest

The community has a great working relationship with the military. A more formalized communication process will only aid in solidifying the relationship.

Implementation Timing
Within 4 - 6 years

7.15.1 Formalized Communication Recommendation 1 (FC1)

Establish a designated position as a Community Planner to serve as a liaison between the Army and the community.

A designated community planner provides a consistent point of contact for the community as well as Fort Riley. The Community Planner would be employed by Fort Riley but could be military or civilian.

Responsible Entities

The primary responsible entities would be Fort Riley.

7.15.2 Formalized Communication Recommendation 2 (FC2)

Make points of contact for the community and Fort Riley widely known and easily identifiable.

Sharing contact information with local residents, stakeholders, large land owners, and farmers will help to ease some of the frustration in getting in touch with the correct contact. Information can be shared through websites, brochures, and other reproducible materials. Update jurisdictions and regional planning organizations websites and link to Fort Riley web page. Include information such as contact information, appropriate methods of contact, expected response time, as well as upcoming events.

Responsible Entities

The primary responsible entities would be Fort Riley and Other. The Other entity would likely include an organization such as the FHRC to spearhead the process. The supporting entities would be Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, and Wakefield.

7.15.3 Formalized Communication Recommendation 3 (FC3)

Create a communication coordination manual to be shared with identified individuals.

A communication coordination manual, to be updated yearly, would identify necessary individuals within the local governments and at Fort Riley. The manual would provide detailed information such as City Council and County Commission meeting dates, departmental contact information, city hall location, etc. By updating the manual on a yearly basis, the contacts would stay current.

Responsible Entities

The primary responsible entity would be Other. An entity such as FHRC would be responsible for putting together the manual. Supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, and Fort Riley.

7.15.4 Formalized Communication Recommendation 4 (FC4)

Establish a JLUS coordination committee.

Establish a committee to assist with the coordination efforts within the study area. The committee should have representatives from each jurisdiction and Fort Riley. The committee should aim to meet at a minimum of a yearly basis to ensure coordination is occurring as planned.

Responsible Entities

The primary responsible entities would be Other such as FHRC. Supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, and Fort Riley.

7.15.5 Formalized Communication Recommendation 5 (FC5)

Create a regionwide coordination process to act as the central point of communication for all Fort Riley related issues.

Create a formal communication process to share information associated with Fort Riley. The established process would provide a means to share information such as increased training dates, unanticipated increases in noise, special community events, and other similar such activities.

Responsible Entities

The primary responsible entities would be Fort Riley and Other. Other would include an entity such as FHRC. Supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, and Wakefield.

7.15.6 Formalized Communication Recommendation 6 (FC6)

Establish the ONE (Outstanding Neighborhood Engagement) program.

As part of the regionwide coordination process established by FC5, create an open exchange of information to maintain transparent communication and provide a platform to keep interested citizens informed.

- Hold open houses in rotating locations on a regular basis;
- Provide an overview of training activities, construction projects, and other areas of interest; and
- Allow residents the opportunity to speak their concerns.

Responsible Entities

The primary responsible entities would be Fort Riley and Other. Other would include an entity such as FHRC. Supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, and Wakefield.

7.16 POST ACCESS

Area of Interest

Fort Riley has a significant amount of history and cultural resources that are interesting to civilians.

Implementation Timing
Within 4 - 6 years

7.16.1 Post Access Recommendation 1 (PA1)

Evaluate existing notification and access procedures for ordinary access as well as special events taking place on Fort Riley.

The existing notification and access procedures must be detailed in order to determine where the issues arise when civilians attempt to enter the post. In addition to conducting trial runs, community participants should be contacted to determine the issues that have taken place.

Responsible Entities

The primary responsible entity would be Other. An impartial organization such as FHRC should be responsible for conducting the analysis. The supporting entity would be Fort Riley.

7.16.2 Post Access Recommendation 2 (PA2)

Develop detailed procedures that can be shared with the community through a variety of public outlets to distribute information and keep the community informed on how to access the Post.

Civilian citizens should be made aware of the procedures necessary to enter the post. By sharing this information, they will know what to anticipate and the associated time constraints. The information could be shared on Fort Riley's website and linked to other community websites.

Responsible Entities

The primary responsible entity would be Fort Riley. The supporting entities would include Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, and Other.

7.17 FLOODPLAIN MANAGEMENT

Area of Interest

Long term solutions are needed to manage floodplains within the study area.

Implementation Timing
Within 4 - 6 years

7.17.1 Floodplain Management Recommendation 1 (FM1)

Investigate feasibility of previously proposed flood control dams in the Wildcat Creek watershed to reduce the peak discharge in the creek thus reducing flooding.

Preliminary studies showed potential to reduce peak discharge of Wildcat Creek into the City of Manhattan by approximately 20% if three dry detention dams were built on Fort Riley. Feasibility would be staged to include an evaluation of funding sources, preliminary design, and NEPA compliance followed by final design and construction depending on feasibility results.

Responsible Entities

The primary responsible entities would be Manhattan, Riley County, and Fort Riley as the supporting entity.

7.17.2 Floodplain Management Recommendation 2 (FM2)

Evaluate and pursue opportunities for funding sources to design flood control measures.

Many grant opportunities exist to aid communities in mitigating against flooding. This effort would evaluate those grants for applicability and provide assistance with grant writing.

Responsible Entities

The primary responsible entities would be Manhattan and Riley County. Supporting entities would include Other - FHRC.

7.17.3 Floodplain Management Recommendation 3 (FM3)

Identify areas where wetland creation/restoration are feasible along Wildcat Creek and its tributaries.

Wetlands would serve dual purpose of creating habitat and flood storage. The federally endangered Topeka Shiner has been known to use off channel pools and oxbows.

Responsible Entities

The primary responsible entities would be Riley County, Manhattan, and Fort Riley as the supporting entity.

7.17.4 Floodplain Management Recommendation 4 (FM4)

Conduct watershed study to identify locations of significant streambank erosion on Wildcat Creek and its tributaries. Prioritize sites for stream restoration assistance.

Use an established industry method to assess the watershed, identify problem spots, and prioritize them for restoration. Reducing erosion would protect infrastructure local to the improvement. Stream restoration would increase habitat and aid in flood mitigation through re-meandering and/or grade control.

Responsible Entities

The primary responsible entities would be Riley County, Manhattan, and Other. Other would include the Kansas Department of Water Resources. Fort Riley would serve as the supporting entity.

7.18 Water Resources

Area of Interest

Lakes and rivers are important resources in the region that need to be protected.

Implementation Timing
Within 4 - 6 years

7.18.1 Water Resources Recommendation 1 (WR1)

Conduct a study to analyze phosphorus contribution to lakes creating algal blooms.

Harmful algal blooms have been a problem in the study area affecting human health, aquatic ecosystems, and the economy. Nutrient pollution, including phosphorus, contributes to algal blooms. This study would investigate the sources and their relevant contributions to algal blooms.

Responsible Entities

The primary responsible entities would be Other. The Other would likely consist of support from researchers at Kansas State University.

7.19 HOUSING

Area of Interest

There is an adequate supply of housing; however, the community is concerned that the price of the housing market is out of line with the community's needs.

Implementation Timing
Within 10 years

7.19.1 Housing Recommendation 1 (HO1)

Conduct a housing market analysis within the JLUS Study Area to determine the current market threshold for housing and price points.

Develop a housing analysis based on economic, demographic, and housing inventory characteristics within the study area for a 10-year period.

Responsible Entities

The primary responsible entity would be Other. It is likely that an entity such as FHRC would be responsible for conducting the study with assistance from the Flint Hills Area Builders Association, Realtors Association, and Chambers of Commerce. The supporting entities would consist of Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, and Fort Riley.

7.19.2 Housing Recommendation 2 (HO2)

Create brochures and informational packages to be shared with new Fort Riley personnel. The brochures should provide information so new residents are notified of housing opportunities off Post.

Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options in the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

Responsible Entities

The primary responsible entity would be Clay County, Geary County, Pottawatomie County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield and Other. Each municipality would need to create their own marketing materials with support from Realtors and Chambers of Commerce. Supporting entities would consist of Fort Riley.

7.20 Fenceline / Boundary Protection

Area of Interest

Approximately 28% of Fort Riley is fenced. The other 72% of unfenced areas may allow for unauthorized people to either intentionally or unknowingly enter the Post.

Implementation Timing
Within 10 years

7.20.1 Fenceline /Boundary Protection Recommendation 1 (FBP1)

Prepare maps that clearly define the areas used by the military for training and distribute to the public for educational purposes.

Using ArcGIS data, map the boundaries and fencelines of the Fort Riley property. Utilizing social media, websites, public forums, etc. distribute the materials to the public to provide notification of the boundaries.

Responsible Entities

The primary responsible entity would be Fort Riley. Supporting entities would include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, and Riley.

7.20.2 Fenceline / Boundary Protection Recommendation 2 (FBP2)

Provide educational material on local government and associated agencies websites to notify of the potential dangers of entering the area.

Educational materials need to be drafted to educate civilians of the potential dangers of entering the Fort Riley boundary. Once the materials have been crated, they can be posted on websites and used as handouts.

Responsible Entities

The primary responsible entity would be Fort Riley. Supporting entities would include Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Manhattan, Milford, Ogden, and Riley.

7.20.3 Fenceline / Boundary Protection Recommendation 3 (FBP3)

Establish a committee to evaluate the elk herds roaming off the installation and develop strategies to better manage the herd on the installation.

Working with representatives from Fort Riley, the Kansas Department of Wildlife Parks and Tourism, large land owners, and farmers form a committee to focus on the elk herds associated with Fort Riley. The committee should meet on an annual basis, at a minimum, and work together to develop herd management strategies.

Responsible Entities

The primary responsible entity would be Fort Riley and Others. Others would consist of the State of Kansas, Kansas Department of Wildlife Parks and Tourism, large land owners and farmers affected by the elk herds.

7.21 Light and Glare

Area of Interest

Lighting controls and standards for new development are not codified by existing regulations. There is potential for new development impacting flight paths and training missions caused by glare or lighting.

Implementation Timing
Within 10 years

7.21.1 Light and Glare Recommendation 1 (LG1)

Develop and adopt Dark Sky Lighting requirements within the Vertical Obstructions MIA to minimize urban sky glow and light trespassing into adjacent properties.

Incorporate Dark Sky lighting requirements into zoning regulations and building codes of local governments within the flight paths of MAAF and helicopter training routes.

Responsible Entities

The primary responsible entity would be Clay County, Geary County, Riley County, Grandview Plaza, Junction City, Milford, Ogden, and Riley.

7.22 RECOMMENDATIONS SUMMARY

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.1 IMPLEMENTATION COMMITTEE (IMP) **IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS**	**Communication, outreach, and coordination are critical tools in building and maintaining relationships among elected officials, stakeholders, and citizens in order to mitigate compatibility issues.**												
IMP1. The Flint Hills / Fort Riley JLUS Technical Working Group should transition to a JLUS implementation committee and be responsible for monitoring the implementation of the recommended JLUS strategies and act as a forum for continued communication and sharing of information and current events associated with JLUS.	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
7.2 LAND USE (LU) **IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS**	**Fort Riley affects multiple jurisdictions and local regulations are not in place within every municipality, or are in need of strengthening, in order to provide protection standards for the military and continued community growth.**												
LU1. Establish a Military Influence Overlay District (MIOD) and Military Influence Areas (MIA), or other similar alternative.	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆		

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
LU2. Update the comprehensive plans to incorporate the MIA, MIOD, and other military compatibility policies. Update and adopt future land use maps, and supporting goals, objectives, and policies.	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆		
LU3. Update zoning regulations to incorporate MIA and MIOD.	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆		
LU4. Create a Military Compatibility Element in the Comprehensive Plan.	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆		
LU5. Update and/or draft Comprehensive Plans, Zoning Ordinances, and applicable studies for the cities of Grandview Plaza, Ogden, Milford, Riley, and Wakefield.					◆			◆	◆	◆	◆		
LU6. Develop and distribute property owner information to provide details on applicable regulations that govern development within the MIOD.	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆		
LU7. Establish by policy or regulation, within the land development regulations, a formal requirement that provides Fort Riley an opportunity to engage in discussion and is given formal notification of new development located adjacent to	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◇	

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
the installation. This should include providing the installation with detailed site plans, project build out descriptions, elevations and construction plans, where appropriate.													
LU8. Seek regular input from Fort Riley representatives for technical assistance (i.e. code updates, comprehensive plan updates, and development review processes).	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	
7.3 GROWTH AREA (GA)	**Fort Riley effects multiple jurisdictions and local regulations are not in place within every municipality, or are in need of strengthening, in order to provide protection standards for the military and continued community growth.**												
IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS													
GA1. The Blue Township/Highway 24 Corridor, while alleviating growth pressures adjacent to Fort Riley, is experiencing rapid growth without the detailed planning that is necessary to maximize the long-term potential of the area. A planning study/analysis should be conducted in this area to develop a long-term strategic growth plan.			◆				◇						

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.4 SAFETY ZONES (SZ)													
IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS	**Airport Safety Zones for Marshall Army Airfield extend off Post.**												
SZ1. Evaluate the feasibility of encroachment partnering agreements (allowed pursuant to Title 10 USC 2684a) with eligible entities to protect lands within the APZs that extend off of Fort Riley.		◆			◆							◆	◇
SZ2. Consider drafting an Air Installation Compatible Use Zone (AICUZ) report to determine noise and hazards associated with the airport environment.		◇			◇							◆	
SZ3. Update local regulations (comprehensive plans and zoning ordinances) to incorporate standards relating to the Clear Zone, and Approach Zones I and II.		◆			◆							◇	

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.5 VERTICAL OBSTRUCTIONS (VO) **IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS**	**The introduction of vertical obstructions can interfere with the success of training missions as well as the safe operations of the airport. The vertical obstructions can include not only trees and buildings but also telecommunication towers and wind turbines.**												
VO1. Identify/map areas of concern for vertical obstructions.	◆	◆		◆	◆	◆		◆	◆	◆		◆	
VO2. As part of the Vertical Obstruction MIA, include Fort Riley on the telecommunication tower siting and approval processes.	◆	◆		◆	◆	◆		◆	◆	◆		◆	
VO3. Increase public awareness of the issues resulting from vertical obstructions and the impacts to the airport, the aircraft, training exercises and routes.	◆	◆		◆	◆	◆		◆	◆	◆		◆	
VO4. Develop height restrictions for compatibility within the Vertical Obstruction MIA.	◆	◆		◆	◆	◆		◆	◆	◆		◆	
7.6 UNMANNED AIR SYSTEMS (UAS) **IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS**	**The UAS corridor was established to provide a flight path from Fort Riley to Smoky Hill and serves as a significant training resource.**												
UAS1. A land use analysis should be conducted to determine existing compatibility conflicts of the approved	◆											◇	◆

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
FAA UAS corridor and other future corridors.													
UAS2. An encroachment analysis should be conducted for the approved UAS corridor, as well as future corridors, to ensure community growth and increased UAS training remain compatible.												◇	◆
7.7 FREQUENCY INTERFERENCE (FI)	**Frequency interference from the community can cause a disruption to training taking place on Fort Riley. Likewise, training on Fort Riley may impact the use of the frequency spectrum within the community.**												
IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS													
FI1. Prepare and execute a Frequency MOU between Fort Riley and adjacent municipalities to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment.	◆	◆		◆	◆	◆		◆	◆	◆	◆	◆	
FI2. Mitigate frequency spectrum impedance and interference issues associated with development through the review process.	◆	◆		◆	◆	◆		◆	◆	◆	◆	◇	

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.8 NOISE (N)	**Noise generated from small arms weapons firing, demolition, large arms weapons firing, and rotary-wing aircraft training can be heard throughout the study area and often interferes with resident's daily lives.**												
IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS													
N1. Where not already present, incorporate noise contour maps into municipal planning documents.	◆	◆		◆	◆		◆	◆	◆	◆			
N2. Include noise compatibility policies within local planning documents for jurisdictions within the Noise MIA.	◆	◆		◆	◆		◆	◆	◆	◆			
N3. Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA.	◆	◆		◆	◆		◆	◆	◆	◆			◆
N4. Create a uniform noise disclosure real estate process.	◆	◆		◆									
N5. Provide current and adequate information to facilitate informed decisions by jurisdictions, developers and interested citizens relative to a property's location and nearby military impacts.	◇	◇		◇	◇		◇	◇	◇	◇		◆	◆
N6. Conduct a study using an acoustic consultant to determine appropriate	◇	◇		◇	◇		◇	◇	◇	◇		◇	◆

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
methods of noise attenuation or other minimization strategies.													
N7. Within the Noise MIA, update and adopt sound attenuation standards specific to each jurisdiction, using the results from the noise attenuation study.	◆	◆		◆	◆		◆	◆	◆	◆			
N8. Educate local builders on the benefits and opportunities of sound attenuation.	◇	◇		◇	◇		◇	◇	◇	◇			◆
N9. Educate the community regarding noise frequency and intensity.	◇	◇		◇	◇		◇	◇	◇	◇		◆	◆
N10. Coordinate future noise assessment studies with local governments to keep them apprised of future changes in the noise contours.	◇	◇		◇	◇		◇	◇	◇	◇		◆	
7.9 REGIONAL GIS DATABASE (GIS) **IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS**	**Municipalities would benefit from a regional database clearinghouse to share relevant GIS-based data.**												
GIS1. Establish a GIS Database Clearinghouse that includes Fort Riley and the municipalities that fall within the study area.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.10 AIR SPACE (AS)													
IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS	**Multiple entities use the airspace around Fort Riley and the competition is only increasing.**												
AS1. Develop a coordination and communication process that involves educating military helicopter pilots of the importance of the farming community and educates the farming community of the importance of the training on Fort Riley.	◇	◇	◇	◇	◇							◆	◆
AS2. Develop a coordination manual for the surrounding farming community that provides contact information for Fort Riley personnel and the large land owners and farmers.	◇	◇	◇	◇	◇							◇	◆
AS3. Conduct, at a minimum, meetings annually between the Fort and the farming communities.	◇	◇	◇	◇	◇							◆	◇
AS4. Coordination between Fort Riley and individual airports within the Study Area is required to maintain air space management.												◆	◆

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.11 HABITAT (HAB)	**Fort Riley and the surrounding grasslands of the Flint Hills communities form a core habitat area for many species of plants and animals, including state and federally threatened, endangered, and protected species.**												
IMPLEMENTATION TIMING: WITHIN 1 – 3 YEARS													
HAB1. Provide assistance to the Army and municipalities to ensure NEPA as well as other state and federal regulations are met.	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
HAB2. Coordinate with the US Fish and Wildlife Services to identify potential habitat for species.	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
HAB3. Educate the public regarding the existing partnerships with natural resources and conservation groups to identify methods of protection.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆	◆
HAB4. Coordinate with US Fish and Wildlife Services to investigate presence/absence of Northern Long-eared bats in the study area.	◇	◇		◇								◇	◆
HAB5. Investigate opportunities to improve fish passage on streams with records of Topeka Shiner presence.	◆	◆		◆		◆	◆						◆
HAB6. Continue to pursue funding through the Army Compatible Use Buffer												◆	◇

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
(ACUB) Program, Readiness and Environmental Protection Initiative (REPI), and Sentinel Landscape Program to provide opportunities for habitat.													
HAB7. Expand partnerships with existing environmental organizations, state and federal agencies, conservation groups, academic groups, and local farm organizations.													◆
7.12 PRESCRIBED BURNING (PB)	**The side effects of wildfires and prescribed burns can impact both the military and civilians in the area.**												
IMPLEMENTATION TIMING: WITHIN 4 – 6 YEARS													
PB1. Provide an educational system to the community explaining the wildfire burning system used within the region and potential fire hazards from training on Fort Riley.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆
7.13 ALTERNATIVE ENERGY SOURCES – SOLAR (AES)	**Solar panel farms have the potential to create adverse effects on military operations.**												
IMPLEMENTATION TIMING: WITHIN 4 – 6 YEARS													
AES1. Develop solar siting guidelines to include: updating zoning ordinances to	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◇

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
specify non-reflective panels for non-residential applications and requiring review and coordination by an Army representative.													
7.14 ALTERNATIVE ENERGY SOURCES – WIND (AEW) **IMPLEMENTATION TIMING: WITHIN 4 – 6 YEARS**	**The use of large scale wind turbines on agricultural lands has significantly increased as the profitability has grown. Regulations need to be put in place to establish siting standards to minimize interference with military training and operation.**												
AEW1. Conduct a study to determine effects of the siting of wind turbines within the JLUS Study area.	◆	◆		◆								◇	
AEW2. Coordinate with State Legislators to restrict wind turbines within the region.												◇	◆
AEW3. Amend local regulatory planning documents (i.e. Comprehensive Plans, Zoning Ordinances, etc.) to incorporate procedures for coordinating alternative energy development applications with the DOD Siting Clearinghouse.	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◇	◇

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.15 FORMALIZED COMMUNICATION (FC) **IMPLEMENTATION TIMING: WITHIN 4 – 6 YEARS**	**The community has a great working relationship with the military. A more formalized communication process will only aid in solidifying the relationship.**												
FC1. Establish a designated position as a Community Planner to serve as a liaison between the Army and the community.												◆	
FC2. Make points of contact for the community and Fort Riley widely known and easily identifiable.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆	◆
FC3. Create a communication coordination manual to be shared with identified individuals.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆
FC4. Establish a JLUS coordination committee.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆
FC5. Create a regionwide coordination process to act as the central point of communication for all Fort Riley related issues.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆	◆
FC6. Establish the ONE (Outstanding Neighborhood Engagement) program.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆	◆

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.16 POST ACCESS (PA)	**Fort Riley has a significant amount of history and cultural resources that are interesting to civilians.**												
IMPLEMENTATION TIMING: WITHIN 4 – 6 YEARS													
PA1. Evaluate existing notification and access procedures for ordinary access as well as special events taking place on Fort Riley.												◇	◆
PA2. Develop detailed procedures that can be shared with the community through a variety of public outlets to distribute information and keep the community informed on how to access the Post.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆	◇
7.17 FLOODPLAIN MANAGEMENT (FM)	**Long term solutions are needed to manage floodplains within the study area.**												
IMPLEMENTATION TIMING: WITHIN 4 – 6 YEARS													
FM1. Investigate feasibility of previously proposed flood control dams in the Wildcat Creek watershed to reduce the peak discharge in the creek thus reducing flooding.				◆			◆					◇	

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
FM2. Evaluate and pursue opportunities for funding sources to design flood control measures.				◆			◆						◇
FM3. Identify areas where wetland creation/restoration are feasible along Wildcat Creek and its tributaries.				◆			◆					◇	
FM4. Conduct watershed study to identify locations of significant streambank erosion on Wildcat Creek and its tributaries. Prioritize sites for stream restoration assistance.				◆			◆					◇	◆
7.18 WATER RESOURCES (WR)	**Lakes and rivers are important resources in the region that need to be protected.**												
IMPLEMENTATION TIMING: WITHIN 4 – 6 YEARS													
WR1. Conduct a study to analyze phosphorus contribution to lakes creating algal blooms.													◆
7.19 HOUSING (HO)	**There is an adequate supply of housing; however, the community is concerned that the price of the housing market is out of line with the community's needs.**												
IMPLEMENTATION TIMING: WITHIN 10 YEARS													
HO1. Conduct a housing market analysis within the JLUS Study Area to determine	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◆

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
the current market threshold for housing and price points.													
HO2. Create brochures and informational packages to be shared with new Fort Riley personnel. The brochures should provide information so new residents are notified of housing opportunities off Post.	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◇	◆
7.20 FENCELINE / BOUNDARY PROTECTION (FP) **IMPLEMENTATION TIMING: WITHIN 10 YEARS**	**Approximately 28% of Fort Riley is fenced. The other 72% of unfenced areas may allow for unauthorized people to either intentionally or unknowingly enter the Post.**												
FBP1. Prepare maps that clearly define the areas used by the military for training and distribute to the public for educational purposes.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		◆	
FBP2. Provide educational material on local government and associated agencies websites to notify of the potential dangers of entering the area.	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		◆	
FBP3. Establish a committee to evaluate the elk herds roaming off the installation and develop strategies to better manage the herd on the installation.												◆	◆

	Clay County	Geary County	Pottawatomie County	Riley County	Grandview Plaza	Junction City	Manhattan	Milford	Ogden	Riley	Wakefield	Fort Riley	Other
7.21 LIGHT AND GLARE (LG)	**Lighting controls and standards for new development are not codified by existing regulations. There is potential for new development impacting flight paths and training missions caused by glare or lighting.**												
IMPLEMENTATION TIMING: WITHIN 10 YEARS													
LG1. Develop and adopt Dark Sky Lighting requirements within the Vertical Obstructions MIA to minimize urban sky glow and light trespassing into adjacent properties.	◆	◆		◆	◆	◆		◆	◆	◆			

IMPLEMENTATION PLAN

8 IMPLEMENTATION PLAN

The foundation of the Flint Hills / Fort Riley JLUS is a community-driven, cooperative, strategic planning process among Fort Riley, the counties of Clay, Geary, Pottawatomie, and Riley, the cities of Grandview Plaza, Junction City, Manhattan, Milford, Ogden, Riley, Wakefield, as well as stakeholders, elected officials, and the community. As such, the coordinated project represents a truly collaborative planning process. The 69 recommendations in the previous section are the product of consensus among the JLUS participants, and provide a practical, coordinated approach to continued regional planning for military and civilian compatibility.

Each of the recommendations incorporate one or more actions that can be implemented to promote compatible land use, prevent encroachments upon the military mission, mitigate existing incompatibilities, and facilitate compatible future development. The recommended strategies function as tools to aid the community in their goal of ensuring the continued sustainability of the military mission at Fort Riley. Collectively, these strategies represent an assertive and coordinated approach that will demonstrate the community's commitment to that goal.

The question then becomes, "How do we implement the recommendations?" The process for implementation can be confusing and complicated. The recommendations themselves vary as well as the processes and procedures of the municipalities implementing them. However, if the Recommendations remain as words in a report, the intent of the study is not yet accomplished. Through actual implementation, the community and the military are able to fulfill the goal of the JLUS and work together to create a thriving community while maintaining support for the mission of the Installation.

The Recommendation strategies have been categorized into groups that provides a general description of what the recommendation will entail. They consist of:

- **Communication and Coordination.** Recommendations in the Communication and Coordination category would provide opportunities and strategies for increased communication or coordination between Fort Riley, the community, stakeholders, elected officials, civilians, and military families.
- **Policy.** Policy recommendations would include changes to regulatory documents such as the Comprehensive Plan, Zoning Ordinances, and/or building codes.
- **Study.** Studies or reports may need to be conducted to determine additional information, conduct additional analyses, and research before the next steps can be determined.
- **Program or Process.** A program or process may need to be established to address a specified area of interest.

The following Implementation Plan will provide a general overview for each municipality to put into place the recommendations set forth within the JLUS.

8.1 CLAY COUNTY

Clay County is located on western side of Fort Riley. The Fort is not actually located within the limits of Clay County, the western edge abuts the county line, but impacts from the Fort can have an effect on the Clay County community. For this reason, the eastern portion of Clay County is included within the JLUS Study Area boundary.

It is important for the County to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Clay County and with guidance from the overall committee. The process below provides a general overview of the steps that Clay County can take to implement their portion of the JLUS process. Only the recommendations that identified Clay County as the primary responsible party were discussed.

8.1.1 Policy

The first, and most crucial step for implementing the JLUS within Clay County is to lay the foundation within the adopted planning documents of the county by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Clay County would consist of the Noise MIA, Renewable Energy Development MIA, Vertical Obstructions MIA, and Frequency MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Clay County and Fort Riley.

- ***Noise MIA***
  The Noise MIA will likely contain, at a minimum, all lands located off of the installation within the noise contours established by The Army Public Health Center. New residential development and other new noise sensitive uses should be subject to sound attenuation standards or other noise compatibility policies to reduce interior noise levels and to enhance the quality of life, should a noise attenuation study call for them. To apply the noise attenuation standards, the builders need to be educated on the technique and the attenuation requirements need to be incorporated into the comprehensive plan and the zoning regulations. This includes adopting the noise contour maps into municipal planning documents.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting

guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Vertical Obstructions MIA***
  The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and UAS flight corridors utilized by Fort Riley. The MIA will be determined through discussions with Fort Riley and Clay County but will likely include the helicopter training routes and the UAS flight corridor. Other requirements to be included within the land development regulations include height restrictions to minimize training interference, include Fort Riley on the siting of tall telecommunication towers or other tall structures, and create Dark Sky lighting requirements to minimize urban sky glow.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Clay County will adopt regulations requiring a specific, detailed review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

In addition to establishing the MIOD and MIAs, other elements of the Comprehensive Plan and Land Development Regulations need to be revised. For example, a military compatibility element should be incorporated into Clay County's Comprehensive Plan. The Element would provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Clay County, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the review and update of regulatory as well as guiding documents.

8.1.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the county into the next phases of implementation:

- Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.
- Conduct a land use analysis to determine compatibility conflicts of the approved FAA UAS corridor and other future corridors. The analysis would consider such issues as land use and zoning and would analyze the compatibility of each use with the UAS corridor.
- Investigate opportunities to improve fish passage on streams with records of Topeka Shiner presence, of particular concern is stream sedimentation and obstructions such as culverts.
- An analysis to determine the potential impacts from wind turbines on the Radars located at Fort Riley as well as any impacts to flight paths for MAAF and helicopter paths would determine appropriate locations and siting opportunities for new turbines as well as areas where they should be prohibited.

8.1.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA. Coordination with and vetting by the Kansas Association of Realtors will be required to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. An educational component will also be required to notify the realtors of the importance of disclosing the information.
- In order to ensure that new land owners are notified of potential noise impacts due to their location within the Average Noise Zones of Fort Riley, the property must be identified during a title search. Each county government within the Noise MIA would need to record the boundary of the Noise MIA and draft a Notice of Potential Noise Impacts to be included with the deed.
- Clay County can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.1.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Prepare and execute a Frequency MOU between Fort Riley and Clay County to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.2 GEARY COUNTY

The southern and western portions of Fort Riley are located within Geary County. The Fort has a significant impact on the community and therefore a large portion of the study area is within the county.

It is important for the County to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Geary County and with guidance from the overall committee. The process below provides a general overview of the steps that Geary County can take to implement their portion of the JLUS process. Only the recommendations that identified Geary County as the primary responsible party were discussed.

8.2.1 Policy

The first, and most crucial step for implementing the JLUS within Geary County is to lay the foundation within the adopted planning documents of the county by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Geary County would consist of the Noise MIA, Renewable Energy Development MIA, Vertical Obstructions MIA, Safety Zone MIA and Frequency MIA.

The exact boundaries of the overlay and MIAs should be determined through discussions with Geary County and Fort Riley.

- ***Noise MIA***
  The Noise MIA will likely contain, at a minimum, all lands located off of the installation within the noise contours established by The Army Public Health Center. New residential development and other new noise sensitive uses should be subject to sound attenuation standards or other noise compatibility policies to reduce interior noise levels and to enhance the quality of life, should a noise attenuation study call for them. To apply the noise attenuation standards, the builders need to be educated on the technique and the attenuation requirements need to be incorporated into the comprehensive plan and the zoning regulations. This includes adopting the noise contour maps into municipal planning documents.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Safety Zone MIA***
  The Safety Zone MIA is established to protect underlying land uses from impacts of Marshall Army Airfield's Clear Zones (CZ) and Accident Potential Zones (APZ I and II). The boundary of the MIA will likely consist of the accident potential zones. Regulations within the overlay and MIA should include the incorporation of Army land use compatibility standards relating to the CZ, APZ I, and APZ II.

- ***Vertical Obstructions MIA***
  The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and UAS flight corridors utilized by Fort Riley. The MIA will be determined through discussions with Fort Riley and Geary County but will likely include the helicopter training routes, clear and approach zones, MAAF flight paths, and corresponding restricted air space. Other requirements to be included within the land development regulations include height restrictions to minimize training interference, include Fort Riley on the siting of tall telecommunication towers or other tall structures, and create Dark Sky lighting requirements to minimize urban sky glow.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Geary County will adopt regulations requiring a specific, detailed review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

In addition to establishing the MIOD and MIAs, other elements of the Comprehensive Plan and Land Development Regulations need to be revised. For example, a military compatibility element should be incorporated into Geary County's Comprehensive Plan. The Element would provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Geary County, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the review and update of regulatory as well as guiding documents.

8.2.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the county into the next phases of implementation:

- Evaluate the feasibility of encroachment partnering agreements (allowed pursuant to Title 10 USC 2684a) with eligible entities to protect lands within the APZs that extend off of Fort Riley. Title 10 USC 2684a allows the Secretary of Defense or the Secretary of a military department to partner with an eligible entity to acquire real property in the vicinity of, or ecologically related to, a military installation to limit incompatible development, preserve habitat, or protect the mission of the installation from encroachment. Eligible entities include the state, a political subdivision of the state, or a private entity that has the goal of conservation, restoration, or preservation of land and natural resources.
- Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.
- Investigate opportunities to improve fish passage on streams with records of Topeka Shiner presence, of particular concern is stream sedimentation and obstructions such as culverts.

- An analysis to determine the potential impacts from wind turbines on the Radars located at Fort Riley as well as any impacts to flight paths for MAAF and helicopter paths would determine appropriate locations and siting opportunities for new turbines as well as areas where they should be prohibited.

8.2.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA. Coordination with and vetting by the Kansas Association of Realtors will be required to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. An educational component will also be required to notify the realtors of the importance of disclosing the information.
- In order to ensure that new land owners are notified of potential noise impacts due to their location within the Average Noise Zones of Fort Riley, the property must be identified during a title search. Each county government within the Noise MIA would need to record the boundary of the Noise MIA and draft a Notice of Potential Noise Impacts to be included with the deed.
- Geary County can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.2.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested

parties through websites and meetings to distribute information about the impacts of vertical obstructions.

- Prepare and execute a Frequency MOU between Fort Riley and Geary County to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.3 POTTAWATOMIE COUNTY

Pottawatomie County is on the far eastern edge of the study area and is not directly adjacent to Fort Riley. They, however, are still impacted by the Fort from a resources standpoint – they alleviate some of the growth pressure immediately surrounding the borders of Fort Riley.

It is important for the County to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Pottawatomie County and with guidance from the overall committee. The process below provides a general overview of the steps that Pottawatomie County can take to implement their portion of the JLUS process. Only the recommendations that identified Pottawatomie County as the primary responsible party were discussed.

8.3.1 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the county into the next phases of implementation:

- The Blue Township/Highway 24 Corridor, while alleviating growth pressures adjacent to Fort Riley, is experiencing rapid growth without the detailed planning that is necessary to maximize the long-term potential of the area. A planning study/analysis should be conducted in this area to develop a long-term strategic growth plan. Needed studies include, long-range planning, neighborhood plans, infrastructure plans, access management planning and corridor planning.

8.3.2 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Pottawatomie County can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.3.3 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.4 RILEY COUNTY

Fort Riley is located primarily within Riley County. The Fort has a significant impact on the community and therefore a large portion of the study area is within the county.

It is important for the County to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Riley County and with guidance from the overall committee. The process below provides a general overview of the steps that Riley County can take to implement their portion of the JLUS process. Only the recommendations that identified Riley County as the primary responsible party were discussed.

8.4.1 Policy

The first, and most crucial step for implementing the JLUS within Riley County is to lay the foundation within the County's Land Development Regulations by establishing a formal connection to the requirements outlined in the Memorandum of Understanding (MOU) with Fort Riley and continuing to implement those requirements within the Critical Area attached to the MOU.

As part of the continued coordination between the Army and Riley County, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives

should be sought out to provide technical expertise during the review and update of regulatory as well as guiding documents.

8.4.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the county into the next phases of implementation:

- Investigate opportunities to improve fish passage on streams with records of Topeka Shiner presence, of particular concern is stream sedimentation and obstructions such as culverts.
- An analysis to determine the potential impacts from wind turbines on the Radars located at Fort Riley as well as any impacts to flight paths for MAAF and helicopter paths would determine appropriate locations and siting opportunities for new turbines as well as areas where they should be prohibited.
- Investigate feasibility of previously proposed flood control dams in the Wildcat Creek watershed to reduce the peak discharge in the creek thus reducing flooding. Feasibility would be staged to include an evaluation of funding sources, preliminary design, and NEPA compliance followed by final design and construction depending on feasibility results.
- Many grant opportunities exist to aid communities in mitigating against flooding. This effort would evaluate those grants for applicability and provide assistance with grant writing.
- By conducting a study to identify areas where wetland creation/restoration are feasible along Wildcat Creek and its tributaries, additional habitat and flood storage would be created.
- Conduct a watershed study to identify locations of significant streambank erosion on Wildcat Creek and its tributaries. Use an established industry method to assess the watershed, identify problem spots, and prioritize them for restoration. Reducing erosion would protect infrastructure local to the improvement. Stream restoration would increase habitat and aid in flood mitigation through re-meandering and/or grade control.

8.4.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- In order to ensure that new land owners are notified of potential noise impacts due to their location within the Average Noise Zones of Fort Riley, the property must be identified during a title search. Each county government within the area identified on the map attached to the Notice of Potential Noise Impacts would need to record the Notice with the Register of Deeds.
- Riley County can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local

communities would need to work together to formalize the materials and the procedures for distribution.

8.4.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the MOU, the Critical Area, and the Notice of Potential Noise Impacts. The materials should share the purpose of these tools as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Fort Riley will determine during the implementation phase if there are any areas outside of the installation where there are existing or potential issues regarding radio frequency interference. Riley County will meet with Fort Riley to discuss possible mitigation efforts if such issues are identified.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.5 CITY OF GRANDVIEW PLAZA

The City of Grandview Plaza is located south of Fort Riley in Geary County, with its eastern borders touching adjacent to the Fort. Due to the proximity of the Fort and the possibility of associated impacts from the community or the Fort, the entirety of the city is within the study area boundary.

It is important for the city to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Grandview Plaza and with guidance from the overall committee. The process below provides a general overview of the steps that Grandview Plaza can take to implement their portion of the JLUS process. Only the recommendations that identified Grandview Plaza as the primary responsible party were discussed.

8.5.1 Policy

In the case of Grandview Plaza, before any of the recommended policies can be implemented, a comprehensive plan and land development regulations must be drafted. The subsequent policy recommendations can be incorporated as part of the drafting of the plan and regulations.

One of the crucial steps of implementing the JLUS within Grandview Plaza is to lay the foundation within the planning documents of the city by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Grandview Plaza would consist of the Noise MIA, Renewable Energy Development MIA, Vertical Obstructions MIA, Safety Zone MIA, and Frequency MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Grandview Plaza and Fort Riley.

- ***Noise MIA***
  The Noise MIA will likely contain, at a minimum, all lands located off of the installation within the 60-65 dB noise contours for MAAF as established by the Army Public Health Center. New residential development and other new noise sensitive uses should be subject to sound attenuation standards or other noise compatibility policies to reduce interior noise levels and to enhance the quality of life, should a noise attenuation study call for them. To apply the noise attenuation standards, the builders need to be educated on the technique and the attenuation requirements need to be incorporated into the comprehensive plan and the zoning regulations. This includes adopting the noise contour maps into municipal planning documents.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Vertical Obstructions MIA***
  The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and UAS flight corridors utilized by Fort Riley. The MIA will be determined through discussions with Fort Riley and Grandview Plaza but will likely include the MAAF approach and departure zones, clear and approach zones, and / or corresponding restricted air space. Other requirements to be included within the land development regulations include height restrictions to minimize training interference, include

Fort Riley on the siting of tall telecommunication towers or other tall structures, and create Dark Sky lighting requirements to minimize urban sky glow.

- ***Safety Zone MIA***
  The Safety Zone MIA is established to protect underlying land uses from impacts of Marshall Army Airfield's Clear Zones (CZ) and Accident Potential Zones (APZ I and II). The boundary of the MIA will likely consist of the accident potential zones. Regulations within the overlay and MIA should include the incorporation of Army land use compatibility standards relating to the CZ, APZ I, and APZ II.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Grandview Plaza will adopt regulations requiring a specific, detailed review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

Incorporate a Military Compatibility Element in the comprehensive plan to provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Grandview Plaza, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the drafting, and subsequent reviews and updates of regulatory as well as guiding documents.

8.5.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the city into the next phases of implementation:

- Evaluate the feasibility of encroachment partnering agreements (allowed pursuant to Title 10 USC 2684a) with eligible entities to protect lands within the APZs that extend off of Fort Riley. Title 10 USC 2684a allows the Secretary of Defense or the Secretary of a military department to partner with an eligible entity to acquire real property in the vicinity of, or ecologically related to, a military installation to limit incompatible development, preserve habitat, or protect the mission of the installation from encroachment. Eligible entities include the state, a political subdivision of the

state, or a private entity that has the goal of conservation, restoration, or preservation of land and natural resources.

- Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.

8.5.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA. Coordination with and vetting by the Kansas Association of Realtors will be required to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. An educational component will also be required to notify the realtors of the importance of disclosing the information.
- Grandview Plaza can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.5.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Prepare and execute a Frequency MOU between Fort Riley and Grandview Plaza to clearly define the potential for any frequency interference with military aircraft, communications, or navigation

equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.

- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.6 CITY OF JUNCTION CITY

The City of Junction City is located south of Fort Riley in Geary County, with its northeastern borders touching adjacent to the Fort. Due to the proximity of the Fort and the possibility of associated impacts from the community or the Fort, the entirety of the city is within the study area boundary.

It is important for the city to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Junction City and with guidance from the overall committee. The process below provides a general overview of the steps that Junction City can take to implement their portion of the JLUS process. Only the recommendations that identified Junction City as the primary responsible party were discussed.

8.6.1 Policy

The first, and most crucial step for implementing the JLUS within Junction City is to lay the foundation within the adopted planning documents of the city by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Junction City would consist of the Renewable Energy Development MIA, Vertical Obstructions MIA, and Frequency MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Junction City and Fort Riley.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Vertical Obstructions MIA***
  The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and UAS flight corridors utilized by Fort Riley. The MIA will be determined through discussions with Fort Riley and Junction City but will likely include approach and departure zones for MAAF and the accompanying restricted air space. Other requirements to be included within the land development regulations include height restrictions to minimize training interference, include Fort Riley on the siting of tall telecommunication towers or other tall structures, and create Dark Sky lighting requirements to minimize urban sky glow.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Junction City will adopt regulations requiring a specific, detailed review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

In addition to establishing the MIOD and MIAs, other elements of the Comprehensive Plan and Land Development Regulations need to be revised. For example, a military compatibility element should be incorporated into Junction City's Comprehensive Plan. The Element would provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Junction City, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the review and update of regulatory as well as guiding documents.

8.6.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the city into the next phases of implementation:

- Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.
- Investigate opportunities to improve fish passage on streams with records of Topeka Shiner presence, of particular concern is stream sedimentation and obstructions such as culverts.

8.6.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Junction City can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.6.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Prepare and execute a Frequency MOU between Fort Riley and Junction City to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.7 CITY OF MANHATTAN

The City of Manhattan is located east of Fort Riley in Riley County. Although not directly adjacent to Fort Riley, the possibility of associated impacts from the community or the Fort, necessitates the entirety of the city within the study area boundary.

It is important for the city to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Manhattan and with guidance from the overall committee. The process below provides a general overview of the steps that Manhattan can take to implement their portion of the JLUS process. Only the recommendations that identified Manhattan as the primary responsible party were discussed.

8.7.1 Policy

The first, and most crucial step for implementing the JLUS within Manhattan is to lay the foundation within the adopted planning documents of the city by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Manhattan would consist of the Noise MIA and Renewable Energy Development MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Manhattan and Fort Riley.

- ***Noise MIA***
  The Noise MIA will likely contain, at a minimum, all lands located off of the installation within the noise contours established by The Army Public Health Center. New residential development and other new noise sensitive uses should be subject to sound attenuation standards or other noise compatibility policies to reduce interior noise levels and to enhance the quality of life, should a noise attenuation study call for them. To apply the noise attenuation standards, the builders need to be educated on the technique and the attenuation requirements need to be incorporated into the comprehensive plan and the zoning regulations. This includes adopting the noise contour maps into municipal planning documents.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

In addition to establishing the MIOD and MIAs, other elements of the Comprehensive Plan and Land Development Regulations need to be revised. For example, a military compatibility element should be

incorporated into Manhattan's Comprehensive Plan. The Element would provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Manhattan, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the review and update of regulatory as well as guiding documents.

8.7.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the city into the next phases of implementation:

- Investigate opportunities to improve fish passage on streams with records of Topeka Shiner presence, of particular concern is stream sedimentation and obstructions such as culverts.
- Investigate feasibility of previously proposed flood control dams in the Wildcat Creek watershed to reduce the peak discharge in the creek thus reducing flooding. Feasibility would be staged to include an evaluation of funding sources, preliminary design, and NEPA compliance followed by final design and construction depending on feasibility results.
- Many grant opportunities exist to aid communities in mitigating against flooding. This effort would evaluate those grants for applicability and provide assistance with grant writing.
- By conducting a study to identify areas where wetland creation/restoration are feasible along Wildcat Creek and its tributaries, additional habitat and flood storage would be created.
- Conduct a watershed study to identify locations of significant streambank erosion on Wildcat Creek and its tributaries. Use an established industry method to assess the watershed, identify problem spots, and prioritize them for restoration. Reducing erosion would protect infrastructure local to the improvement. Stream restoration would increase habitat and aid in flood mitigation through re-meandering and/or grade control.

8.7.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA. Coordination with and vetting by the Kansas Association of Realtors will be required to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. An educational component will also be required to notify the realtors of the importance of disclosing the information.

- Manhattan can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.7.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.8 CITY OF MILFORD

The City of Milford is located west of Fort Riley in Geary County. Due to the proximity of the Fort and the possibility of associated impacts from the community or the Fort, the entirety of the city is within the study area boundary.

It is important for the city to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Milford and with guidance from the overall committee. The process below provides a general overview of the steps that Milford can take to implement their portion of the JLUS process. Only the recommendations that identified Milford as the primary responsible party were discussed.

8.8.1 Policy

In the case of Milford, before any of the recommended policies can be implemented, a comprehensive plan and land development regulations must be drafted. The subsequent policy recommendations can be incorporated as part of the drafting of the plan and regulations.

One of the crucial steps of implementing the JLUS within Milford is to lay the foundation within the planning documents of the city by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Milford would consist of the Noise MIA, Renewable Energy Development MIA, Vertical Obstructions MIA, and Frequency MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Milford and Fort Riley.

- ***Noise MIA***
  The Noise MIA will likely contain, at a minimum, all lands located off of the installation within the noise contours established by The Army Public Health Center. New residential development and other new noise sensitive uses should be subject to sound attenuation standards or other noise compatibility policies to reduce interior noise levels and to enhance the quality of life, should a noise attenuation study call for them. To apply the noise attenuation standards, the builders need to be educated on the technique and the attenuation requirements need to be incorporated into the comprehensive plan and the zoning regulations. This includes adopting the noise contour maps into municipal planning documents.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Vertical Obstructions MIA***
  The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and UAS flight corridors utilized by Fort Riley. The MIA will be determined through discussions with Fort Riley and Milford but will likely include the military helicopter routes. Other requirements to be included within the land development regulations include height restrictions to minimize training interference, include Fort Riley on the siting of tall telecommunication towers or other tall structures, and create Dark Sky lighting requirements to minimize urban sky glow.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the

frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Milford will adopt regulations requiring a specific, detailed review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

Incorporate a Military Compatibility Element in the comprehensive plan to provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Milford, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the drafting, and subsequent reviews and updates of regulatory as well as guiding documents.

8.8.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the city into the next phases of implementation:

- Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.

8.8.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA. Coordination with and vetting by the Kansas Association of Realtors will be required to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. An educational component will also be required to notify the realtors of the importance of disclosing the information.
- Milford can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.8.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Prepare and execute a Frequency MOU between Fort Riley and Milford to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.9 CITY OF OGDEN

The City of Ogden is located on the eastern side of Fort Riley in Riley County. The Fort has a significant impact on the community and therefore the entirety of the city is within the study area.

It is important for the city to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Ogden and with guidance from the overall committee. The process below provides a general overview of the steps that Ogden can take to implement their portion of the JLUS process. Only the recommendations that identified Ogden as the primary responsible party were discussed.

8.9.1 Policy

The first, and most crucial step for implementing the JLUS within Ogden is to lay the foundation within the adopted planning documents of the city by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary

consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Ogden would consist of the Noise MIA, Renewable Energy Development MIA, Vertical Obstructions MIA, and Frequency MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Ogden and Fort Riley.

- ***Noise MIA***
  The Noise MIA will likely contain, at a minimum, all lands located off of the installation within the noise contours established by The Army Public Health Center. New residential development and other new noise sensitive uses should be subject to sound attenuation standards or other noise compatibility policies to reduce interior noise levels and to enhance the quality of life, should a noise attenuation study call for them. To apply the noise attenuation standards, the builders need to be educated on the technique and the attenuation requirements need to be incorporated into the comprehensive plan and the zoning regulations. This includes adopting the noise contour maps into municipal planning documents.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Vertical Obstructions MIA***
  The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and UAS flight corridors utilized by Fort Riley. The MIA will be determined through discussions with Fort Riley and Ogden but will likely include approach and departure zones for MAAF and the accompanying restricted air space. Other requirements to be included within the land development regulations include height restrictions to minimize training interference, include Fort Riley on the siting of tall telecommunication towers or other tall structures, and create Dark Sky lighting requirements to minimize urban sky glow.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Ogden will adopt regulations requiring a specific, detailed

review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

In addition to establishing the MIOD and MIAs, other elements of the Comprehensive Plan and Land Development Regulations need to be revised. For example, a military compatibility element should be incorporated into Ogden's Comprehensive Plan. The Element would provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Ogden, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the review and update of regulatory as well as guiding documents.

8.9.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the city into the next phases of implementation:

- A transportation study is necessary to analyze the use of Riley Avenue. The study would be intended to determine potential funding sources for improvements that could include measures for safe and efficient traffic flow.
- Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.

8.9.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA. Coordination with and vetting by the Kansas Association of Realtors will be required to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. An educational component will also be required to notify the realtors of the importance of disclosing the information.
- Ogden can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local

communities would need to work together to formalize the materials and the procedures for distribution.

8.9.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Prepare and execute a Frequency MOU between Fort Riley and Ogden to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.10 CITY OF RILEY

The City of Riley is located in Riley County west of Fort Riley, with its southern borders adjacent to the Fort. Due to the proximity of the Fort and the possibility of associated impacts from the community or the Fort, the entirety of the city is within the study area boundary.

It is important for the city to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Riley and with guidance from the overall committee. The process below provides a general overview of the steps that Riley can take to implement their portion of the JLUS process. Only the recommendations that identified Riley as the primary responsible party were discussed.

8.10.1 Policy

In the case of Riley, before any of the recommended policies can be implemented, a comprehensive plan and land development regulations must be drafted. The subsequent policy recommendations can be incorporated as part of the drafting of the plan and regulations.

One of the crucial steps of implementing the JLUS within Riley is to lay the foundation within the planning documents of the city by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Riley would consist of the Noise MIA, Renewable Energy Development MIA, Vertical Obstructions MIA, and Frequency MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Riley and Fort Riley.

- ***Noise MIA***
  The Noise MIA will likely contain, at a minimum, all lands located off of the installation within the noise contours established by The Army Public Health Center. New residential development and other new noise sensitive uses should be subject to sound attenuation standards or other noise compatibility policies to reduce interior noise levels and to enhance the quality of life, should a noise attenuation study call for them. To apply the noise attenuation standards, the builders need to be educated on the technique and the attenuation requirements need to be incorporated into the comprehensive plan and the zoning regulations. This includes adopting the noise contour maps into municipal planning documents.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Vertical Obstructions MIA***
  The Vertical Obstructions MIA is established to prevent vertical obstructions in the areas underlying flight paths, flight training routes, and UAS flight corridors utilized by Fort Riley. The MIA will be determined through discussions with Fort Riley and Riley but will likely include the military helicopter routes. Other requirements to be included within the land development regulations include height restrictions to minimize training interference, include Fort Riley on the siting of tall telecommunication towers or other tall structures, and create Dark Sky lighting requirements to minimize urban sky glow.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Riley will adopt regulations requiring a specific, detailed review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

Incorporate a Military Compatibility Element in the comprehensive plan to provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Riley, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the drafting, and subsequent reviews and updates of regulatory as well as guiding documents.

8.10.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the city into the next phases of implementation:

- Create a vertical constraints map identifying locations within the study area where tall structures should be prohibited. The height should be predetermined through discussions with Fort Riley and the impacted local governments.

8.10.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Establish noise disclosure statements for all prospective homeowners and renters within the Noise MIA. Coordination with and vetting by the Kansas Association of Realtors will be required to include noise disclosure statements within the sample disclosure statements for property within the Noise MIA. An educational component will also be required to notify the realtors of the importance of disclosing the information.

- Riley can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.10.4 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Prepare and execute a Frequency MOU between Fort Riley and Riley to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.11 CITY OF WAKEFIELD

The City of Wakefield is located west of Fort Riley in Clay County. The entirety of the city is within the study area boundary; however, it is not directly affected by Fort Riley impacts, and vice versa, as some of the other municipalities.

It is important for the city to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

The recommendations summarized in the following section will be crafted specifically to meet the needs of Wakefield and with guidance from the overall committee. The process below provides a general overview of the steps that Wakefield can take to implement their portion of the JLUS process. Only the recommendations that identified Wakefield as the primary responsible party were discussed.

8.11.1 Policy

In the case of Wakefield, before any of the recommended policies can be implemented, a comprehensive plan and land development regulations must be drafted. The subsequent policy recommendations can be incorporated as part of the drafting of the plan and regulations.

One of the crucial steps of implementing the JLUS within Wakefield is to lay the foundation within the planning documents of the city by establishing the Military Influence Overlay District (MIOD) within the comprehensive plan and land development regulations. The MIOD is a geographic boundary consisting of, at a minimum, the already established area identified through the MOU, consisting of the State Area of Interest Map. Within the MIOD specific concerns can be addressed through the Military Influence Area (MIA). The MIAs within Wakefield would consist of the Renewable Energy Development MIA, and Frequency MIA. The exact boundaries of the overlay and MIAs should be determined through discussions with Wakefield and Fort Riley.

- ***Renewable Energy Development MIA***
  The Renewable Energy Development MIA is established to protect the mission of Fort Riley from impediments of industrial scale solar farms and large-scale wind farms. The boundary of the MIA will be determined through coordination with Fort Riley and will contain the areas that could be most impacted by large scale wind and / or solar farms. The MIA should include solar siting guidelines that include non-reflective panels for non-residential applications and require review by a Fort Riley representative. Procedures should also be incorporated for coordination with the DOD Siting Clearinghouse for alternative energy projects.

- ***Frequency MIA***
  The Frequency MIA is established to prevent interference with the frequency spectrum in order to successfully complete operational missions within the installation and its training areas. The extensive use of the frequency spectrum leads to a growing concern with interference in the frequency spectrum. The establishment of the MIA provides the opportunity to incorporate regulations that will designate frequencies that can cause military interference. Within the geographic area of the Frequency MIA, Wakefield will adopt regulations requiring a specific, detailed review of projects that may involve a source of frequency emissions. These requirements will be incorporated into the comprehensive plan and land development regulations will be applied as part of the development review process.

Incorporate a Military Compatibility Element in the comprehensive plan to provide supportive language and coordination strategies for continued collaboration with Fort Riley.

As part of the continued coordination between the Army and Wakefield, review of development and proposed changes need to be shared. The Army could be incorporated as part of the development review process. An MOU is already in place to establish the need and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the drafting, and subsequent reviews and updates of regulatory as well as guiding documents.

8.11.2 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. The JLUS resulted in some additional programs and processes or modifications to those that are already in place.

- Wakefield can provide support to the Army when completing the NEPA review process and other regulatory processes, when deemed necessary. Support could come in the form of sharing of data and resources.
- Promotional materials such as brochures and informational packages can inform new Fort Riley personnel of the various housing options within the community. Fort Riley and the local communities would need to work together to formalize the materials and the procedures for distribution.

8.11.3 Communication and Coordination

Additional communication and coordination can help aid many of the situation that were identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- To better educate the public, development industry, government officials, and others distribute property owner information about the newly established MIOD and MIAs. The materials should share the purpose of the overlay as well as what new regulations are in place that might impact the community.
- Prepare and execute a Frequency MOU between Fort Riley and Wakefield to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.

8.12 FORT RILEY

Although the JLUS is focused primarily on policies, programs, plans and studies that can be conducted by local governments, Fort Riley can contribute as well. The recommendations summarized in the following

section are specific to the needs and abilities of Fort Riley. The process below provides a general overview of the steps that Fort Riley can take to implement their portion of the JLUS process. Only the recommendations that identified Fort Riley as the primary responsible party were discussed.

It is important for Fort Riley to coordinate with FHRC to ensure the establishment of the Flint Hills / Fort Riley JLUS Implementation Committee and to serve as an active member of the Committee. The Flint Hills / Fort Riley JLUS Implementation Committee will be responsible for monitoring and coordinating with all participating entities for the overall implementation of the JLUS.

8.12.1 Policy

In many instances, the local government is the entity that will be required to adopt or implement the recommendation, but Fort Riley will be needed to assist in establishing the appropriate requirements.

As part of the continued coordination between Fort Riley and the adjacent jurisdictions, review of development and proposed changes need to be shared. An MOU is already in place to establish the need for Army assistance in the review of proposed developments and by placing the requirement within the land development regulations, it becomes a more formal process. Additionally, Fort Riley representatives should be sought out to provide technical expertise during the drafting, and subsequent reviews and updates of regulatory as well as guiding documents.

Specific input is needed from the Army for the following policies:

- Fort Riley should provide input on telecommunication tower siting and approval within the Vertical Obstruction MIA.
- Assistance from Fort Riley is required to develop height restrictions within the Vertical Obstruction MIA.
- Assistance from Fort Riley is required to develop solar siting guidelines within the Renewable Energy Development MIA.

8.12.2 Study

The implementation of the JLUS can often lead to additional studies or projects that need to take place before the next steps can be implemented. The following projects or studies will lead the community and Fort Riley into the next phases of implementation:

- Evaluate the feasibility of encroachment partnering agreements (allowed pursuant to Title 10 USC 2684a) with eligible entities to protect lands within the APZs that extend off of Fort Riley. Title 10 USC 2684a allows the Secretary of Defense or the Secretary of a military department to partner with an eligible entity to acquire real property in the vicinity of, or ecologically related to, a military installation to limit incompatible development, preserve habitat, or protect the mission of the installation from encroachment. Eligible entities include the state, a political subdivision of the state, or a private entity that has the goal of conservation, restoration, or preservation of land and natural resources.

- A Clear Zone and Approach Zones have been identified for MAAF, however, an AICUZ study has not been completed. The AICUZ analyzes the effects of aircraft noise, accident potential, and land use compatibility and provides planning guidelines for neighbors of MAAF.
- Assist local governments in creating a vertical constraints map to identify locations within the study area where tall structures should be prohibited.

8.12.3 Program or Process

Many programs and processes are currently in place to aid the local governments within the study area and Fort Riley in achieving their objectives. In order to continue to preserve habitat and reduce encroachment, Fort Riley should continue to pursue funding through the Army Compatible Use Buffer (ACUB) Program, Readiness and Environmental Protection Initiative (REPI), and Sentinel Landscapes Program.

8.12.4 Communication and Coordination

Additional communication and coordination will aid situations identified within the JLUS. Communication and coordination assists in educating the public on particular issues, sharing information, and providing a forum to receive feedback. Some of the measures that were identified include the following:

- Increase public awareness of the issues resulting from vertical obstructions and the impacts on the airport, the aircraft, training exercises and routes. Craft educational materials including pamphlets, brochures, or handouts, and share with builders, landowners, and other interested parties through websites and meetings to distribute information about the impacts of vertical obstructions.
- Prepare and execute a Frequency MOU between Fort Riley and Wakefield to clearly define the potential for any frequency interference with military aircraft, communications, or navigation equipment. An MOU would provide a clearer understanding of the activities that could potentially lead to frequency interference and where the greatest interference may occur.
- Provide training to local officials and municipal departments in order to provide educated response to the community in regards to military impacts, in particular noise impacts. Additionally, on an annual basis, at a minimum, hold open houses where interested citizens are able to gather information.
- Increase community awareness of training schedules and military operations through the use of local media sources, websites, newsletters, and outreach functions to better educate the community regarding noise frequency and intensity.
- Local governments are often not aware that an installation-wide noise impact assessment is being conducted by the Army Public Health Center and that the associated noise contours may change. Utilizing the Implementation Committee or another designated working group, Fort Riley could keep the local jurisdictions up to date on any assessments or resulting changes to the noise contours.

- A communication process needs to be put into place to allow information to be shared between the farming community and Fort Riley. The two parties can have significant impacts on one another and through a coordinated process, the impacts can be shared, discussed, and mitigated. At a minimum, an annual meeting will be required for discussion.
- Coordination already takes place between MAAF, Manhattan Regional Airport, Freeman Field Airport, and Salina Airport Authority and with overall responsibility falling to the FAA. However, with increased air traffic in the area, additional coordination measures will only help to ensure safety of those using air space.
- Set up regular coordination meetings between the US Fish and Wildlife Services, municipalities within the Study Area, and Fort Riley to identify potential habitat for species. The meetings should discuss funding sources, partnering prospects, and research opportunities for potential habitat.
- A designated community planner provides a consistent point of contact for the community as well as Fort Riley. The Community Planner would be employed by Fort Riley but could be military or civilian.
- Sharing contact information with local residents, stakeholders, large land owners, and farmers will help to ease some of the frustration in getting in touch with the correct contact. Information can be shared through websites, brochures, and other reproducible materials. Update jurisdictions and regional planning organizations websites and link to Fort Riley web page. Include information such as contact information, appropriate methods of contact, expected response time, as well as upcoming events.
- Create a formal, region-wide communication process to share information associated with Fort Riley. The established process would provide a central point of contact and a means to share information such as increased training dates, unanticipated increases in noise, special community events, and other similar such activities.
- Establish the ONE (Outstanding Neighborhood Engagement) Program to create an open exchange of information, to maintain transparent communication, and to provide a platform to keep interested citizens informed. Responsibilities include: Hold open houses in rotating locations on a regular basis; Provide an overview of training activities, construction projects, and other areas of interest; and Allow residents the opportunity to speak their concerns.
- Civilian citizens should be made aware of the procedures necessary to enter the post. By sharing this information, they will know what to anticipate and the associated time constraints. The information could be shared on Fort Riley's website and linked to other community websites.
- Using ArcGIS data, map the boundaries and fencelines of the Fort Riley property. Utilizing social media, websites, public forums, etc. distribute the materials to the public to provide notification of the boundaries.
- Educational materials need to be drafted to educate civilians of the potential dangers of entering the Fort Riley boundary. Once the materials have been crated, they can be posted on websites and used as handouts.

- Working with representatives from Fort Riley, the Kansas Department of Wildlife Parks and Tourism, large land owners, and farmers form a committee to focus on the elk herds associated with Fort Riley. The committee should meet on an annual basis, at a minimum, and work together to develop herd management strategies.