



# Executive Summary

May 2016



## What Is a Joint Land Use Study?

A Joint Land Use Study (JLUS) is a cooperative planning effort conducted as a joint venture between an active military installation, surrounding cities and counties, organizations and the public. Ellsworth Air Force Base (AFB) JLUS was funded through a grant from the Department of Defense (DOD), Office of Economic Adjustment (OEA) and contributions by the South Dakota Ellsworth Development Authority (SDEDA), the JLUS project manager.

The JLUS was developed under the guidance of three main objectives.

**Understanding.** Convene community and military representatives to identify, confirm, and understand the compatibility issues in an open forum, taking into consideration both community and Ellsworth AFB perspectives and needs. This includes public awareness, education, and input as part of a cohesive outreach program.

**Collaboration.** Encourage cooperative land use and resource planning by Ellsworth AFB, neighboring jurisdictions and SDEDA so that future plans and development are compatible with the training and operational missions at Ellsworth AFB. Concurrently, seek ways to reduce operational impacts on adjacent lands within the Study Area.

**Actions.** Provide a set of mutually supported tools, activities, and procedures (strategies) that local jurisdictions, SDEDA and Ellsworth AFB can implement in order to avoid and reduce current and future potential compatibility issues. The strategies proposed include both operational measures to mitigate installation impacts on surrounding communities and local government and agency approaches to reduce community impacts on military operations. These strategies will help decision makers resolve compatibility issues and prioritize projects within the annual budgeting process of their respective organizations.

## Compatibility Assessment

Compatibility, in relation to military readiness, can be defined as the balance or compromise between community needs and interests and military needs and interests. The goal of compatibility planning is to promote an environment where both community and military can coexist successfully. A number of factors influence whether community and military plans, programs, and activities are compatible or in conflict. To provide a comprehensive assessment of potential compatibility issues, the Ellsworth AFB JLUS process looked at 25 compatibility factors (topics). These factors included topics such as biological resources, dust / smoke / steam, housing availability, infrastructure extensions, land use, noise, vibration, safety, and vertical obstructions.

*The Ellsworth AFB JLUS was conducted as a collaborative planning effort that included the following project partners:*

- City of Box Elder
- City of Rapid City
- Meade County
- Pennington County
- Ellsworth AFB
- SDEDA



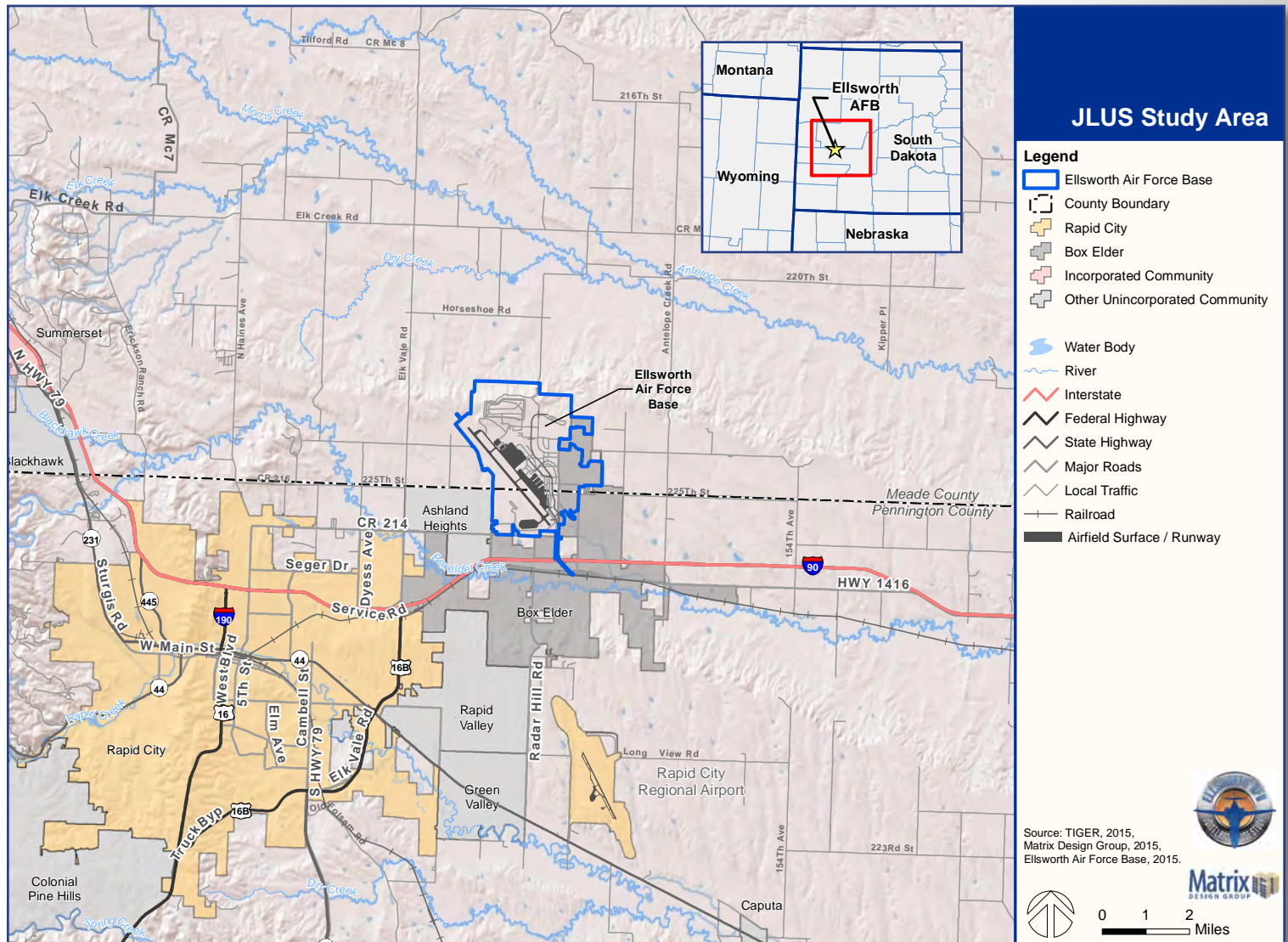
## Collaborative Planning

The JLUS planning process was designed to create a locally relevant study that builds consensus and obtains support from the stakeholders involved. The public was instrumental in the development of this JLUS by providing their perspective and feedback, both in the JLUS public workshops and through the use of the interactive project website: [www.ellsworthjlus.com](http://www.ellsworthjlus.com)

The development of the project was also guided by two committees, each composed of community and military representatives.

- **Executive Committee (EC).** This committee was made up of elected officials and leaders representing jurisdictions in the Study Area, SDEDA, and Ellsworth AFB leadership. The Committee served an active and important role in providing policy direction during the development of the Ellsworth AFB JLUS.
- **Working Group (WG).** The Working Group was made up of staff representatives from the organizations on the EC. This Group helped identify and address technical issues, provide feedback on report development, and assist in the development and evaluation of the recommended strategies.

## Ellsworth AFB JLUS Study Area



The JLUS Study Area was designed to address all lands near Ellsworth AFB that may impact current or future military operations or be impacted by these military operations. In total, the JLUS Study Area encompasses approximately 500 square miles and is centered around Ellsworth AFB. It includes the cities of Box Elder and

Rapid City, as well as Meade County and Pennington County. *It is important to note that the JLUS Study Area does not include the Powder River Training Complex (PRTC) or any other Military Operations Areas or Military Training Routes outside of Meade and Pennington Counties.*

The JLUS Study Area was based on the location of issues identified under the 25 compatibility factors.



## JLUS Recommended Strategies

The heart of the Ellsworth AFB JLUS is the set of 77 recommended strategies that address the 32 compatibility issues identified. The recommended strategies have been developed through a collaborative effort between representatives of local jurisdictions, Ellsworth AFB, local organizations, the general public and other stakeholders that

own or manage land or resources in the region. Because the Ellsworth AFB JLUS is the result of a collaborative planning process, the strategies represent a true consensus plan; a realistic and coordinated approach to compatibility planning developed with the support of stakeholders involved throughout the process.

The JLUS strategies incorporate a variety of actions that promote compatible land use and resource planning. Upon implementation, existing and potential compatibility issues arising from the civilian / military interface can be removed or significantly mitigated. The recommended strategies are the key outcome of the JLUS document and are the culmination of the JLUS process.

## Strategies Identified



### Air Quality (AQ)

- Update South Dakota Ambient Air Monitoring Plan
- Update Plans to Incorporate Military Compatibility
- Update Fugitive Dust Control Plan
- Air Quality Monitoring
- Air Quality Partnerships



### Anti-Terrorism / Force Protection (AT)

- Self-Policing Brochures
- Eagle Eye Training Program
- Develop an "Eyes on Ellsworth" Program
- Landscaping to Provide Barrier for Base
- Identify Locations of Critical Parcels
- Continue to Pursue Readiness Environmental Protection Integration (REPI) Opportunities
- Incorporate and Budget for AT / FP Design Standards, Stand-Off Distances, and Adequate Perimeter Fence in Installation Plans
- Incorporation into Box Elder
- Install and Monitor Signage



### Biological Resources (BIO)

- Coordinate the Protection and Conservation of Sensitive Species
- Develop Conservation of Sensitive Species Management Plan
- Update Integrated Natural Resources Management Plan



### Coordination / Communication (COM)

- Establish a JLUS Coordination Committee
- Develop Memorandum of Understanding (MOU)
- Create and Maintain a GIS Data Clearinghouse
- Ellsworth AFB Technical Support to Local Jurisdictions
- Early Development Application Review
- Review of Military Planning Documents
- Informational Brochures
- Host Meet and Greet Events
- Establish Communication Procedures for Training that Occurs Outside the Routine Schedule Including Special Events
- Enhance Notifications to the Public
- Encourage Use of Media Methods to Disseminate Information
- Maintain and Continue to Utilize Social Media



### Dust / Smoke / Steam (DSS)

- Fire Control Plan
- Coordination Regarding Dust/Smoke Inducing Operations



### Energy Development (ED)

- Update Comprehensive Plans for Military Compatibility
- Amend Zoning Ordinances for Military Compatibility
- Coordinate with DOD Siting Clearinghouse
- Coordinate with FAA Regulations



### Housing Availability (HA)

- Create a Community-Military Housing Subcommittee
- Develop Housing Needs Information
- Update Housing Plans



### Infrastructure Extensions (IE)

- Remediation of Contaminated Site
- Coordination on Infrastructure Planning
- Communities Should Coordinate Studies, Design and Construction of Infrastructure

The key to the implementation of the strategies developed in the JLUS process is the establishment of a JLUS Coordination Committee to oversee the JLUS execution. Through this committee, local jurisdictions, Ellsworth AFB, SDEDA, federal and state agencies, and other interested parties can continue their initial work together to establish procedures, recommend or refine

specific actions, and make adjustments to strategies over time to ensure that the JLUS continues to resolve key compatibility issues into the future.

Concurrent with the efforts of the JLUS Coordination Committee, each project partner is responsible for establishing their own course of action to implement the strategies unique to their organization

through collaboration of their leadership, planners, and the public.

The strategies developed during the JLUS process are described in detail in Chapter 6 of the JLUS Report. The strategies contained in the JLUS are listed by title along the bottom of pages 4 and 5, below.



### Land / Air / Sea Spaces (LAS)

- Enhance Awareness of Federal Unmanned Aerial System Regulation
- Develop Information on Usage



### Legislative Initiatives (LEG)

- Develop Memorandum of Understanding (MOU)
- Develop a Resource Management Reference Guide
- Enhance Awareness of the Jurisdiction Boundaries



### Land Use (LU)

- Update Comprehensive Land Use Plan
- Amend Ordinance 34 Building Code and Construction Enforcement
- Early Coordination on Reuse
- Military Compatibility Areas (MCA)s with Subzones
- Maintenance and Update of MCAs
- Incorporate Ellsworth AFB as One of the Agencies that Review Pre-Development Applications / Proposals
- Update Plans and Amend Ordinances



### Noise (NOI)

- Develop and Provide Sound Attenuation Technical Support
- Amend Building Codes
- Update Comprehensive Plans and Zoning Codes to Establish Provisions for Discouraging Mobile / Manufactured Homes in Noise MCA
- Amend Zoning Ordinances to Establish Regulations for Discouraging Mobile / Manufactured Homes in Noise Subzone
- Update Comprehensive Plans and Amend Zoning Ordinances and Municipal Codes for Noise Attenuation Standards
- Consider Developing a Voluntary Sound Attenuation Retrofit Program for Residential Uses
- Housing Relocation



### Roadway Capacity (RC)

- Develop Feasibility Study
- Consider Transit Center Outside Ellsworth AFB Main Gate
- Compatibility Considerations in Transportation Planning
- Develop Divert Routes Plan
- Notification of Divert Routes Plan



### Safety Zones (SA)

- Control Bird and Wildlife Attractants Near Base
- BASH Consideration in Jurisdiction or Agency Projects
- Increase Surrounding Landowner Awareness
- Consider Acquisition of Remaining Primary Surface Land



### Vertical Obstructions (VO)

- Develop Feasibility Study for Underground Conversion or Relocation
- Ensure Imaginary Surface / FAA Part 77 Compliance



### Vibration (V)

- Educate the Public on Cause of Vibrations



### Water Quality / Quantity (WQQ)

- Conduct Deicing Fluid Runoff Study
- Update Storm Water Pollution Prevention Plan
- Continue Remediation and Monitoring of Contaminated Site
- Update Ellsworth AFB Stormwater Pollution Prevention Plan
- Use Natural Methods for Noxious Weed Control



## Geographic Relevance

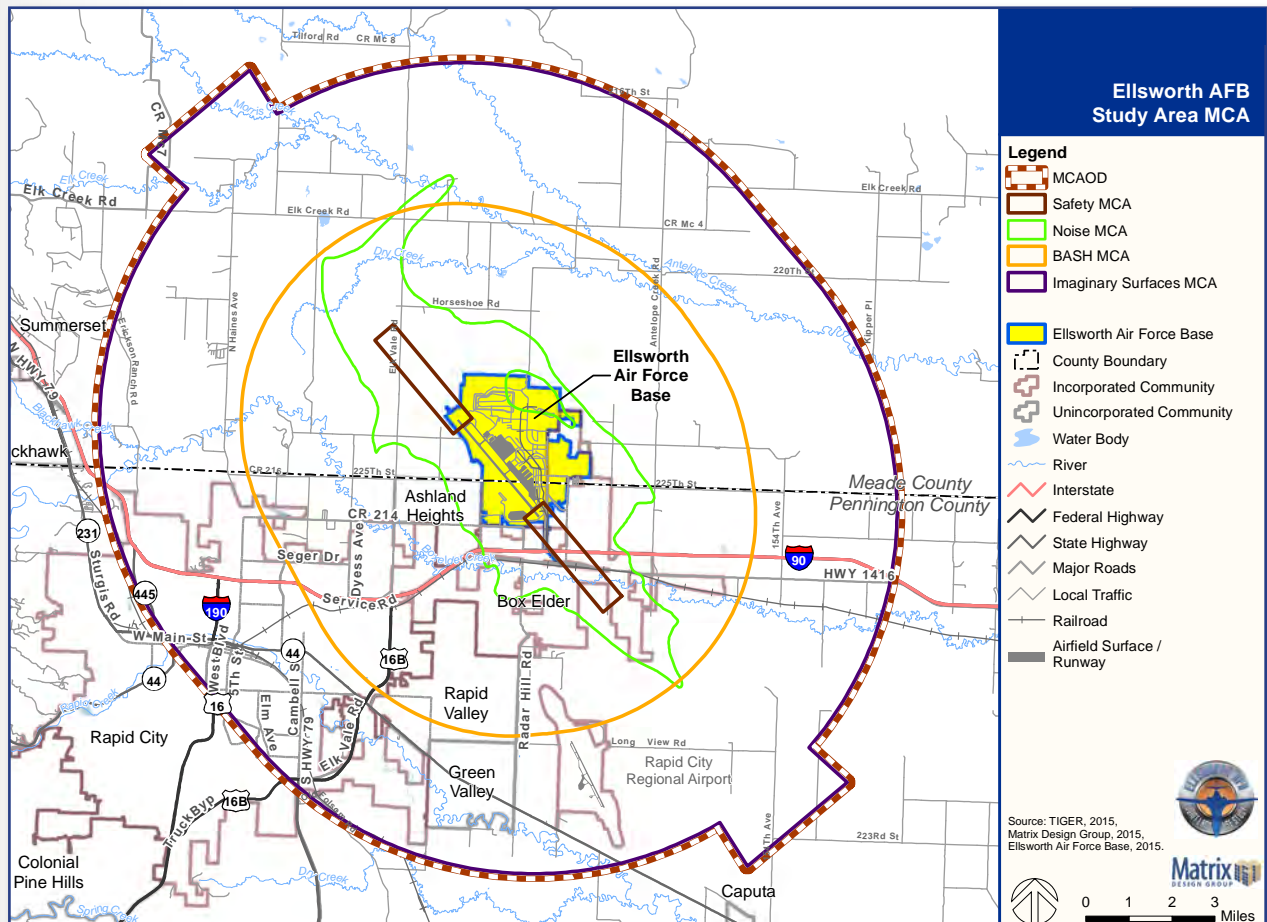
A key strategy in guiding compatible development and activities is the establishment of five Military Compatibility Areas (MCAs) and their associated subzones. The MCA maps (described below and on the following pages) illustrate the geographic areas where specific JLUS strategies are to be applied (locations for each strategy are defined in Chapter 6 of the JLUS Report). This technique ensures that the strategies are applied to the appropriate areas, and that locations deemed not subject to a specific compatibility issue are not adversely impacted by strategies inappropriate for their location or circumstance.

The MCAs were designed to accomplish the following:

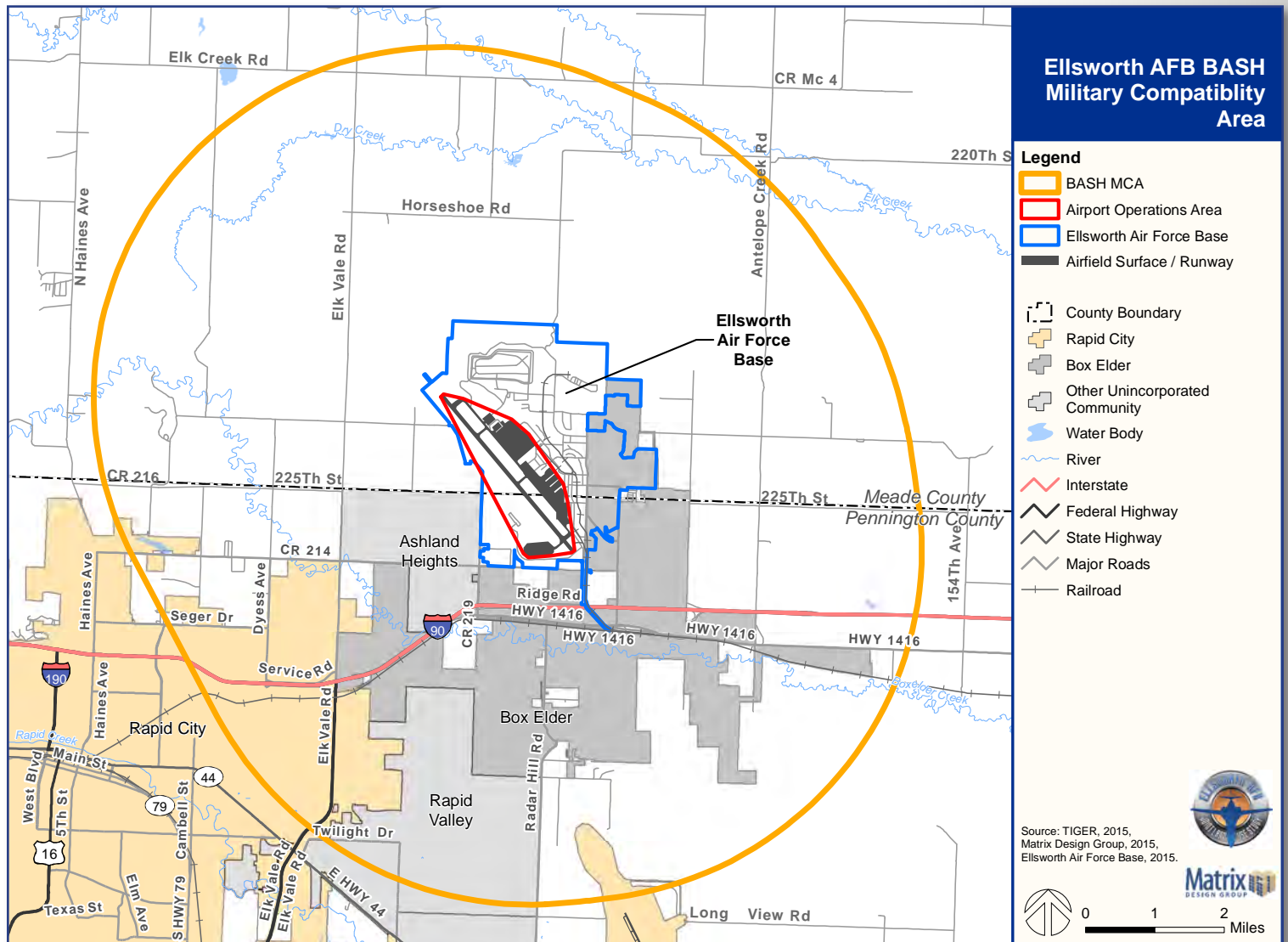
- 1 Promote an orderly transition between community and military land uses so that land uses remain compatible;
- 2 Protect public health, safety, and welfare;
- 3 Maintain operational capabilities of military installations and areas;
- 4 Promote an awareness of the size and scope of military training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

## Study Area MCA

The Study Area MCA is an area that incorporates all other MCAs and covers the area shown on the map to the right. This is the same area used in the JLUS documents as the JLUS Study Area.



## BASH Military Compatibility Area

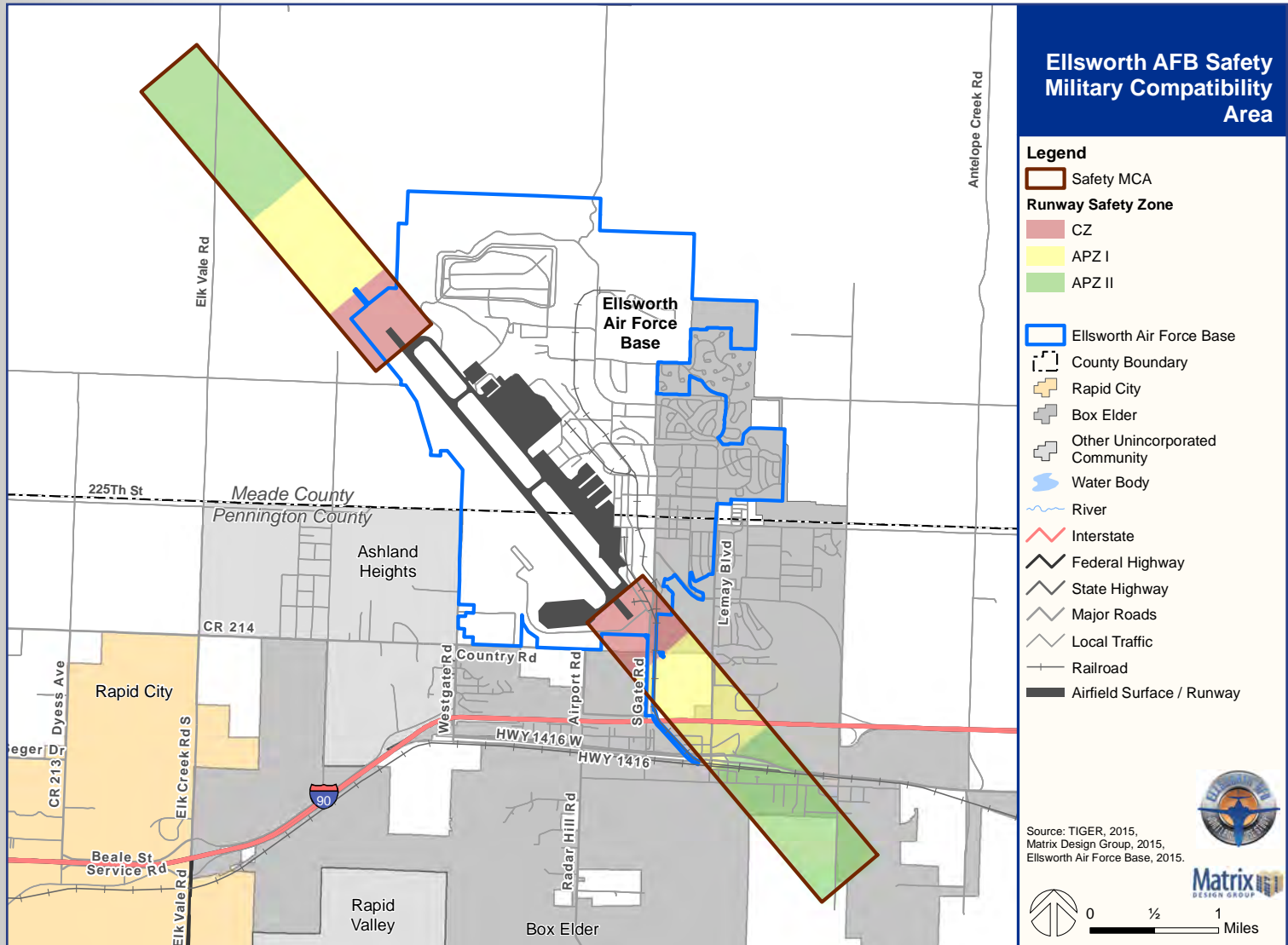


The BASH MCA is characterized by areas that could be affected by bird and wildlife strikes due to the lower altitude of flight operations in this area. The BASH MCA represents a five-mile statutory area from the edge of the airfield operational areas (runway, taxiways, ramp areas) based on Federal Aviation Administration (FAA) recommendations. Land uses in this area may be subject to additional development guidance, where appropriate, to prevent attractants of birds and wildlife that could increase the risk of safety to pilots and aircraft flying at lower speeds and altitudes. BASH concerns are explained in more detail in Section 5.21, Safety, in the JLUS Background Report.





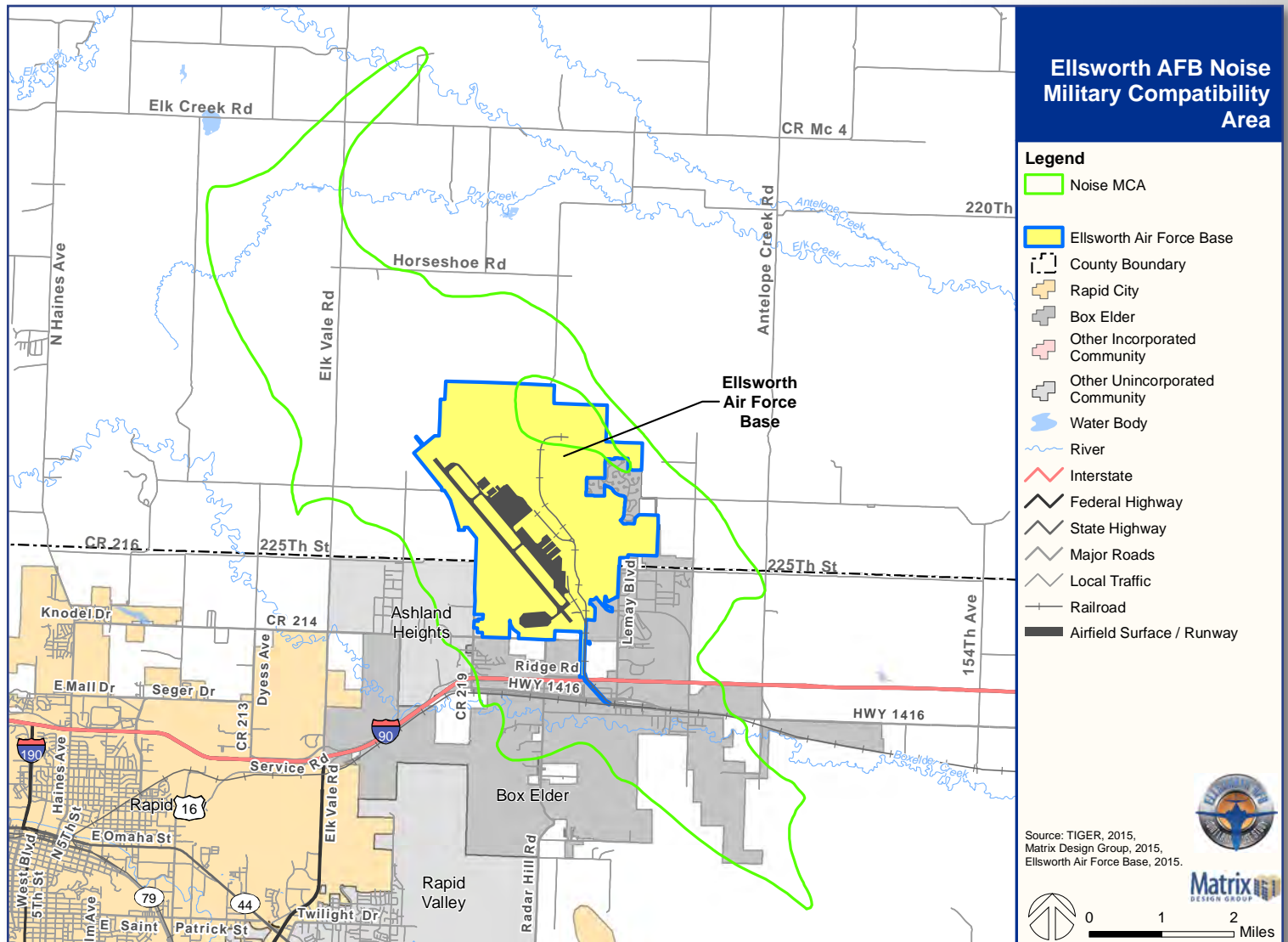
## Safety Military Compatibility Area



The Safety MCA guides compatible land use types and densities / intensities within the Clear Zones (CZs) and Accident Potential Zones (APZs) I and II of Ellsworth AFB runway. The current location of these areas is based on the airfield layout and air operations identified by Ellsworth AFB.

A Safety MCA is needed to prevent the development of incompatible land uses in areas with the greatest potential for an incident (although a very low probability). These safety zones were identified as a result of 2008 Ellsworth AFB AICUZ. The safety zones are explained in more detail in Section 5.21, Safety, in the Background Report.

## Noise Military Compatibility Area

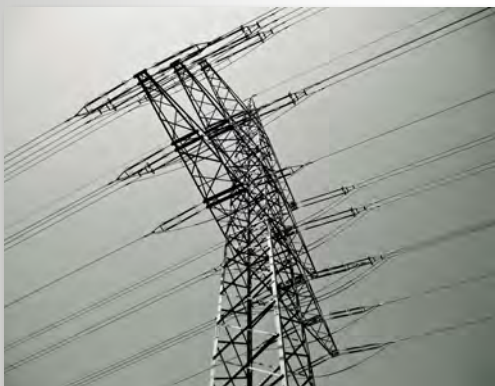
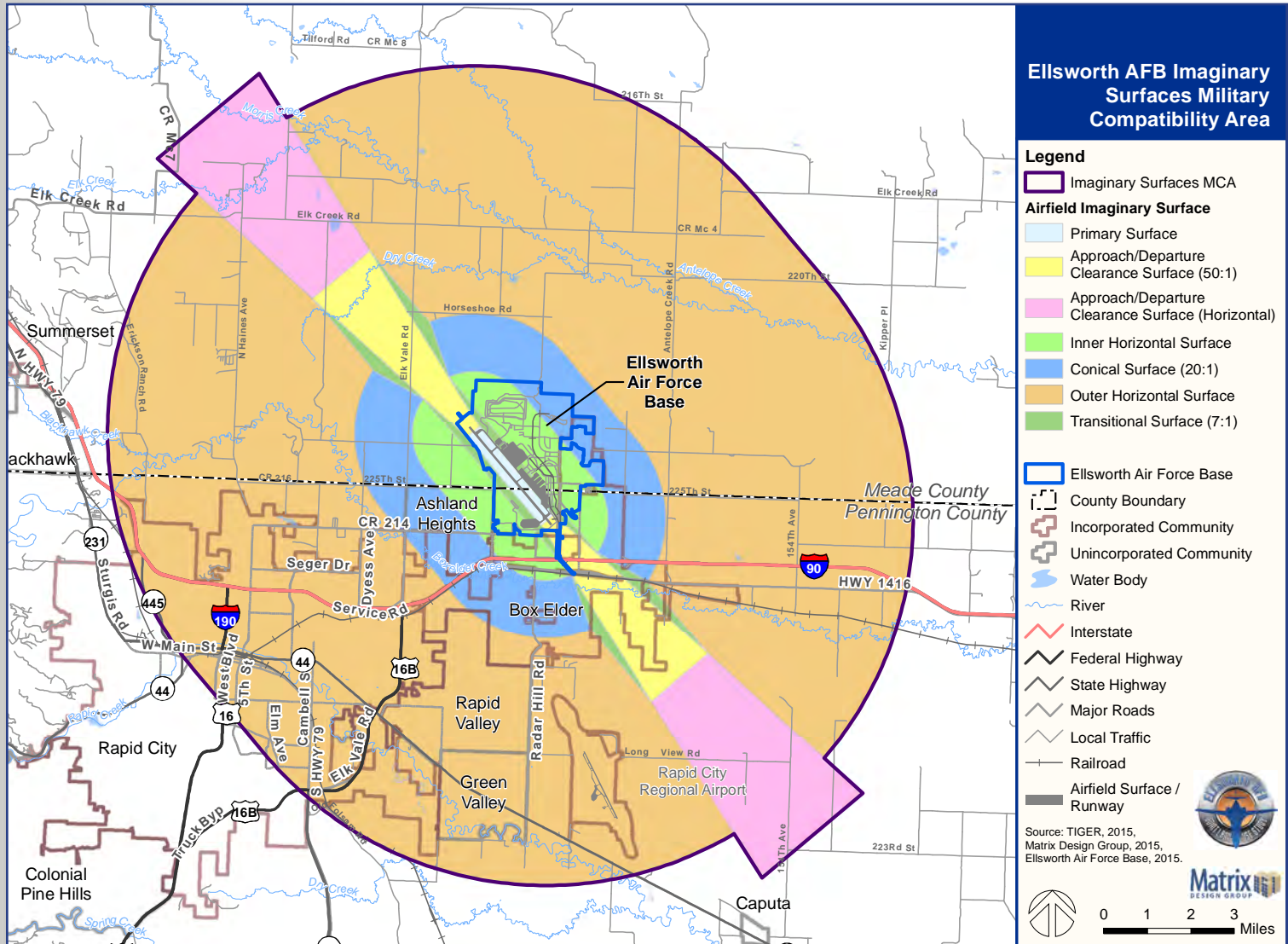


Noise is often a concern to the public surrounding military installations with flying missions. The Noise MCA includes all land located off-installation within the 65 dB Day-Night Average Sound Level (DNL) noise contour for Ellsworth AFB. Noise zones are explained in more detail in Section 5.18, in the Background Report.





## Imaginary Surfaces Military Compatibility Area



The purpose of the Imaginary Surfaces MCA is to provide guidance on the height of structures and buildings within the area defined by FAA guidance and Air Force instructions known as imaginary surfaces. The imaginary surfaces are a 3-D geographic area comprising approach and departure airspace corridors and safety buffers. Vertical obstruction heights are a major concern for flight operations due to the potential for a structure to extend into navigable airspace, which could impede safe flight operations and put both pilots and citizens on the ground at risk of an aircraft accident. Vertical obstructions that can affect flight safety include, but are not limited to, cell towers, power lines, wind turbines, buildings, and trees. Imaginary surfaces are explained in more detail in Section 5.23, Vertical Obstructions, in the Background Report.

## JLUS Documents

Three JLUS documents, each providing different levels of information, are available to the public, elected and appointed officials, and the military. These documents provide an overview of the JLUS process, detailed information on Ellsworth AFB and the overall Study Area, an assessment of existing compatibility issues, and recommended strategies. These documents are as follows.



### Joint Land Use Study

The JLUS Report presents an overview of the JLUS planning process, purpose and objectives of the study and the recommended strategies. The report presents a concise description of the following:

- JLUS Study Area;
- Population profile and economic overview of the communities in the JLUS Study Area;
- Ellsworth AFB mission overview;
- Summary of the factors and compatibility issues identified during the JLUS process; and
- Set of recommended strategies to mitigate or prevent encroachment and proactively achieve land use compatibility.



### Background Report

The JLUS Background Report provides the technical background and detailed assessment of the compatibility issues identified as part of the JLUS process.



### Executive Summary

The JLUS Executive Summary serves as a quick reference describing the purpose of the JLUS and providing an overview of the key JLUS strategies and Military Compatibility Areas.

*This study was prepared under contract with the South Dakota Ellsworth Development Authority, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the South Dakota Ellsworth Development Authority and the jurisdictions, and organizations participating in the JLUS program, and does not necessarily reflect the views of the Office of Economic Adjustment.*



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