



# Sumter-Shaw Air Force Base *Joint Land Use Study*

WHITE &  
SMITH, LLC  
PLANNING AND  
LAW GROUP

BENCHMARK

MARSTEL DAY<sup>®</sup>  
CONSERVATION & CONSULTING  
FROM SEA TO STARS



This Study was prepared under contract with White & Smith, LLC, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of White & Smith, LLC and its subconsultants, Benchmark Planning, and Marstel-Day, LLC and the input of the local steering committees and does not necessarily reflect the views of the Office of Economic Adjustment or the Department of Defense.

THIS PAGE INTENTIONALLY LEFT BLANK



## ACKNOWLEDGMENTS

### JLUS Policy Committee

Mayor of the City of Sumter—**Joseph McElveen**

Chair of Sumter County Council—**Vivian McGhaney**

Wing Commander (serving as ex officio member)—**Col. Stephen Jost**

Mission Support Group Commander (serving as ex-officio)—**Col. John Thomas**

Chairman of Sumter City-County Planning Commission—**Burke Watson**

Member of Sumter City Council—**Calvin Hastie**

Member of Sumter County Council—**Charles Edens**

Sumter School District—**Karen Michalik**

City of Sumter City Manager—**Deron McCormick**

Sumter County Administrator—**Gary Mixon**

### JLUS Technical Advisory Committee

Sumter City-County Planning Director—**George McGregor**

Sumter City-County Zoning Administrator—**Donna McCullum**

Sumter City-County Planning GIS Manager—**Charles Robbins**

Sumter School District—**Dana Fall**

Sumter County Attorney—**Johnathan Bryan**

City of Sumter General Counsel—**Eric Shytle**

Sumter County Economic Development Board—**Jay Schwedler**

Santee-Lynches Council of Governments Planning Director—**Kyle Kelly**

Shaw AFB Community Planner—**James Olsen**

Representative from the Conservation Industry—**Jason Johnson**

Representative from the Building Industry—**Doc Dunlap**

Representative from the Real Estate Industry—**Jay Davis**

Senior Planner, Sumter City-County Planning Department—**Helen Roodman**

Senior Planner, Sumter City-County Planning Department—**Joey Adams- Raczkowski**

THIS PAGE INTENTIONALLY LEFT BLANK

## TABLE OF CONTENTS

<b>Acknowledgments</b>	<b>i</b>
<b>Executive Summary</b>	<b>1</b>
<b>Chapter 1: Purpose and Process</b>	<b>11</b>
I. What is a Joint Land Use Study?	11
II. Study Goals and Objectives	12
III. The Participants and the Process	13
IV. The JLUS Study Area	13
V. The JLUS Process	15
VI. The Sumter-Shaw JLUS Public Outreach Campaign	16
VII. Overview of the Sumter-Shaw Joint Land Use Study	17
<b>Chapter 2: The Installations and the Community: Current Conditions and the Road Ahead</b>	<b>21</b>
I. Shaw AFB and Poinsett ECR Context	21
II. Community Context	33
III. Encroachment Challenges and Management	42
<b>Chapter 3: Land Use Compatibility Analysis</b>	<b>75</b>
I. Introduction	75
II. Shaw AFB Aircraft Operational Impacts (2013 AICUZ)	75
III. Current Basis of Land Use Compatibility Regulation – Shaw AFB	83
IV. Comparison of 2004 and 2013 Shaw AFB AICUZ Noise Contours	86
V. Potential Future Aircraft Noise Impacts – Shaw AFB F-35 Transition	88
VI. Shaw AFB Potential Aircraft Noise Impacts – Comparison with AICUZ Data	90
VII. Shaw AFB 2013 AICUZ Noise Zone Land Use Analysis	93
VIII. Shaw AFB F-35A EIS Scenario 3 Noise Zone Land Use Analysis	104
IX. Shaw AFB Accident Potential Zone Land Use Analysis	115
X. Poinsett ECR Overview	124
XI. Poinsett ECR Land Use Analysis	129

<b>Chapter 4: State, Local, and Federal Tools for Advancing Land Use Compatibility</b>	<b>141</b>
I. Introduction	141
II. The South Carolina Planning and Land Use Framework	142
III. Existing Military-Related Policies and Regulations in Sumter and Sumter County	148
IV. Federal Compatibility Programs and Tools	162
<b>Chapter 5: JLUS Recommendations</b>	<b>169</b>
I. Introduction	169
II. The Next Phases: JLUS Implementation and Ongoing Planning and Coordination	169
III. JLUS Implementation Committee	171
IV. Organization of JLUS Recommendations	171
V. The “JLUS Recommendations Matrix” – Summarized	172
VI. High Priority JLUS Recommendations – Summarized	173
VII. JLUS Recommendations	174
VIII. JLUS Recommendations Matrix	196
<b>Appendix A: Public Survey Results</b>	
<b>Appendix B: City and County Airfield Compatibility, Range Compatibility, and Noise Attenuation District Regulations</b>	
<b>Appendix C: Meeting Notes from Public Meetings</b>	
<b>Appendix D: Meeting Notes Policy and Technical Advisory Committees Meetings</b>	

## LIST OF FIGURES

### Chapter 1

Figure 1-1: Sumter-Shaw Joint Land Use Study Area	14
---	----

### Chapter 2

Figure 2-1: Shaw AFB Airfield Operations in 2011	24
Figure 2-2: Total Shaw AFB Personnel in Fiscal Year 2013	24
Figure 2-3: Shaw AFB Baseline F-16 and Proposed F-35A Operations	25
Figure 2-4: Baseline and Proposed Military Personnel on Shaw AFB	26
Figure 2-5: Mini-MUTES at Poinsett ECR	27
Figure 2-6: Fiscal Year 2015 Poinsett ECR Usage	28
Figure 2-7: Population Change, 1990-2015	33
Figure 2-8: Sumter County Urban and Rural Population Counts	34
Figure 2-9: Population and Housing Density of the City of Sumter and Sumter County	34
Figure 2-10: Top Ten Industries in Sumter County 2015	35
Figure 2-11: Civilian Labor Force Employment for Sumter County and South Carolina	36
Figure 2-12: Fiscal Year 2015 Local Economic Impact	37
Figure 2-13: Estimated Population Change, 2010-2030	38
Figure 2-14: Proposed Transportation Improvements within JLUS Study Area	39
Figure 2-15: Shaw AFB, Poinsett Electronic Range, and Sumter Airport Five-Mile Boundary and Restricted Airspace	46
Figure 2-16: Compatible Use Easements within JLUS Study Area	50
Figure 2-17: 1993 Shaw AFB JCLUS Recommended Community Goals and Policies	52
Figure 2-18: 1993 Shaw AFB JCLUS Recommended Military Goals and Policies	53
Figure 2-19: 1993 Shaw AFB JCLUS Sumter Zoning Recommendations	56
Figure 2-20: 1993 Shaw AFB JCLUS Short-term Recommendations	59
Figure 2-21: 2002 Poinsett ECR JCLUS Major Recommendations	60
Figure 2-22: 2002 Poinsett ECR JCLUS Future Land Use Map Recommendations	62
Figure 2-23: Poinsett ECR JCLUS Goals and Policies	64
Figure 2-24: Open and Conserved Space in Sumter County	67
<b>Chapter 3</b>	
Figure 3-1: JLUS Study Area	76
Figure 3-2: 2013 AICUZ Noise Zones (65+ dB DNL)	77
Figure 3-3: Aircraft Accident Potential Zones	77
Figure 3-4: 2013 Shaw AFB AICUZ Aircraft Noise Contours (DNL)	78

Figure 3-5: 2013 Shaw AFB AICUZ Accident Potential Zones (APZ)	79
Figure 3-6: Combined 2013 Shaw AFB AICUZ Aircraft Operational Impacts	80
Figure 3-7 Jurisdictional Distribution of Off-Base Impacts (2013 AICUZ)	81
Figure 3-8 Jurisdictional Mapping of Off-Base Impacts (2013 AICUZ)	82
Figure 3-9: 2004 AICUZ Noise Zone Summary	83
Figure 3-10: 2004 AICUZ Aircraft Noise Contours	84
Figure 3-11: Current Compatible Use Regulations (Shaw AFB 2004 AICUZ Basis)	85
Figure 3-12: Comparison of 2004 and 2013 AICUZ Off-Base Noise Impacts	86
Figure 3-13: Comparison of 2004 and 2013 AICUZ 65+ dB DNL Noise Zone	87
Figure 3-14: F-35A EIS Scenario 3 Aircraft Noise Impacts	88
Figure 3-15: F-35 Scenario 3 Noise Contours	89
Figure 3-16: Comparison of 2004 AICUZ (F-16) and F-35A Scenario 3 Off-Base	90
Figure 3-17: Comparison of 2013 AICUZ (F-16) and F-35A Scenario 3 Off-Base Noise	90
Figure 3-18: Comparison of F-35A Scenario 3 and 2004 AICUZ (F-16) 65+ dB DNL Noise Zone	91
Figure 3-19: Comparison of F-35A Scenario 3 and 2013 AICUZ (F-16) 65+ dB DNL Noise Zone	92
Figure 3-20: 2013 AICUZ Noise Zone Generalized Existing Land Use Summary	93
Figure 3-21: 2013 AICUZ Noise Zone Land Subdivision Summary	94
Figure 3-22: 2013 AICUZ Noise Zone Generalized Zoning Summary	94
Figure 3-23: 2013 AICUZ Noise Zone Future Land Use Summary	95
Figure 3-24: 2013 AICUZ Noise Zone Generalized Existing Land Use Pattern	96
Figure 3-25: 2013 AICUZ Noise Zone Land Subdivision Pattern	97
Figure 3-26: 2013 AICUZ Noise Zone Generalized Base Zoning Districts	98
Figure 3-27: 2013 AICUZ Noise Zone Future Land Use Pattern	99
Figure 3-28: 2013 AICUZ Noise Zone Existing Land Use	100
Figure 3-29: 2013 AICUZ Noise Zone Existing Land Use Compatibility	101
Figure 3-30: 2013 AICUZ Noise Zone Generalized Zoning Compatibility	102
Figure 3-31: 2013 AICUZ Noise Zone Current Zoning Compatibility	103
Figure 3-32: F-35 EIS Scenario 3 Noise Zone Generalized Existing Land Use Summary	104
Figure 3-33: F-35 EIS Scenario 3 Noise Zone Land Subdivision Summary	105
Figure 3-34: F-35 EIS Scenario 3 Noise Zone Generalized Zoning Summary	105
Figure 3-35: F-35 EIS Scenario 3 Noise Zone Future Land Use Summary	106
Figure 3-36: F-35 EIS Scenario 3 Noise Zone Generalized Existing Land Use Pattern	107
Figure 3-37: F-35 EIS Scenario 3 Noise Zone Land Subdivision Pattern	108
Figure 3-38: F-35 EIS Scenario 3 Noise Zone Generalized Zoning	109
Figure 3-39: F-35 EIS Scenario 3 Noise Zone Future Land Use Pattern	110

Figure 3-40: F-35 EIS Scenario 3 Noise Zone Existing Land Use Compatibility Summary	111
Figure 3-41: F-35 EIS Scenario 3 Noise Zone Existing Land Use Compatibility	112
Figure 3-42: F-35 EIS Scenario 3 Noise Zone Generalized Zoning Compatibility Summary	113
Figure 3-43: F-35 EIS Scenario 3 Noise Zone Current Zoning Compatibility	114
Figure 3-44: Shaw AFB Accident Potential Zone Generalized Existing Land Use Summary	115
Figure 3-45: Shaw AFB Accident Potential Zone Land Subdivision Summary	116
Figure 3-46: Shaw AFB Accident Potential Zone Generalized Zoning Summary	116
Figure 3-47: Shaw AFB Accident Potential Future Land Use Classifications	117
Figure 3-48: Accident Potential Zone Generalized Existing Land Use Pattern	117
Figure 3-49: Accident Potential Zone Land Subdivision Pattern	118
Figure 3-50: Accident Potential Zone Generalized Base Zoning Districts	119
Figure 3-51: Accident Potential Zone Future Land Use Pattern	120
Figure 3-52: Shaw AFB Accident Potential Zone Existing Land Use Compatibility Summary	121
Figure 3-53: Shaw AFB Accident Potential Zone Generalized Zoning Compatibility Summary	121
Figure 3-54: Accident Potential Zone Existing Land Use Compatibility	122
Figure 3-55: Accident Potential Zone Current Zoning Compatibility	123
Figure 3-56: Poinsett ECR 65+ dB DNL Noise Zone Summary	124
Figure 3-57: Poinsett ECR Restricted Airspace and Aircraft Noise Contours	125
Figure 3-58: Poinsett ECR Boundary Status Summary	126
Figure 3-59: Poinsett ECR Boundary Status	127
Figure 3-60: Poinsett ECR Compatible Use Zoning	128
Figure 3-61: Poinsett ECR Generalized Existing Land Use Summary	129
Figure 3-62: Poinsett ECR Land Subdivision Summary	130
Figure 3-63: Poinsett ECR Generalized Zoning Summary	130
Figure 3-64: Poinsett ECR Future Land Use Summary	131
Figure 3-65: Poinsett ECR Generalized Existing Land Use Pattern	132
Figure 3-66: Poinsett ECR Land Subdivision Pattern	133
Figure 3-67: Poinsett ECR Generalized Base Zoning Districts	134
Figure 3-68: Poinsett ECR Future Land Use Pattern	135
Figure 3-69: Poinsett ECR Noise Zone Existing Land Use Compatibility Summary	136
Figure 3-70: Existing Land Use Compatibility Within Poinsett ECR Noise Contours	137
Figure 3-71: Poinsett ECR Noise Zone Generalized Zoning Compatibility Summary	138
Figure 3-72: Poinsett ECR Noise Zone Current Zoning Compatibility	139

**Chapter 4**

Figure 4-1: Current MPA, JLUS Study Area, and Local Jurisdictional Boundaries	152
Figure 4-2: Presence of Aircraft Impacts in City of Sumter and Sumter County	156
Figure 4-3: Current Noise Attenuation (NA) Districts	161

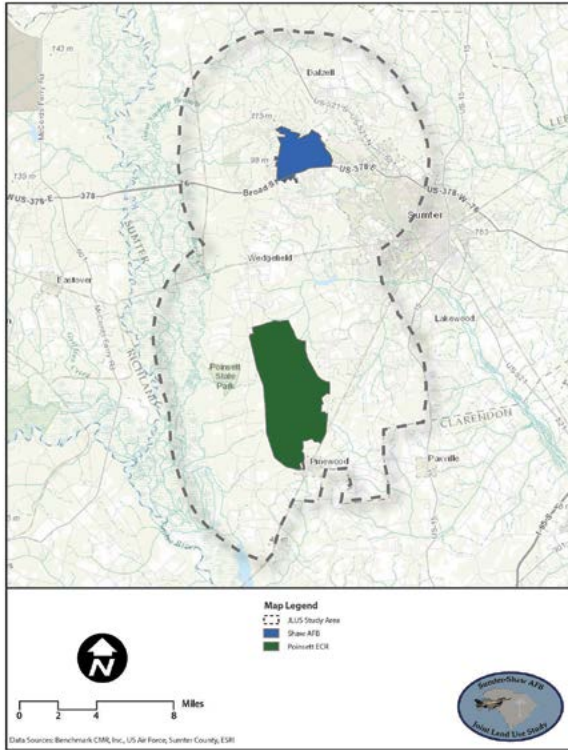
**Chapter 5**

Figure 5-1: MPA, RCD, and F-35A 65+ dB Noise Contour	176
Figure 5-2: Revised Military Protection Areas-1 and -2	178
Figure 5-3: 2004 AICUZ Noise Zones for Recent F-16 Operations	181
Figure 5-4: 2013 AICUZ Noise Zones for Existing F-16 Operations	182
Figure 5-5: 2013 EIS Noise Zones for F-35A Operations (Scenario 3)	183
Figure 5-6: Merged Noise Zones for Recent and Existing F-16 Operations and Potential F-35A Operations	184



## EXECUTIVE SUMMARY

### WHAT IS A JOINT LAND USE STUDY?



A Joint Land Use Study (JLUS) is a collaborative planning process that involves local military installations, the civilian community, and relevant city or county jurisdictions. These studies are used around the country to create dialogue between military installations and their neighboring communities about how to promote compatible land uses around the installation. JLUS's are not zoning codes or regulations; therefore, implementation of any recommendations is not enforceable without action by the local community to adopt regulations, agreements, comprehensive plan policies, and other documents identified in the study. A JLUS simply seeks to identify and assess the various tools and strategies available to a community, serving as a guide for future decision-making.

The Sumter City-County Planning Commission sponsored the Sumter-Shaw JLUS. The project was made possible with funding from the Department of Defense's Office of Economic Adjustment (OEA), and a financial contribution from the local community. White and Smith Planning & Law Group worked with partners Benchmark Planning and Marstel-Day, LLC to complete the study between October 2015 and September 2016.

A collaborative effort among Shaw Air Force Base (Shaw AFB), Poinsett Electronic Combat Range (Poinsett ECR), Sumter City-County Planning Commission, Sumter County, the City of Sumter, and other affected stakeholders in the community provided the foundation for this report. While guidance from a Policy Committee and a Technical Advisory Committee informed the recommendations, the final result would not have been possible without full engagement from local stakeholders, the general public, as well as local, regional, and state representatives.

### GOALS AND OBJECTIVES OF THE SUMTER-SHAW JOINT LAND USE STUDY

There is a long history of collaboration among Shaw AFB, Poinsett ECR, and the local Sumter community, including the completion of previous joint land use studies, in 1993 and 2002. The primary goal of this JLUS is to further support the preservation of long-term land use compatibility between Shaw AFB and Poinsett ECR, and the surrounding communities. The JLUS process has been used nationwide and communities generally find that the process, as well as the implementation of subsequent recommendations, is mutually beneficial to military installations and to the local community. An updated JLUS benefits Shaw AFB and Poinsett ECR by helping the Installations mitigate operational impacts, such as noise, or non-compatible land uses in their vicinity, especially as Air Force missions and aircraft types change over time. The study

also benefits the local community by providing it with tools and strategies that can be implemented to help reduce impacts on citizens and address incompatibilities, while also continuing to support the mission and operations at the Installations.

The primary objectives of Joint Land Use Studies are to:

1. **Increase Awareness.** Increased community awareness of Shaw AFB and Poinsett ECR's operations and, for the Air Force, awareness of anticipated land use patterns on nearby civilian lands, increases communication and understanding as the community and installations interact in the future. The JLUS process, therefore, involved twelve months of collaborative planning by Air Force officials, City and County governments, and members of the public and private sectors. The planning process involved an extensive review of background information and increasing community awareness of the role Shaw AFB and Poinsett ECR play, the impacts they have on the community and, of course, the impacts the community can have on the Air Force.
2. **Encourage Collaboration.** The ability for a community to maintain land use compatibility is enhanced by collaborative decision-making related to land use and Air Force operations. This community already has a long history of collaboration. As a result, it has a very good understanding of the compatibilities of civilian lands near Shaw AFB and Poinsett ECR and current Air Force operations. This study, therefore, simply builds on the tools and processes for maintaining collaboration between the Air Force installations and its community partners once the JLUS is completed.
3. **Maintain Land Use Compatibility.** The compatibility tools recommended by the JLUS Policy Committee range from simply formalizing existing coordination processes to amending existing local government regulations to supplement compatibility or to prepare for potential future Air Force operations. These recommendations are options for the local community to evaluate and are not mandated, per se. Regardless, enhanced awareness of the impacts military and civilian land uses have on one another and increased collaboration "across the fence," provides a foundation for ongoing land use compatibility. This, in turn, protects the Air Force's ability to operate in the region.

The JLUS process differs depending on the community and study area. The objectives of the Sumter-Shaw JLUS process are to maintain the collaborative, inclusive approaches to land use planning in the areas near Shaw AFB and Poinsett ECR, to prepare for compatible land use in the face of growth in the region, and to minimize associated conflicts. Additionally the JLUS process also aims to support local economic vitality and opportunities related to the Installations, to protect the quality of life in surrounding communities, and to sustain the long-term mission at both installations.

## WHAT IS HAPPENING IN THE VICINITY OF SHAW AFB AND POINSETT ECR?

---

Shaw Air Force Base is a major site for supporting the overall Air Force mission. The base hosts the 20th Fighter Wing (20 FW), which is the largest F-16 combat unit in the entire Air Force. Current operations conducted with the 20 FW include Counterair Operations and Counterland Operations within active combat zones around the world. Airmen are deployed from the site regularly in support of military operations with a primary mission of suppressing enemy air defenses. The Ninth Air Force and U.S. Air Force Central (USAFCENT) reside at Shaw AFB and are responsible for organizing, training, and equipping Airmen to meet the demands of contemporary and future warfare operations, as well as ensuring agile combat support capabilities. The U.S. Army Central Command (USARCENT) is also located at Shaw AFB.

Furthermore, Shaw AFB operates Poinsett Electronic Combat Range (ECR) that serves as a combat training environment for all branches of the military throughout the southeastern United States. A Multiple Threat Emitter System (MUTE) is used in both aircraft- and ground-related training activities such as practice targeting, evasion, and simulation of enemy systems. There is restricted airspace above Poinsett ECR in order to provide open training airspace for participating aircraft.

The Air Force has selected Shaw AFB as one of the potential active-duty east coast operational locations for the new F-35A fighter jets. Though no decision had been made as of the time of the 2016 JLUS, there are multiple proposed scenarios for potential arrivals of the F-35As, all of which support continuation of the current primary mission of the site. If Shaw AFB receives the F-35A, overall airfield operations are expected to decrease. The usage of Poinsett ECR is also expected to change. For example, additional airspace for the F-35As may be necessary to continue operations of Poinsett ECR at its current levels.

Most of the land surrounding Shaw AFB and Poinsett ECR, especially to the west, is considered compatible with the Air Force training and mission operations. This land is made up of primarily agricultural and low-density residential uses. Land uses to the north, east, and south of the Installations are more diverse, and do contain some areas that are considered incompatible with current Air Force operations. Demand for residential development is expected to continue near Shaw AFB and Poinsett ECR, even though population growth in Sumter County and the City has been low in recent years.



The largest impacts in the region associated with Shaw AFB and Poinsett ECR are aircraft noises and accident potential.

While Shaw AFB and Poinsett ECR maintain a strong relationship with the communities that surround the Installations, this study focuses on understanding current and future operational impact scenarios. This process includes mapping the noise contours generated by training operations at both Installations to determine the extent of potential compatibility issues. Noise-sensitive uses, such as areas with residents or livestock rearing areas, are considered less compatible with the installations. The impacts of operational noises can be mitigated using methods such as sound attenuation construction techniques. The study also assesses the Accident Potential Zones (APZs) and their relation to current and projected uses in the local area. Various scenarios are considered when assessing impacts in the region, including the potential acquisition of the F-35As.

Conversely, civilian land uses surrounding Shaw AFB and Poinsett ECR also can impact Air Force operations. These off-base impacts are minimal around Shaw and Poinsett at this time, but could be worsened by the encroachment of incompatible land uses like the civilian use of Unmanned Aerial Systems (UAS) or widespread urban development or high density subdivisions near the Installations.

The Sumter-Shaw JLUS serves to expand and update the previously conducted joint land use studies in the area by identifying current and future impacts of operations and providing recommendations for moving forward. Through this process, the JLUS will help Shaw AFB, Poinsett ECR, and the local community proactively reduce any negative impacts on one another through continuing to support coordinated planning efforts for compatible land use in the area.

## JOINT LAND USE STUDY: AN OVERVIEW



The JLUS report is divided into five chapters and a series of appendices, each of which are described briefly below.

### **Chapter 1: Purpose and Process**

Chapter 1 explains the goals of the Sumter-Shaw JLUS and the three main components of the process that led to this report. This chapter also provides background information about previous land use studies in the area, as well as an introduction to Shaw Air Force Base, Poinsett Electronic Combat Range, and the local communities.

### **Chapter 2: The Installations and the Community: Current Conditions and the Road Ahead**

Chapter 2 describes how the lands both in and around Shaw AFB and Poinsett ECR are being used, and the

potential for both to experience challenges related to land use compatibility. This chapter also examines how the area's economic, demographic, environmental, and cultural characteristics affect land use.

### **Chapter 3: Land Use Compatibility Analysis**

Chapter 3 examines the impact of Shaw AFB and Poinsett ECR operations on lands within the designated study area, as well as the impacts of future development on the mission at the two Installations.

### **Chapter 4: State, Local, and Federal Tools for Advancing Land Use Compatibility**

Chapter 4 provides an inventory of land use compatibility tools created by Sumter County and the City of Sumter to address impacts within the vicinity of Shaw AFB and Poinsett ECR. This chapter also outlines the authorities of the City and County under state law, which served as the basis for determining recommendations presented by the JLUS Policy Committee in Chapter 5.

### **Chapter 5: JLUS Recommendations**

Chapter 5 identifies the recommendations for enhancing long-term land use compatibility between Shaw AFB, Poinsett ECR, and the local community. The JLUS Policy Committee considers these recommendations important to preserving the working relationship between stakeholders, as well as reflecting a continuously evolving mission at the local Installations. The recommendations are divided into short-, middle-, and long-term timeframes for purposes of implementation.



### **Appendices**

The appendices of this report include public survey results, notes from public meetings, as well as meeting notes from the JLUS Policy and Technical Advisory Committees, all of which contributed significantly to informing the final recommendations. The City and County regulations for Airfield Compatibility, Range Compatibility, and the Noise Attenuation District are also included.

## JLUS IMPLEMENTATION STRATEGIES

The JLUS Policy Committee identified the strategies and tools available to the City and County, Air Force bases, and other stakeholders to maintain the community's current collaborative approach to compatible land use near Shaw AFB and Poinsett ECR. This JLUS seeks to identify steps that the community could take to maintain existing land use compatibility, address potential incompatibilities, and plan for future cooperation as the Installations and surrounding areas grow in the future.

The JLUS Project Team worked with the JLUS Policy Committee and Technical Advisory Committee to identify these strategies and tools that would protect both local areas and support the broader scale missions of Shaw AFB, Poinsett ECR, and the Air Force as a whole. The values and needs of each community are associated with a particular context and no tool or strategy should be implemented without further public process. The recommendations are organized based on the "procedural context" in which they would be implemented. There are some overlaps of substantive area because of the need to address a certain implementation task within multiple procedural contexts.

The following chart summarizes the implementation tasks recommended for consideration and indicates the relative priority level and expected timeframe within each would be addressed. A description of the seven overarching categories of tools is provided following the chart. The chart and descriptions make up a condensed version of the full "JLUS Implementation Matrix" provided in Chapter 5.

How can Shaw AFB, Poinsett ECR, and the off-base community work together to maintain compatible land use in the region as they face increased urban development and an evolving Air Force mission?



Procedural Context	Relative Priority	Implementation Task	Implementation Timeline		
			0-3 Years	3-10 Years	10-20 Years
Comprehensive Planning	High	Updated Military Protection Area (MPA) Boundaries and Policies	x		
	High	Update Comprehensive Plans related to 2016 Joint Land Use Study	x		
	Low	Small Area Plans	x		
Zoning & General Code Provisions	High	Revise ACD Overlay Noise Zones to reflect F-16 and potential F-35A Operations	x		
	High	Replace current Noise Attenuation (NA) Districts with MPA-2 boundaries and policies	x		
	High	Renewable Energy Projects	x		
	High	Frequency Emissions and Interference Avoidance	x		
	High	Require coordination per State Military Coordination Act	x		
	High	Include Poinsett ECR in Height Restrictions	x		
	High	Incorporate Clear Zones restrictions into Zoning Codes	x		
	High	Noise Zone Restrictions Updated	x		
	High	Non-Conforming land uses, structures	x		
	High	Existing Platted Lots	x		
	High	City-County Code Consistency Review	x		
	High	Add Poinsett ECR to Zoning Codes' Purpose Statements	x		
	Low	Evaluate Effectiveness & Feasibility of a Transferable Development Right Program		x	
Subdivision Regulations	High	Add Poinsett ECR boundaries to Plat Notice Requirements	x		
	High	Plat Acknowledgment Statements	x		
	High	Expand Subdivision Signage for Operational Awareness in MPAs	x		
Notice to Property Owners & Occupants	High	Real Estate Disclosures	x		
	Medium	Expand Road Signage for Operational Awareness in MPAs		x	

Procedural Context	Relative Priority	Implementation Task	Implementation Timeline		
			0-3 Years	3-10 Years	10-20 Years
Interagency Cooperation	High	Appoint JLUS Implementation Committee	x		
	High	Renewable Energy Project Review & Impacts	x		
	High	Sumter School District Coordination/Logistics	x		
	High	Coordinate regarding Proposed Growth-Inducing Infrastructure within the MPAs	x		
	High	Coordinate with the South Carolina Military Base Task Force	x		
	Medium	Community Partnership & Shared Services	x		
	Medium	Coordinate community planning & professional development	x		
	Medium	Land Conservation	x		
Public Outreach & Communication	High	Civilian Unmanned Aircraft Systems (UAS)	x		
	High	Increase Community Awareness of the Air Force Mission	x		
	High	Noise Level Reduction Construction Standards	x		
	High	Radio Frequency Interference Awareness	x		
	High	On-base School Logistics	x		
	High	Dedicated Webpage	x		
	High	Noise Inquiries	x		
	High	Local Business Coordination	x		
Ongoing Planning & Coordination	High	Establish a Military Planning & Coordination Committee (MPCC)	x		
	High	Prepare Military Planning & Coordination Agreement (MPCA)	x		
	High	Prepare MPCC Bylaws	x		
	High	Monitor Status of F-35A Squadrons	x		
	High	Maintain coordination with Santee-Lynches Regional COG	x		
	Medium	Update Noise Contours for Poinsett ECR & Evaluate the Need for Additional Protections		x	
	Low	Monitor Non-Aircraft Military Impacts at Poinsett ECR		x	

## Comprehensive Planning

While the Comprehensive Plans for the City of Sumter and Sumter County outline provisions related to military land use planning and the lands surrounding Shaw AFB and Poinsett ECR, it is recommended that the City and County implement plan-based JLUS recommendations prior to pursuing the regulatory changes suggested in the next section.

The Comprehensive Plan changes could include a reevaluation of the Military Protection Area (MPA) boundaries and policies. The potential arrival of an F-35A squadron, the extent of Poinsett Range Compatibility District, and the need for increased public awareness throughout surrounding areas should be reflected in an amended MPA. The Policy Committee suggests that MPA policies be used to guide future rezoning requests within the MPAs and be reflected in City and County regulations. In addition, it is recommended that the small area plans policy be removed and that the recommendations of the JLUS be integrated into the plans instead.

## Zoning and General Code Provisions

The JLUS Policy Committee suggests that the City and County update various zoning maps and codes in order to facilitate existing or anticipated operations, or to clarify existing code provisions. Some recommendations include extending noise overlays that reflect existing and potential noise contours, updating noise attenuation or impact-mitigation requirements, and addressing renewable energy projects. Steps could also be taken to ensure that existing codes are comprehensively enforced as to both Shaw AFB and Poinsett ECR.



While coordination between the Installations and the City and County has occurred naturally over time, the statutory coordination requirements could be formally adopted into relevant sections of the City and County subdivision and zoning codes for both installations. The JLUS Policy Committee also suggests editing regulations to include Poinsett ECR airspace protections, restrictions for off-base lands within Clear Zones (CZs), limited land uses within designated noise zones, and compliance exceptions in order to address non-conforming land uses and structures. The committee recommends that the City-County Code be reviewed for consistency with other guidelines and policies. The language of the purpose and scope of the codes could be clarified to include both Poinsett ECR and Shaw AFB. It may also be helpful to evaluate the effectiveness and feasibility of a Transferable Development Rights (TDR) program in the area.

## Subdivision Regulations

Subdivision regulations could be updated to include the same language for both of the Installations. Currently, there are no specific requirements noted for Poinsett ECR in some sections. The JLUS Policy Committee also recommends expanding requirements for subdivision signage to include minor, as well as major, subdivisions throughout both the recommended MPA-1 and MPA-2 areas.

## Notice to Property Owners and Occupants

In order to facilitate public awareness and reduce land use conflicts, the JLUS Policy Committee recommends expanding notification areas. This includes engaging the real estate and development community in establishing a requirement for real estate disclosures. The committee also recommends expanding road signage for operational awareness in MPAs.



## Interagency Cooperation

Collaboration among local government and military agencies was a vital component of the JLUS process and will be vital to ongoing land planning efforts in the community related to its military land uses. The Policy Committee suggested several measures be taken in this regard, including to appoint a JLUS Implementation Committee to follow through with the recommendations of the Committee presented in this report. The Policy Committee also recommends creating a review and impact study method for any renewable energy projects proposed in the region, as well as establishing a platform for discussion between the Sumter School District and Shaw AFB officials in order to address coordination at Shaw Heights and High Hills elementary schools.

It is also necessary to promote increased coordination between local, regional, and state agencies and Shaw AFB and Poinsett ECR officials regarding planned infrastructure extensions and potential encroachment impacts. Engagement between local stakeholders and the South Carolina Military Base Task Force should also be sustained. Overall, efforts may be made to continue to integrate and formalize base and community planning efforts among stakeholders and to pursue continued participation in land conservation efforts.

## Public Outreach and Communication

Public outreach and communication is a crucial part of maintaining transparency and fostering trust between the Air Force bases and the surrounding community. Suggestions for improved public outreach include ensuring that the public is aware of restrictions related to civilian Unmanned Aircraft Systems (UAS), construction standards for noise level reduction, and sources of frequency interference. It is also important to increase community awareness of the Air Force mission – particularly as the mission evolves – and to facilitate this through informal documentation or a Military Planning and Coordination Agreement (MPCA). The creation of a dedicated webpage for public awareness efforts would allow for dissemination of information to the public and could create an expanded forum to address issues such as the logistical challenges with on-base schools and noise complaint protocols. Local businesses are also encouraged to coordinate with Shaw AFB and Poinsett ECR.

## Ongoing Planning and Coordination

The final set of recommendations represents a framework that would guide community operations after the JLUS Implementation phase is complete. This phase would be guided by a committee and governed by committee bylaws and a non-binding agreement much like a Memorandum of Understanding (MOU). It is expected that the JLUS Implementation Committee will develop these components during the JLUS Implementation phase following the completion of the JLUS.

The ongoing planning and coordination efforts include establishing a Military Planning and Coordination Committee (MPCC) that will facilitate ongoing communication between the Installations and the community, preparing a Military Planning and Coordination Agreement (MPCA) and the MPCC bylaws, and monitoring the status of the F-35A squadron, as this will determine the final implementation approaches. The installations should also maintain coordination with the Santee-Lynches Regional COG in order to stay abreast of regional issues and potential impacts. In addition, the committee suggests that noise contours and encroachment issues related to the installations and the surrounding communities (particularly related to Poinsett ECR) continue to be monitored and updated.



THIS PAGE INTENTIONALLY LEFT BLANK

## CHAPTER 1: Purpose and Process

### I. WHAT IS A JOINT LAND USE STUDY?

A “Joint Land Use Study,” or “JLUS” is a planning process used in South Carolina and around the country, to facilitate land use compatibility between military installations and their surrounding civilian communities. Since 1985, over 110 Joint Land Use studies have been completed nationwide.

In fact, previous Joint Land Use Studies were completed for Shaw Air Force Base in 1993 and for Poinsett Electronic Combat Range in 2002. JLUSs also have been completed for the South Carolina communities surrounding Fort Jackson/McEntire ANG, Joint Base Charleston, Marine Corps Air Station – Beaufort, and Marine Corps Recruit Depot – Parris Island.

The Sumter-Shaw JLUS was administered by the Sumter City-County Planning Commission with funding by the Department of Defense’s Office of Economic Adjustment (OEA), with a financial contribution from the local community. White & Smith Planning and Law Group, from Charleston, led the study, with partners Marstel-Day, LLC, and Benchmark Planning (the “JLUS Project Team”). This team was selected after a formal bid process in the summer of 2015.

In the past, Air Force and other military installations were situated in rural areas separated from urban and suburban land uses by rural and agricultural lands. In more recent decades, though, civilian development has crept ever closer to these military installations and in some instances, has experienced the impacts (for example, sound, traffic, accident potential) that come with military training and operations. Fortunately, as a result of prior planning efforts and joint land use studies here, Shaw AFB and Poinsett ECR remain fairly free of incompatible land uses near their boundaries.

However, Shaw AFB has been identified as one of several Air Force bases around the country that could have a new type of fighter jet locate here. This jet – the F-35A Joint Strike Fighter – has noise impacts that are generally more extensive than those associated with the F-16 fighter jet, which is the primary aircraft operating out of Shaw AFB today. Therefore, if the F-35A were to beddown at Shaw AFB, initial studies show that the sound associated with its operation could impact more lands in the region than is currently the case with the F-16.

Based on this potential change and the city’s historic growth trends westward towards Shaw AFB and Poinsett ECR, the time was right to reengage the land use planning process to ensure that, moving forward, conflicts between military and civilian land uses in this community are minimized. By taking the initiative to deliberately plan for land use compatibility through a joint land use study process, the needs of the Air Force mission can be protected while citizens remain safe and are able to maintain quality of life.

This report, which resulted from a one-year community planning process, outlines relevant demographic and land use background information, identifies potential land use conflicts, and describes the additional tools available to the community for maintaining compatibility between civilian land uses and operations at Shaw AFB and Poinsett ECR. The Joint Land Use Study itself is a planning document – similar to the Sumter

The 2016 Joint Land Use Study for Shaw Air Force Base and Poinsett Electronic Combat Range was an update to prior planning efforts related to land use compatibility in the vicinity of these two important Department of Defense Installations.

2030 Comprehensive Plan – and does not amount to zoning or regulations. It does, however, recommend tools the community may implement, including amendments to zoning – to ensure ongoing land use compatibility near the Installations. These recommendations were the result of extensive engagement with community stakeholders, landowners, and the public and were adopted by a JLUS “Policy Committee.”

Stakeholders and members of the public impacted by (or creating an impact on) the local Air Force installations were fully engaged over the course of the JLUS process. JLUS participants included:

- Air Force officials, personnel, and specialists;
- landowners and affected residents;
- business alliances and chambers of commerce;
- private enterprise and affected property owners;
- local and regional government agencies;
- state and other federal agencies;
- conservation and environmental groups;
- utilities and service providers;
- transportation and infrastructure interests; and
- schools, colleges, and other educational organizations.

## II. STUDY GOALS AND OBJECTIVES

---

The primary goal of any JLUS is to (a) inventory potential and current incompatibilities in land use, (b) identify measures for mitigating any incompatibilities, and (c) detail a plan for maintaining compatible land uses, regional cooperation, and the ongoing mission of the local installation.

The JLUS process varies community-to-community, but the objectives of the process generally are to:

1. **Increase Awareness.** Increased community awareness of Shaw AFB and Poinsett ECR’s operations and, for the Air Force, awareness of anticipated land use patterns on nearby civilian lands, increased communication and understanding as the community and installations interact in the future. The JLUS process, therefore, involved twelve months of collaborative planning by Air Force officials, City and County governments, and members of the public and private sectors. The planning process involved an extensive review of background information and increasing community awareness of the role Shaw AFB and Poinsett ECR play, the impacts they have on the community and, of course, the impacts the community can have on the Air Force.
2. **Encourage Collaboration.** The ability for a community to maintain land use compatibility is enhanced by collaborative decision-making related to land use and Air Force operations. This community already has a long history of collaboration. As a result, it has a very good understanding of the compatibilities of civilian lands near Shaw AFB and Poinsett ECR and current Air Force operations. This study, therefore, simply builds on the tools and processes for maintaining collaboration between the Air Force installations and its community partners once the JLUS is completed.
3. **Maintain Land Use Compatibility.** The compatibility tools recommended by the JLUS Policy Committee range from simply formalizing existing coordination processes to amending existing local government regulations to supplement compatibility or to prepare for potential future Air Force operations. These recommendations are options for the local community to evaluate and are not mandated, per se. Regardless, enhanced awareness of the impacts military and civilian land uses have

on one another and increased collaboration “across the fence,” provides a foundation for ongoing land use compatibility. This, in turn, protects the Air Force’s ability to operate in the region.

### III. THE PARTICIPANTS AND THE PROCESS

---

The JLUS was conducted between October 2015 and September 2016. Participants of the study included members of Shaw AFB, local, regional, and state representatives, and other entities and individuals familiar with and impacted by operations at the Installations. In addition, landowners in the JLUS Study Area and the general public were involved in a series of three (3) public meetings held in October 2015, July 2016, and September 2016. The members of the two steering committees, which guided the process, are identified in the Acknowledgements section of the report and their role is discussed below. The minutes from the steering committees’ meetings are included in [Appendix D](#).

#### A. The Steering Committees

In addition to the landowners, business leaders, and community groups that participated as stakeholders in the JLUS project, two “steering” committees were appointed to guide the process.

First, the JLUS Policy Committee, made up of elected and upper level military officials and local jurisdiction administrators, met approximately every other month with the JLUS Team to receive its findings and to consider its proposed recommendations. The Policy Committee gave direction to the JLUS Team in preparing this report and its final recommendations.

Second, the Policy Committee was supported by the expertise of an appointed Technical Advisory Committee, made up of staff and department heads from Sumter County, the City of Sumter, Shaw AFB, the School District, the local council of governments, and local industry representatives. The Technical Advisory Committee reviewed initial deliverables from the JLUS Team and provided technical input to the Team and the JLUS Policy Committee throughout the process. The Technical Advisory Committee members attended each of the meetings with the Policy Committee and met between meetings with the JLUS Team as needed.

### IV. THE JLUS STUDY AREA

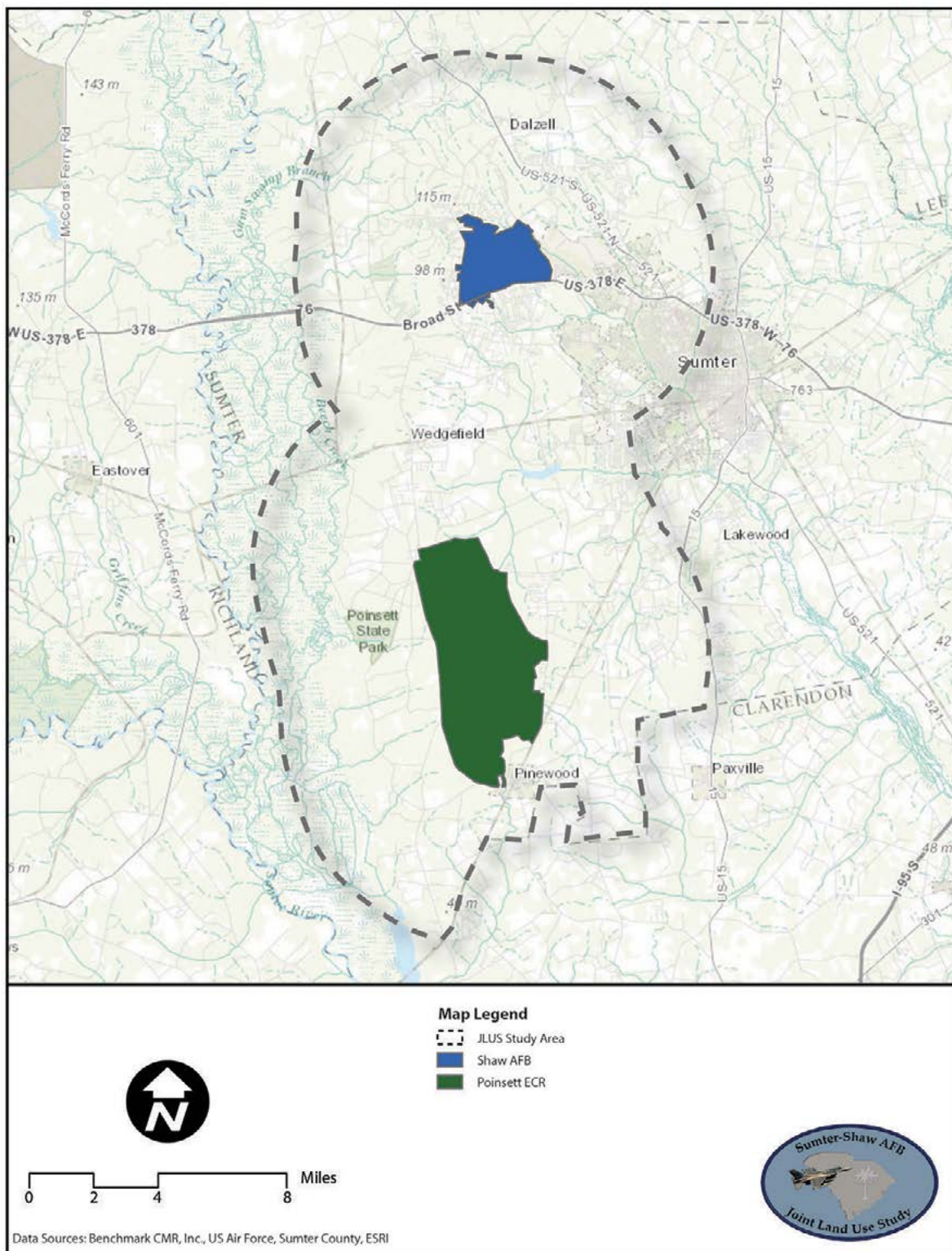
---

The Policy Committee designated the JLUS Study Area as shown in Figure 1-1 on page 14.

The Study Area includes Shaw AFB and Poinsett ECR, as well as off-base lands most likely to be impacted by the Air Force’s training missions and/or most likely to experience civilian growth that could impact missions at the Installations. These impacts are detailed in Chapter 3: “Land Use Compatibility Analysis,” and are based on the known military operational impacts identified through the 2013 Air Installation Compatible Use Zone Study (AICUZ), previous AICUZ studies, Joint Land Use Studies, and local knowledge shared with the JLUS Team during the study.



Figure 1-1: Sumter-Shaw Joint Land Use Study Area



## V. THE JLUS PROCESS

---

The Sumter-Shaw JLUS process involved three key components of the land use dynamic between civilian land use and military land use and operations. The three components are as follows:

- Evaluation of Existing Conditions and Policies;
- Land Use Compatibility Analysis; and
- Study Recommendations.

The JLUS Project Team, at the direction of Policy and Technical Advisory Committees, facilitated the completion of each of these three components, each of which included the input of community stakeholders, the general public, and landowners in the Study Area. The following sections detail each of the three components.

### A. Evaluation of Existing Conditions

The Evaluation of Existing Conditions and Policies included Shaw AFB and Poinsett ECR site visits, a review of background documents, comprehensive plans, and regulations, and face-to-face meetings with the public and key stakeholders identified by the JLUS Technical Advisory and Policy Committees. In addition, between October and December 2015, a Public Survey was conducted in order to increase the JLUS Team's understanding of the community's view of the Air Force's presence in the region and the history of military-civilian interactions here. The Public Survey included thirty-one questions and was available to the general public in hard copy and online. One hundred-and-one (101) responses were received, almost all of which were submitted through the online forum. Survey results are summarized and included in their entirety in [Appendix A](#) of this report.

### B. Land Use Compatibility Analysis

Chapter 3 of the report contains the "Land Use Compatibility Analysis" performed for the lands impacted by noise and safety within the JLUS Study Area. The analysis identifies existing land uses and the zoning categories on the lands within the JLUS Study Area and compares them to the off-base impacts from military operations at Shaw AFB and Poinsett ECR. This allowed the JLUS Policy Committee to identify which lands remained susceptible to possible military impacts and to make its recommendations accordingly. This analysis incorporated and reflected the regulatory steps already taken in the community as a result of prior JLUS efforts.

The Land Use Compatibility Analysis also took into consideration the land uses on Shaw AFB and Poinsett ECR, in order to understand which areas have already been developed near the installations, which remain vacant, and which existing lands are already compatible with Air Force operations. The Land Use Compatibility Analysis is included in Chapter 3 of the report.

### C. Study Recommendations

This third phase of the Study – the Recommendations phase – reflects all background information, the compatibility analysis, and the implementation options presented to both the community and the Policy Committee to consider during the study period. The Committee categorized its final recommendations into the seven (7) "procedural contexts" within which they would be implemented.

Notably, the inclusion of these recommendations in the JLUS report does not effectuate their implementation. As is detailed in Chapter 5, there is a second phase following completion of the JLUS, which would implement the recommendations of the Policy Committee that are supported by the community as well as City and County elected officials.

## VI. THE SUMTER-SHAW JLUS PUBLIC OUTREACH CAMPAIGN

As mentioned above, the Policy and Technical Advisory Committees included a range of key community stakeholders and public agency representatives. However, the Policy Committee also conducted an extensive campaign to reach the general public, affected industries, and landowners in the JLUS Study Area.

In addition to face-to-face meetings held with community stakeholders and the public, the JLUS “public outreach campaign” included brochures, a project website, a Facebook page, as well as announcements and public notices provided throughout the study.

### A. JLUS Brochures

The JLUS Team prepared and distributed two informational brochures during the Sumter-Shaw JLUS process. The first was prepared prior to the initial Public Outreach Meeting on October 26, 2015. This brochure simply introduced the community to the JLUS process and outlined what the public could expect from the Joint Land Use Study effort. This brochure was available on the Project Website throughout the study.

An additional brochure was prepared at the conclusion of the JLUS, which gave an overview of the final Joint Land Use Study report, the Policy Committee’s recommendations, and described the next steps for the community in the JLUS process.

Both brochures were available on the Project Website and in hard copy. Brochures were also made available to the City and County staffs and agency representatives on the Policy and Technical Advisory Committees.

### B. Project Website



The JLUS Team launched a Project Website prior to the first Public Outreach Meeting, which served throughout the study as a central location for key deliverables and project materials as they were developed. The website included important meeting announcements and what “next steps” the community could anticipate along the way.

The Project Website also included a general overview of the JLUS process, “frequently asked questions,” and downloadable versions of all public presentations, deliverables, and surveys. Contact information was included in order to facilitate public questions or comments throughout the study by email.

### C. Facebook Page

The JLUS Project Team also maintained a Facebook page as another way to keep the public updated on the JLUS as it progressed. Posts included information about upcoming public input sessions, how to submit survey responses and written comments to the Project Team, as well as updates about the status of the JLUS.

The Project Team also used its Facebook page to link people to the project’s website in order to gain more information at critical points in the process, such as when public survey results were posted and drafts of the report were made available.





## D. Community Stakeholder Meetings

The JLUS Team held a series of one-on-one interviews with key community stakeholders identified by the JLUS Policy Committee. These face-to-face interviews were held between October 26 and October 28, 2015, while others were completed by teleconference to accommodate participant's schedules and availabilities. Among those interviewed were officials from the following agencies and organizations:

- Shaw Air Force Base
- Poinsett Electronic Compatibility Range
- Sumter City-County Planning Commission
- City of Sumter
- Sumter County
- Santee-Lynches Council of Governments
- Economic Development industries
- Environmental and Conservation agencies
- Real Estate and Development industries
- Chamber of Commerce, including Military Affairs subcommittee
- Sumter School District

## E. Public Outreach Meetings

The first Public Outreach Meeting of the JLUS was held at 6:30 p.m. on October 26, 2015 at City Centre in downtown Sumter. At this first meeting, the JLUS Team gave an overview of the JLUS process and how it has been used in other locations in South Carolina and around the country. The Team also received initial input and walked the audience through the public survey process and shared a selection of key questions. The deliverables that would result from the JLUS process were described and the public was informed of subsequent opportunities to participate in the JLUS and to submit comments, questions, or concerns throughout. The Public Survey was made available to those in attendance who wished to complete a hard copy of the survey instead of online.

A second public meeting was held on July 18, 2016 in order to present the public with the results of the Public Survey, the Land Use Compatibility Analysis, and an overview of the Policy Committee's recommendations for augmenting land use compatibility between Shaw AFB and Poinsett ECR and the civilian community and nearby landowners. An opportunity for public comment also was provided, which resulted in good public input.

Each of the Public Outreach Meetings was advertised in the local media, the Project Website, the Facebook page, and local government websites. All public presentation materials and meeting summaries were posted to the Project Website following each Public Outreach Meeting. Notes from those meetings can be found at [Appendix C](#) of this report.

## VII. OVERVIEW OF THE SUMTER-SHAW JOINT LAND USE STUDY

Each of the five (5) chapters in the JLUS documents important components of the JLUS process, which have been described above. Also, several important documents have been included as appendices to this report. The following briefly describes each of the chapters of the report that follow Chapter 1.

## Chapter 2: The Installations and the Community: Current Conditions and the Road Ahead

Chapter 2 describes land use trends in the region, the nature of operations and training at Shaw AFB and Poinsett ECR, and the challenge “encroachment” can create for military installations and the surrounding “off-post” community. This chapter summarizes cultural, demographic, environmental impacts, and affected resources that may also affect land use in the JLUS Study Area and region. Current conditions on military and civilian lands are evaluated here, as are any anticipated changes in conditions or military operations.

Among the specific topics covered in Chapter 2 are:

- Shaw AFB and Poinsett ECR mission and operational footprints
- Environmental Resources, including wastewater, storm water, and climate change preparation
- Cultural, archeological, and architectural resources
- Growth trends
- Urban and rural populations
- Population density and projections
- Economic impacts of the Air Force on the region
- Capital infrastructure planning, including transportation, water and wastewater, economic development
- Noise impacts
- Potential threats to compatibility from renewable energy projects, spectrum interference, wildlife, civilian unmanned aircraft (i.e., drones)
- Past land use compatibility projects and studies associated with Shaw AFB and Poinsett ECR

## Chapter 3: Land Use Compatibility Analysis

This chapter identifies potential conflicts that have or could arise between Air Force operations at Shaw AFB or Poinsett ECR and the lands in the JLUS Study Area. The most significant potential impacts from the installations on the community result from sound and safety concerns resulting from air operations at Shaw and Poinsett. Existing land uses within the Study Area were compared to the impact contours described in the 2013 Air Installation Compatible Use Zones (AICUZ) Study and the 2013 Environmental Impact Statement (EIS).

The first study describes the noise and safety contours associated with Shaw AFB’s existing primary training mission, which includes four squadrons that operate F-16 fighter jets. These aircraft create the most notable off-base impact on civilian lands, and therefore, are the primary focus of the Land Use Compatibility Analysis as to current conditions. Shaw AFB’s full operational components are described in Chapters 2 and 3 in detail.

The second study – the 2013 EIS – set out to discover the potential impacts that may exist if the current F-16 fighter squadrons were replaced with three squadrons of F-35A aircraft. The EIS, released in September 2013, identified Shaw AFB as the preferred active duty East Coast operational location for the F-35A. If Shaw AFB is selected, the new aircraft would gradually replace the current F-16 fleet, though the primary mission of Shaw AFB would remain largely the same. No final decision had been made as of the date of the JLUS.



In order to be prepared in that event, the Policy Committee chose to structure the Land Use Compatibility Analysis using the greatest potential extent of F-35A operations, as they are known today, through the 2013 EIS. If Shaw AFB is selected as the location of some number of F-35A aircraft, however, the Policy Committee anticipated that additional study will first be conducted by the Air Force and updated impact contours would be created and used for land planning purposes at that time.

#### **Chapter 4: State, Local, and Federal Tools for Advancing Land Use Compatibility**

The tools available to the Air Force, Sumter County, the City of Sumter, and other key stakeholders to maintain compatible growth patterns near the Installations and to enhance ongoing coordination efforts are outlined in Chapter 4. These tools and their legal authorities reflect South Carolina statutes and planning practices. The JLUS Team identifies available tools in light of the fact that Sumter County and the City of Sumter already have adopted overlays zones into their zoning codes and a Military Protection Area into their comprehensive plans, each as a result of prior JLUS processes in 1993 and 2002.

As stated earlier, the JLUS recommends tools that are available to the City and County Councils – and other stakeholders – should they decide to adopt a particular one after the study is complete. Therefore, Chapter 5 is intended to be expansive in nature so that decision-makers are aware of all options when the study is implemented in the future.

#### **Chapter 5: JLUS Recommendations**

Chapter 5 sets forth the recommendations of the Policy Committee for appropriate steps the community may take to advance and maintain land use compatibility in the vicinity of Shaw AFB and Poinsett ECR. These recommendations are prioritized according to their relative importance to advancing land use compatibility in the region. Each is categorized according to the “procedural context” within which they would be implemented:

- Comprehensive planning
- Zoning and general code provisions
- Subdivision regulations
- Notice to property owners and occupants
- Interagency cooperation, public outreach and communication, and
- Ongoing planning and coordination.

The tools outlined in Chapter 5 reflect the JLUS Team’s year-long efforts, the Technical Advisory Committee, and the Policy Committee, as well as the input of the public and key community stakeholders.

#### **Appendices**

In order to maintain a record of the work of the JLUS Policy Committee and to help inform the JLUS implementation phase, several important documents from the study have been included as appendices to this report, including:

- A. Public Survey Results
- B. City and County Airfield Compatibility, Range Compatibility, and Noise Attenuation District Regulations
- C. Public Meeting Notes
- D. Policy/Technical Advisory Committee Meeting Notes

THIS PAGE INTENTIONALLY LEFT BLANK

## CHAPTER 2:

### The Installations and the Community: Current Conditions and the Road Ahead

#### I. SHAW AFB AND POINSETT ECR CONTEXT

##### A. General

Shaw AFB and Poinsett ECR are located in central South Carolina, within Sumter County and approximately 30 miles east of Columbia, the South Carolina state capital. Shaw AFB occupies approximately 3,367 acres within the City of Sumter, roughly seven miles west of downtown. Other population centers near Shaw AFB include Oakland, Dalzell, and Cherryvale. Poinsett ECR occupies approximately 12,500 acres within unincorporated Sumter County, roughly 10 miles due south of Shaw AFB and roughly 10 miles southwest of the City of Sumter.<sup>1</sup> Poinsett ECR is an air-to-ground bombing range operated by Shaw AFB that provides a combat training environment for various aircrews throughout the southeastern United States.<sup>2</sup> Poinsett ECR is bordered on the west by the Manchester State Forest and on the south by the Town of Pinewood.

The City of Sumter is located in central Sumter County, is the county's largest municipality and serves as the county seat. It is also the principal municipality in the Sumter Metropolitan Statistical Area (MSA), which is composed of Sumter County. The jurisdictions involved with this JLUS include the City of Sumter and Sumter County.

English-speaking settlers first inhabited what is now Sumter County in the 1740s, when they established homesteads along the banks of the Wateree River. On January 1, 1800, Sumter County was officially established as Sumter District. The City of Sumter, then known as Sumterville, incorporated in 1845. Both the county and the city owe their names to General Thomas Sumter, of American Revolutionary War fame, who founded and settled the town of Stateburg just west of Shaw AFB.<sup>3</sup> For most of its history, the county was agricultural and rural. However, the opening of Shaw AFB in 1941 ushered in an era of population growth and economic diversity as industries such as manufacturing and healthcare as well as the military moved into the area.<sup>4</sup>

The majority of development within the county is concentrated in and around the City of Sumter although urban sprawl over the past 25 years has moved west of downtown toward Shaw AFB. Roughly 90 percent of the land in Sumter County is rural or agricultural in use. Approximately six percent is residential land use, two percent is industrial, and remaining land uses each compose roughly 1 percent of the county land.

Considering the trend of residential developments to expand westward toward Shaw AFB, it is important to facilitate and strengthen engagement opportunities between the installation and local stakeholders.<sup>5</sup>

##### B. Shaw AFB

###### 1. Importance of Shaw AFB to the Air Force Mission

The mission of the United States Air Force is to “fly, fight and win...in air, space and cyberspace.” Part of the vision of the Air Force is to “provide compelling air, space, and cyber capabilities for use to by the combatant commanders” and to “[provide] precise and reliable Global Vigilance, Reach and Power for the nation.”<sup>6</sup>

Shaw AFB is an important piece in the overall Air Force mission. The host unit, the 20th Fighter Wing (20 FW), is the largest F-16 combat unit in the entire Air Force with 76 F-16s currently stationed at the

installation.<sup>7</sup> Current operations executed by the 20 FW include Counterair Operations and Counterland Operations conducted in active combat zones across the globe.<sup>8</sup>

Airmen and F-16s from the 20 FW are deployed regularly in support of numerous military operations. The primary mission is suppression of enemy air defenses and destruction of enemy air defenses. Recent deployments include North Atlantic Treaty Organization (NATO)-led Operation Allied Force in the European theater (April 1999), Operation Iraqi Freedom in the Iraqi theater (2003), and Operation Enduring Freedom in the Afghanistan Theater (2013).<sup>9</sup>

Additionally, Shaw AFB is home to the Ninth Air Force. The Ninth Air Force is responsible for organizing, training, and equipping Airmen to meet the demands of modern and future warfare and ensuring agile combat support capabilities. Eight wings and three direct reporting units fall under the Ninth Air Force along with more than 350 aircraft and 28,000 active-duty and civilian personnel. The Ninth Air Force is also responsible for the operational readiness of 16 Ninth Air Force-gained National Guard and Air Force Reserve units.<sup>10</sup>

## 2. Shaw AFB Mission

### a. Current Mission

The 20th Fighter Wing (20 FW) is the host unit of Shaw AFB and includes the following groups:

- 20th Maintenance Group (20 MXG)
- 20th Medical Group (20 MDG)
- 20th Mission Support Group (20 MSG)
- 20th Operations Group (20 OG)

Within the 20 OG, four squadrons operate F-16s as part of Shaw AFB's primary operating mission: the 20th Operations Support Squadron (20 OSS), 55th Fighter Squadron (55 FS), 77th Fighter Squadron (77 FS), and 79th Fighter Squadron (79 FS). The primary mission of the 20 FW is to "provide combat-ready airpower and combat-ready Airmen to meet any challenge, anytime, anywhere".<sup>11</sup> As part of the Wing's Counterland and Counterair operations, the F-16s exercise suppression of enemy air defense (SEAD) capabilities and are the first combatants to enter a conflict to destroy enemy surface-to-air integrated defense systems, lowering the risk for units that follow into battle.<sup>12</sup>

The 20 FW falls under Air Combat Command (ACC), a Major Command (MAJCOM) headquartered at Langley AFB, Virginia. ACC is the Air Force's primary provider of air combat forces, and their mission is to operate fighters, bomber reconnaissance, battle-management, and electronic combat aircraft in support of the global implementation of the United States national security strategy.<sup>13</sup>

Shaw AFB is also home to United States Air Force Central Command (AFCENT). AFCENT is the air component of United States Central Command (CENTCOM). AFCENT is responsible for air operations and developing contingency plans in support of national objectives for CENTCOM's 20-nation area of responsibility in Southwest Asia. Additionally, AFCENT manages an extensive supply and equipment-prepositioning program throughout the Middle East.<sup>14</sup>

Shaw AFB is also the location of U.S. Army Central (USARCENT), which supports CENTCOM's missions in Central Asia and the Middle East by providing professional land forces who work to improve relationships between the United States and stakeholders in CENTCOM's area of responsibility, and who ensure security and stability within the area of responsibility.<sup>15</sup> USARCENT, formerly the Third Army, relocated to Shaw AFB

### SELECT SURVEY RESULTS

A vast majority (93.8 percent) of respondents think the military training that takes place at Shaw AFB and Poinsett ECR is important (19.8 percent) or very important (74 percent).

in 2011 following recommendations of the 2005 Base Realignment and Closure (BRAC) round.<sup>16</sup> There are currently over 1,400 active duty and reserve Army personnel stationed at USARCENT at Shaw AFB.<sup>17</sup>

### b. Future Missions

The F-35A Operational Basing Environmental Impact Statement (EIS) released in September 2013 identifies Shaw AFB as the preferred active duty east coast operational location for the F-35A. If Shaw AFB receives the F-35A, the new aircraft would gradually replace the current F-16 fleet, but the primary mission of Shaw AFB would remain largely the same.

The F-35A is capable of conducting numerous mission sets, which include Counterair and Counterland operations, such as those currently being executed by Shaw AFB F-16s.<sup>18</sup>

Chapter 3 of this report evaluates the compatibility of current and future land uses on the lands surrounding Shaw AFB regarding both the historic and current F-16 missions, as well as the potential F-35A mission as described in the EIS. The details of the potential F-35A mission, were it to beddown at Shaw AFB, are set forth in the following sections of this report.

## 3. Shaw AFB Aircraft Operations

### a. Current Operations

Shaw AFB is home to three flying squadrons and one operations support squadron which combined operate 76 F-16 aircraft in support of the Counterair and Counterland Operations missions executed by the 20 FW. The 55th "Fighting Fifty-Fifth" Fighter Squadron (55 FS), 77 FS "Gamblers", and 79 FS "Tigers" are organized within the 20th Operations Group (20 OG), which is responsible for training, operations, and maintenance of all 20 FW flying missions.<sup>19</sup>

The 20th Operations Support Squadron (20 OSS), a unit within the 20 OG, is responsible for all airfield activities and associated support of the 20 FW's fighter missions. The 20 OSS consists of a number of flights, some of which are responsible for aspects of aircraft operations. The Airfield Operations Flight provides airfield management and air traffic control (ATC) service to the 20th FW and Ninth Air Force, as well as any other military and civilian operators, as necessary. Airfield Management oversees the airfield and helps provide a safe operating environment for one of ACC's busiest airfields.<sup>20</sup>

Aircraft operations based at Shaw AFB occur at the installation's airfield, Poinsett ECR, and within the airspace of the 20 FW's Installation Complex and Mission Footprint (IC/MF). The airfield at Shaw AFB includes two parallel runways and associated taxiways, ramps, and various navigational aids (NAVAIDs). Runway 04L/22R is 10,016 feet in length and 150 feet wide, and Runway 04R/22L is 8,001 feet in length and 150 feet wide. The runways are oriented on a general southwest to northeast axis in accordance with the prevailing winds. The airfield elevation is 241 feet above mean sea level (MSL).<sup>21</sup>

Airspace used by the 20 FW for operational training is characterized as either Special Use Airspace (SUA) or Airspace for Special Use (ASU). SUA is defined by the Federal Aviation Administration (FAA) as "airspace wherein activities must be confined because of their nature, or wherein limitations are imposed on aircraft operations that are not a part of those activities, or both."<sup>22</sup> Military SUA include Military Operations Areas (MOAs), Alert Areas, Prohibited Areas, Restricted Areas, and Warning Areas. Each different type of SUA is utilized for a specific type of training, and each includes its own rules.<sup>23</sup> The SUA most often utilized by the 20 FW include the following:

- Bulldog MOAs
- Gamecock MOAs
- Poinsett MOA
- R-6002 (over Poinsett Range)
- W-161
- W-177



ASU is a term used to identify other airspace established for military use that does not meet the criteria for SUA. Examples of ASU include Military Training Routes (MTRs), Air Traffic Control Assigned Airspace (ATCAA), and Low-Altitude Tactical Navigation (LATN) areas. MTRs are low-altitude aerial routes designated for high-speed military training and are divided into two categories: Instrument Routes (IRs) are conducted in accordance with Instrument Flight Rules (IFR) and Visual Routes (VRs) are conducted in accordance with Visual Flight Rules (VFR).<sup>24</sup> A third type of MTR, the Slow-speed Low-altitude Route (SR), is used for military air operations at or below 1,500 feet above ground level (AGL) that must be flown at air speeds of 250 knots or less and are flown only under VFR conditions. While similar to IRs and VRs in many respects, SRs are technically not part of the MTR system and therefore have no directive guidance and are not charted on official FAA air charts.<sup>25</sup>

The 2013 Shaw AFB Air Installation Compatible Use Zone (AICUZ) study examined airfield operations at Shaw AFB during calendar year (CY) 2011, shown below in Figure 2-1. Each arrival and departure is counted as an airfield operation. For example, if an aircraft departs from an airfield and later returns to the same airfield, that is considered two airfield operations. If an aircraft departs from one airfield and never returns to the same airfield, that is considered one airfield operation. In 2011, 51,391 airfield operations took place at Shaw AFB, including 49,257 (96 percent) by 20 FW F-16s. Transient aircraft including F-15s, KC-10s, C-12s, C-5s, and F-16s from other installations comprised the remaining 2,134 (4 percent) of airfield operations.<sup>26</sup>

Figure 2-1: Shaw AFB Airfield Operations in 2011

Aircraft Type	Airfield Operations (2011)
F-16s (Based at 20 FW)	49,257
Transient Aircraft	2,134
<b>Total</b>	<b>51,391</b>

Source: Shaw Air Force Base, *Air Installation Compatible Use Zone Update*, January 2013.

Note: Transient aircraft include F-15s, KC-10s, C-12s, C-5s, and F-16s from other installations, and other aircraft.

Figure 2-2: Total Shaw AFB Personnel in Fiscal Year 2013

Personnel Category	Number of Personnel
<b>Active Duty and Reserve</b>	
Air Force	6,286
Army	1,139
<b>Total Military</b>	<b>7,425</b>
<b>Civilians and Contractors</b>	
Appropriated Fund Civilians	685
Non-Appropriated Fund Civilians	239
Base Exchange Employees	162
Private Business Employees	13
<b>Total Civilian</b>	<b>1,099</b>
<b>Total Personnel</b>	<b>8,524</b>

Source: Shaw Air Force Base, *Fiscal Year 2015 Economic Impact Statement*, February 2016.

Figure 2-2 displays the total Shaw AFB personnel as of fiscal year (FY) 2015, according to the Shaw AFB Fiscal Year 2015 Economic Impact Statement. The total personnel includes all military members from both the Air Force and the Army, all civilians, and all contractors to include employees of the Base Exchange and other businesses located on the installation.<sup>27</sup>

### b. Future Operations

The Air Force evaluated six potential locations within the continental United States (CONUS) for potential operational locations of the F-35A, the Air Force's version of the Joint Strike Fighter (JSF), as part of its 2013 F-35A Operational Basing EIS. Burlington Air Guard Station (AGS), Vermont; Hill AFB, Utah; Jacksonville AGS, Florida; McEntire Joint National Guard Base (JNGB), South Carolina; Mountain Home AFB, Idaho; and, Shaw AFB. The EIS proposes three beddown scenarios at the Air National Guard (ANG) and Reserve



stations and three beddown scenarios at the active duty bases.<sup>28</sup> As of March 2016, F-35As operate out of the following Air Force installations: Edwards AFB, California; Eglin AFB, Florida; Hill AFB, Utah; Luke AFB, Arizona; and, Nellis AFB, Nevada.<sup>29</sup>

Although multiple installations fly the F-35A, the aircraft's use at each location differs depending on the mission of the particular units flying the aircraft. Luke AFB and Eglin AFB are locations of Formal Training Units (FTUs), where pilots learn to fly and employ the F-35A. Training units typically execute a large number of airfield operations because student pilots must meet a certain number of flying hours. Edwards AFB and Nellis AFB are test locations where weapons and other systems of the F-35A are tested and analyzed. In the future, Nellis AFB will also be the home of the F-35A Weapons School, where Airmen will be trained on all aspects of the F-35A weapons system.<sup>30</sup>

Hill AFB F-35As are operational aircraft; the units and aircraft stationed at Hill AFB are preparing to be deployed to combat missions, much like the mission of the 20 FW at Shaw AFB. If Shaw AFB receives the F-35A, the aircraft will perform a similar mission to those at Hill AFB and similar to the mission of the F-16s currently at Shaw AFB.

According to the 2013 F-35 EIS, there are three proposed scenarios for future F-35A beddown at Shaw AFB. Under Air Combat Command (ACC) Scenario 1, Shaw AFB would receive one squadron and 24 F-35As, under ACC Scenario 2, Shaw AFB would receive two squadrons and 48 aircraft, and under ACC Scenario 3, Shaw AFB would receive three squadrons and 76 aircraft. All options involve the incoming F-35A squadron(s) replacing all the F-16s over time. Under the current proposal, at no time would the combined F-35As and F-16s based at Shaw AFB exceed the current amount of F-16s. Shaw AFB will continue to manage transient aircraft that utilize the airfield, no matter the final Record of Decision (ROD) concerning the F-35A.<sup>31</sup>

If Shaw AFB receives F-35As under any of the three proposed scenarios, total airfield operations are expected to decrease. As shown in Figure 2-3, potential total airfield operations of 20 FW aircraft are expected to decrease from approximately 38,000 to just over 17,000.

Figure 2-3: Shaw AFB Baseline F-16 and Proposed F-35A Operations

Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
F-16s (20 FW)	24 F-35As	48 F-35As	72 F-35As
49,257	10,667	21,334	32,001
<b>Net Change</b>	<b>-38,590</b>	<b>-27,923</b>	<b>-17,256</b>

Source: United States Air Force, *F-35A Operational Basing EIS*, September 2013.; AICUZ Update: Shaw AFB, South Carolina, January 2013.

Note: Baseline 20 FW F-16 airfield operations numbers are for 2011.

Figure 2-4 (page 26) shows the baseline and proposed military personnel for each scenario at Shaw AFB. Under all scenarios, personnel associated with the F-35A will be fewer than those associated with the F-16s. Total personnel reductions range from over 1,300 under Scenario 1 to as few as 150 under Scenario 3. Base Operations Support (BOS) personnel, which include civilian government employees and other military such as security police and administration, are currently not based at Shaw AFB as part of the F-16 mission. BOS personnel would be included in the beddown of the F-35A.<sup>32</sup>

Figure 2-4: Baseline and Proposed Military Personnel on Shaw AFB

Personnel	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
F-16s	1,905	-1,905	-1,905	-1,905
F-35A	0	532	1,064	1,596
BOS Personnel	N/A	53	106	<b>159</b>
<b>Total</b>	<b>1,905</b>	<b>585</b>	<b>1,170</b>	<b>1,755</b>
<b>Net Change</b>	<b>N/A</b>	<b>-1,320</b>	<b>-735</b>	<b>-150</b>

Source: United States Air Force *F-35A Operational Basing EIS*, September 2013.

## C. Poinsett ECR

### 1. Importance of Poinsett ECR to the Air Force Mission

Poinsett ECR is a multi-purpose range and training facility located approximately seven miles south of Shaw AFB (See Figure 3-1). Poinsett ECR provides Airmen from the 20 FW and other Air Force units the ability to train using inert or “dummy” bombs, live fire, and electronic warfare capabilities. Poinsett ECR is highly utilized by multiple units and is critical for F-16 pilots out of the 20 FW to maintain operations skills as they prepare for deployment to warzones across the globe. In addition to the aircraft-related training Poinsett ECR provides, the range is used for ground-based training activities such as small arms, light maneuver, and demolitions training.

### 2. Poinsett ECR Mission

#### a. Current Mission

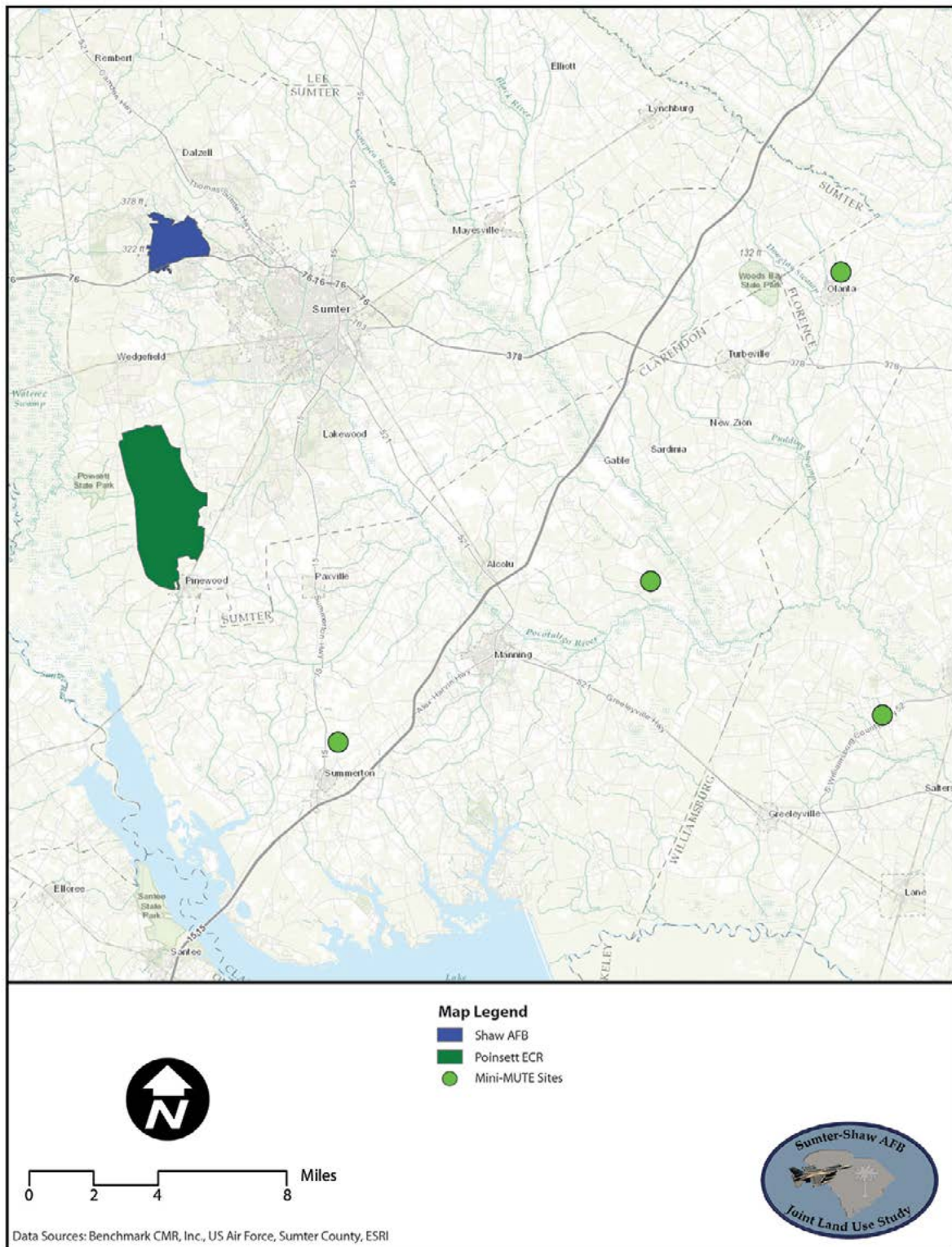
Poinsett ECR provides resources and space for aircraft- and ground-related training activities for active duty and reserve elements of all branches of the military. Aircraft-related training resources include the bombing and gunnery range where aircraft can fire live 20 millimeter (mm), 7.62 mm, and .50-caliber bullets, as well as drop “dummy,” or inert, bombs for targeting practice. The electronic range allows aircraft to practice targeting, evasion, and other forms of mid-air engagement utilizing the Multiple Threat Emitter System (MUTES) at the range, which uses radio signals to simulate enemy aircraft and other systems.

The MUTES was installed on Poinsett ECR in 1993 and consists of radar-emitting equipment that simulates up to 108 enemy activities such as anti-aircraft missiles, early-warning radar, and surface-to-air and air-to-air missiles. Mini-MUTES are smaller, more portable versions of a MUTES, and can simulate only a handful of enemy activities each. Mini-MUTES are geographically dispersed to provide training pilots different situations to train under. Shaw AFB controls multiple Mini-MUTES throughout the southeast, and four within close proximity to Sumter County (see Figure 2-5).<sup>33</sup>



MUTES located at Poinsett ECR  
Source: 20th Operations Support Squadron.

Figure 2-5: Mini-MUTES at Poinsett ECR



Restricted Airspace (R-6002) is located over Poinsett ECR and provides participating aircraft open airspace in which to train (See Figure 3-57). Restricted Airspace is designated for participating aircraft only, typically military aircraft partaking in training exercises, and may not be entered by other aircraft.<sup>34</sup> The Poinsett Military Operations Area (MOA) adjoins R-6002 to the south to provide ingress and egress airspace for participating aircraft. MOAs are designated airspace where military activities are likely to take place, and where traversing aircraft are notified of the potential military activity. Poinsett MOA is located partially in southern Sumter County, western Clarendon County, and eastern Calhoun County.

Poinsett ECR is currently utilized at roughly 50 percent capacity;<sup>35</sup> available data show that over 1,700 sorties took place at Poinsett ECR between October 2014 and September 2015, including over 1,000 sorties by F-16s based at Shaw AFB. See Figure 2-6 for Poinsett ECR usage in fiscal year 2015 (October 2014 – September 2015) by Shaw AFB and other aircraft.

Figure 2-6: Fiscal Year 2015 Poinsett ECR Usage

Baseline	Shaw AFB Sorties	Other Aircraft Sorties	Total
October 2014	42	9	51
November 2014	140	24	164
December 2014	32	23	55
January 2015	13	32	45
February 2015	24	55	79
March 2015	101	76	177
April 2015	125	88	213
May 2015	131	64	195
June 2015	36	63	99
July 2015	112	186	298
August 2015	75	18	93
September 2015	199	52	251
<b>Total</b>	<b>1,030</b>	<b>690</b>	<b>1,720</b>

Source: 20th Force Support Squadron.

## b. Future Mission

Poinsett ECR is projected to continue to provide space and resources for live round and electronic training exercises for both aircraft- and ground-based personnel. The recent arrival of the F-35B at Beaufort Marine Corps Air Station (MCAS), and the potential arrival of the F-35A at Shaw AFB and McEntire Joint National Guard Base (JNGB) will likely affect the usage of Poinsett ECR.<sup>36</sup> The F-35 airframe requires more airspace to operate than the currently used F-16 and F-18 airframes, and additional future airspace over and near Poinsett ECR may be necessary to continue operations at the current levels.



## D. Environmental Resources and Management

### 1. Environmental Compliance Program

Shaw AFB and Poinsett ECR must comply with all applicable environmental compliance program requirements as specified in Air Force Instruction (AFI) 32-7001, *Environmental Management*. Although most of these compliance areas are not directly related to land use compatibility off the installations, a brief description of each is included for background purposes.

#### a. Air Quality Management

Air quality management requirements include compliance with all federal, state, and local laws, regulations, and ordinances on U.S. Air Force active and reserve installations and activities. This includes all air quality and emissions requirements for stationary, mobile, and fugitive sources of emissions. Requirements include the following: Clean Air Act (CAA) requirements for the prevention of accidental releases of hazardous and extremely hazardous substances (EHSs), including Risk Management Plans; annual air emissions reporting requirements under the Toxic Release Inventory (TRI) provisions; use of ozone depleting substances (ODSs) and ODS reserve along with ODS reduction requirements; and development of a radon policy.

#### b. Hazardous Waste Management

Hazardous waste management requires compliance with statutory and regulatory requirements. This includes compliance with the Resource Conservation and Recovery Act (RCRA) program, which may be enforced by federal or state government.

#### c. Water Quality Management

Water quality management includes compliance with federal water pollution control requirements under the Clean Water Act (CWA). It includes regulatory compliance for sanitary or industrial wastewater discharges; stormwater runoff; nonpoint source pollution; sewage sludge generation; and facilities involved in the transfer, storage, and transportation of petroleum, oil, and lubricants (POL), and hazardous materials that may involve discharge or runoff. Compliance with the national federal permit program under the CWA is required through the National Pollutant Discharge Elimination System (NPDES), administered by the Environmental Protection Agency (EPA). Shaw AFB has an on-site federally owned treatment works (FOTW) plant to treat wastewater. The plant is permitted to treat 1.2 million gallons per day (MGD).

#### d. Installation Restoration Program

The installation restoration program requires the identification, investigation, and clean up or control of hazardous substance (HS) released from past waste disposal operations and spills at U.S. Air Force installations. It includes compliance with Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA).

#### e. Solid Waste Management and Resource Recovery

Solid waste management and resource recovery requires compliance with statutory and procedural requirements such as the Solid Waste Disposal Act (SWDA) for solid waste (SW) disposal, waste minimization, recycling, and resource recovery requirements. Regulated activities include thermal processing of 50 tons or more per day of municipal-type SW; storage or collection of residential, commercial, and institutional SW; the sourcing of separate materials for recovery; the purchase of products that contain recycled materials; operation land disposal sites or use commercial off-site landfills for SW disposal; and the generation of solid waste recycling revenue.

## 2. Natural Resource Management Program

In contrast to the environmental compliance elements described above, natural resource management may relate, in some instances, more directly to land use compatibility in the vicinity of the installations or actually on the installations. To date, however, there are no federally-listed threatened or endangered species (TES) on Shaw AFB that limit on-base missions. The Red-cockaded Woodpecker (RCW), a federally endangered species, and the American alligator, a federally threatened species, are known to occur on Poinsett ECR. The presence of RCW and the American alligator on Poinsett ECR does not currently impact or limit operations at the range.<sup>37</sup>

Responsibility for the management of natural resources at Shaw AFB and Poinsett ECR is that of the 20th Civil Engineer Squadron (20 CES). The 20 CES supervises and manages the installation's Natural and Cultural Resources Office, which directs and coordinates the natural resources management program.

The Integrated Natural Resources Management Plan (INRMP) guides the management of natural resources on Shaw AFB and Poinsett ECR over a five-year time period and is reviewed annually. The most recent INRMP was completed in September 2015.

### a. Wetlands

Long Branch, a small creek that runs across the northern portion of the airfield, is the only naturally occurring wetland feature on Shaw AFB. Wetland features associated with Long Branch total 44 acres.

Approximately 5,444 acres of wetlands exist on Poinsett ECR in the form of Carolina Bays, Brunson Swamp, and numerous wooded and isolated wetlands. Carolina Bays are located throughout the eastern and southern portions of the range and account for approximately 4,200 acres, or roughly 78 percent of the total wetlands area. There are nine identified Carolina Bays or bay complexes on the range, including bays as large as 2,600 acres. These bays provide important habitat for a number of species, including resident vertebrates, and resident and migratory birds.<sup>38</sup>

### b. Threatened and Endangered Species

Section 7 of the Endangered Species Act (ESA) requires the U.S. military to protect and manage federally listed TES on installations where they occur and to develop site-specific plans to preserve those species and their habitats. AFI 32-7064, *Integrated Natural Resources Management*, further directs Air Force installations to protect and conserve state-listed species and species that are candidates for federal listing.

The RCW and the American alligator are the only TES with documented occurrences on Poinsett ECR; there are no documented occurrences of TES on Shaw AFB. The American chaffseed and Canby's dropwort, two federally endangered plants, have potential to occur at both Shaw AFB and Poinsett ECR but have yet to be observed.<sup>39</sup>

## 3. Wastewater Management

Shaw AFB wastewater is treated at the installation's on-site FOTW, which is permitted to treat up to 1.2 MGD. The City of Sumter owns the FOTW, which is operated by a third-party contractor. Shaw AFB acquires its potable water through on-base wells that tap into the Black River Aquifer.



Manchester State Forest is located adjacent to Poinsett ECR.

## 4. Stormwater Management

In accordance with United States Environmental Protection Agency (USEPA) stormwater regulations, Shaw AFB maintains an updated Stormwater Pollution Prevention Plan (SWP3) that includes Best Management Practices (BMPs) to minimize pollution through training, awareness, and control of pollution sources. The Shaw AFB SWP3 includes BMPs to minimize pollution runoff from the installation's many industrial activities, including aircraft maintenance, vehicle maintenance, and aircraft refueling.<sup>40</sup>

Sumter County, the City of Sumter, and the Town of Mayesville have each passed local stormwater management and sediment reduction ordinances. The 2030 Sumter Comprehensive Plan recommends improvements in stormwater management through the implementation of a stormwater management and erosion control utility, development of low impact design guidelines for sustainable stormwater practices, and development of stormwater management design guidelines to ensure a quality engineering and design aesthetic to facilities.<sup>41</sup>

## 5. Climate Change

Climate change has been identified as a potential concern for operational and installation sustainability. The threat of increased temperatures, drought events, and increased storm frequency and severity has far-reaching implications for Shaw AFB, Poinsett ECR, and the greater Sumter community. These potential climate-induced events have the potential to impact facilities and infrastructure at Shaw AFB and Poinsett ECR and, in turn, hinder the installation's ability to perform operations and mission-related training effectively. For their part, Shaw AFB and Poinsett ECR have taken steps to reduce the Installations' carbon footprints through energy reductions and have executed several projects to improve the local environment such as planting trees on base, protecting on-base wetlands through enhanced mapping, and developed an installation-wide longleaf pine (LLP) planting plan.<sup>42</sup>

Department of Defense Directive (DODD) 4715.21, *Climate Change Adaptation and Resilience*, establishes policy that requires the DOD to adapt current and future operations to address the impacts of climate change. This includes evaluating any of climate change's potential impacts on the DOD mission, incorporating climate change effects into future planning, and managing any potential risks to the mission from climate change.<sup>43</sup>

## E. Cultural Resources Program and Management

### 1. Historical Relevance to the Region

Present-day Shaw AFB began in 1941 as Shaw Army Airfield, a part of the Army Air Corps with the mission of training cadets and student officers in basic flight training. With the exception of a few tracts of land added to the northwest corner of the installation, the Shaw AFB boundaries are today largely unchanged from the original 1941 boundaries. Poinsett ECR was established in 1951, at first only occupying 7,500 acres in southern Sumter County. Shaw AFB acquired a large amount of land in 1993, which brought the range's total acreage up to approximately 12,500 acres, its current size.

Shaw AFB and Poinsett ECR are located in a region historically occupied by the Siouan tribes of central South Carolina, including the Santee, Wateree, Waxhaw, and Congaree. It is possible that the Siouan tribes resided in this region back into prehistory. However, very little is known of the prehistory of Central South Carolina.

English-speaking citizens have inhabited Sumter County since the 1740s when settlers established homesteads along the banks of the Wateree River. General Thomas Sumter is the namesake of both the city and the county; he also settled the town of Stateburg, west of Shaw AFB.<sup>44</sup>



## 2. Archeological and Architectural Resources

Shaw AFB completed an update to its Integrated Cultural Resources Management Plan (ICRMP) in 2015. The ICRMP is intended as the planning and guidance document to assist the installation in complying with federal preservation requirements and Air Force policy directives. The ICRMP allows for the integration of cultural resource requirements with ongoing mission activities so the availability of mission-essential land is maintained and compliance with requirements is achieved. The Shaw AFB ICRMP was developed in accordance with AFI 32-7065, *Cultural Resources Management*, and serves as a management plan for fiscal years 2015-2019.

Archaeological investigations of Shaw AFB and Poinsett ECR began as early as 1982, when a pedestrian survey was conducted at Poinsett ECR. Nearly all of Shaw AFB and Poinsett ECR have undergone Phase I archaeological surveys, resulting in the recording of 142 archaeological sites. Each recorded site has undergone Phase II testing to determine potential eligibility for inclusion on the National Register of Historic Places (NRHP). This resulted in 36 NRHP eligible sites: 2 on Shaw AFB and 34 on Poinsett ECR. The Shaw AFB eligible sites include an Early Archaic encampment and a prehistoric ceramic site, and some of the Poinsett ECR eligible sites include numerous prehistoric and historic encampments and the 19th century Manchester Railroad Depot.

Architectural surveys identified five structures on Shaw AFB and Poinsett ECR as eligible for the NRHP: four structures associated with the Rosemary Fire Tower Historic District on Poinsett ECR and Building 611 on Shaw AFB. The Rosemary Fire Tower complex was built in 1934, and Building 611 is a steel demountable hangar built in 1942. Currently, there are plans to convert the resources located at the Rosemary Fire Tower complex to a field office and natural and cultural interpretive center.

Shaw AFB is in full compliance with all federal laws regarding the protection of cultural and historic resources, and currently no cultural and historic resources interfere with the missions of Shaw AFB or Poinsett ECR.<sup>45</sup>

## 3. Relationship with Native American Tribes

In 1997, fragments of human skeletal material were retrieved from Poinsett ECR during excavations. These are believed to be associated with the Catawba Indian Nation, which was notified immediately after the retrieval. Shaw AFB continues to consult with the Catawba Indian Nation, which has potential historic associations with Sumter County. Currently, the Catawba Indian Nation is the only federally recognized tribe located in South Carolina. It was typical for Native American tribes to locate near major rivers, and because major rivers are located east and west of Sumter County, it is not likely that other federally recognized tribes have cultural interests in Sumter County.<sup>46</sup>

## II. COMMUNITY CONTEXT

### A. Demographic Context

#### 1. Historic Growth Trends

The populations of both the City of Sumter and Sumter County have been relatively stable for the past 25 years. Despite low population growth, development in unincorporated county land west of the city has increased since 1990. Much of this development has occurred in the areas to the east of Shaw AFB, representing a steady march west from the city toward the base. This shift in development patterns can be partially attributed to people wanting to be closer to large economic drivers such as Shaw AFB and the City of Columbia. Other factors likely influencing a shift from the city to the county are perceptions of lower quality schools and high crime rates within the city.<sup>47</sup>

As shown in Figure 2-7, population growth between 1990 and 2015 in both Sumter County and the City of Sumter was lower than the state of South Carolina as a whole. The City of Sumter experienced an estimated 4.3 percent population increase between 1990 and 2000, and Sumter County experienced a 3.3 percent population increase during the same period. Comparatively, the population of South Carolina as a whole increased by 15.1 percent. The trends continued in the next decade as the city and county populations increased by 2.2 percent and 2.9 percent between 2000 and 2010, respectively, and South Carolina's total population increased by 15.3 percent.<sup>48</sup> Looking at population change over the past 25 years further illustrates the nature of population trends in the Sumter region compared to South Carolina as a whole. Where South Carolina's population grew by 40.4 percent between 1990 and 2015, Sumter County population grew by 6.1 percent. Original Census data show that the City of Sumter population decreased by 2.7 percent between 1990 and 2015, from 41,943 to 40,816. However, the U.S. Census Bureau has acknowledged that they over counted the City of Sumter 1990 population. In a 2005 letter from then-U.S. Census Bureau Director Charles Louis Kincannon to Sumter Mayor Joseph McElveen, the U.S. Census Bureau acknowledges that the 1990 population count should have been closer to 38,000 rather than 41,943.<sup>49</sup> Assuming the City of Sumter 1990 population was close to 38,000, the city experienced a population increase of approximately 7.4 percent between 1990 and 2015.

Figure 2-7: Population Change, 1990-2015

Location	1990	2000	2010	2015	Percentage Change 1990-2015
City of Sumter	38,000*	39,643	40,524	40,816	7.4**
Sumter County	101,271	104,646	107,456	107,480	6.1
South Carolina	3,486,703	4,011,832	4,625,364	4,896,146	40.4

Sources: U.S. Census Bureau, 1990 Census Summary File 1; U.S. Census Bureau, 2000 Census Summary File 1; U.S. Census Bureau, 2010 Census Summary File 1; U.S. Census Bureau, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015.

\*The U.S. Census Bureau estimates the City of Sumter 1990 population to be approximately 38,000. The original count showed an incorrect population of 41,943.

\*\*This percentage change is based on the estimated 1990 City of Sumter population of 38,000.

## 2. Urban and Rural Population

Despite low population growth in Sumter County and the City of Sumter, low-density urban development over the past 25 years has affected land use and population density within sectors of the county. According to data from the U.S. Department of Agriculture's National Agricultural Statistics Service, Sumter County had 515 farms in 2012 with an average size of 342 acres, totaling 176,002 acres. This acreage amounts to over 40 percent of the county's total area of approximately 436,800 acres.<sup>50</sup> This predominance of agricultural land use is also reflected within the breakdown of county population living within urban and rural areas. As shown in Figure 2-8, according to the U.S. Census Bureau, in 2010, 73,107 residents of Sumter county (or 68 percent of the total population) lived within urban areas and 34,349 residents (or 32 percent of the total population) lived within rural areas.<sup>51</sup> The urban and rural population splits of Sumter County generally mirror those in South Carolina.

Figure 2-8: Sumter County Urban and Rural Population Counts

Location	Urban Population	Urban Population as Percentage of Total	Rural Population	Rural Population as Percentage of Total
Sumter County	73,107	68.0	34,349	32.0
South Carolina	1,423,307	66.6	714,376	33.4

Source: U.S. Census, American FactFinder, Urban and Rural Universe: Total population 2010 Summary File 1, Sumter County, South Carolina.

## 3. Population and Housing Density

Population density in both the City of Sumter and Sumter County has increased very slightly since 2000, reflective of the two jurisdictions' low population growth. As shown in Figure 2-9, housing unit density in both the City of Sumter and Sumter County has increased at a faster rate than population density. This indicates that, though population growth is slow, new housing units are being built within the city and county and likely explains the increased housing demand west of the city.

Figure 2-9: Population and Housing Density of the City of Sumter and Sumter County

Year	City of Sumter		Sumter County	
	Population Density (People per Square Mile)	Housing Density (Units per Square Mile)	Population Density (People per Square Mile)	Housing Density (Units per Square Mile)
2000	1484.8	600.4	153.3	61.2
2010	1517.8	679.8	157.4	67.4
2015	1528.7	705.7* (2014)	157.5	69.1

Sources: U.S. Census, 2000 Summary File 1; U.S. Census, 2010 Summary File 1; U.S. Census Bureau, *Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015*; U.S. Census Bureau, *Annual Estimates of Housing Units for the United States, Regions, Divisions, States, and Counties: April 1, 2010 to July 1, 2015*. \*2015 housing unit data for the City of Sumter was not available at the time of this study.

The increase in housing units between 2000 and 2014 despite low population growth is reflected by increased vacancy rates over the same period. Vacancy rates in the city and county between 2000 and 2014 increased by 5.9 percent (9.2 to 15.1 percent) and 4.3 percent (9.6 to 13.9 percent), respectively.<sup>52</sup> Additionally, the share of 1- and 2-person households in both the City and County steadily increased between 2000 and 2014, while the share of households with 4 or more occupants saw sharp declines.<sup>53</sup> This simply means that more housing units are required to house the same amount of people, and may contribute to the increase in total housing units since 2000.

Shaw AFB (including Poinsett ECR) is the largest single employer in Sumter County. Shaw AFB employs approximately 2,000 more people than the entire manufacturing industry in Sumter County.

## B. Economic Context

### 1. Economic Characteristics of the Region

In addition to employment provided through Shaw AFB and Poinsett ECR, top economic sectors in Sumter County include the manufacturing, health care and social assistance, retail trade, educational services, and accommodation and food services industries.<sup>54</sup>

As of 2015, the manufacturing industry employed the largest percentage of workers in Sumter County excluding the uniformed personnel at Shaw AFB and Poinsett ECR. Nearly 6,500 people work in the manufacturing industry in Sumter County, accounting for 17.5 percent of total civilian jobs in the county. Comparatively, the manufacturing industry accounts for roughly 10.5 percent of the jobs within the United States, making manufacturing a base industry of Sumter County. As shown in Figure 2-10, the health care and social assistance (16.4 percent), retail trade (12.4 percent), educational services (10.2 percent), and accommodation and food services (9.3 percent) industries also employ large percentages of workers in Sumter County.<sup>55</sup>

Figure 2-10: Top Ten Industries in Sumter County 2015

Industry	Employment	Percentage of Workforce
Manufacturing	6,435	17.5
Health Care and Social Assistance	6,018	16.4
Retail Trade	4,569	12.4
Educational Services	3,747	10.2
Accommodation and Food Services	3,436	9.3
Public Administration	2,561	7.0
Administrative and Support and Waste Management and Remediation Services	2,323	6.3
Construction	2,152	5.9
Other Services (except Public Administration)	1,032	2.8
Professional, Scientific, and Technical Services	937	2.5

Source: S.C. Department of Employment & Workforce, *Community Profile: Sumter, SC Metropolitan Statistical Area*, January 26, 2016.

As shown in Figure 2-11, employment in Sumter County declined slightly between 2000 and 2014. According to U.S. Census data, the employed civilian labor force decreased by 0.64 percent in Sumter County between 2000 and 2014, while the civilian labor force in South Carolina increased by more than 11 percent.<sup>56</sup>

Figure 2-11: Civilian Labor Force Employment for Sumter County and South Carolina

Location	2000	2010	2014 Estimate	2000-2014: Percentage Change
Sumter County	41,372	40,592	41,109	-0.64
South Carolina	1,824,700	2,002,289	2,031,997	11.36

Sources: U. S. Census Bureau, 2009–2014 American Community Survey, 2015; U.S. Census Bureau, 2006–2010 American Community Survey, 2011; U. S. Census Bureau, *Census 2000: Summary File 3*, 2001.

## 2. Affordable Housing and Schools

According to the real estate website Trulia, Sumter County is one of the more affordable housing markets in the state of South Carolina. Average listing prices of homes for sale in February 2016 ranged from \$104,720 in Marlboro County to \$521,939 in Charleston County with a median average listing of \$183,498 in Saluda County. The average listing price of a home for sale in Sumter County was \$155,434 in February 2016, ranking it as the 16th most affordable county to buy a home during that month (out of 46 counties).<sup>57</sup> Despite relatively level overall population growth since 2000, new housing units in Sumter County continue to increase in number, especially west of the City of Sumter and toward Shaw AFB. Population growth has also occurred in the areas west and south of the city around Shaw AFB and Poinsett ECR, respectively.<sup>58</sup> This is reflected in the data obtained by the U.S. Census Bureau (Census) during 2000 and 2010 censuses, as well as for the 2014 American Community Survey five-year estimates. Between 2000 and 2014, the total population of Sumter County increased by an estimated 3,136, but housing units increased by an estimated 4,746.<sup>59</sup> Nearly all of this new housing has been built west of the city, and Shaw AFB personnel and their dependents occupy much of the new housing stock.<sup>60</sup>

The Sumter School District was created in 2011 by consolidating Sumter School Districts 2 and 17, which previously served schools in the county and city, respectively. The district enrolls more than 17,000 students in 16 elementary schools, 7 middle schools, 3 high schools, 1 alternative learning program, an adult education program, the Sumter County Career Center, and the Early Head State program. Shaw Heights Elementary School and High Hills Elementary School are both located on Frierson Road within the fence line of Shaw AFB. While many children who attend both schools live on base, most are dropped off and picked up by parents and guardians that live off base. This has created a number of logistical issues during drop-off and pick-up hours. Parents and guardians must have a pass granted by Shaw AFB Security Forces to enter the installation for this purpose. To obtain a pass, one must meet certain criteria, such as not having a felony conviction in the past. There have been instances where parents and guardians of children attending the two schools have not been able to obtain a pass and, therefore, could not enter the installation. There are also reports of regular, long traffic back-ups during pick-up and drop-off hours because all cars and school buses must enter through the same gate. At the current moment, Shaw AFB does not have a dedicated school liaison, which can create communication issues between the base and the schools.

### 3. Local Economic Impacts of Shaw AFB and Poinsett ECR

Shaw AFB, including Poinsett ECR, is a major contributor to the local, regional, and state economies. According to the economic impact report prepared by Shaw AFB, the Installations combined to generate over \$909 million in economic impact for fiscal year 2015. Shaw AFB employed 8,600 combined military and civilian personnel, resulting in a payroll of over \$600 million.<sup>62</sup> Figure 2-12 displays further details of the local economic impacts of Shaw AFB and Poinsett ECR.

Figure 2-12: Fiscal Year 2015 Local Economic Impact

<b>Total Military Pay</b>	<b>\$600,611,371</b>
Air Force	\$402,747,506
Army Central Command	\$197,863,865
<b>Total Civilian Pay</b>	<b>\$64,463,930</b>
Appropriated Fund	\$57,876,762
Non-Appropriated Fund	\$3,403,486
Base Exchange	\$2,811,780
Private Businesses	\$371,902
Total Payroll	\$665,075,301
Total Local Expenditures	\$149,755,471
Total Estimated Number of Jobs Created	2,634
Estimated Average Annual Salary	\$36,060
Estimated Value of Jobs Created	\$94,982,040
<b>Total Local Economic Impact</b>	<b>\$909,812,812</b>

Source: Shaw Air Force Base, *Economic Impact Statement: Fiscal Year 2015*.

Shaw AFB also has an important economic presence in the regional and state economies. According to a 2015 statewide study, Shaw AFB generated a total of \$2.2 billion in economic activity statewide and supported 13,832 jobs, with approximately \$1 billion in annual employee compensation.<sup>63</sup>

## C. Where the Sumter Community is Headed

### 1. Projected Population Growth

Figure 2-13 (page 38) shows total population for Sumter County and the state of South Carolina in 2010, as estimated in 2015, and as projected by the South Carolina Revenue and Fiscal Affairs Office. To estimate future population, the South Carolina Revenue and Fiscal Affairs Office evaluates recent birth, death, and migration trends. These trends are then projected through the next two decennial censuses, in this case through the year 2030. These projections could change significantly depending on numerous factors, including future migration trends and economic growth.<sup>64</sup>

Figure 2-13: Estimated Population Change, 2010-2030

Location	2010	2015	2020	2025	2030
Sumter County	107,456	107,480	108,900	109,200	109,500
South Carolina	4,625,364	4,896,146	5,020,400	5,256,080	5,451,700

Sources: U.S. Census Bureau, *2010 Census Summary File-1*; U.S. Census Bureau, *Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015*. South Carolina Revenue and Fiscal Affairs Office – Health and Demographics Section.

## 2. Economic Development

The 2007 Sumter Economic Development Plan identifies five core strategies with corresponding goals with the intention of solidifying and strengthening the county's ability to retain and attract new and diverse businesses and industries. The strategies are listed below:

- **Strategy 1:** Product Development – Invest in new and revitalized industrial infrastructure. Redevelop obsolete industrial sites. Create a program focused on rebuilding empty industrial buildings.
- **Strategy 2:** Workforce Development – Work closely with local stakeholders, such as the technical schools, to develop a marketable local workforce.
- **Strategy 3:** Internal and External Marketing and Communication – Create a public relations program to communicate the county's economic development operations to local leadership and residents. Adopt and implement an external economic marketing program.
- **Strategy 4:** Economic Development Organization and Funding – Ensure the economic development department has the appropriate resources.
- **Strategy 5:** Existing Business Retention and Expansion – Utilize the strong Sumter County industry assistance program.

The 2030 Sumter Comprehensive Plan identifies a number of economic development sites throughout the county to focus future industrial uses with the intent of strengthening the county's industrial job base. In line with the 2007 Economic Development Plan, the economic development sites focus on the reuse of existing industrial parks to take advantage of existing infrastructure and other resources.<sup>65</sup>

The Greater Sumter Chamber of Commerce's Military Affairs Committee has the responsibility of ensuring the success and longevity of Shaw AFB. The Military Affairs Committee works with both the installation and the local business community to remove obstacles that may prevent or hinder Shaw AFB's ability to accomplish its mission, and presumably to enhance the potential for future missions at Shaw AFB and Poinsett ECR.<sup>66</sup>

## 3. Transportation Planning

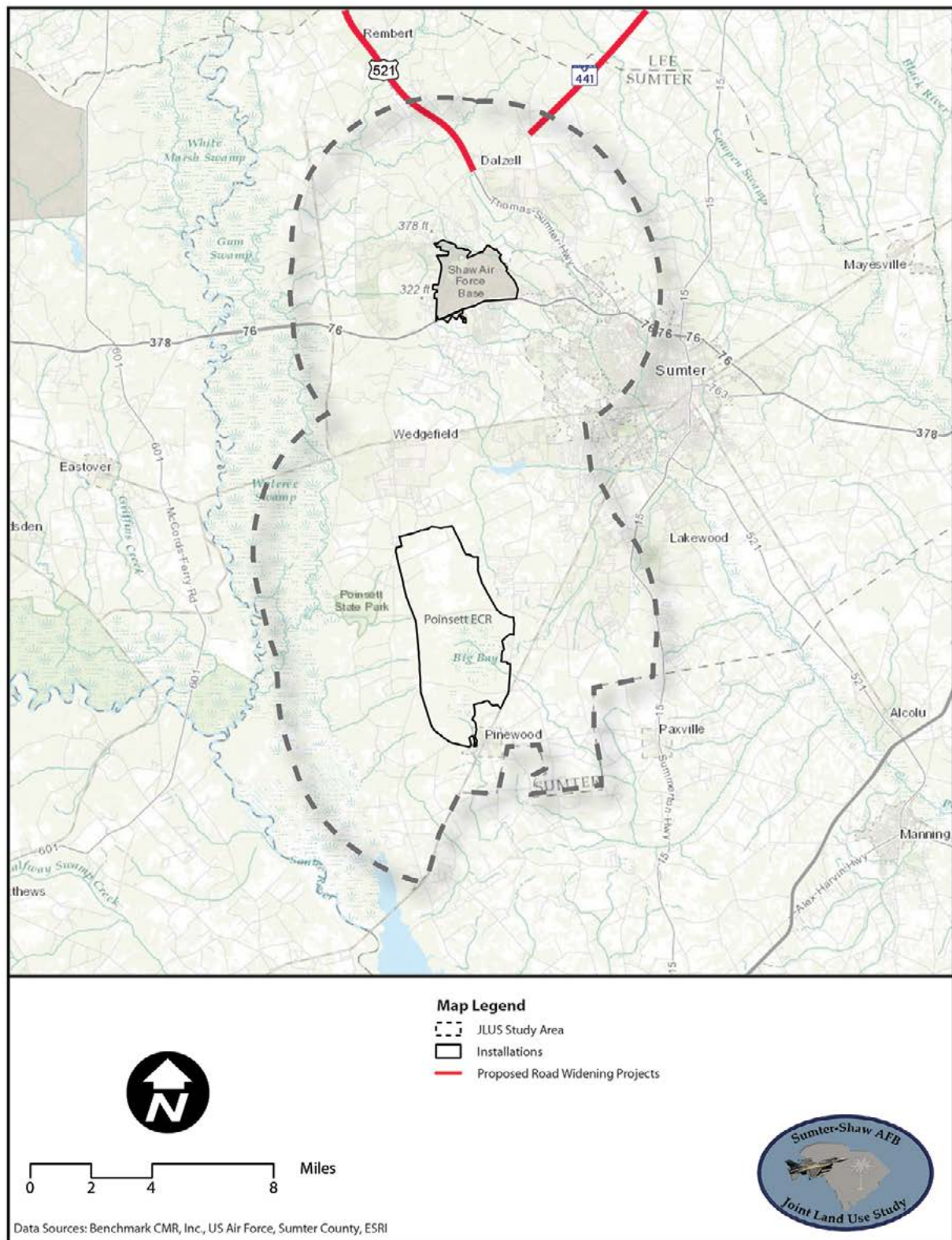
Future transportation planning in the City of Sumter and Sumter County will focus on including more pedestrian- and bicycle-friendly infrastructure, improving safety for all users, and improving interconnectedness throughout the city and county.

Transportation planning policy in Sumter County is spearheaded by two separate entities focusing on two separate parts of the county. Sumter County rural transportation planning is led by the Santee-Lynches Council of Governments (SLCOG), which published the Long Range Rural Transportation Plan 2040 in 2014. Objectives of this plan include improving safety, reducing delays, increasing pedestrian features, increasing

*Continued on page 40*



Figure 2-14: Proposed Transportation Improvements within JLUS Study Area



**Continued from page 38**

park and riding capacity and rider awareness, increasing availability of transit, promoting ridesharing programs, and increasing and improving bicycle infrastructure.<sup>67</sup> Within the City of Sumter and the urbanized portions of Sumter County, the Sumter Urban Area Transportation Study (SUATS) Policy Committee is responsible for transportation planning. The SUATS Policy Committee is the Metropolitan Planning Organization (MPO) for the region, and the goals of the 2015 study focused on creating more complete streets, increasing connectivity in the region, and completing new roads in the more rural parts of their jurisdiction.<sup>68</sup>

At the time the Joint Land Use Study was prepared, two capacity-adding transportation improvements falling within the JLUS Study Area (see Figure 2-14) were included in the 2014 *Santee-Lynches Long Range Rural Transportation Plan 2040*. These improvements (to US 521, between SC 441 and I-20; and to SC 441, between Secondary Route 282 and I-20) are not included in the fiscally-constrained list of projects and are not expected to be funded or commenced in the near-term.

#### 4. Water and Wastewater Infrastructure Planning

Similar to transportation infrastructure, water and wastewater infrastructure is a driver of development and potential encroachment by guiding potential new development and allowing for increased density in already developed areas. The City of Sumter is the sole provider of water and wastewater within the city limits. A number of other water providers service Sumter County as well, including the Wedgefield-Stateburg Water District, High Hills Rural Water Company, and the Dalzell Water District. Shaw AFB utilizes wells that tap into the Black River Aquifer to provide potable water to the facilities on base.

The City of Sumter has the stated goal of centralizing water supply in the county to better coordinate regional land use, transportation, and infrastructure more effectively.<sup>69</sup> Centralized water supply also helps to reduce potential incompatible development around Shaw AFB and Poinsett ECR by limiting where potable water is delivered.

The individual municipalities within Sumter County – the City of Sumter, the Town of Pinewood, and the Town of Mayefield – provide sanitary sewer service to customers in their service area. Most residents in unincorporated Sumter County use septic systems. However, roughly 1,700 households receive wastewater service from the City of Sumter. To help prevent incompatible development near Shaw AFB and Poinsett ECR, the City and County Comprehensive Plans have policies discouraging the extension of municipal water or sewer for residential purposes within the Military Planning Area.<sup>70</sup>

#### 5. Future Land Use Development

Future land use in Sumter County and the City of Sumter is influenced by a variety of factors, including population growth, economics, and utilities and transportation infrastructure expansion. Population growth in both the city and county has been low since at least 1990, and the population is projected to continue to grow slowly for the near future. Since 1990, population and development in the area has steadily moved westward from the city toward Shaw AFB. Between 2000 and 2014, an estimated 2,651 housing units were added in the census tracts adjacent to Shaw AFB and Poinsett ECR, or nearly 56 percent of the total housing units added in the county over the same period.<sup>71</sup> Sumter County and City of Sumter future land use plans designate certain sectors as priority economic development areas, which are designed to encourage reuse of existing industrial sites and guide future development away from Shaw AFB and Poinsett ECR.

Between 2000 and 2014, an estimated 4,746 housing units were added in Sumter County. Of those, 2,651, or roughly 56 percent, are located in areas near Shaw AFB or Poinsett ECR.

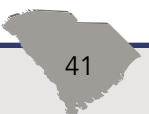
Additionally, to help rein in unrestricted sprawl throughout the county, to encourage reuse of abandoned inner ring developments and downtown areas, and to help prevent incompatible development near Shaw AFB and Poinsett ECR, the city and county have adopted policies designed to encourage new development within the urbanized area of the county. City water and wastewater services will expand in ways that encourage reinvestment in currently abandoned or underused portions of the city and county and discourage potential incompatible development near the Installations.

The adoption of the MPA, the Rural Development Areas, and the Conservation Planning Areas also encourage future development closer to the historic core of the City of Sumter and the surrounding areas of the county that have been urbanized.<sup>72</sup>

## 6. Conservation Planning

Much of Sumter County is open space, agricultural land use, and other natural environments such as wetlands and forest. The Sumter 2030 Comprehensive Plan lays out specific strategies and policies aimed at preserving and conserving existing environmental assets throughout the city and county. The plan calls for all development projects to use conservative design techniques, encourages environmental setbacks and buffering, calls for open space to be incorporated into new developments, prioritizes connecting to a city and countywide network of green infrastructure, and encourages an overall increase in sustainability. Conservation is also reflected in the county's future land use plan. Nearly all of the land outside of the Suburban Development Area is designated for agricultural conservation, environmental conservation, or is within the MPA, which caps density at one housing unit per acre.<sup>73</sup>

Additionally, the county and city have a history of working closely with the NRCS and The Conservation Fund to acquire land for permanent and temporary conservation purposes. New opportunities to conserve land within the MPA may present themselves in the future.



### III. ENCROACHMENT CHALLENGES AND MANAGEMENT

---

#### A. Definition of Encroachment

There are many complementary definitions of encroachment. The Department of Defense's (DOD) Office of Economic Adjustment (OEA) defines encroachment broadly as incompatible development, which may include uses that adversely affect safety, public health, and welfare as well as those that produce noise, smoke, dust, excessive light, electromagnetic interference, and vibration that impair the military mission.

The Air Force defines encroachment as "any deliberate action by any governmental or non-governmental entity or individual that does, or is likely to inhibit, curtail, or impede current or future military activities within the installation complex and/or mission footprint; or any deliberate military activity that is, or is likely to be incompatible with a community's use of its resources."<sup>74</sup> According to the Air Force, encroachment challenges fall into one or more of 13 encroachment categories defined in Air Force Instruction (AFI) 90-2001, Encroachment Management:<sup>75</sup>

- **Airspace and Land Restrictions:** Development of tall structures under airspace, limited access to MTRs or SUA, airspace capacity concerns, competition between military and civil aviation interests.
- **Airborne Noise:** Noise associated with military activities including aircraft, artillery, and other uses.
- **Urban Growth:** Incompatible development near Air Force installations.
- **Spectrum Encroachment:** Wide ranging challenge area that includes competition for spectrum, interference of spectrum from noise, removal or reallocation of bandwidth, and the blocking of spectrum or impeding of line of sight by physical structures.
- **Endangered Species and Critical Habitat:** Presence of endangered species or a negative biological opinion that could result in habitat restrictions leading potentially to the loss of training range access.
- **Air:** Air pollution or opacity requirements can limit operational readiness, usually due to the Air Force having to abide by air quality conformity requirements and opacity rules. Can end up restricting the amount and type of training Air Force units can conduct in certain areas.
- **Water:** Water quality and quantity issues.
- **Cultural Resources:** Cultural resources, such as archeological sites, can restrict use and access to training areas.
- **Unexploded Ordnance and Munitions:** Includes unexploded ordnance (UXO), discarded military munitions, and munitions constituents high enough to cause an environmental hazard. Most impacts revolve around impacts to the environment, and the Air Force's responsibility to clean it up.
- **Marine Resources:** Competition for ocean space by humans and wildlife that can compromise Air Force operations, training, or testing.
- **Energy Compatibility and Availability:** Includes compatibility conflicts associated with development, siting, distribution, or transmission of energy resources.
- **Security/Safety:** Security concerns within the operating area that could affect the mission, such as trespassers, quantity distance (QD) arcs, and bird and wildlife aircraft strike hazard (BASH) issues.
- **Natural Factors and Climate Effects:** Weather or disaster events and related management that affect nearby communities and Air Force installations.

The military attempts to mitigate these encroachment impacts through service-level programs, like the JLUS program, to manage encroachment through established local collaborative land use planning



processes. The goal of the JLUS is to preserve long-term land use compatibility between the military installation and the surrounding communities. Compatible land use planning can be defined as the balance between the needs and interests of the community and the needs and interests of the military installation.

## B. Installation and Community Impacts and Issues

As active airfields, Shaw AFB and Poinsett ECR naturally create noise and safety impacts on the communities that surround the Installations. Other impacts felt due to the Air Force presence in the community include heavy traffic at times, a large transient population, and noise impacts from sources other than aircraft, such as small arms training and announcements from the Giant Voice system. Conversely, Shaw AFB and Poinsett ECR can experience impacts from the community in the form of potential incompatible urban growth near the fencelines, potential airspace restrictions in the form of tall structures, safety concerns from an increased use of unmanned aerial systems (UAS), and potential spectrum interference. Land use is central to many of the impacts experienced by both the Installations and the community.

The City of Sumter and Sumter County have taken proactive steps to encourage compatible land uses around Shaw AFB and Poinsett ECR. The most significant in recent years were the completion of Joint Land Use Studies for each installation as is described previously. Following those efforts, the Sumter City-County Planning Commission implemented an Airfield Compatibility District (ACD) with the intent of preventing incompatible land uses and flight hazards around Shaw AFB. The ACD regulations are included as [Appendix B](#). The ACD includes separate districts covering the APZs, three separate noise districts, and an overlaying Noise Attenuation (NA) district. Each zone includes a blend of land use restrictions and noise attenuation measures to protect both the public and the mission of Shaw AFB.<sup>76</sup> Detailed maps of the APZs, noise contours, ACD, and NA district are in Chapter 3.

The City of Sumter and Sumter County also adopted a Range Compatibility District (RCD) in an effort to encourage compatible land uses around Poinsett ECR. The RCD covers the land below Restricted Area 6002 (R-6002), which provides aircraft utilizing Poinsett ECR open airspace to conduct weapons training. The RCD requires noise attenuation within specific areas and encourages low-density residential development throughout.<sup>77</sup>

The Military Protection Area (MPA) encompasses the NA district, most of the RCD, and the land between Shaw AFB and Poinsett ECR. The purpose of the MPA is to protect Shaw AFB and Poinsett ECR from incompatible development, and protect residents from safety and noise issues associated with living close to a military airfield by capping residential density at one housing unit per acre and by expecting new residential development to meet noise attenuation standards if necessary.<sup>78</sup>

The specific regulatory components of the ACD, RCD, and MPA are detailed in Chapter 4 of the JLUS report. In addition, the JLUS Policy Committee's recommendations for increasing land use compatibility through revisions to each of these overlays are described in Chapter 5 of the report.

### 1. Land Use Trends

Much of the land use to the west of Shaw AFB is agricultural and low-density residential. Land to the northern, eastern, and southern sides of Shaw AFB includes a mix of industrial, commercial, agricultural, and low- and medium-density residential development.<sup>79</sup> These areas are generally low in density. However, certain areas such as the Cherryvale area contain uses incompatible with current F-16 aircraft operational noise impacts, as discussed in Chapter 3.

Future land use in Sumter County will be dominated by two primary constraints: poor soil, swamps, and wetlands in the lowlands to the east and the existence of Shaw AFB and Poinsett ECR to the west, which funnels development to the center of the county. With less market demand for development in the eastern portion of the county, it is expected that demand for residential development near Shaw AFB will continue.<sup>80</sup>

The Sumter 2030 Comprehensive Plan identifies the Suburban Development Area, which surrounds the downtown area of the City of Sumter and is bordered to the west by the MPA. Within the Suburban Development Area are three types of Priority Investment Areas: Priority Economic Development Areas, Priority Commercial/Mixed-Use Areas, and Priority Commercial Corridors. The purpose of the Priority Investment Areas is to identify, direct, and concentrate new development opportunities. These Priority Investments Areas are in part planned with the intent to encourage potentially incompatible land uses away from Shaw AFB and Poinsett ECR.<sup>81</sup>

The MPA encompasses the APZs and noise contours of the 2013 Shaw AFB AICUZ, much of the RCD surrounding Poinsett ECR, and the land between Shaw AFB and Poinsett ECR. The MPA is shown in Figure 4-1. The purpose of the MPA is to protect Shaw AFB and Poinsett ECR from incompatible development, namely in the form of dense residential development. New water and sewer service to the MPA will not be provided by the City of Sumter for residential uses, and residential development in this area is limited to one unit per acre or less. The potential arrival of the F-35A aircraft at Shaw AFB could require amendments to the MPA and a re-evaluation of future land use policy surrounding Shaw AFB and Poinsett ECR.

## 2. Noise Impacts

Noise impacts occur both on the Installations, and within the local community. The level of impact is generally related to the proximity of the noise source. Noise generated from Shaw AFB and activities at Poinsett ECR is predominately from aircraft operations. Noise complaints are directed to the 20th Fighter Wing Public Affairs Officer (20 FW/PAO), who responds accordingly and catalogs the complaint information. In 2015, Shaw AFB received only seven official noise complaints. The majority of these complaints involve low-flying aircraft utilizing Poinsett ECR.<sup>82</sup> The 2013 Shaw AFB AICUZ provides recommendations to reduce noise impacts both on the installation and in the community, including limiting noise-sensitive land uses such as residential and livestock rearing within the noise contours.<sup>83</sup>

### SELECT SURVEY RESULTS

Noise associated with Shaw AFB and Poinsett ECR, notably aircraft noise, has a significant presence within the region. Jet or other aircraft noise from Shaw AFB or Poinsett ECR can be heard at least weekly by 72.6 percent of respondents and 40 percent of respondents hear aircraft noise daily.

Chapter 3 describes and discusses the extent of the noise impact contours for the existing F-16 mission at Shaw AFB, the potential F-35A mission, and for operations at Poinsett ECR.

## 3. Unmanned Aerial Systems

Unmanned Aerial Systems (UAS) operations near Shaw AFB and Poinsett ECR can create airspace restrictions and safety concerns for pilots and impact mission operations at both installations. There are three different types of UAS operations:

- public operations;
- civil operations; and;
- model aircraft operations (hobby or recreational only).

The FAA issues a Certificate of Waiver or Authorization (COA) for public aircraft operations that permits public agencies and organizations to operate a particular aircraft for a particular purpose in a particular area. The FAA works with the operating agency to develop conditions and limitations to ensure a certain level of safety. Examples of public operations use include law enforcement, firefighting, border patrol, disaster relief, search and rescue, and military training.<sup>84</sup>

Civil aircraft operations are those that do not meet the criteria of a public aircraft operation, such as commercial and experimental operations. On June 21, 2016, the FAA announced the Final Small Unmanned Aircraft Rule, or Part 107. Part 107 defines the first operating rules for commercial-use UAS, which include that an unmanned aerial vehicle (UAV) must weigh less than 55 pounds and cannot fly above 400 feet above ground level (AGL), that the remote pilot in control must have a remote pilot certificate, and that Air Traffic Control (ATC) must be notified before operating a UAS in Class B, C, D, or E airspace.<sup>85</sup> Airspace associated with Shaw AFB includes combined Class C/D airspace that extends to a 4.4-mile radius around the installation.<sup>86</sup> Sumter Airport includes Class G airspace, which may be flown in by commercial UAS users without notification of the Shaw AFB ATC.

Prior to the release of Part 107, all civil UAS operations had to obtain either a COA, a Section 333 exemption, or a Special Airworthiness Certificate (for experimental operations); established operating rules are intended, in part, to reduce unnecessary burdens on current and potential civil UAS remote pilots. The FAA estimates the new rule may generate more than \$82 billion for the United States economy and create more than 100,000 jobs over the next 10 years.<sup>87</sup> It will likely spur a significant increase in civil UAS operations, including potentially in the Sumter region.

Model aircraft operations pertain only to hobby or recreational uses. For a UAS to operate as a model aircraft, it must be within the parameters outlined in Section 336 of the FAA Modernization and Reform Act (FMRA). These parameters include that the UAV must weigh no more than 55 pounds, operations must abide by a community-based set of safety guidelines, and no operations may take place within five miles of an airport without first getting permission from the airport's ATC tower. As of December 21, 2015, all unmanned model aircraft that weigh between 0.55 pounds and 55 pounds must be registered with the FAA Unmanned Aircraft System registry before being flown outdoors. Model aircraft operations are strongly encouraged to follow the following safety guidelines:<sup>89</sup>

- fly below 400 feet AGL and remain clear of surrounding obstacles;
- fly within visual line of sight;
- remain well clear of and do not interfere with manned aircraft operations;
- do not fly within 5 miles of an airport unless you contact the airport and control tower before flying;
- do not fly directly over people or near stadiums;
- do not fly near emergency response efforts such as fires; and,
- do not fly under the influence.

Figure 2-15 shows the five-mile buffer around Shaw AFB, Poinsett ECR, and Sumter Airport where model UAS operations are restricted, pending approval by the Shaw AFB ATC tower. Also shown is Restricted Airspace, R-6002, over Poinsett ECR, where non-participating aircraft operations are restricted, which includes UAS operations.

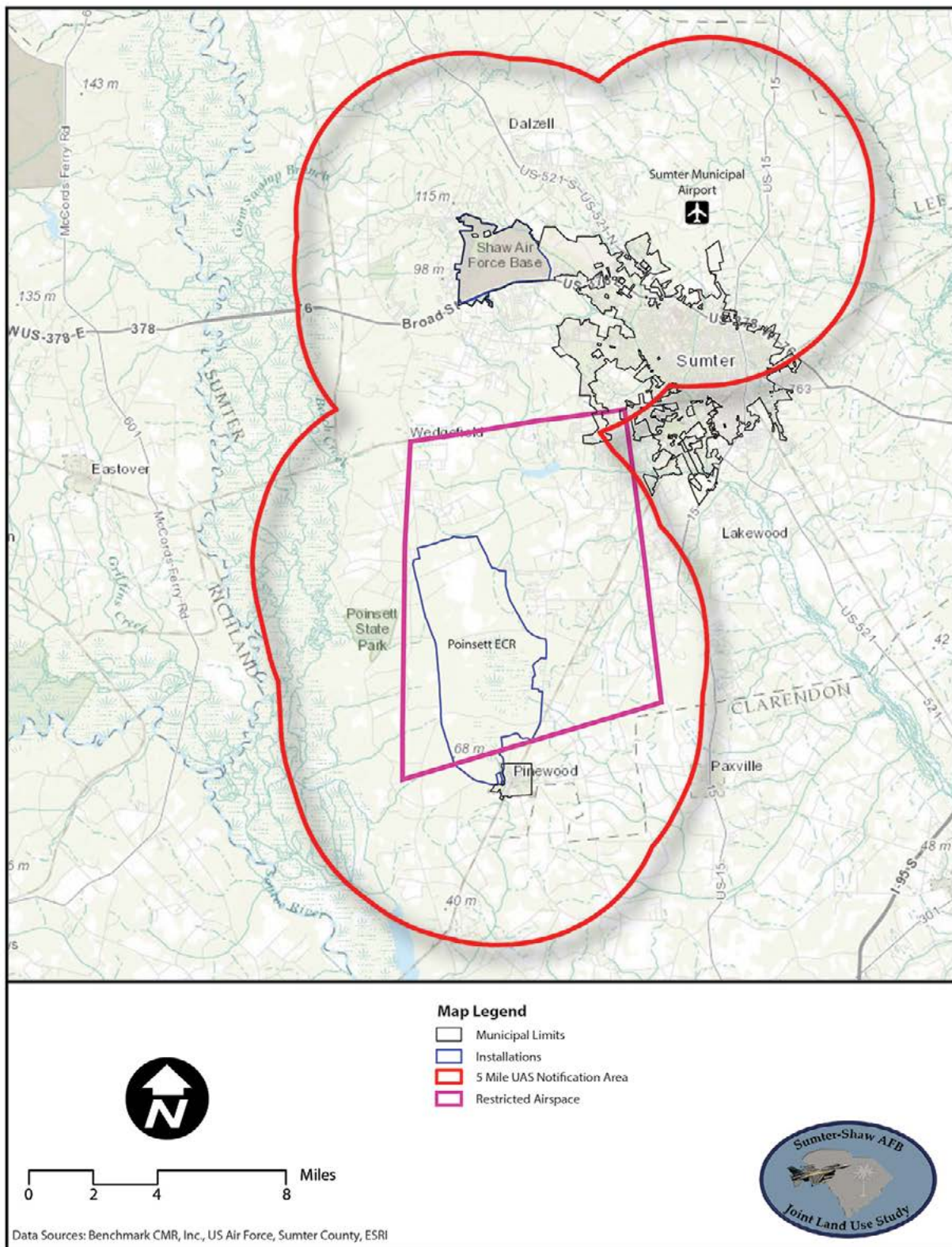
There have been no reports of UAS operations interfering with aircraft operations at Shaw AFB. However, it is acknowledged by city, county, and base leadership that, nationwide and within South Carolina, UAS use is increasing and will continue to increase, and Shaw AFB and Poinsett ECR should plan for, and plan to prevent, potential future incidents.<sup>90</sup>

There is no reported or regular current use of public UAS operations in the vicinity of Shaw AFB, Poinsett ECR, or Sumter Airport. Law enforcement entities, such as Customs and Border Protection (CBP), do not conduct UAS operations near Shaw AFB. According to the United States Department of Transportation (USDOT), demand for public UASs is projected to increase significantly over the next 20 years, especially among state

*Continued on page 47*



Figure 2-15: Shaw AFB, Poinsett Electronic Range, and Sumter Airport Five-Mile Boundary and Restricted Airspace



*Continued from page 45*

and local entities. The increased demand for state and local UAS will likely come from increased use by state and local law enforcement.<sup>91</sup>

#### 4. Environmental Impacts

Training activities at Shaw AFB and Poinsett ECR have the potential to create environmental impacts. These may include impacts to water quality and natural resources, including protected species. In accordance with the Sikes Act, training and mission activities at Shaw AFB and Poinsett ECR are conducted in a way that provides for sustainable, healthy ecosystems, complies with applicable environmental laws and regulations, and provides for no net loss in the capability of military installation lands to support the military mission. There are no significant environmental concerns that prohibit current mission and training activities at Shaw AFB or Poinsett ECR. However, Poinsett ECR contains longleaf pine forest and Carolina Bays, both habitats of concern that require management and limit where mission activities can take place.<sup>92</sup>

#### 5. Bird Aircraft Strike Hazard

Shaw AFB maintains a Bird Aircraft Strike Hazard (BASH) Program to protect pilots and aircraft from potential safety concerns presented by birds within the aircraft flight patterns. The Shaw AFB BASH Program is guided by the "Bird Aircraft Strike Hazard (BASH) Plan, Shaw AFB, Sumter, SC," (BASH Plan) which was finalized in June 2000. The Shaw AFB BASH Plan "provides a program for monitoring, reporting and eliminating potential BASH problems."<sup>93</sup>

Shaw AFB and Poinsett ECR do not currently have any significant BASH challenges. However, waterfowl from the Carolina Pines Golf Course can present safety issues. Shaw AFB has a BASH Management Working Group (BMWG) that is responsible for updating the BASH Plan, and working the Shaw AFB BASH Program to include executing actions to lower the BASH threat at Shaw AFB and Poinsett ECR.<sup>94</sup>

#### 6. Renewable Energy

Large-scale sources of renewable energy are not currently prevalent in South Carolina, or in the Sumter County area. However, solar energy facilities do exist throughout the state with potential for expansion, and there is potential for offshore wind energy development. Due to the nature of the F-16, and potential F-35A, mission at Shaw AFB, most operational flying takes place away from Shaw AFB and Poinsett ECR, far outside the Sumter County jurisdictional boundaries. Because few, if any, of these outside communities have a relationship with Shaw AFB, it is in these outlying areas where the potential for incompatible renewable energy development is the highest.

There are numerous electric utility producers and providers in South Carolina, including Black River Electric Cooperative, Duke Energy Progress, and Santee Cooper Power in the Sumter region. In South Carolina, a developer looking to construct an energy-producing facility, including solar and wind energy facilities, must directly engage with the local electric utility concerning the interconnection process and the negotiation of a Power Purchasing Agreement (PPA).<sup>95</sup> Because there is no central state office to facilitate these discussions, it may be difficult for Shaw AFB to maintain awareness of potentially incompatible large-scale renewable energy facilities outside of Sumter County. However, as discussed in detail in Chapter 5, there are opportunities to engage with renewable energy developers and utility companies very early in the process to help prevent potentially incompatible renewable energy development.

##### a. Solar Energy

South Carolina has high potential for photovoltaic (PV) solar energy capacity, and has seen considerable investment in PV solar energy projects over the past five years. In 2015 South Carolina installed 3.5 megawatts (MW) of solar electric capacity, ranking it 35th nationally. In total, there are 15 MW of solar electric capacity

in South Carolina, enough to power 1,600 homes, which also ranks 35th nationally.<sup>96</sup> Over 11 MW of the total 15 MW of solar electric capacity has been installed since 2011, and South Carolina's potential for solar capacity ranks 10th nationally.<sup>97</sup>

The majority of current and proposed solar projects in South Carolina are in or near the coastal counties around Charleston and Myrtle Beach. However, recent South Carolina state policies and incentives provided by large energy utilities may spur solar energy development in other parts of the state, including the Sumter County area. In 2015, South Carolina passed its first Renewables Portfolio Standard (RPS), which requires utilities to source at least a certain percentage of their electricity from renewable sources. South Carolina's RPS mandates that energy providers obtain at least 2 percent of all electricity produced from renewable sources by 2021. While this is one of the lowest RPS mandates in the country, it has the potential to spur renewable energy development. Additionally, Duke Energy, one of the largest energy providers in South Carolina, offers a \$1/watt rebate off the cost of a solar panel system.<sup>98</sup> This will likely help spur more household PV solar installation rather than large-scale commercial solar development.

Some forms of solar energy development have the potential to cause encroachment issues for pilots due to reflectivity and glare. However, PV solar energy developments, which are most common in the southeast, rarely present reflectivity issues. Design attributes of PV solar energy panels, such as anti-reflective coatings and intentionally roughened surfaces, increase absorption of sunlight and reduce reflectivity.<sup>99</sup> Additionally, the Solar Glare Hazard Analysis Tool (SGHAT), developed by Sandia National Laboratories, provides airfield operators and planners a tool to evaluate the potential reflectivity of planned solar projects and allows for compatible siting of projects. The SGHAT is required by the FAA for reflectivity and glare hazards proposed near all airports, and is commonly utilized by military installations with flying missions.<sup>100</sup>

#### b. Wind Energy

The southeastern United States has some of the lowest potential wind capacity in the country, and many of the states in the region have few-to-no installed wind energy facilities. As of May 2016, there are zero existing or planned wind energy facilities in the state of South Carolina.<sup>101</sup> However, there is potential for offshore wind energy development off the South Carolina coast between Charleston and Myrtle Beach. In November of 2015, the federal government issued a call for proposals to lease areas off the coast of South Carolina.<sup>102</sup> Wind speeds in the areas 3 to 60 miles off the coast of South Carolina average 7.5 to 8.5 meters per second (m/s) at 90-meters height; typically, areas with average annual wind speeds of 7 m/s or greater at this height are considered suitable for off-shore wind energy development.<sup>103</sup>

Wind energy development off the South Carolina coast could present environmental challenges to the state of South Carolina and mission impacts to Shaw AFB and surrounding installations. Development near the Cape Romain National Wildlife Refuge (NWR) could present issues for migratory birds that use the NWR for feeding and roosting grounds.<sup>104</sup>

Wind energy development in the waters off South Carolina will likely be within one of the numerous Warning Areas that line the Atlantic coast. Warning Areas are Special Use Airspace (SUA) located over water and used by military aircraft for training purposes. F-16s from Shaw AFB sometimes utilize the Warning Areas off the coast of South Carolina to conduct training, and any wind energy development within that airspace



The Colleton Solar Farm started operations near Walterboro, SC in December 2013. The facility is operated by TIG Sun Energy under a contract with Santee Cooper.



may restrict full use of the Warning Areas. Wind turbines can also interfere with military radar by being in a radar's line-of-sight or by creating clutter and other interference through its rotating blades. Wind energy development within approximately 30 miles of Shaw AFB or Poinsett ECR would likely interfere with the installation's airfield radar. However, offshore wind energy development is not likely to create any challenges to the Shaw AFB radar system.<sup>105</sup>

## 7. Spectrum Encroachment

Within the local geographic context of a Joint Land Use Study (JLUS), Spectrum Encroachment challenges typically involve spectrum interference to assets located on the installation or at nearby, off-installation locations, encroachment on radar systems onboard aircraft, or encroachment by the military into the local community. Specific examples of Spectrum Encroachment challenges can include the following: line-of-sight conflicts; electromagnetic interference; increased demand for commercial use of frequencies, such as from cellular phone companies and radio stations; and alternative energy systems such as windfarms, which may block or interfere with spectrum frequencies.<sup>106</sup>

Discussions with Shaw AFB and Poinsett ECR personnel as well as with members of the Sumter community found there are no recognizable current issues related to spectrum encroachment and potential spectrum-related issues were insignificant.<sup>107</sup>

The Multiple Threats Emitter System (MUTES) located on Poinsett ECR and the numerous Mini-MUTES located throughout the region do not experience any electromagnetic interference, spectrum encroachment, line-of-sight impedances, and have an approximate 90 percent clearance rate when requesting the 200-megahertz (MHz)-bands of spectrum necessary to conduct training.<sup>108</sup>

Development within the JLUS Study Area that could potentially create spectrum interference for Shaw AFB and Poinsett ECR assets include tall structures, cellular towers, and wind turbines. Tall structures, such as buildings or radio towers, can impede the line-of-sight between the Mini-MUTES facilities and participating aircraft. Cellular towers can both impede line-of-sight and create competition for spectrum bands used by the MUTES and Mini-MUTES systems to conduct training. Wind turbines near a radar can physically impede the radar's line-of-sight, as well as create clutter or false readings due to the Doppler Effect created by rotating turbines. Each situation is unique, but in general, wind turbines within approximately 30 miles of an aircraft tracking radar such as a Digital Airport Surveillance Radar (DASR), or a weather radar such as a Next-Generation Radar (NEXRAD) can create spectrum interference.<sup>109</sup>

Recent steps have been taken to allow offshore wind energy development off the coast of South Carolina between Charleston and Myrtle Beach.<sup>110</sup> However off-shore wind energy development will not impact mission operations within or near the JLUS Study Area, and there are no existing or planned land-based windfarms within or near the JLUS Study Area, or in the state of South Carolina.

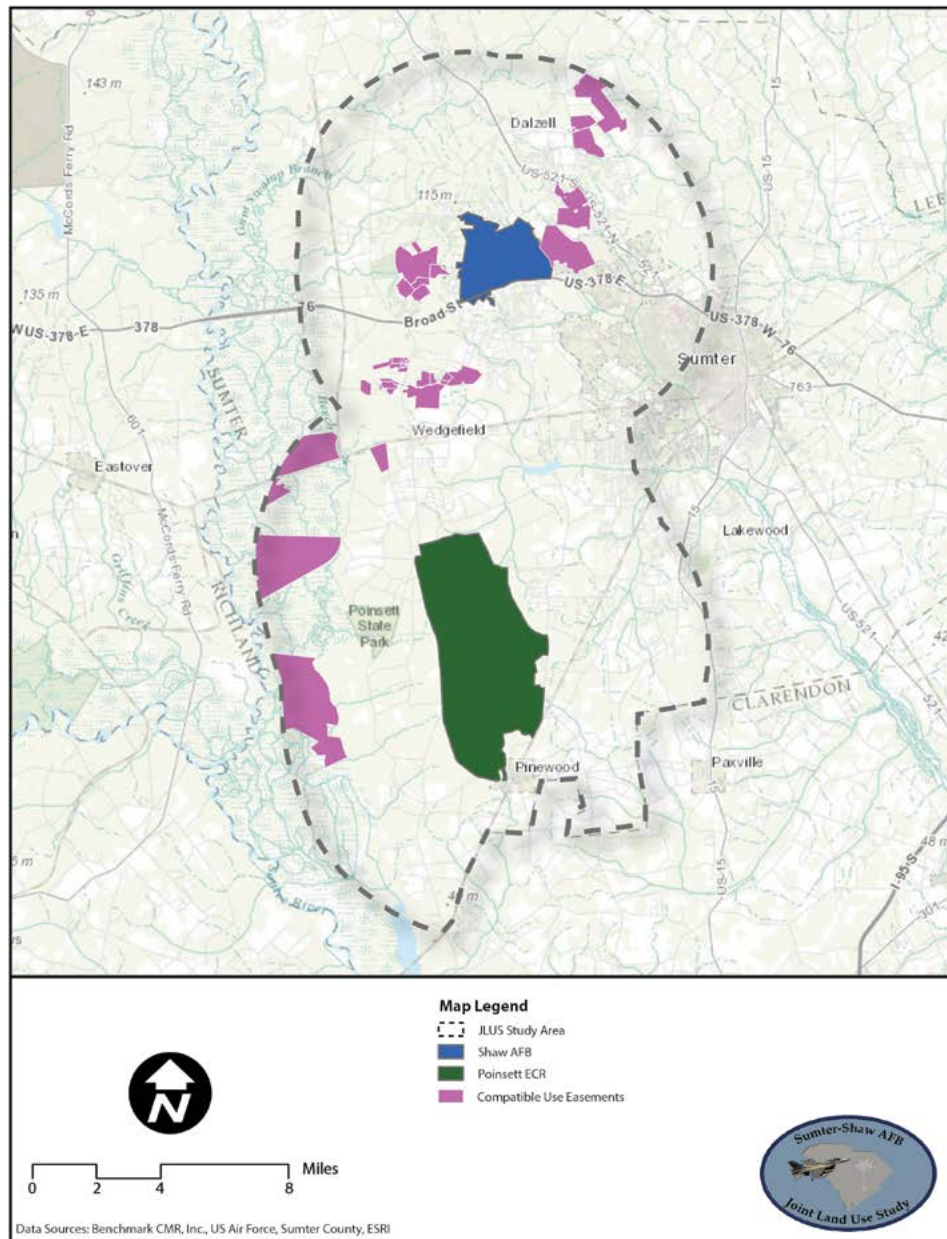
## C. Shaw AFB Encroachment Management Program

Encroachment management at Shaw AFB is conducted on a case-by-case basis by individual functionalities as necessary. Shaw AFB and the Sumter Planning Department work together to address current and potential incompatible land uses by engaging with one another regularly. When necessary, Shaw AFB will attend Planning Commission or City Council meetings to learn about and discuss potential incompatible development. Engagement efforts between the community and the installation have been sufficient in limiting incompatible development around Shaw AFB and Poinsett ECR.

Encroachment management, among other things, may include the acquisition of land areas located within the accident potential and noise zones in the local area surrounding Shaw AFB and Poinsett ECR. Land acquisition is performed through fee simple ownership, the purchase of development and conservation rights, and other land conservation partnerships.

Shaw AFB has not taken the action to acquire new land for base operations very often since its inception in 1941. With the exception of a few tracts of land in the northwest corner of the installation, Shaw AFB occupies roughly the same land area as it did when it was established. However, Shaw AFB has been involved in the protection of lands surrounding the installation in the form of conservation easements to protect and maintain land use compatibility. Through use of programs like the Readiness and Environmental Protection Initiative (REPI) program, Shaw AFB has helped reduce potential incompatible development around the installation. A map showing the current extent of compatible use easements within the study area is shown in Figure 2-16.

Figure 2-16: Compatible Use Easements within JLUS Study Area



## 1. 1993 Shaw AFB Joint Compatible Land Use Study (JCLUS)

The Sumter community and Shaw AFB have previously completed a cooperative land use study which examined compatible land uses between the installation and the community. The Shaw AFB – Sumter County Joint Compatible Land Use Study (JCLUS) was completed in December 1993 and amended in July 1994. This JCLUS provided a snapshot of the installation and the surrounding communities at the time, analyzed current and future land uses and impacts such as noise, and provided recommended actions to promote continued compatibility between Shaw AFB and the surrounding communities.

Figures 2-17 to 2-20 display the recommendations put forth in the 1993 JCLUS and, where applicable, the actions taken by the community or the military to implement the recommendations.

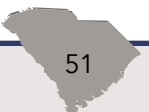


Figure 2-17: 1993 Shaw AFB JCLUS Recommended Community Goals and Policies

Goals	Policies
Control development in the vicinity of Shaw Air Force Base, Poinsett Gunnery Range and the Sumter Airport that would interfere with the continued operations of these facilities.	Encourage use of review procedures to evaluate the suitability of proposed development.
	Encourage only the most compatible land uses for noise impacted and accident potential areas when development cannot otherwise be avoided.
	Strongly discourage scattered location of new commercial and industrial developments.
	Discourage the extension of continuous and scattered commercial activity along U.S. 76/378 and other major highways and transportation routes.
	Promote and encourage new population growth and land development in urban areas and areas served by community services.
	Sumter County and the City of Sumter should adopt regulatory controls with criteria for mitigating the effects of noise.
Plan for the orderly accommodation of new development.	Encourage all development to be located, sited, and designed to carefully fit its surroundings, to protect and enhance the quality of the environment, and to maintain the character of the area.
	Capital improvements such as sewer and water services and road widening should be avoided in or adjacent to areas susceptible to annoying levels of noise or accident potential.
	Sumter County and the City of Sumter should participate in coordinated planning efforts with Shaw AFB and related facilities.
	Discourage development of mobile home parks in areas susceptible to annoying levels of noise.
	Promote the clustering of urban developments and discourage scattered and strip development.
	Improve public education and awareness of planning and zoning in the noise impacted areas.
Minimize the impact of growth on existing development, streets, and resources.	Minimize hazardous levels of water, air, noise, and other forms of pollution throughout the Sumter area.
	Promote the clustering of development to increase the efficiency of transportation and reduction of energy consumption.
	Prohibit encroachment of incompatible developments into established areas. Protect the integrity of aircraft related facilities and flight tracks by not allowing incompatible land uses into the area.
	Encourage future development to locate on vacant parcels which are properly zoned areas.
	Encourage the implementation of zoning in the City and County that is consistent with the Joint Compatible Land Use Study.

Source: Shaw Air Force Base – Sumter County Joint Compatible Land Use Study, Sumter City-County Planning Commission, July 1994.



Figure 2-18: 1993 Shaw AFB JCLUS Recommended Military Goals and Policies

Goals	Policies
Promote the public health, safety, comfort, and general welfare of the inhabitants of Shaw Air Force Base and Sumter County.	Plan, guide, and promote future growth and development.
	Promote orderly development and appropriate land use.
	Protect the character and stability of existing conforming land uses.
	Take all possible measures to prevent the elimination or impairment of airfield operations and protect the public investment therein.
	Enhance the quality of life in the affected areas.
	Protect the general economic welfare of the Sumter community by discouraging incompatible land uses that could threaten or limit existing and future military aircraft operations.
	Establish guidelines for land use compatibility.
	Recognize the economic role of Shaw Air Force Base in the Sumter region and reaffirm the importance of protecting this vital public investment and its socioeconomic contributions to the community.
	Inform community leaders of and discourage the establishment of any land use which would unreasonably endanger aircraft operations and the continued use of the airfield.
	Incorporate all elements of the Air Installation Compatible Use Zone concept into the Sumter County 2005 Comprehensive Development Plan, modifying it when necessary.
	Encourage the adoption and enforcement of appropriate zoning, building code, and subdivision ordinances to implement the land use recommendations.

Table continued on next page

Goals	Policies
<p>Restrict land uses that are recognized as incompatible in noise sensitive areas and those prohibited in clear zones for aircraft safety:</p> <ul style="list-style-type: none"> <li>• Uses that release into the air any substance such as steam, dust, or smoke, which could impair visibility or otherwise interfere with the safe operation of aircraft.</li> <li>• Uses that produce light emissions, either direct or indirect (reflective), which could interfere with pilot vision.</li> <li>• Uses that produce electrical emissions which would interfere with aircraft communication systems or navigation equipment.</li> <li>• Uses that attract birds or waterfowl, such as operations of sanitary landfills, maintenance of feeding stations, construction of lakes and ponds, or growth of certain vegetation.</li> <li>• Uses that provide for structures within ten feet of aircraft approach-departure and/or transitional surfaces.</li> </ul>	
<p>Certain noise levels of varying duration and frequency can be detrimental to both physical and mental health. A limited, though definite, danger to life exists in certain areas adjacent to airfields. Where these conditions are sufficiently severe, it is not consistent with the public health, safety, and general welfare to allow the following types of uses:</p> <ul style="list-style-type: none"> <li>• Residential</li> <li>• Retail business</li> <li>• Office buildings</li> <li>• Public buildings (school, churches, etc.)</li> <li>• Recreational buildings and structures.</li> </ul>	

Table continued on next page

Goals	Policies
Land areas below the take-off and final approach flight paths are exposed to significant danger of aircraft accidents. The density of development and intensity of use must be limited in such areas.	
Different land uses have different sensitivities to noise. Land use compatibility standards should be based on these noise sensitivities. In addition, a standard Noise Level Reduction Guideline for new construction should be implemented to permit certain uses where they would otherwise be prohibited.	
<p>Land-use planning and zoning in the airfield environs cannot be based solely on aircraft-generated effects. Designation of land uses with the AICUZ should be further defined by consideration:</p> <ul style="list-style-type: none"> <li>• Physiographic factors</li> <li>• Climate and hydrology</li> <li>• Vegetation</li> <li>• Surface geology</li> <li>• Soil characteristics</li> <li>• Intrinsic land use suitabilities and constraints</li> <li>• Existing land use patterns</li> <li>• Land-ownership and values</li> <li>• Socioeconomic considerations</li> <li>• Cost and availability of public utilities, transportation, and community facilities</li> <li>• Other noise sources</li> </ul>	

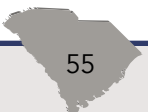


Figure 2-19: 1993 Shaw AFB JCLUS Sumter Zoning Recommendations

Ordinance	Recommendation	Action Taken
Article V – Section 501, District Boundaries	Extend the DNL I District (65-75 dB) north, west, and south to the nearest logical boundary.	The DNL-1 Boundary was not enlarged, however; the Noise Attenuation District overlay had been implemented with regulatory language in place requiring Noise Notification Signage at entrances to Major Subdivisions and along the perimeter of the overlay district.
	The zoning classification of the Rural Development District (RDD) should be changed to Rural Agriculture (RA) north of the range to road 763 and northeast to the city limits of Sumter.	With adoption of the 1999 Zoning & Development Standards Ordinance, the Rural Development District (RDD) was changed to become the Agricultural Conservation (AC) District. The land north of the range to 763 is now zoned AC, however; east of St. Pauls Church Rd. down McCrays Mill Rd. northeast to the City limits is a blend of General Residential (GR), Agricultural Conservation (AC), Residential-15 (R-5), and Residential-9 (R-9) zoning.
	[The] General Residential District (GR) classification should be changed to R-15, which still allows for residential development but at a lower density.	Much of the Cherryvale community to the south of Broad St. retains the General Residential (GR) designation. All GR zoning has been removed from the APZ-2 (Northeast). In addition, new residential development has been prohibited in the APZ-1 and APZ-2 as outlined in Article 3, Section R: Airfield Compatibility Districts (ACD) and Exhibit 7: Airfield Compatibility District (ACD) Use Regulations ACD Districts

Table continued on next page

Ordinance	Recommendation	Action Taken
Article V – Purpose of Districts	To easily distinguish between districts, the maximum allowable densities should be included in the descriptions where applicable.	Article 3 of the Zoning & Development Standards Ordinance outlines each zoning district and associated regulations. The district descriptions have not been modified to include maximum allowable densities.
	List the variety of housing types in the description of the GR District for clarity and understanding.	This description has not been modified to clarify what “variety of housing types” means.
	The Limited Commercial (LC) District should be restricted to conform to ACD safety standards near Shaw AFB.	The Airfield Compatibility District overlay district established in Article 3, Section R regulates development in proximity to Shaw AFB above and beyond the standard LC development standards.
	The General Commercial (GC) District should be restricted to conform to ACD safety standards near Shaw AFB.	The Airfield Compatibility District overlay district established in Article 3, Section R regulates development in proximity to Shaw AFB above and beyond the standard GC development standards.
	The last sentence of the description for RA should be deleted.	The Rural Agricultural (RD) district no longer exists.
Article V – Special Purpose Districts	Planned Unit Developments (PUDs) should be restricted to all requirements of the ACDs to ensure future compatible land uses in the study areas.	The Airfield Compatibility District overlay district established in Article 3, Section R regulates development in proximity to Shaw AFB above and beyond the standard established by any Planned Development (PD) standards.
Article X – Supplemental Review, Design and Performance Criteria for Certain Buildings, Uses and Projects	Any planned construction of exterior illumination in the APZ I and II Districts of the ACDs should be reviewed by the Airspace and Safety Director at Shaw AFB for obstruction clearances.	While it is policy to seek input from Shaw AFB, there is no specific codification of language directing review by the Airspace and Safety Director at Shaw AFB for obstruction clearances.
	Any planned construction requiring exterior illumination within two miles of the Sumter Airport should be reviewed by the Federal Aviation Administration (FAA) for obstruction clearances.	While it is policy to seek input from the FAA for any development within the adopted Airport Overlay District (AP) for Sumter Airport, there is no specific codification of language directing review by the FAA for obstruction clearances.

Table continued on next page

Ordinance	Recommendation	Action Taken
Article X – Section 1008 – Specific Development Standards for Certain Other Uses and Projects	FAA regulations currently prohibit the location of sanitary landfills within 10,000 feet of the end of runways but is allowing individual airports and jurisdictions to set their own distance requirements. Distance requirements should be added to this section, for sanitary landfills only, to insure the environmental protection of the County's wildlife for Shaw AFB and the Sumter Airport.	Sanitary landfills and inert dump sites are not by-right uses in any zoning district. These uses are permitted by Conditional Use or through Special Exception Approval through the Board of Zoning Appeals. Section 5.b.3.a. requires that the use not be within 1,000 ft. measured in a straight line of any existing residential, religious, educational, medical, or public use, however; there is no separation standard from Shaw AFB or the Sumter Airport.
Sumter Subdivision Ordinance	Include definitions of APZ Zones and a map outlining these zones for easy reference.	Article 3, Section R: Airfield Compatibility Districts (ACD) adopts the boundaries of the APZ Zones and establishes use limitations, however; no clear definition for what an APZ is has been provided. Additionally, the boundaries have been established and are a mapped overlay district readily available to the Public.
	A representative from Shaw AFB should be added to the Subdivision Review Committee.	Shaw AFB Base Community Planner is invited to all Technical Review Committee meetings however, their official position on the Technical Committee has not been codified.
Building Codes	It is strongly recommended that the building code be extended to the unincorporated areas of Sumter County to include the noise footprint of Shaw AFB and incorporate sound attenuation construction requirements in the APZs.	Countywide building permitting became effective in 1998. All new construction and renovations to existing buildings within the City of Sumter and Sumter County is completed in accordance with the 2012 International Residential Code (for residential development) and the 2012 International Building Code (for commercial development).

Source: Shaw Air Force Base – Sumter County Joint Compatible Land Use Study, Sumter City-County Planning Commission, July 1994.



Figure 2-20: 1993 Shaw AFB JCLUS Short-term Recommendations

Recommendation	Action Taken
Amend the Official Sumter Zoning Map to extend the DNL 1 District boundaries north to the intersection of Highways 278 and 43, east to County Road 1018 and Queens Chapel Road, west along Raccoon Road and County Road 1077, and south along McLaurin Road to State highway 40.	A Noise Attenuation District (NA) overlay zone has been adopted that extends beyond the official boundary of the DNL-I (65-75dB) zone. The NA district is referenced in Section 3.r.2.f. and codified in Article 3, Section T: Noise Attenuation (NA) District of the Zoning & Development Standards Ordinance.
Amend the Official Sumter Zoning Map to change the zoning classification of GR to RDD within the APZ II District north of Shaw AFB.	All GR zoning has been removed from the APZ-2 (Northeast). In addition, new residential development has been prohibited in the APZ-1 and APZ-2 as outlined in Article 3, Section R: Airfield Compatibility Districts (ACD) and Exhibit 7: Airfield Compatibility District (ACD) Use Regulations ACD Districts.
Amend the Official Sumter Zoning Map to change the zoning classifications of R-15 to RDD north of Shaw AFB.	The land north of Shaw AFB was zoned Agricultural Conservation (AC) in 1999, however; the property along Sargent and Seymour Rds. known as Linwood Plantation Subdivision was rezoned the R-15 in 2006. No other Properties within the ACD north of Shaw AFB have been up-zoned to increase residential density.
Amend the official Sumter Zoning map to change the zoning classification of Heavy Industrial (HI) along John Franklin Road to RA.	The Heavy Industrial (HI) designation remains in place on these parcels. The adoption of the ACD regulations restrict development on the property. Further, the HI designation prohibits all residential development whereas an agricultural designation does not.
Amend the Official Sumter Zoning Map to change the zoning classification of RA northeast of Shaw AFB between Frierson Road and Old Frierson Road down to Long Branch to Light Industrial and Wholesale District (LI-W).	These properties were zoned Light Industrial-Wholesale (LI-W), Limited Commercial (LC) and Agricultural Conservation (AC). Additionally, development is further restricted on portions of these properties due the Airfield Compatibility District regulation.
Amend the Sumter Zoning Ordinance to allow the development of mobile homes in all commercial districts as defined in Article V, page V-3, and as outline in Article VI, Tables I, II and III.	Manufactured (mobile) homes are only permitted in the General Commercial (GC) district within bona-fide mobile home parks. No other commercial districts permit manufactured homes.

Source: Shaw Air Force Base – Sumter County Joint Compatible Land Use Study, Sumter City-County Planning Commission, July 1994.

## 2. 2002 Poinsett ECR JCLUS

In the years following the completion of the 1993 Shaw AFB – Sumter County JCLUS, training activities at Poinsett ECR were expanded and intensified. In response, a 2002 JCLUS update focused solely on Poinsett ECR was conducted. The 2002 Poinsett ECR JCLUS provided more specific details about Poinsett ECR and the areas surrounding the range than was provided in the 1993 Shaw AFB JCLUS. It also gave updates on actions taken due to the 1993 Shaw AFB JCLUS and provided recommendations specific to Poinsett ECR. Major recommendations are shown below in Figure 2-21, recommended updates to the Future Land Use Map are shown in Figure 2-22, and goals and policies of the JCLUS are shown in Figure 2-23.

Figure 2-21: 2002 Poinsett ECR JCLUS Major Recommendations

Recommendation	Action Taken
Noise	
In noise impacted areas, the density of development and intensity of all uses should be limited as much as possible. Where noise conditions are sufficiently severe, the following types of uses should be discouraged: Residential; Retail business; Office buildings; Public buildings (school, churches, etc.); Recreational buildings and structures.	No changes to the established zoning map have been executed that would decrease density entitlements or limit uses since completion of the Poinsett ECR JCLUS.
A standard Noise Level Reduction (NLR) zone governing all new construction should be implemented to prohibit certain uses where they might otherwise be permitted.	To date no regulatory language has been adopted clearly defining noise level reduction standards.
The Air Force should alter its methods of categorizing civilian complaints about aircraft noise to ensure that each complaint is assigned to a specific address.	
Regulatory Controls	
Certain areas around the Range currently zoned AC (minimum 1 acres) should be changed to CP (minimum 5 acres).	To date no rezoning of property from AC to CP has been undertaken in the areas identified.
Land Use	
Land east and south of the Range should be identified for permanent, undisturbed preservation to prevent further higher-density residential encroachment.	The 2030 Comprehensive Land Use Plan identifies this area as being in the Military Protection Planning Area. This designation offers guidance to decision makers regarding changes in zoning designation to permit more intense development. Currently in the AC zoning district residential density is at 1 unit per acre with a minimum lot size of 1 acre. Additionally, the Zoning Ordinance only allows one residential dwelling per parcel of land (Article 4, Section 4.f.3.a).
Land east and north of the Range should be targeted for low-density, noise compatible development and designated a "Range Compatibility District."	A Range Compatibility District (RCD) has been adopted and codified, however it does not restrict uses, the RCD only requires construction to implement noise reduction standards for structures inside identified DNL zones. There are no formal use prohibitions beyond those inherent in the base zoning district.

Table continued on next page

Recommendation	Action Taken
The future use of the Southern Array installation should increase and proactive efforts should be made to avoid the same types of land use incompatibilities currently being encountered by the Northern Array.	The 2030 Comprehensive Land Use Plan has policy in place that does not support encroachment around Poinsett ECR.
The 1999-2020 Future Land Use Plan map should be amended to include range compatibility areas.	The 2020 Comprehensive Plan identified areas around Poinsett ECR and Shaw AFB as Military Protection Areas. In the 2030 Plan the Military Protection Areas around Poinsett and Shaw were conjoined into one large protection area to better protect the lands between the two installations from further density and encroachment.
Water and Sewer Infrastructure	
Capital improvements related to new sewer and water service or expansion of existing service should be avoided in or adjacent to areas around the Range, particularly to the north and northeast.	The 2030 Comprehensive Land Use Plan sets out specific planning policy that prohibits extension of sewer and water services into the Military Protection Planning Area for incompatible residential uses. Additionally, policies for the Rural Development Planning Area and Conservation Planning Area prohibit and curtails the extension of sewer and water infrastructure into those areas. The Rural Development and Conservation Preservation Planning Areas encompass the Military Protection Planning Area.
The town of Pinewood should be discouraged from extending sewer or water lines into unincorporated areas to the north of its boundaries.	
A committee of representatives from the Sumter City-County Planning Commission, Shaw AFB, and the Sumter Public Works Department should be formed to meet bi-annually to discuss the impact of infrastructure expansions on the operations of the Poinsett Range.	This has occurred informally.
Environment	
The Poinsett State Forest should be maintained as a relatively undisturbed natural area and reserved for infrequent recreational use.	
Environmentally sensitive areas within the Range area should be permanently protected and preserved.	

Source: Poinsett Electronic Combat Range Joint Compatible Land Use Study, Sumter City-County Planning Commission, November 2002.

Figure 2-22: 2002 Poinsett ECR JCLUS Future Land Use Map Recommendations

Land Use Type	Recommendation	Actions Taken
Limited Business Development	Areas recommended for limited commercial land use concentrated around significant transportation intersections. Small neighborhood commercial services could be located here but no major enterprises or amenities that would attract more residential development.	The 2030 Comprehensive Land Use Plan integrated many of the concepts outlined in the 2002 Poinsett ECR JCLUS when completely recrafting the land use policy areas and supporting policy statements. The 2030 Plan centers around support for directing incompatible land uses away from the Military Protection Policy Area that encompasses Shaw AFB and Poinsett ECR. The document as a whole focuses on the importance of supporting the AF Mission as both installations while promoting growth and development into least likely to create encroachment problems for the Installations.
Residential Housing Type Optional	Areas with existing residential land use recommended as appropriate for infill development at densities higher than Agriculture Conservation, including development served by extended water/sewer infrastructure. Although development in these areas would not immediately threaten operations at the Poinsett Range, care should be taken to make sure development is still limited in scale and intensity by various means as appropriate.	
Conservation Preservation	Area recommended for Conservation Preservation zoning and primarily intended to remain as permanently undeveloped open space. No infrastructure upgrades should be allowed in this area that would lead to increased residential development. Minimum lot sizes would be the largest in this zone at 5 or more acres per dwelling unit.	

Table continued on next page

Source: Poinsett Electronic Combat Range Joint Compatible Land Use Study, Sumter City-County Planning Commission, November 2002.

Land Use Type	Recommendation	Actions Taken
Agriculture Conservation	Area recommended for Agriculture Conservation zoning and appropriate for agriculture activities and residential development at low-density levels that is not served by water/sewer infrastructure. Minimal infrastructure upgrades could be allowed but residents should not ever expect urban level of services to be provided in this zone. Minimum lot sizes would still be relatively large in this zone at 1 or more acres per dwelling unit.	
Range Compatibility	Area recommended for low-density, noise compatible development with specific standards for future range-compatible development. The area immediately north and east of the Poinsett Range should be targeted as a range compatibility zone with noise level reduction inside of residences to be achieved through modification of existing structures and improved construction standards for future homes. Minimum lot sizes would need to be greater than .5 acres per dwelling unit.	
Residential Conservation	Area recommended as a transitional between Range Compatibility area and the City of Sumter. Conservation measures such as limitations on development density, infrastructure extension (sewer), conservation easements/trusts, purchase of development rights, transfer of development rights, etc. should be encouraged.	
Notification Area	Area within which real estate transactions should include disclosure of noise levels related to Poinsett Range activities. Signs should also be posted on the borders of this area along all public roads indicating when the noise area is 65 decibels or greater. Sumter Board of Realtors should add a category to property listings that designates that a home is in a high noise area.	The Poinsett RCD boundaries coincide with a Noise Attenuation area. As per the Zoning Ordinance, noise notification signs are required at the entrances to major subdivisions and along the perimeter of the district. Additionally, all subdivision plats are stamped with noise zone notification information as all building permits disclose noise zone influences.

Figure 2-23: Poinsett ECR JCLUS Goals and Policies

Goal	Policy
Control development in the vicinity of Poinsett Range that would interfere with the continued operations of the facility.	Rezone areas north and northeast of the Poinsett Range from AC to CP to limit future development density.
	Encourage use of noise-sensitive review procedures to evaluate the suitability of proposed developments.
	Allow only the most compatible uses for noise impacted areas where development cannot otherwise be avoided.
	Strongly discourage scattered location of new commercial and industrial developments.
	Discourage the extension of continuous and scattered residential and commercial development along thoroughfares near the Poinsett Range.
	Promote and encourage new population growth and land development in urban areas and areas already served by public infrastructure.
	Sumter County and municipalities should adopt building codes with criteria for mitigating the effects of noise in the Poinsett Range area.
	Encourage the establishment of a Range Compatibility District to control future development.
Plan for the orderly accommodation of new development.	Encourage all development to be located, sited, and designed to carefully fit its surroundings, to protect and enhance the quality of the environment, and to maintain the character of the area.
	Capital improvements such as sewer and water services and road widening should be avoided in or adjacent to areas susceptible to annoying levels of noise.
	Sumter County should participate in coordinated planning efforts with Shaw Air Force Base and related facilities.
	Discourage development of mobile home parks in areas susceptible to annoying levels of noise.
	Promote the clustering of urban developments and discourage scattered and strip development.
	Improve public understanding and awareness of planning and zoning in the noise environment.

Table continued on next page



Goal	Policy
Minimize the impact of growth on existing development, streets, and resources.	Minimize hazardous levels of water, air, noise, and other forms of pollution throughout the Sumter area.
	Promote the clustering of development to increase the efficiency of transportation and reduction of energy consumption.
	Prohibit encroachment of incompatible developments into established areas. Protect the integrity of aircraft related facilities by not allowing incompatible land uses into the area.
	Encourage future development to locate on vacant parcels which are properly zoned rather than in areas which are zoned for incompatible land uses.
	Encourage the on-going implementation of zoning in the County that is consistent with the Joint Compatible Land Use Study.
Promote the public health, safety, comfort, and general welfare of the inhabitants of Shaw Air Force Base and Sumter County.	Plan, guide, and regulate future growth and development.
	Promote orderly development and appropriate land use.
	Protect the character and stability of existing conforming land uses.
	Prevent the elimination or impairment of airfield operations and protect the public investment therein.
	Enhance the quality of life in the affected areas.
	Protect the general economic welfare of the Sumter community by restricting incompatible land uses that could threaten or limit existing and future operations.
	Establish guidelines for land use compatibility.
	Recognize the economic role of Shaw Air Force Base and Poinsett Range in the Sumter region and reaffirm the importance of protecting this vital public investment and its socio-economic contributions to the community.
	Prevent the establishment of any land use which would unreasonably endanger aircraft operations and the continued use of the airfield.
	Incorporate all elements of this plan along with the 1993 Joint Compatible Land Use Study into the Sumter County 1999-2020 Comprehensive Development Plan, modifying it where necessary.
	Adopt and enforce appropriate zoning, building code, and subdivision ordinances to implement the land use recommendations.

Table continued on next page

Goal	Policy
Restrict and prohibit land uses that are recognized as inherently incompatible in noise sensitive areas and areas not in the public interest.	Restrict uses that release into the air any substance such as steam, dust, or smoke, which could impair visibility or otherwise interfere with the safe operations of aircraft.
	Restrict uses that produce light emissions, either direct or indirect (reflective), which could interfere with pilot vision.
	Restrict uses that produce electrical emissions which would interfere with aircraft communication systems or navigation equipment.
	Restrict uses that attract birds or waterfowl, such as operation of sanitary landfills, maintenance of feeding stations, construction of lakes and ponds or growth of certain vegetation.
	Restrict uses that provide for structures within ten feet of aircraft approach-departure and/or transitional surfaces.

Source: Poinsett Electronic Combat Range Joint Compatible Land Use Study, Sumter City-County Planning Commission, November 2002.

### 3. Existing Public Communication and Outreach Interactions

Shaw AFB and Poinsett ECR have positive working relationships with the City of Sumter, Sumter County, and the public at large. The community is largely supportive of both the Shaw AFB and Poinsett ECR missions and understands the Installations' importance in the overall Air Force mission. The Sumter community identifies Shaw AFB as an important cultural, social, and economic presence in the region and has a history of working to help protect the installation's mission.

The Public Affairs (PA) office at Shaw AFB handles outreach and engagement for both Shaw AFB and Poinsett ECR. The Shaw AFB PA office communicates with the general public in a number of different ways, including social media (Twitter and Facebook), websites, and through the local print and television news outlets.

The Shaw-Sumter Community Council was formed more than 60 years ago, shortly after the arrival of Shaw AFB in the Sumter community. The council's main purpose is to develop confidence, understanding, mutual respect, and friendship between Shaw AFB and the local communities. The council provides stakeholders from Shaw AFB and the Sumter communities to interact and engage on a number of levels and issues.<sup>111</sup>

Semiannual events such as the Shaw AFB Air Expo "Thunder Over the Midlands" provide an opportunity for the community to learn about the Shaw AFB and overall Air Force missions, as well as see demonstrations from the renowned Thunderbirds, the U.S. Air Force's official aerial demonstration team.

## D. Community Encroachment Management Efforts

### 1. Open and Conserved Space

Sumter County has an abundance of open space dedicated to conservation, agriculture, and recreation that is compatible with the Shaw AFB and Poinsett ECR missions. Sumter County covers approximately 436,800 acres, including over 183,000 acres (nearly 42 percent) of open and conserved land.<sup>112</sup> As shown in Figure 2-24, open and conserved land in Sumter County can be grouped into four general

categories: prime farmland, natural recreation areas such as parks and forests, military installations, and land that is under conservation easements.

Shaw Army Airfield was activated on August 30, 1941 as part of the Army Air Corps. With the exception of a few land tracts added in the northwest corner, the boundaries of Shaw AFB have changed little since the base was first established.<sup>113</sup> Poinsett ECR was activated in 1951 and originally covered 7,500 acres. In 1993, a land swap between the Air Force and the state of South Carolina expanded Poinsett ECR from its then 8,500 acres to its current 12,500 acres.<sup>114</sup>

Recent efforts to preserve the current and future missions at Shaw AFB and Poinsett ECR through land acquisition include creative methods involving multiple stakeholders, such as the Readiness and Environmental Protection Integration (REPI) Program and the purchasing of agricultural or conservation easements on properties as opposed to fee simple purchase. The sections below outline some of the actions taken by the DOD, local governments, and other stakeholders to help preserve the Shaw AFB and Poinsett ECR missions.

## 2. Midlands Area Joint Installation Consortium

The Midlands Area Joint Installation Consortium (MAJIC) was formed in 2007 in response to the need to protect the missions of the five military installations in central South Carolina:

- Shaw AFB
- Poinsett ECR
- Fort Jackson
- McEntire Joint National Training Center
- McCrady Training Center

Fort Jackson, McCrady Training Center, and McEntire Joint National Training Center are located in Richland County, west of Sumter County, Shaw AFB, and Poinsett ECR. All five installations, and all branches of the DOD, utilize the approximately 670-square-mile area between the Installations for training. MAJIC combines the efforts of all five installations and the surrounding communities to protect this area from incompatible urban growth.

MAJIC, along with many central South Carolina governments and organizations, has coordinated numerous REPI projects in western Sumter County and eastern Richland County areas. As of September 2013, the DOD, local governments, and conservation organizations such as TCF had combined to preserve 12,560 acres through 26 separate real estate transactions using the REPI Program.<sup>115</sup>

## 3. Local Government

The communities surrounding Shaw AFB and Poinsett ECR have long shown support of the Installations' missions and have taken proactive steps to protect the viability of the installation and its economic contribution to the region.

Figure 2-24: Open and Conserved Space in Sumter County

Name	Acres
Prime Farmland	110,000
Natural Recreation Areas	31,486
Manchester State Forest	28,675
Poinsett State Park	1,010
Woods Bay State Park	1,590
Local Parks	211
Military Installations	15,867
Shaw AFB	3,367
Poinsett ECR	12,500
Conservation Easements	25,933
Total	183,286

Source: Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*, December 2009.

In 2014, the City of Sumter, in partnership with TCF purchased 694 acres of farmland adjacent to the east of Shaw AFB. The property was purchased in part through funds obtained from the REPI Program in an effort to both provide a buffer for Shaw AFB and provide potential recreation area for the city.<sup>116</sup> The REPI Program is detailed in Chapter 4 of the JLUS report and recommendations related to the ongoing REPI effort are included in Chapter 5. In addition to REPI funding, the property was purchased with funds from a local sales tax designed to pay for special capital improvements. The Sumter County Capital Projects Sales Tax referendum of 2008, better known as the Penny for Progress initiative, is a referendum that authorizes Sumter County Council to levy a temporary sales tax to fund 16 total capital projects.<sup>117</sup>

#### 4. Conservation Organizations

According to the National Conservation Easement Database (NCED) and data from The Conservation Fund (TCF), there are at least 87 conservation easements in Sumter County covering approximately 25,933 acres of land. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) holds many of these easements (42 of 87), totaling 6,839 acres. The majority of NRCS easements (38 of the 42) were acquired under the former Wetlands Restoration Program (WRP).<sup>118</sup> The goal of the WRP was to protect, restore, and enhance critical wetlands.<sup>119</sup> Many of the WRP easements are located along the banks of the Wateree River, the Pocotaligo River, the Black River, and Timber Creek, including two large easements of 893 and 2,178 acres along the Wateree River.<sup>120</sup> The Wetland Reserve Enhancement Partnership (WREP) program has since replaced the WRP at the USDA, and is discussed further in Chapter 4 of the JLUS report.

As of May 2016, TCF held a total of 36 conservation easements within Sumter County. TCF-held easements are concentrated along the Wateree River and around Shaw AFB in the western portion of Sumter County and within the areas identified by MAJIC as critical to mission operations of the five local military installations.<sup>121</sup>

#### 5. Air Force Community Partnership Program

The Air Force Community Partnership (AFCP) Program is a framework and process through which Air Force installations and local communities work together to leverage resources and capabilities to achieve mutual value and benefit. This is accomplished through public-public and public-private (P4) partnerships that are designed to identify numerous benefits for the installation and the community, including reduced operating and service costs, reduced risks, and enhanced mission efficiency and effectiveness.<sup>122</sup>

Shaw AFB and the local communities in Sumter County have worked together in many ways in the past to help improve mission resiliency and quality of life. The Shaw – Sumter AFCP Program, which kicked off in November 2014, is an extension and continuation of that cooperation. As of June 2016, agreements for nine partnerships had been signed, including partnerships that serve the following purposes:

- provide for joint fire training and use of manpower and equipment during local and county emergencies,
- provide a law enforcement and antiterrorism liaison between the base and the community,
- promote shared use of firing ranges and provide for joint training opportunities,
- formalize support for city and base tours for new Airmen,
- provide shared city and base event postings,
- formalize an adopt-a-school program to provide mentoring for the community youths by base personnel,
- improve Shaw AFB's 911 response times,
- provide emergency counseling, training for Airmen, and relationship-building conferences, and

- provide easy access to Shaw's Carolina Lakes Golf Course and Sumter County's Crystal Lakes Golf Course.<sup>123</sup>

Personnel from Shaw AFB and members of the Sumter community continue to meet regularly to identify and pursue new partnerships and to continue working initiatives that help both the base and the community. Ongoing partnerships include those designed to better match local higher education resources with the needs of active duty members and their families, to identify potential internships at Shaw AFB, and to share resources for medical training and education.<sup>124</sup>

<sup>1</sup>Shaw Air Force Base, *Air Installation Compatible Use Zone Update: Shaw Air Force Base, South Carolina*, January 2013.

<sup>2</sup>Sumter City-County Planning Commission, *Poinsett Electronic Combat Range Joint Compatibility Land Use Study*, November 7, 2002.

<sup>3</sup>"Heritage & History," *City of Sumter, SC*, accessed February 11, 2016, <http://www.sumtersc.gov/heritage-history.aspx>.

<sup>4</sup>"Facts and Statistics," *City of Sumter, SC*, accessed February 12, 2016, <http://www.sumtersc.gov/facts-and-statistics.aspx>.

<sup>5</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*, December 2009, <http://sumtercountysc.org/?q=general-information/planning/sumter-2030-comprehensive-plan>.

<sup>6</sup>"About Us," *United States Air Force*, accessed February 12, 2016, <http://www.af.mil/AboutUs.aspx>.

<sup>7</sup>Shaw Air Force Base, *Air Installation Compatible Use Zone Update: Shaw Air Force Base, South Carolina*.

<sup>8</sup>*Air Force Doctrine, Annex 3-01 Counterair Ops* (Curtis E. Lemay Center for Doctrine Development and Education, February 1, 2016), <https://doctrine.af.mil/download.jsp?filename=3-01-ANNEX-COUNTERAIR.pdf>; *Air Force Doctrine, Annex 3-03 Counterland Ops* (Curtis E. Lemay Center for Doctrine Development and Education, April 16, 2014), <https://doctrine.af.mil/download.jsp?filename=3-03-Annex-COUNTERLAND.pdf>.

<sup>9</sup>Jonathan Bass, "20th FW Awarded ACC Meritorious Unit Award," *Shaw Air Force Base*, August 28, 2013, <http://www.shaw.af.mil/news/story.asp?id=123361314>.

<sup>10</sup>"Ninth Air Force," *Shaw Air Force Base*, accessed February 15, 2016, <http://www.shaw.af.mil/units/9thairforce.asp>.

<sup>11</sup>Shaw Air Force Base, *Air Installation Compatible Use Zone Update: Shaw Air Force Base, South Carolina*.

<sup>12</sup>20th Fighter Wing, Public Affairs Office, *Shaw F-16 Mission*, 2015, [https://www.youtube.com/watch?v=0yDS\\_D\\_RmE](https://www.youtube.com/watch?v=0yDS_D_RmE).

<sup>13</sup>"Air Combat Command: Fact Sheet," *Air Combat Command*, September 23, 2015, <http://www.af.mil/AboutUs/FactSheets/Display/tabid/224/Article/104461/air-combat-command.aspx>.

<sup>14</sup>"AFCENT Mission," *U.S. Air Forces Central Command*, accessed February 15, 2016, <http://www.afcent.af.mil/AboutUs.aspx>.

<sup>15</sup>"About U.S. Army Central," *U.S. Army Central*, accessed March 15, 2016, <http://www.usarcent.army.mil/About-USARCENT>.

<sup>16</sup>Susanne Schafer, "3rd Army Begins Move to SC Shaw Air Base from Ga.," *The Associated Press*, March 4, 2011, <http://www.postandcourier.com/article/20110304/PC16/303049929>.

<sup>17</sup>Shaw Air Force Base, *Economic Impact Statement: Fiscal Year 2015*, February 2016.

<sup>18</sup>Department of the Air Force, *United States Air Force F-35A Operational Basing Environmental Impact Statement*, September 2013.

<sup>19</sup>"20th Operations Group - Fact Sheet," *Shaw Air Force Base*, November 29, 2010, <http://www.shaw.af.mil/library/factsheets/factsheet.asp?id=3467>.

<sup>20</sup>"20th Operations Support Squadron - Fact Sheet," *Shaw Air Force Base*, January 30, 2006, <http://www.shaw.af.mil/library/factsheets/factsheet.asp?id=3471>.

<sup>21</sup>Shaw Air Force Base, *Air Installation Compatible Use Zone Update: Shaw Air Force Base, South Carolina*.

<sup>22</sup>"Airspace, Special Use Airspace, and Temporary Flight Restrictions," *Federal Aviation Administration*, accessed February 16, 2016, [https://www.faa.gov/gslac/ALC/course\\_content.aspx?clID=42&slID=243&preview=true](https://www.faa.gov/gslac/ALC/course_content.aspx?clID=42&slID=243&preview=true).

<sup>23</sup>Fred Engle, "Successful Inter-Agency Consultation: The BLM & DoD Wind Energy Protocol," (PowerPoint), accessed February 16, 2016, [http://www.blm.gov/style/medialib/blm/wo/MINERALS\\_\\_REALTY\\_\\_AND\\_RESOURCE\\_PROTECTION\\_/energy/presentations.Par.43286.File.dat/15-Engle.pdf](http://www.blm.gov/style/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/presentations.Par.43286.File.dat/15-Engle.pdf).

<sup>24</sup>Ibid.

- <sup>25</sup>National Geospatial Intelligence Agency, *Flight Information Publication AP/1B*, March 5, 2015.
- <sup>26</sup>Shaw Air Force Base, *Air Installation Compatible Use Zone Update: Shaw Air Force Base, South Carolina*.
- <sup>27</sup>Shaw Air Force Base, *Economic Impact Statement: Fiscal Year 2015*.
- <sup>28</sup>Department of the Air Force, *United States Air Force F-35A Operational Basing Environmental Impact Statement*, 35.
- <sup>29</sup>"Locations Flying the F-35," *Lockheed Martin: F-35 Lightning II*, accessed February 17, 2016, <https://www.f35.com/about/who-is-flying>.
- <sup>30</sup>"United States Air Force Weapons School - Fact Sheet," *Nellis Air Force Base*, August 12, 2015, <http://www.nellis.af.mil/library/factsheets/factsheet.asp?id=19837>.
- <sup>31</sup>Department of the Air Force, *United States Air Force F-35A Operational Basing Environmental Impact Statement*, 35.
- <sup>32</sup>*Ibid.*
- <sup>33</sup>Eric Petosky, "MUTES Trains Deployed Electronic Warfare Officers," *U.S. Air Force*, October 11, 2006, <http://www.af.mil/News/ArticleDisplay/tabid/223/Article/129466/mutes-trains-deployed-electronic-warfare-officers.aspx>.
- <sup>34</sup>National Geospatial-Intelligence Agency, *Area Planning – Special Use Airspace: North and South America (AP/1A)*, January 2015.
- <sup>35</sup>JLUS Interviews with Shaw AFB personnel, October 2015.
- <sup>36</sup>*Ibid.*
- <sup>37</sup>20th Civil Engineer Squadron, *Shaw Air Force Base Plan 32-7064 Integrated Natural Resources Management*, September 18, 2015.
- <sup>38</sup>*Ibid.*
- <sup>39</sup>*Ibid.*
- <sup>40</sup>Shaw Air Force Base, "Shaw AFB Plan 32-1067: Stormwater Pollution Prevention Plan," November 1, 2015.
- <sup>41</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.
- <sup>42</sup>JLUS Interviews with Shaw AFB personnel.
- <sup>43</sup>Department of Defense, Department of Defense Directive (DODD) 4715.21, *Climate Change Adaptation and Resilience*, January 14, 2016.
- <sup>44</sup>"Heritage & History."
- <sup>45</sup>Shaw Air Force Base, *Shaw AFB Integrated Cultural Resources Management Plan*, July 2015.
- <sup>46</sup>*Ibid.*
- <sup>47</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.
- <sup>48</sup>U.S. Census Bureau, *2000 Census Summary File 1*, n.d., accessed December 12, 2014; U.S. Census Bureau, *2010 Census Summary File 1*, n.d., accessed April 4, 2016; U. S. Census Bureau, *2009–2014 American Community Survey*, 2015.
- <sup>49</sup>Charles Louis Kincannon, "From the Office of the Director, U.S. Census Bureau to Mayor Joseph T. McElveen," October 25, 2005.
- <sup>50</sup>United States Department of Agriculture, *2012 Census of Agriculture: South Carolina State and County Data*, May 2014.
- <sup>51</sup>U.S. Census Bureau, *2010 Census Summary File 1*.
- <sup>52</sup>U.S. Census Bureau, *2000 Census Summary File 1*; U.S. Census Bureau, *2010 Census Summary File 1*; U. S. Census Bureau, *2009–2014 American Community Survey*.
- <sup>53</sup>*Ibid.*
- <sup>54</sup>S.C. Department of Employment & Workforce, *Community Profile: Sumter, SC Metropolitan Statistical Area*, January 26, 2016, <http://lmi.dew.sc.gov/lmi%20site/Documents/CommunityProfiles/21044940.pdf>.
- <sup>55</sup>*Ibid.*; U. S. Census Bureau, *2009–2014 American Community Survey*.
- <sup>56</sup>U. S. Census Bureau, *2009–2014 American Community Survey*; U. S. Census Bureau, *2006–2010 American Community Survey*, 2011; U. S. Census Bureau, *2000 Census Summary File 3*, n.d.
- <sup>57</sup>"South Carolina Home Prices and SC Heat Map," *Trulia.com*, February 17, 2016, [http://www.trulia.com/home\\_prices/South\\_Carolina/](http://www.trulia.com/home_prices/South_Carolina/).
- <sup>58</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*, 20.
- <sup>59</sup>U.S. Census Bureau, *2000 Census Summary File 1*; U. S. Census Bureau, *2009–2014 American Community Survey*.



<sup>60</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.

<sup>61</sup>"District Profile," Sumter School District, June 17, 2013, [http://www.sumterschools.net/site\\_res\\_view\\_template.aspx?id=2b1cff6b-6c87-4a99-8caa-3a5aa3160e50](http://www.sumterschools.net/site_res_view_template.aspx?id=2b1cff6b-6c87-4a99-8caa-3a5aa3160e50).

<sup>62</sup>Shaw Air Force Base, Economic Impact Statement: Fiscal Year 2015.

<sup>63</sup>University of South Carolina, *The Economic Impact of South Carolina's Military Community: A Statewide and Regional Analysis*, January 2015.

<sup>64</sup>South Carolina Revenue and Fiscal Affairs Office, "South Carolina Statistical Abstract," accessed April 4, 2016, <http://abstract.sc.gov/index.html>.

<sup>65</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.

<sup>66</sup>"Committees," Greater Sumter Chamber of Commerce, 2016, <http://www.sumterchamber.com/committees>.

<sup>67</sup>Santee-Lynches Regional Council of Governments, Long Range Rural Transportation Plan 2040, June 16, 2014.

<sup>68</sup>SUATS Policy Committee, *Sumter Urban Area Transportation Study: Unified Planning Work Program*, July 1, 2014.

<sup>69</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.

<sup>70</sup>*Ibid.*

<sup>71</sup>U.S. Census Bureau, 2000 Census Summary File 1; *ibid.*; U. S. Census Bureau, *2009–2014 American Community Survey*.

<sup>72</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.

<sup>73</sup>*Ibid.*

<sup>74</sup>Department of the Air Force, *Air Force Policy Directive (AFPD) 90-20, Encroachment Management Program*, April 12, 2012.

<sup>75</sup>Department of the Air Force, *Air Force Instruction (AFI) 90-2001, Encroachment Management*, September 3, 2014.

<sup>76</sup>Sumter County, *Sumter County Zoning and Development District Regulations: Section R. - Airfield Compatibility Districts (ACD)*, n.d., [https://www.municode.com/library/sc/sumter\\_county/codes/code\\_of\\_ordinances?nodeId=CD\\_ORD\\_APXADESTZO\\_ARTTHREEZODEDIRE\\_SRAICODIAC](https://www.municode.com/library/sc/sumter_county/codes/code_of_ordinances?nodeId=CD_ORD_APXADESTZO_ARTTHREEZODEDIRE_SRAICODIAC).

<sup>77</sup>Sumter County, *Sumter County Zoning and Development District Regulations: Section S. - Range Compatibility Districts (RCD)*, n.d., [https://www.municode.com/library/sc/sumter\\_county/codes/code\\_of\\_ordinances?nodeId=CD\\_ORD\\_APXADESTZO\\_ARTTHREEZODEDIRE\\_SRAICODIAC](https://www.municode.com/library/sc/sumter_county/codes/code_of_ordinances?nodeId=CD_ORD_APXADESTZO_ARTTHREEZODEDIRE_SRAICODIAC).

<sup>78</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.

<sup>79</sup>*Ibid.*

<sup>80</sup>*Ibid.*

<sup>81</sup>*Ibid.*

<sup>82</sup>20 FW/PA, 2015 Shaw Air Force Base Noise Complaint Log, January 2016.

<sup>83</sup>Shaw Air Force Base, Air Installation Compatible Use Zone Update: Shaw Air Force Base, South Carolina.

<sup>84</sup>"Public Operations (Governmental)," *Federal Aviation Administration*, September 11, 2015, [https://www.faa.gov/uas/public\\_operations/](https://www.faa.gov/uas/public_operations/).

<sup>85</sup>Federal Aviation Administration, "Summary of Small Unmanned Aircraft Rule (Part 107)," June 21, 2016.

<sup>86</sup>"Establishment of Class D Airspace Shaw AFB, SC," *Federal Register*, January 22, 2003, <https://www.federalregister.gov/articles/2003/01/22/03-1315/establishment-of-class-d-airspace-shaw-afb-sc>.

<sup>87</sup>Les Dorr and Alison Duquette, "Press Release - DOT and FAA Finalize Rules for Small Unmanned Aircraft Systems," *Federal Aviation Administration*, June 21, 2016, [https://www.faa.gov/news/press\\_releases/news\\_story.cfm?newsId=20515](https://www.faa.gov/news/press_releases/news_story.cfm?newsId=20515).

<sup>88</sup>U.S. House, *FAA Modernization and Reform Act (FMRA)*, 49, vol. Subtitle B-Unmanned Aircraft Systems, 2012, sec. 333, [https://www.faa.gov/uas/media/Sec\\_331\\_336\\_UAS.pdf](https://www.faa.gov/uas/media/Sec_331_336_UAS.pdf).

<sup>89</sup>"Model Aircraft Operations," *Federal Aviation Administration*, February 10, 2016, [https://www.faa.gov/uas/model\\_aircraft/](https://www.faa.gov/uas/model_aircraft/).

<sup>90</sup>JLUS Interviews with Shaw AFB personnel; JLUS Interviews with community stakeholders, October 2015.

<sup>91</sup>U.S. Department of Transportation, *Unmanned Aircraft System (UAS) Service Demand 2015-2035: Literature Review and Projection of Future Usage*, September 2013, <https://fas.org/irp/program/collect/service.pdf>.

<sup>92</sup>20th Civil Engineer Squadron, *Shaw Air Force Base Plan 32-7064 Integrated Natural Resources Management*.

- <sup>93</sup>Ibid.
- <sup>94</sup>Ibid.
- <sup>95</sup>JLUS Interviews with community stakeholders.
- <sup>96</sup>Solar Energy Industries Association, "Solar Spotlight: South Carolina," March 4, 2016, [http://www.seia.org/sites/default/files/SC%20State%20Fact%20Sheet\\_3.4.2016.pdf](http://www.seia.org/sites/default/files/SC%20State%20Fact%20Sheet_3.4.2016.pdf).
- <sup>97</sup>"'No-Regrets' Clean Power Plan for South Carolina," *South Carolina Coastal Conservation League*, accessed April 5, 2016, <http://coastalconservationsleague.org/projects/epa-clean-power-plan/>.
- <sup>98</sup>"South Carolina Solar Policy Information," SolarPowerRocks.com, n.d., accessed April 5, 2016.
- <sup>99</sup>Roger Colton, "Assessing Solar PV Glare In Dense Residential Neighborhoods," *Solar Industry*, January 2015, [http://solarindustrymag.com/online/issues/SI1501/FEAT\\_02\\_Assessing-Solar-PV-Glare-In-Dense-Residential-Neighborhoods.html](http://solarindustrymag.com/online/issues/SI1501/FEAT_02_Assessing-Solar-PV-Glare-In-Dense-Residential-Neighborhoods.html).
- <sup>100</sup>"Solar Glare and Flux Mapping Tools," *Sandia National Laboratories*, accessed April 5, 2016, <https://share.sandia.gov/phlux>.
- <sup>101</sup>"South Carolina Wind Energy," American Wind Energy Association, accessed May 10, 2016, <http://awea.files.cms-plus.com/FileDownloads/pdfs/South%20Carolina.pdf>.
- <sup>102</sup>David Slade, "Feds a Step Closer toward Wind Farms off South Carolina Coast," *The Post and Courier*, November 24, 2015, <http://www.postandcourier.com/article/20151124/PC16/151129644>.
- <sup>103</sup>"WINDEXchange: South Carolina Offshore 90-Meter Wind Map and Wind Resource Potential," *U.S. Department of Energy*, May 1, 2014, [http://apps2.eere.energy.gov/wind/windexchange/windmaps/offshore\\_states.asp?stateab=sc](http://apps2.eere.energy.gov/wind/windexchange/windmaps/offshore_states.asp?stateab=sc).
- <sup>104</sup>Bo Petersen, "N.J. Company Seeks Leases for Wind Farms off Charleston," *The Post and Courier*, May 8, 2016, <http://www.postandcourier.com/20160508/160509522/nj-company-seeks-leases-for-wind-farms-off-charleston>.
- <sup>105</sup>Mark McLaughlin, "Wind Farm Effects on Air Traffic Control and Compatible Siting Collaboration," (32 PowerPoint Slides, 2011), <http://growinggreencommunities.com.ismmedia.com/ISM3/std-content/repos/Top/Text%20Blocks/Speakers/Presentations/AP/AP%20McLaughlin.pdf>.
- <sup>106</sup>Department of the Air Force, *Air Force Instruction (AFI) 90-2001, Encroachment Management*.
- <sup>107</sup>JLUS Interviews with Shaw AFB personnel; JLUS Interviews with community stakeholders.
- <sup>108</sup>JLUS Interviews with Shaw AFB personnel.
- <sup>109</sup>McLaughlin, "Wind Farm Effects on Air Traffic Control and Compatible Siting Collaboration."
- <sup>110</sup>Petersen, "N.J. Company Seeks Leases for Wind Farms off Charleston."
- <sup>111</sup>"Shaw AFB," *City of Sumter, SC*, accessed February 26, 2016, <http://www.sumtersc.gov/shaw-afb.aspx>.
- <sup>112</sup>Sumter City-County Planning Commission, *Sumter 2030 Comprehensive Plan*.
- <sup>113</sup>Shaw Air Force Base, Shaw AFB Integrated Cultural Resources Management Plan.
- <sup>114</sup>"Poinsett Land Swap OK'd," *The Item*, May 21, 1993, <https://news.google.com/newspapers?nid=1980&dat=19930521&id=M5QiAAAAIBAJ&sjid=s64FAAAAIIBAJ&pg=2840,6056247&hl=en>.
- <sup>115</sup>Department of Defense, "Readiness and Environmental Protection Integration (REPI) Program Fact Sheet: Midlands Area Joint Installation Consortium," September 30, 2013, <http://www.repi.mil/Portals/44/Documents/2014%20Buffer%20Fact%20Sheets/MAJIC.pdf>.
- <sup>116</sup>"City of Sumter Completes Purchase of 694 Acres Near Shaw Air Force Base in South Carolina," *The Conservation Fund*, May 20, 2014, <http://www.conservationfund.org/news/press-releases/641-city-of-sumter-completes-purchase-of-694-acres-near-shaw-air-force-base-in-south-carolina>.
- <sup>117</sup>"About Penny for Progress," *Sumter County, South Carolina*, accessed February 28, 2016, <http://www.sumtercountysc.org/?q=penny-progress/about-penny-progress>.
- <sup>118</sup>U.S. Endowment for Forestry and Communities, "National Conservation Easement Database," October 2014, <http://nced.conservationregistry.org/>.
- <sup>119</sup>"Easements," *Natural Resources Conservation Service*, accessed February 26, 2016, <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/>.
- <sup>120</sup>U.S. Endowment for Forestry and Communities, "National Conservation Easement Database."
- <sup>121</sup>The Conservation Fund, "Conservation Easements," Shapefile, (2016).

<sup>122</sup>U.S. Air Force, "Public Affairs Guidance: Air Force Community Partnership Program," April 2016.

<sup>123</sup>SAF/IEI Support Lead Facilitator, *Shaw AFB - Sumter Community Partnership Meeting: Quarterly Update Meeting Minutes*, January 28, 2016.

<sup>124</sup>*Ibid.*



THIS PAGE INTENTIONALLY LEFT BLANK

## CHAPTER 3:

# Land Use Compatibility Analysis

### I. INTRODUCTION

The Land Use Compatibility Analysis is intended to provide insight into the current and future state of compatibility between operations occurring at Shaw Air Force Base and Poinsett Electronic Combat Range and the neighboring civilian communities that host the Installations. This analysis is focused on the most prominent impacts created by the ongoing training missions at each installation, most notably noise from aircraft operations and aircraft accident potential in the vicinity of Shaw Air Force Base's runways. In order to gauge the degree of compatibility that exists, the analysis provides insight into current land use and development patterns, the current regulatory environment, including compatible use regulations, and the plans of the local governments for future growth and development. These are analyzed in the context of both the current operational environment and the potential future operational environment based upon the most reliable information that is available. Taken as a whole, this analysis will help to inform the recommendations set forth in Chapter 5 of the Joint Land Use Study and provide background information to support the decisions of local governments as they seek to promote ongoing compatible growth and land use in the region.

In order to narrow the geographic scope of the compatibility analysis, the JLUS Policy and Technical committees established a defined study area within which the analysis is focused. The Study Area (see Figure 3-1 on next page) is based upon the known military operational impacts that the participating communities have identified through the 2013 Air Installation Compatible Use Zone Study (AICUZ), previous AICUZ studies, Joint Land Use Studies, as well as local knowledge of land use, growth patterns, and military operational impacts, both current and future. The impacts and compatibility issues associated with Shaw AFB are described first in this chapter with those related to Poinsett ECR taken up second.

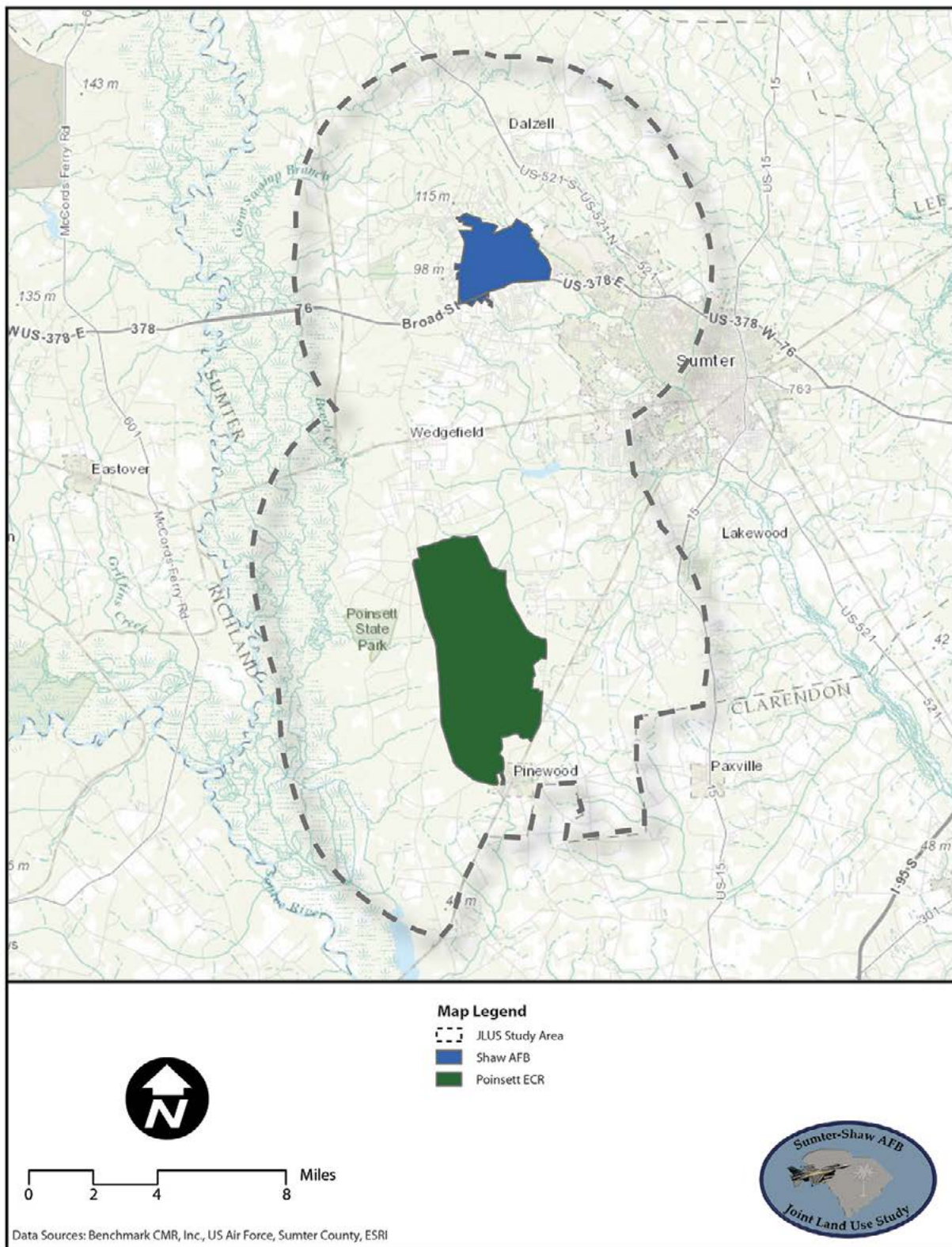
### II. SHAW AFB AIRCRAFT OPERATIONAL IMPACTS (2013 AICUZ)

The primary compatibility concerns related to land use and development activity in the communities around Shaw AFB are those associated with aircraft operational noise and aircraft accident potential as identified in the most recent Air Installation Compatible Use Zone (AICUZ) study conducted by the US Air Force for Shaw AFB in 2013.

#### A. Aircraft Operational Noise

The 2013 AICUZ identifies areas on and around Shaw AFB that are subject to high noise potential. The contours, or gradient, associated with high noise potential correlates with noise levels generated by aircraft operations at Shaw. The noise contours established in the 2013 AICUZ (see Figure 3-4) are based on the average day-night noise level that is projected to be generated by aircraft operations at Shaw AFB. Since the contours are based on average sound levels (expressed as X dB DNL), individual exposure levels from a single aircraft operation may be higher or lower than the level indicated by the noise contour at any particular location. Individual instances of exposure will also vary based upon meteorological conditions, time of day, and other factors that influence noise perception.

Figure 3-1: JLUS Study Area





For the purposes of this study, the area contained within the 65+ dB DNL noise contour (see Figure 3-4) was chosen as the basis of analysis for aircraft noise impacts. A statistical breakdown of the area covered by the noise contours is shown in Figure 3-2 below.

Figure 3-2: 2013 AICUZ Noise Zones (65+ dB DNL)

Noise Zone (dB DNL)	On-Base Acres	Off-Base Acres	Combined Acres	% Off-Base
65-69	601	3,720	4,321	86.1%
70-74	605	1,260	1,865	67.6%
75-79	631	203	834	24.4%
80+	1,149	15	1,164	1.3%
Total	2,985	5,198	8,183	63.5%

As the data contained in the table above demonstrate, the proportional share of the “off-base” extent of each of the noise zones is inversely correlated with the degree of impact, meaning that areas within the higher noise zones are more concentrated within Shaw AFB’s boundary than outside of it. While the majority of the area covered by the 65-69 and 70-75 dB DNL contours fall outside of the installation boundary, approximately 75 percent of the area of the 75-79 dB DNL contour and nearly 99 percent of the area of the 80+ dB DNL contour falls within the boundary of Shaw AFB.

## B. Aircraft Accident Potential

The areas identified in the 2013 AICUZ as being located within aircraft accident potential zones (APZ) are shown in Figure 3-5. The APZs consist of a “Clear Zone”, within which the highest degree of accident potential exists and two additional zones, known as APZ 1 and APZ 2, which indicate areas of decreasing, though still significant, risk for aircraft accident potential. The size and configuration of these zones, which are associated with all military airfields, is dictated by the classification of the runway(s) and the typical flight tracks and operational profile of aircraft operating from the airfield. Of note, the APZs for Shaw AFB’s runways overlap due to their close proximity to each other. Because of this, the analysis presented in the JLUS combines the overlapping APZs of equal “intensity” and where a more intensive APZ overlaps one of lesser intensity, the more restrictive APZ is considered present.

Although almost 80 percent of the area covered by the APZs falls outside of Shaw AFB’s boundary, nearly all of the acreage of the Clear Zone is on the base. Only a small portion of the area covered by APZ 1 is located on the base, while all of APZ 2 falls outside of the installation boundary. Statistics related to the on- and off-station area covered by the APZs is shown in Figure 3-3.

Figure 3-3: Aircraft Accident Potential Zones

Accident Potential Zone	On-Base Acres	Off-Base Acres	Combined Acres	% Off-Base
Clear Zone (CZ)	566	78	644	12.1%
APZ 1	18	900	918	98.0%
APZ 2	0	1,286	1,286	100.0%
Total	584	2,264	2,848	79.5%

## C. Combined Aircraft Operational Impacts

The combined extent of the area covered by aircraft noise contours and the accident potential zones is shown in Figure 3-6. As the map shows, there is a strong correlation between the higher noise levels and areas within APZs. Since many of the compatibility issues area similar between noise and accident potential, this coincidence serves to limit the amount of land area where a higher degree of regulation may be necessary to achieve compatibility.

Figure 3-4: 2013 Shaw AFB AICUZ Aircraft Noise Contours (DNL)

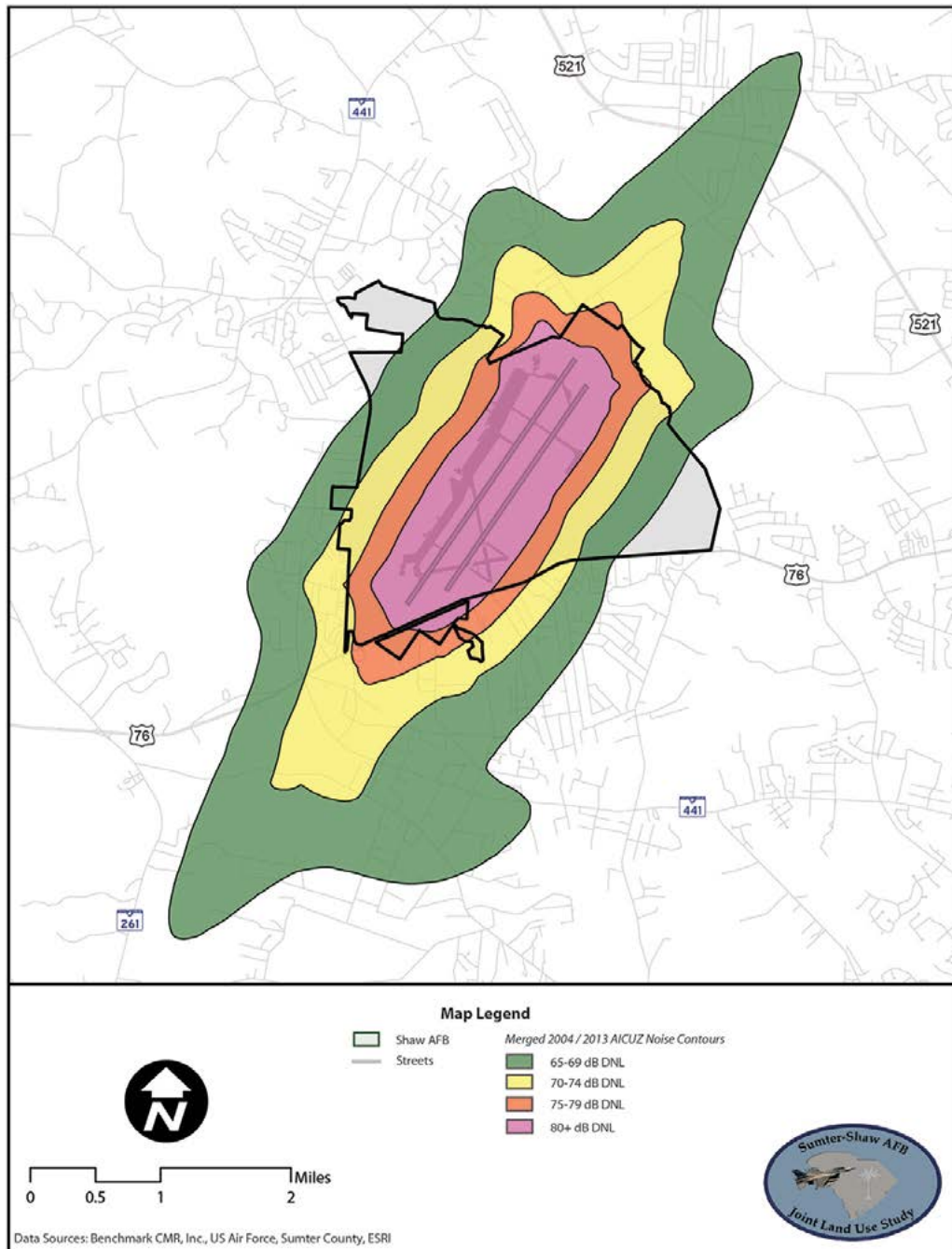


Figure 3-5: 2013 Shaw AFB AICUZ Accident Potential Zones (APZ)

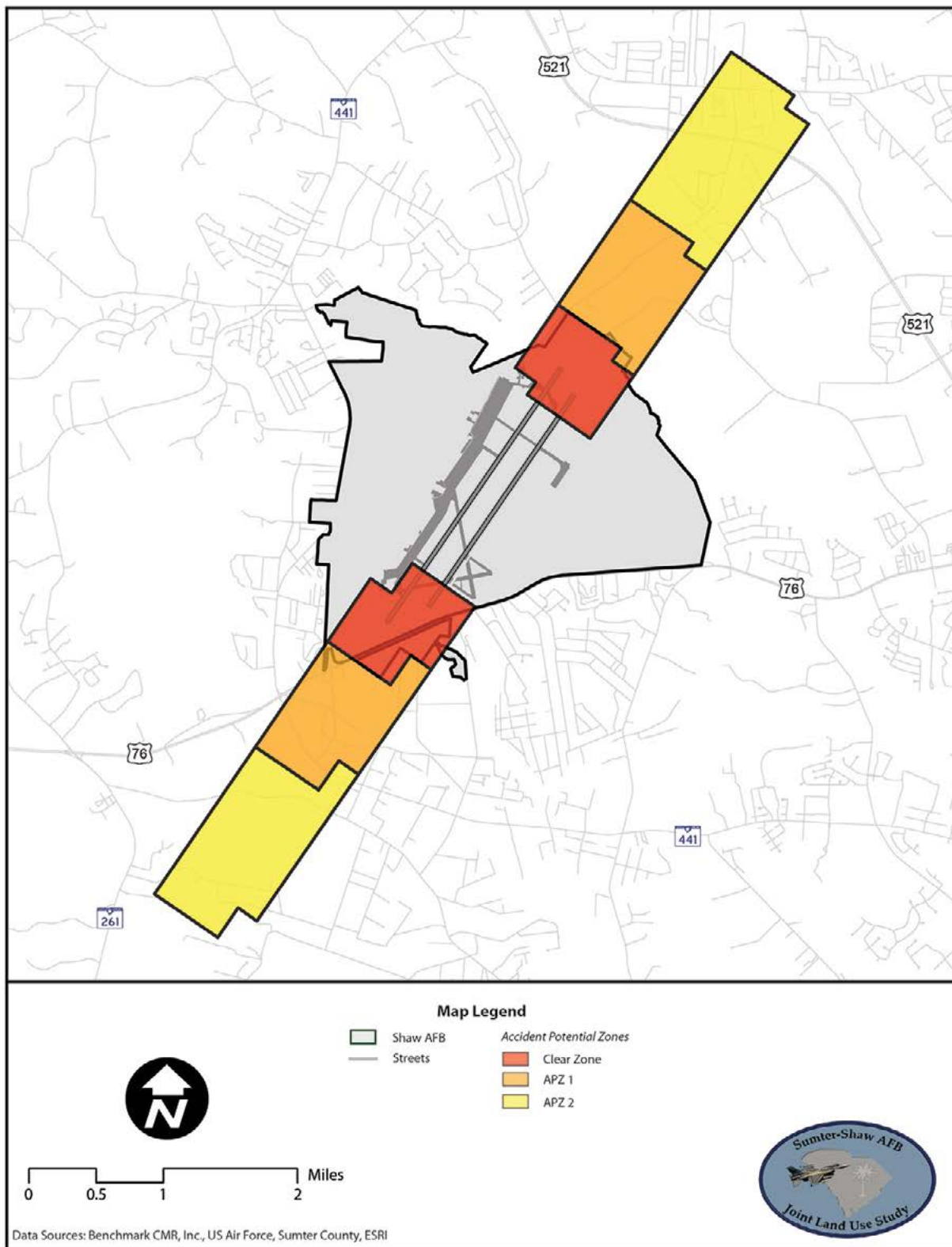
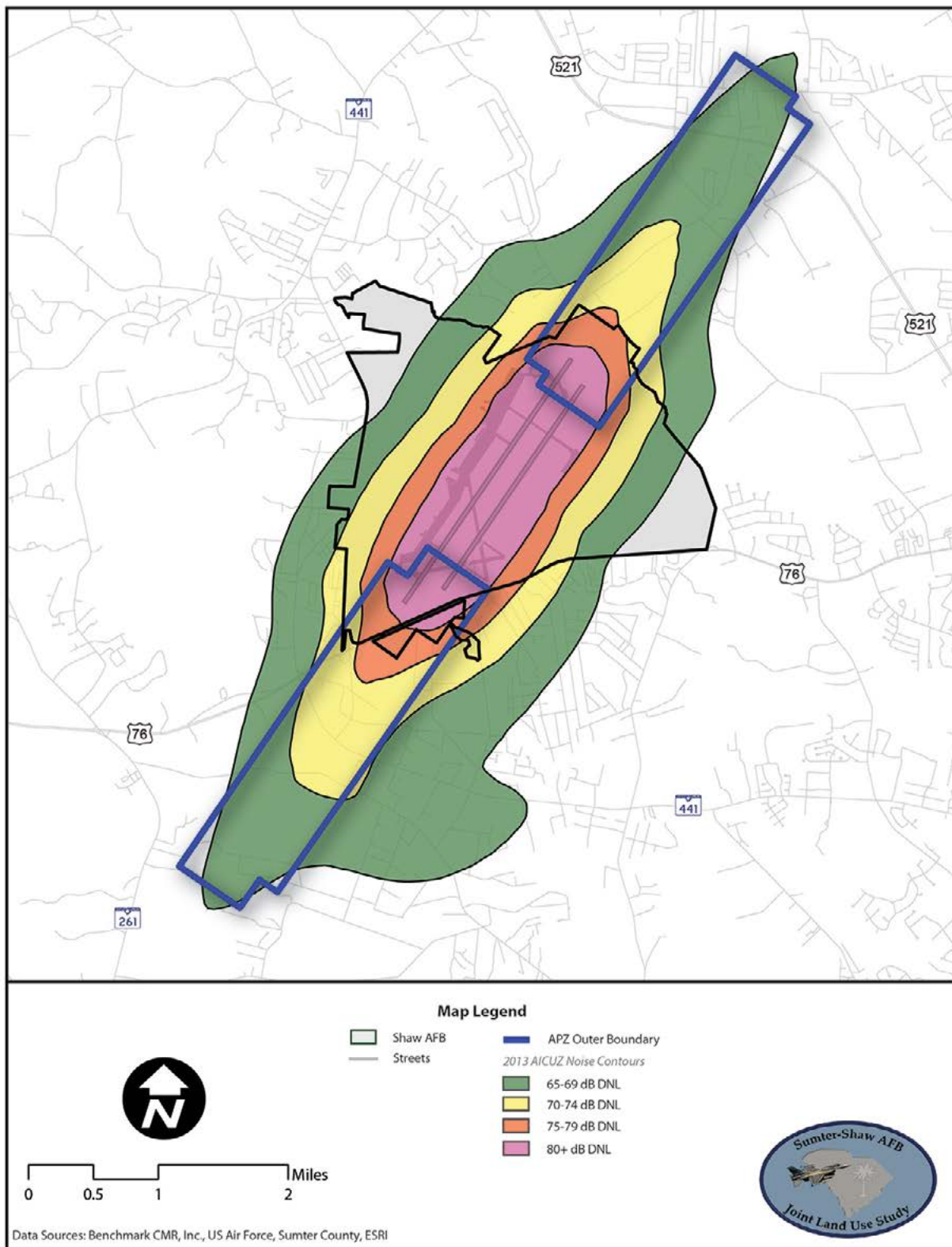


Figure 3-6: Combined 2013 Shaw AFB AICUZ Aircraft Operational Impacts



## D. Current Jurisdictional Distribution of Impacts (Off-Base)

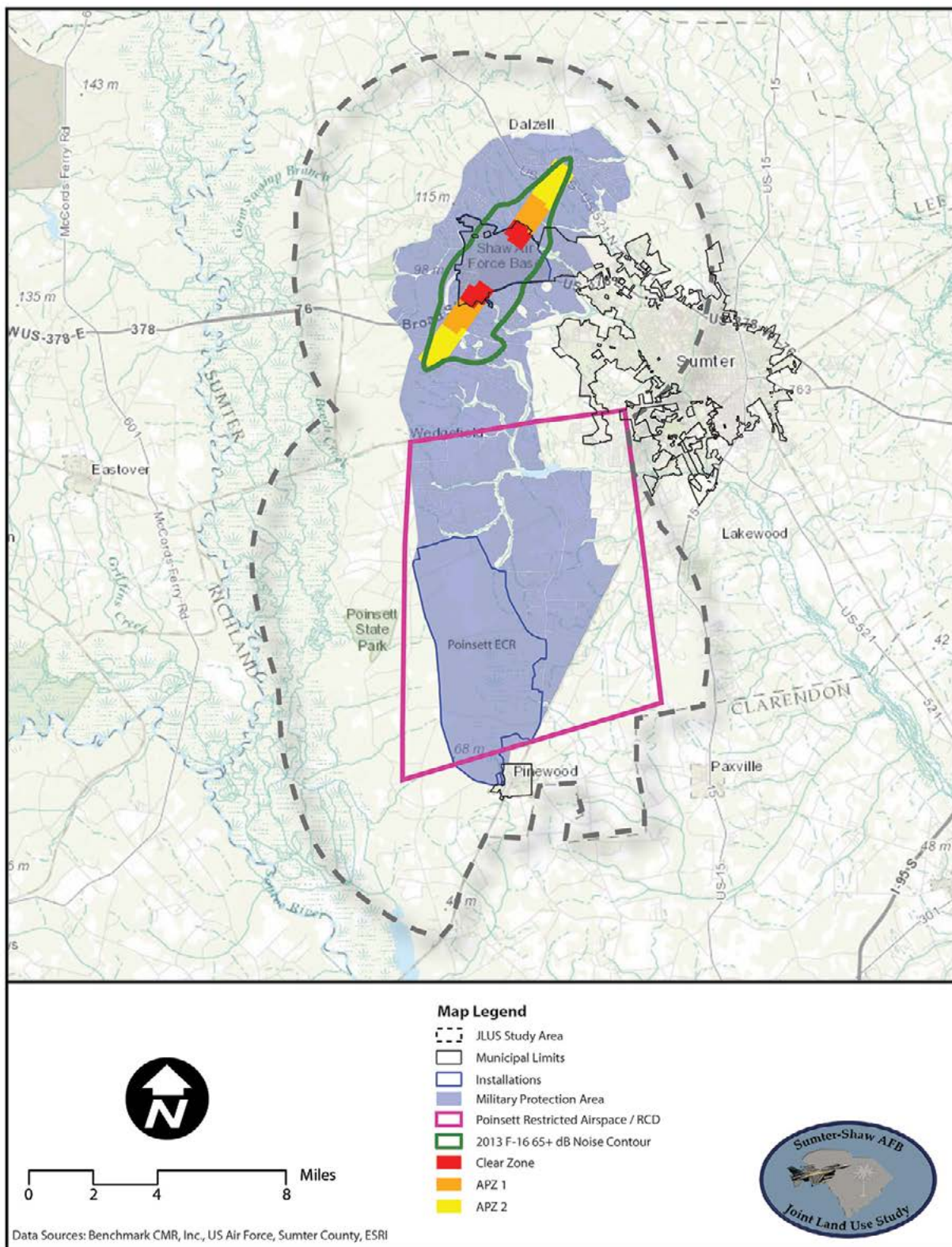
The data shown in Figure 3-7 provides a jurisdictional overview (county and municipal jurisdiction) of the noise and accident potential impacts associated with Shaw AFB based on the 2013 AICUZ. Figure 3-8 illustrates the relationship of the local jurisdictions to the restricted airspace associated with Shaw AFB and Poinsett ECR, which is discussed later in this chapter. As the map and table below reveal, the vast majority of the land area outside of the installation boundaries that fall within the noise zones, APZs, and under the restricted airspace lie within Sumter County's jurisdiction and not within a municipality.

Figure 3-7 Jurisdictional Distribution of Off-Base Impacts (2013 AICUZ)

Impact Type	City of Sumter (Acres)	Sumter County (Acres)	Total (Acres)
2013 AICUZ Noise Zones	183	5,015	5,198
Accidental Potential Zones	0	2,096	2,096
Restricted Airspace	298	3,242	3,540



Figure 3-8 Jurisdictional Mapping of Off-Base Impacts (2013 AICUZ)





### III. CURRENT BASIS OF LAND USE COMPATIBILITY REGULATION – SHAW AFB

#### A. Aircraft Operational Noise

Land use compatibility with military aircraft operations at Shaw AFB is promoted and protected by Sumter County and the City of Sumter through a regulatory environment (primarily zoning) based on the results of the 2004 AICUZ study for Shaw AFB. This study, the same basis for planning and zoning amendments in 2009, utilized noise contours that have changed, as noted in the preceding section based on the most recent (2013) AICUZ.

The spatial extent of the 2004 AICUZ noise contours is shown in Figure 3-10, while the table below (Figure 3-9) provides a statistical breakdown of the on- and off-base coverage of the 2004 AICUZ noise zones. Much like the 2013 AICUZ noise contours, the highest noise levels from the 2004 AICUZ are confined primarily to areas that fall within the installation boundary. A more detailed examination of the differences between the 2004 and 2013 AICUZ noise contours is provided in the following section.

Figure 3-9: 2004 AICUZ Noise Zone Summary

Noise Zone (dB DNL)	On-Base Acres	Off-Base Acres	Combined Acres	% Off-Base
65-69	486	3,244	3,730	87.0%
70-74	613	1,238	1,851	66.9%
75-79	659	226	885	25.5%
80+	1,185	31	1,216	2.5%
Total	2,943	4,739	7,682	61.7%

#### B. Aircraft Accident Potential

While the designated Accident Potential Zones associated with the runways at Shaw AFB have not changed, local regulations only incorporate the spatial extent of APZ 1 and APZ 2 into the regulatory framework. The absence of the Clear Zones from local compatibility regulations is reflected in the map shown in Figure 3-11. Recommendations related to the inclusion of the Clear Zones in the City and County's zoning codes are included in Chapter 5.

#### C. Compatible Use Regulations

The noise contours and APZs 1 and 2 from the 2004 AICUZ have been utilized by the city and county to promote compatible land use around Shaw AFB. The geographic extent of the compatible use regulations based on those impacts is shown in relation to the JLUS Study Area in Figure 3-8. The policies and regulations that apply within each of these districts and overlays are described in detail in Chapter 4.

Figure 3-10: 2004 AICUZ Aircraft Noise Contours

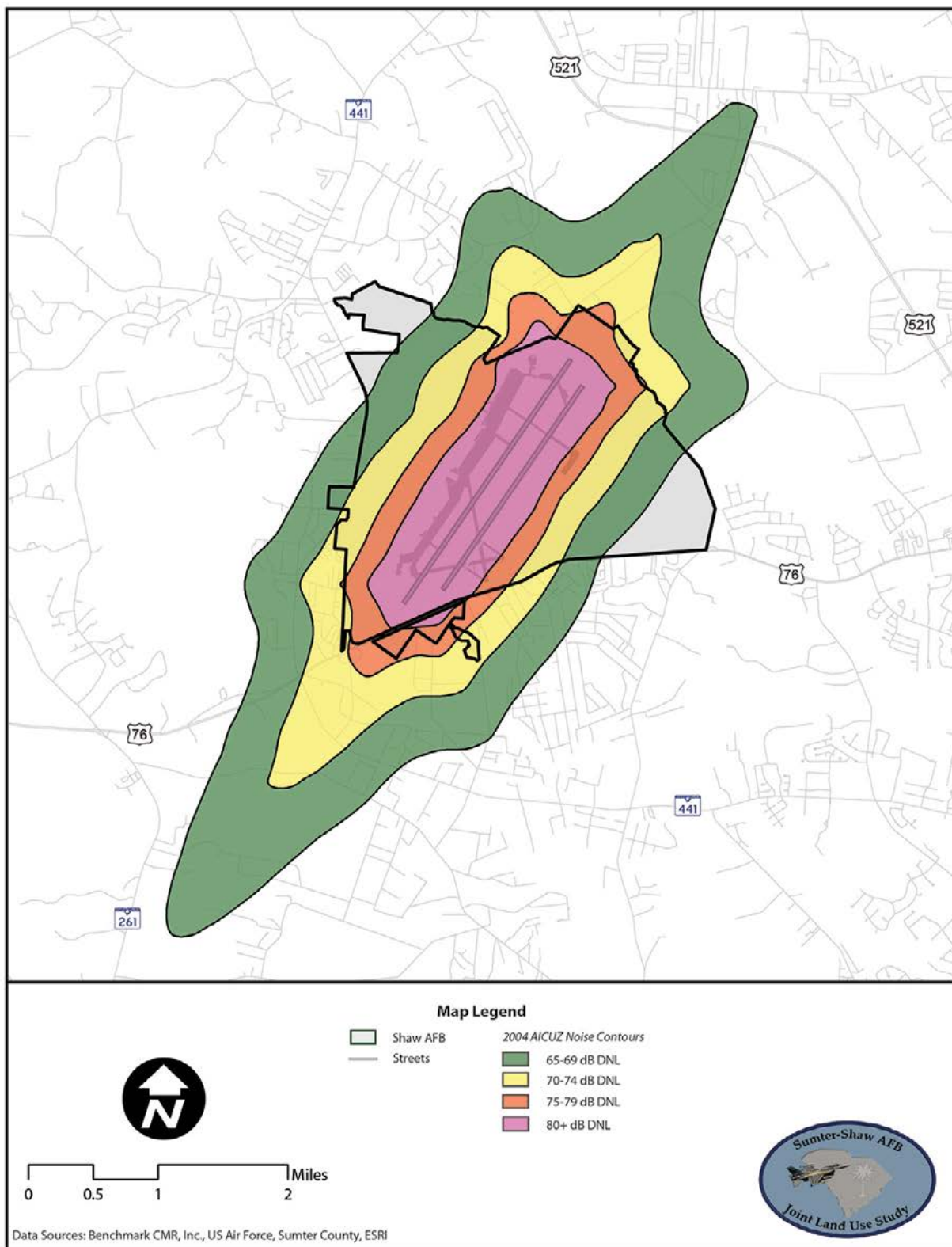
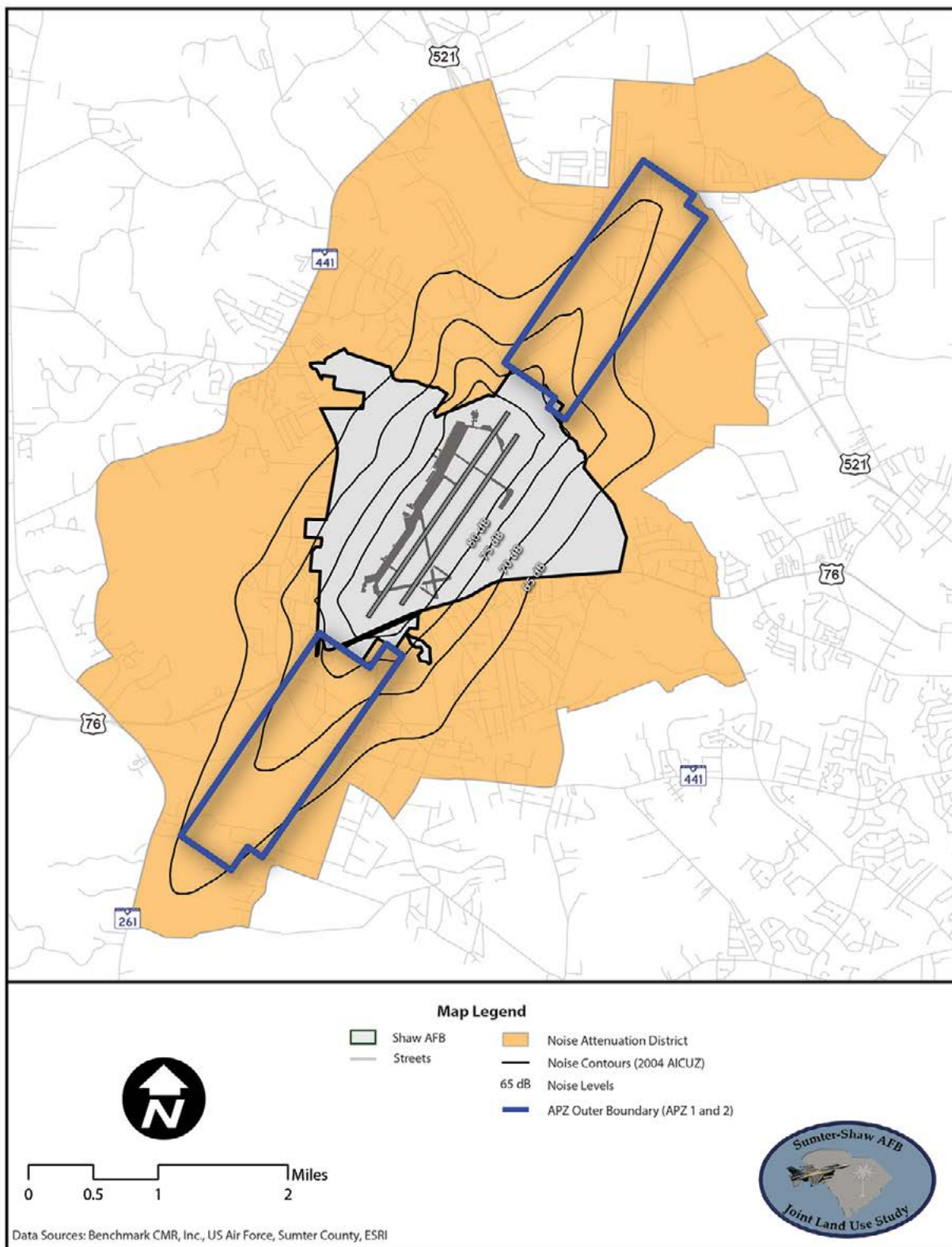


Figure 3-11: Current Compatible Use Regulations (Shaw AFB 2004 AICUZ Basis)



## IV. COMPARISON OF 2004 AND 2013 SHAW AFB AICUZ NOISE CONTOURS

The 2004 and 2013 AICUZ noise contours (65+ dB DNL), shown previously in Figures 3-10 and 3-4, respectively, have geographic extents that differ significantly from each other, particularly as it relates to the extension of the 65-69 dB DNL contour to the southeast in the 2013 data as compared to the more compact form of the noise contours in the 2004 data. Figure 3-12, below, provides a statistical analysis of the differences between the two AICUZ noise zones (65 dB+ DNL) with respect to the area outside of the installation boundary.

Figure 3-12: Comparison of 2004 and 2013 AICUZ Off-Base Noise Impacts

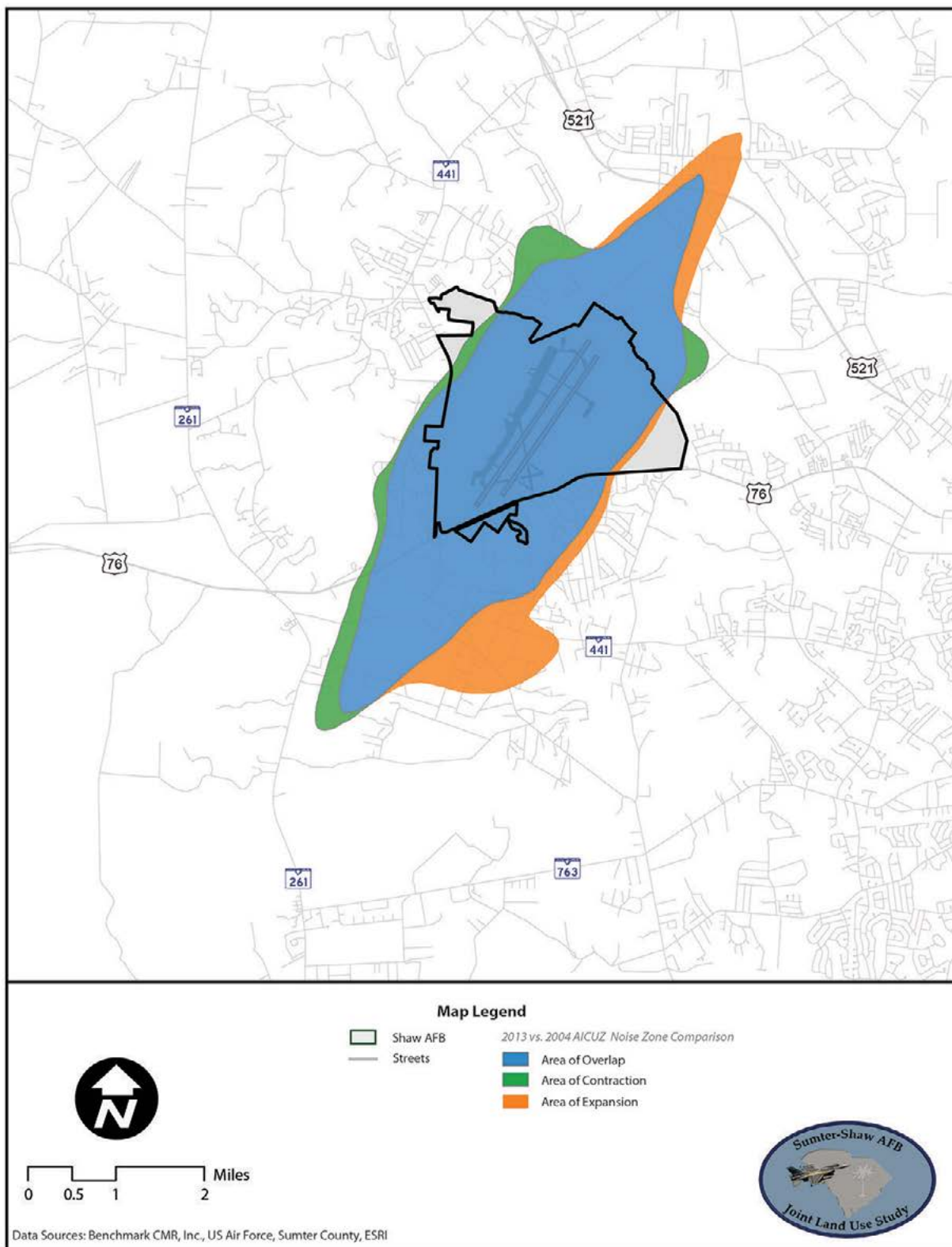
Noise Zone (dB DNL)	Off-Base Acres		Change 2004-2013 (Acres)
	2004	2013	
65-69	3,244	3,720	476
70-74	1,238	1,260	22
75-79	226	203	-23
80+	31	15	-16
Total	4,739	5,198	459

In addition to an increase of over 450 additional off-base acres falling in the 2013 noise zones, there were noticeable shifts in the spatial extent of the coverage of most of the noise zones between the two studies. Of particular note is the decrease in the off-base acreage covered by the highest noise contours (75-79 and 80+ dB DNL) between the 2004 and 2013 studies. The most significant change observed is the difference between the amount of off-base acreage covered by the 65-69 dB DNL contour, with approximately 475 more acres falling within this noise contour in the 2013 AICUZ data as compared to the 2004 AICUZ noise zones.

The map in Figure 3-13 details the differences in the area that falls within the 65+ dB noise zone between the 2004 and 2013 AICUZ studies. As the map shows, the greatest changes observed between the two data sets occurred in areas to the northeast and south of Shaw AFB. In the area northeast of the base, the width of the outermost contours decreased while simultaneously extending a greater distance to the northeast. South of Shaw, the noise contours expanded in width significantly toward the east in 2004 while decreasing in extent to the southwest slightly as compared to 2004.



Figure 3-13: Comparison of 2004 and 2013 AICUZ 65+ dB DNL Noise Zone



## V. POTENTIAL FUTURE AIRCRAFT NOISE IMPACTS – SHAW AFB F-35 TRANSITION

Looking prospectively at potential changes in assigned aircraft at Shaw AFB in the future is a key aspect of this Joint Land Use Study. To that end, the Land Use Compatibility analysis examines the potential for noise impacts associated with a change in mission that would bring F-35A Joint Strike Fighter aircraft to Shaw and replace its current complement of F-16s.

The data included in this analysis is based upon the maximum aircraft deployment scenario contemplated in the 2013 Environmental Impact Statement (EIS) that was prepared for Shaw and other Air Force and Air National Guard bases to aid in determining the most appropriate locations for basing the new aircraft. The scenario in question, defined as Scenario 3 in the EIS, would have Shaw transitioning to three squadrons of F-35A aircraft in the future. The noise contours used in the modeling for that scenario are shown in Figure 3-15 on the following page, and statistics related to extent of the anticipated noise impacts are shown in Figure 3-14 below.

Figure 3-14: F-35A EIS Scenario 3 Aircraft Noise Impacts

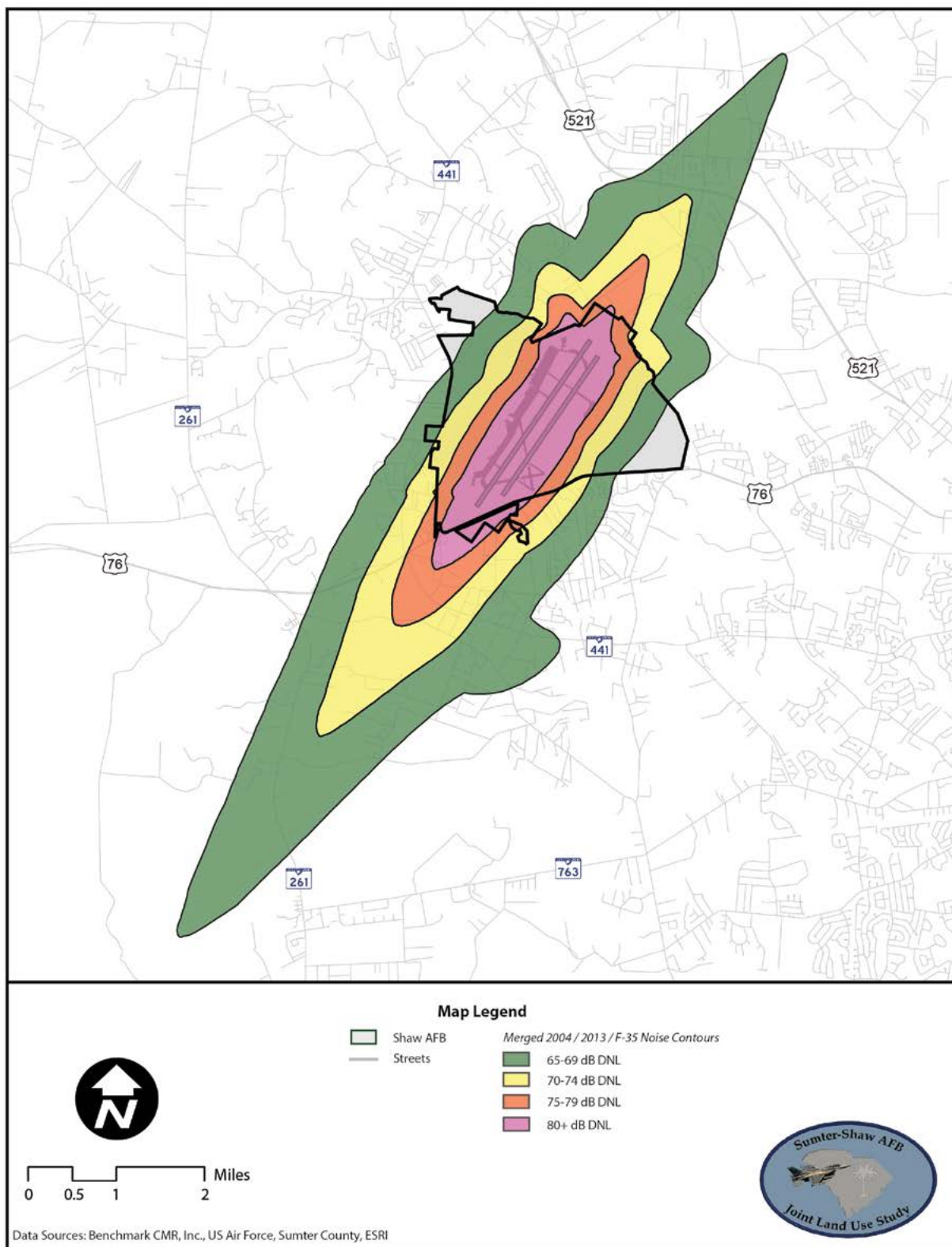
Noise Zone (dB DNL)	On-Base Acres	Off-Base Acres	Combined Acres	% Off-Base
65-69	515	5,805	6,320	91.9%
70-74	572	2,086	2,658	78.5%
75-79	520	673	1,193	56.4%
80+	1,154	123	1,277	9.6%
Total	2,761	8,687	11,448	75.9%

As the data indicates, over 75 percent of the total area impacted by 65+ dB DNL noise contours is located outside of the installation boundary. The areas of greatest potential impact, those that fall within the 80+ dB DNL, fall primarily inside of the installation boundary; however, over half of the area of each of the other noise zones impacts off-base areas, including over 90 percent of the 65-69 dB DNL noise zone.

While the final decision of whether or when Shaw AFB would transition to the F-35A, this data provides an important input into the planning process since it allows the potentially affected communities to prepare for the eventual arrival of the Air Force's newest fighter aircraft. A comparative analysis is provided in Section VI between both past and current aircraft operational noise impacts with the anticipated impacts associated with a potential transition to the F-35.



Figure 3-15: F-35 Scenario 3 Noise Contours



## VI. SHAW AFB POTENTIAL AIRCRAFT NOISE IMPACTS – COMPARISON WITH AICUZ DATA

The following is a comparison of both the 2004 and 2013 AICUZ noise contours with the potential F-35A noise contours as shown in Scenario 3 of the EIS. As the data in the tables below and the maps on the following pages demonstrate, there is the potential for a significant change in the amount of off-base acreage subject to high noise levels.

Figure 3-16: Comparison of 2004 AICUZ (F-16) and F-35A Scenario 3 Off-Base

Noise Zone (dB DNL)	Off-Base Acres		Change 2004 F-16 – F-35A (Acres)
	2004 (F-16)	F-35A	
65-69	3,244	5,805	2,561
70-74	1,238	2,086	848
75-79	226	673	447
80+	31	123	92
Total	4,739	8,687	3,948

Figure 3-17: Comparison of 2013 AICUZ (F-16) and F-35A Scenario 3 Off-Base Noise

Noise Zone (dB DNL)	Off-Base Acres		Change 2013 F-16 – F-35A (Acres)
	2013 (F-16)	F-35A	
65-69	3,720	5,805	2,085
70-74	1,260	2,086	826
75-79	203	673	469
80+	15	123	108
Total	5,198	8,687	3,448

Figure 3-18: Comparison of F-35A Scenario 3 and 2004 AICUZ (F-16) 65+ dB DNL Noise Zone

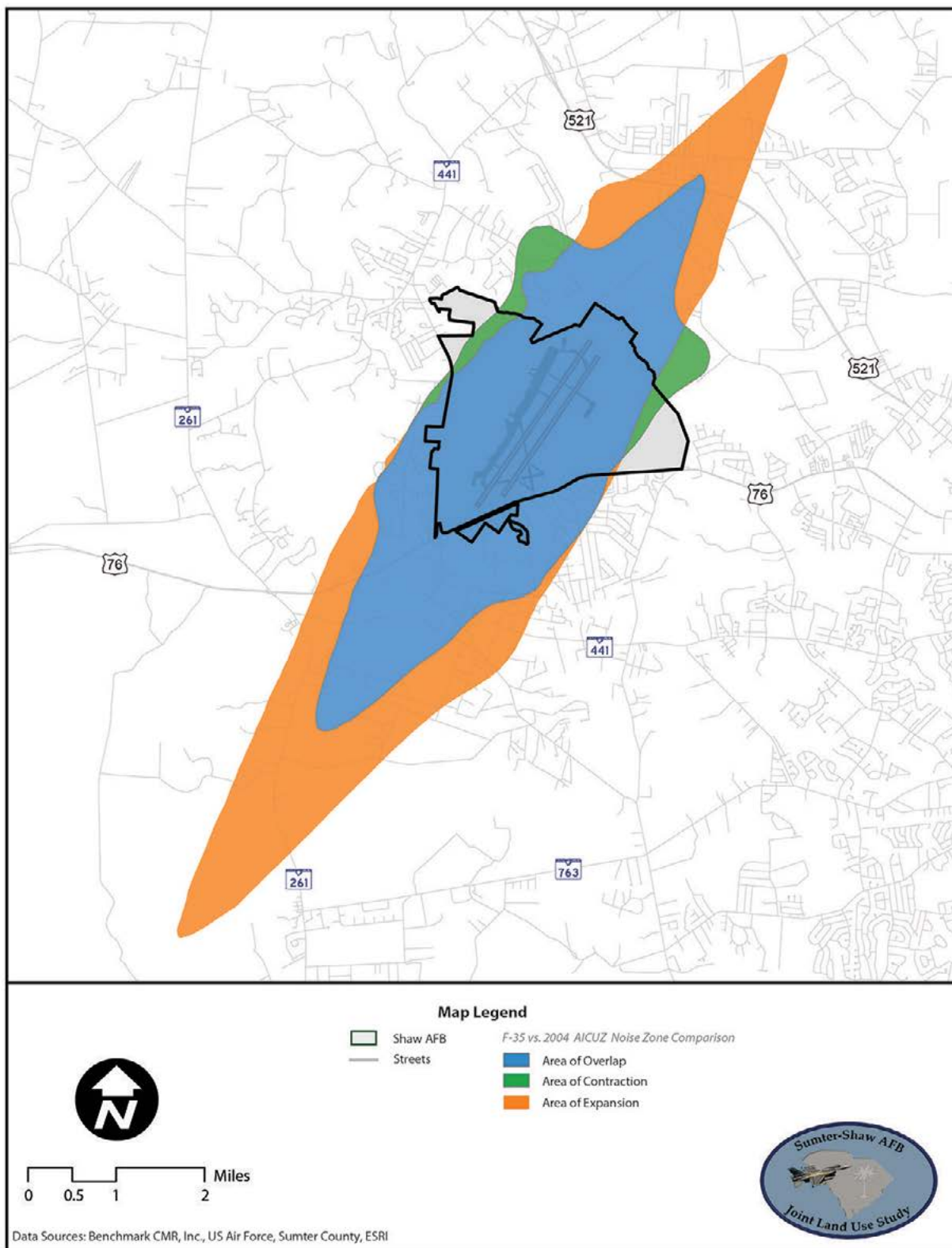
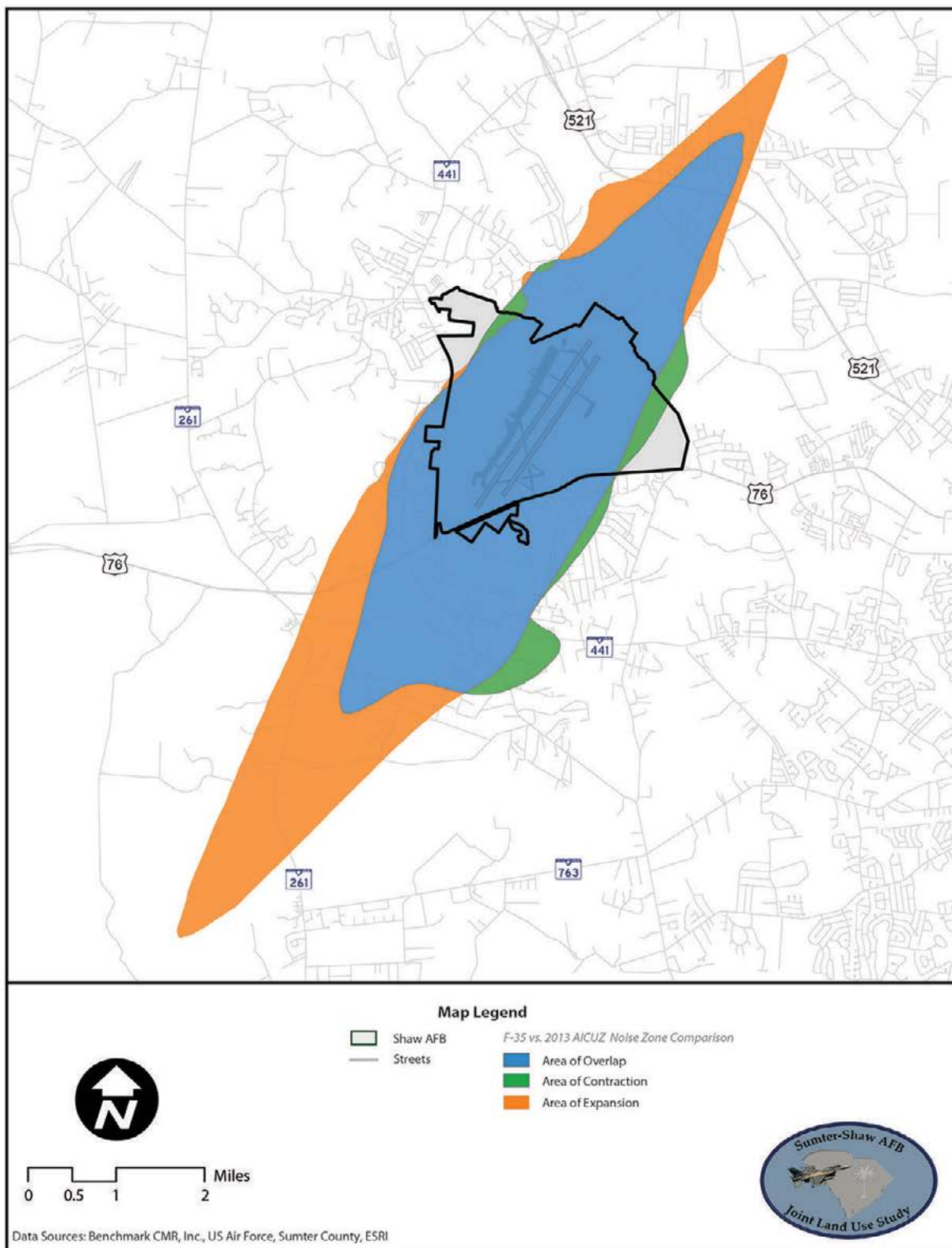


Figure 3-19: Comparison of F-35A Scenario 3 and 2013 AICUZ (F-16) 65+ dB DNL Noise Zone



## VII. SHAW AFB 2013 AICUZ NOISE ZONE LAND USE ANALYSIS

The following is an analysis and summary of the land use patterns and land use compatibility within the area covered by the 65+ dB DNL noise contours as established in the 2013 Shaw AFB AICUZ study for the current F-16 aircraft. Topics covered include analyses of the existing land use pattern, land subdivision pattern, zoning, and future land use (as established in the 2030 Comprehensive Plan). These are followed by analyses of the compatibility of the established land use and regulatory patterns with the Air Force AICUZ guidance for compatible land use within areas of high noise potential from aircraft operations.

### A. Generalized Existing Land Use Pattern

Observations of the general existing land use pattern within the aircraft operational noise impact area designated in the 2013 AICUZ, as shown on the map in Figure 3-24 and detailed in the table below, reveal that the primary current land use within the area is undeveloped / agricultural land, representing just over half of the total off-base acreage within the noise zones. These undeveloped / agricultural areas are primarily to the northeast and southwest of Shaw AFB. Land used for residential purposes accounts for nearly 30 percent of the acreage inside of the noise zones, with the greatest concentrations of residentially developed land found in the Cherryvale neighborhood, located south of Shaw AFB and in the areas adjacent to the base's western boundary along Highway 441. Industrial land uses account for slightly over 10 percent of the land uses within the noise zone, with the greatest concentration of industrial development found due south of the base on the south side of US Highway 76. Commercial land uses are found along the major corridors in the noise zone (primarily along US 76 and Highway 441), while community and institutional uses (such as churches and schools) are scattered throughout the area, accounting for less than 2 percent of the overall acreage within the noise zone.

Figure 3-20: 2013 AICUZ Noise Zone Generalized Existing Land Use Summary

Existing Land Use	Acres	% of Noise Zone
Undeveloped/Agriculture	2,590	53.4%
Residential	1,453	30.0%
Community/Institutional	84	1.7%
Commercial	164	3.4%
Industrial	560	11.5%
Total	4,851	100%



## B. Land Subdivision

The degree of land subdivision within the noise impact area (see Figure 3-25) varies widely, from large rural tracts to urban-scale residential lots. The most densely subdivided areas are associated with residential development in the Cherryvale community south of US 76 and at the northeastern end of the noise zone near US 521. Parcels subdivided to the greatest degree, those smaller than 0.5 acre in size, account for only 2 percent of the overall acreage within the noise zone, while approximately 90 percent of the land in the noise zone is contained in parcels greater than 1 acre in size, indicating a generally suburban to rural overall land subdivision pattern. More than 60 percent of the acreage in the noise zone is contained in parcels larger than 10 acres in size with these larger tracts concentrated in the area northeast of Shaw AFB and at the far southwestern tip of the noise impact area.

Figure 3-21: 2013 AICUZ Noise Zone Land Subdivision Summary

Parcel Size (Acres)	Parcels	Acres	% of Noise Zone
Less than 0.5	304	106	2.2%
0.5 – 1	505	298	6.1%
1 – 3	462	644	13.3%
3 – 10	142	678	14.0%
Greater than 10	80	3,118	64.4%
Total	1,493	4,844	100.0%

## C. Zoning

An examination of the generalized base zoning districts within the noise zones, as shown in Figure 3-26, reveals that nearly 60 percent of the acreage has been assigned to the Agricultural Conservation district. This is consistent with both the existing land use and land subdivision patterns in terms of the degree of development and density of development that has taken place in the area. The second most prevalent general district type is land zoned for industrial purposes, accounting for around 25 percent of the acreage in the noise zone. Commercial and residential districts comprise the remainder of the study area (around 10 percent each) with residentially zoned property concentrated in the Cherryvale community south of US 76 while commercially zoned properties are found primarily along the highway corridors.

Figure 3-22: 2013 AICUZ Noise Zone Generalized Zoning Summary

Future Land Use	Acres	% of Noise Zone
Agriculture	2,777	57.3%
Residential	395	8.1%
Commercial	488	10.1%
Industrial	1,185	24.5%
Total	4,851	100.0%



## D. Future Land Use

The future land use map in the 2030 Comprehensive Plan assigns three future land use types to the area subject to the 2013 AICUZ aircraft operational noise impact areas, as shown on the map in Figure 3-27 and detailed in the table below. As currently drafted, these future land-use categories do not overlap, with each of the three being a distinct classification applied to lands within its boundaries to the exclusion of the other two. Bearing this framework in mind, the predominant future land-use classification is the Military Protection Area, which accounts for over 90 percent of the land area within the noise zones. Lands designated in the Conservation category, primarily located along floodplains, account for around 5 percent of the land within the noise zone, while the remaining land, located along Highway 441, is designated as a Commercial Corridor. Note, however, in Chapter 5, the Policy Committee recommends that the Military Protection Area operate as an “overlay” so that its policies apply in addition to the policies for the Conservation, Commercial Corridor, and Commercial Mixed Use Future Land Use areas. Note, in Figure 3-27, that although the Commercial Mixed Use Future Land Use area is not found within the noise zones, it does fall within the outermost boundaries of the Military Protection Area.

Figure 3-23: 2013 AICUZ Noise Zone Future Land Use Summary

Future Land Use	Acres	% of Noise Zone
Conservation	246	5.1%
Military Protection Area	4,512	92.9%
Commercial Corridor	97	2.0%
Total	4,855	100.0%

Figure 3-24: 2013 AICUZ Noise Zone Generalized Existing Land Use Pattern

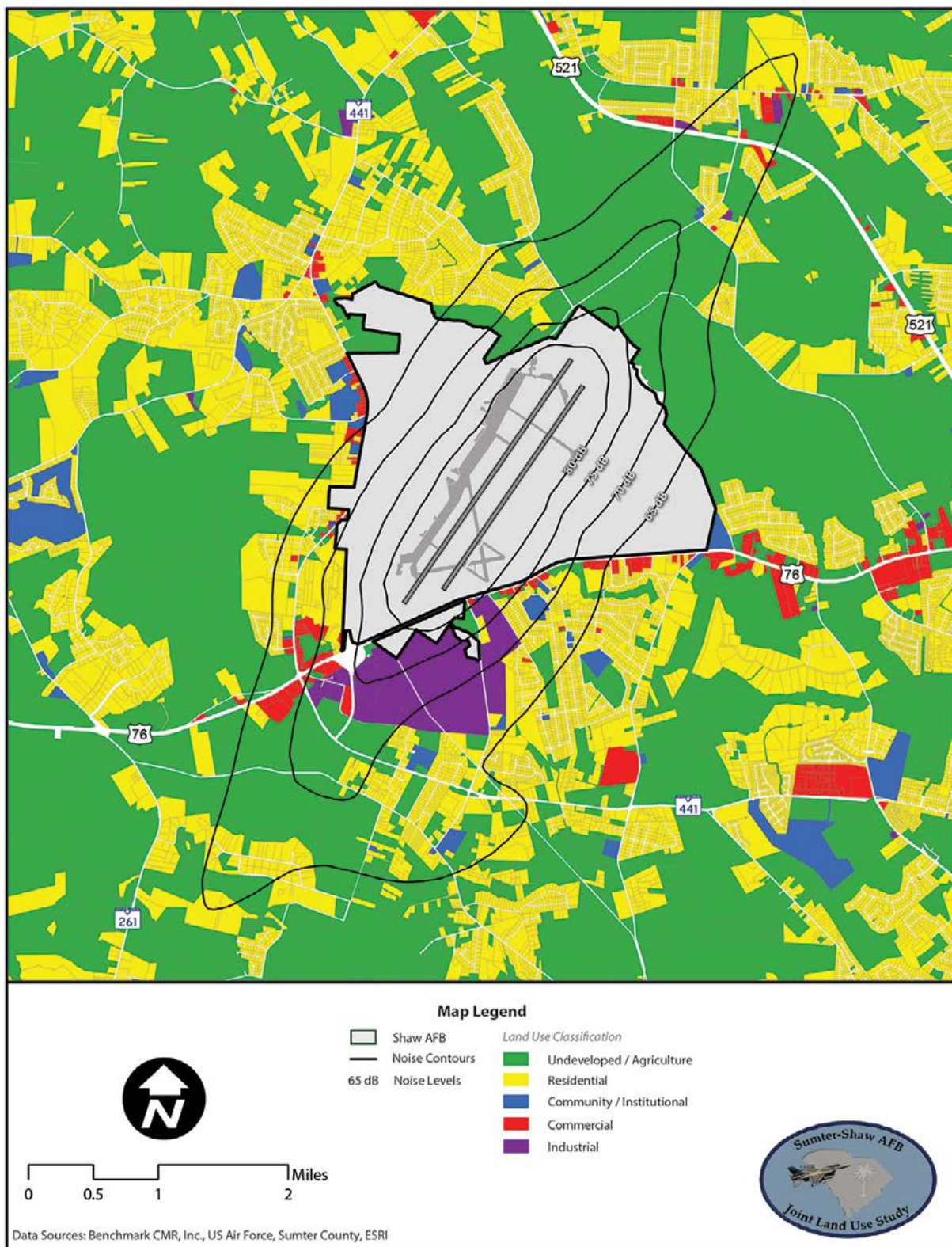




Figure 3-25: 2013 AICUZ Noise Zone Land Subdivision Pattern

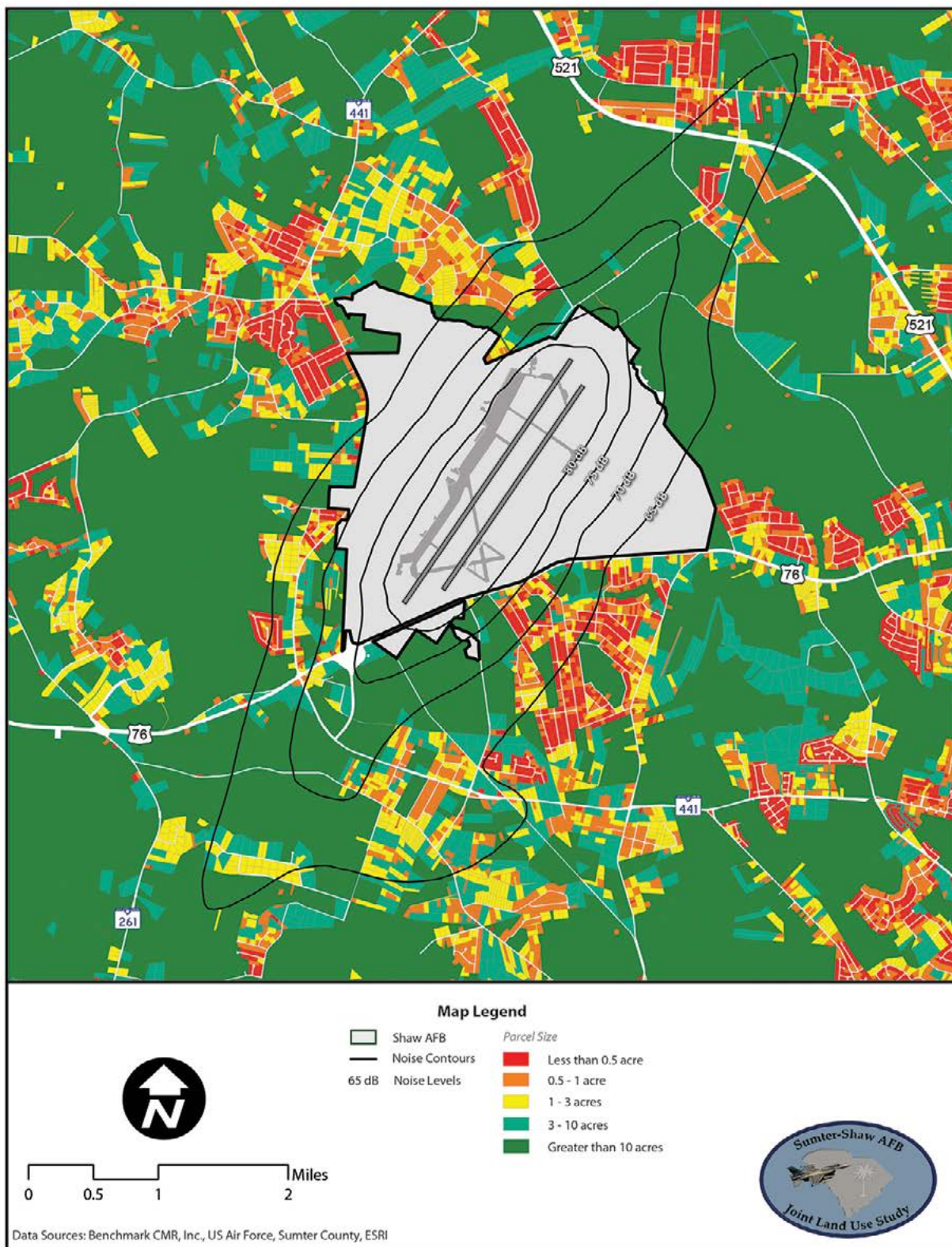




Figure 3-26: 2013 AICUZ Noise Zone Generalized Base Zoning Districts

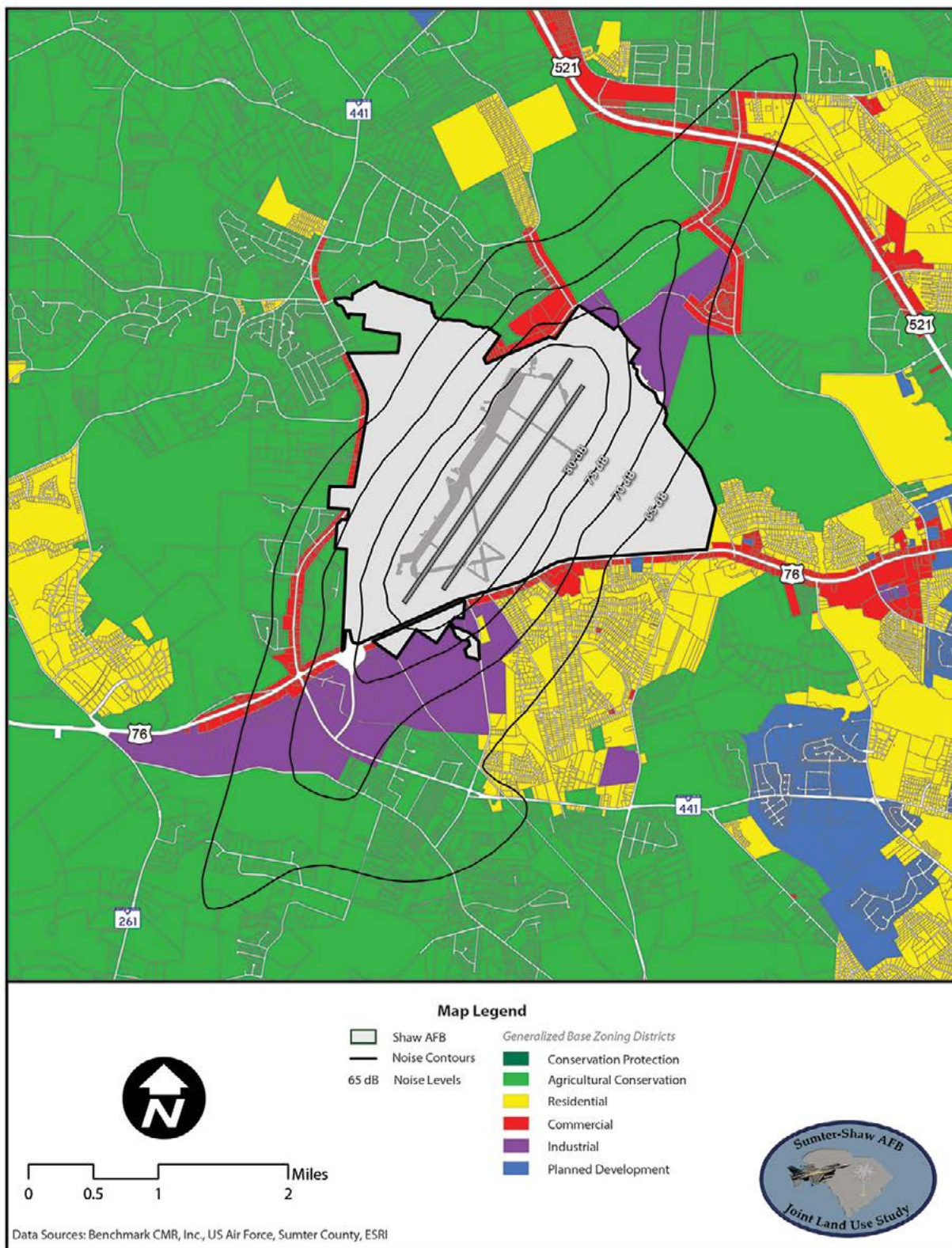
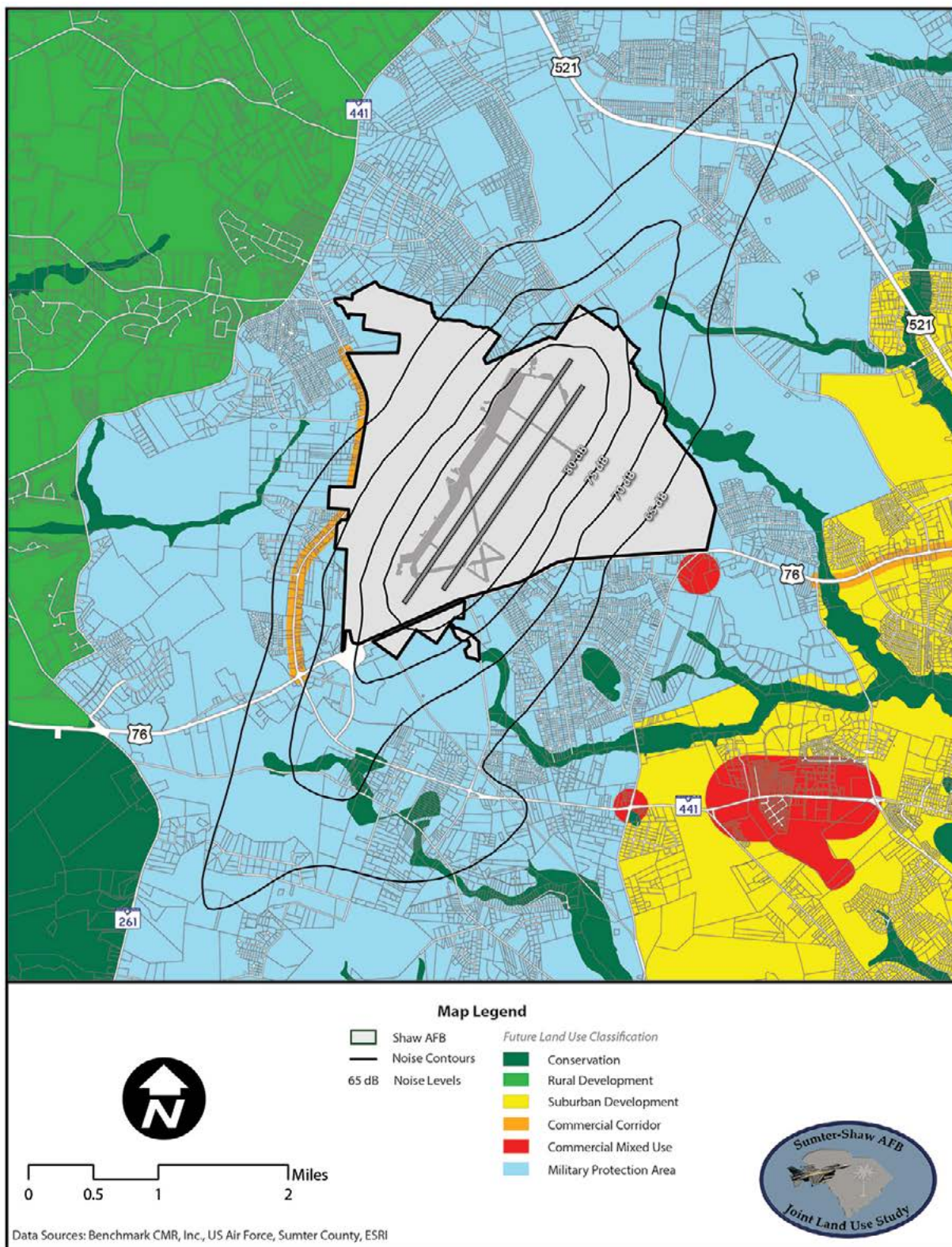




Figure 3-27: 2013 AICUZ Noise Zone Future Land Use Pattern



## E. Existing Land Use Compatibility

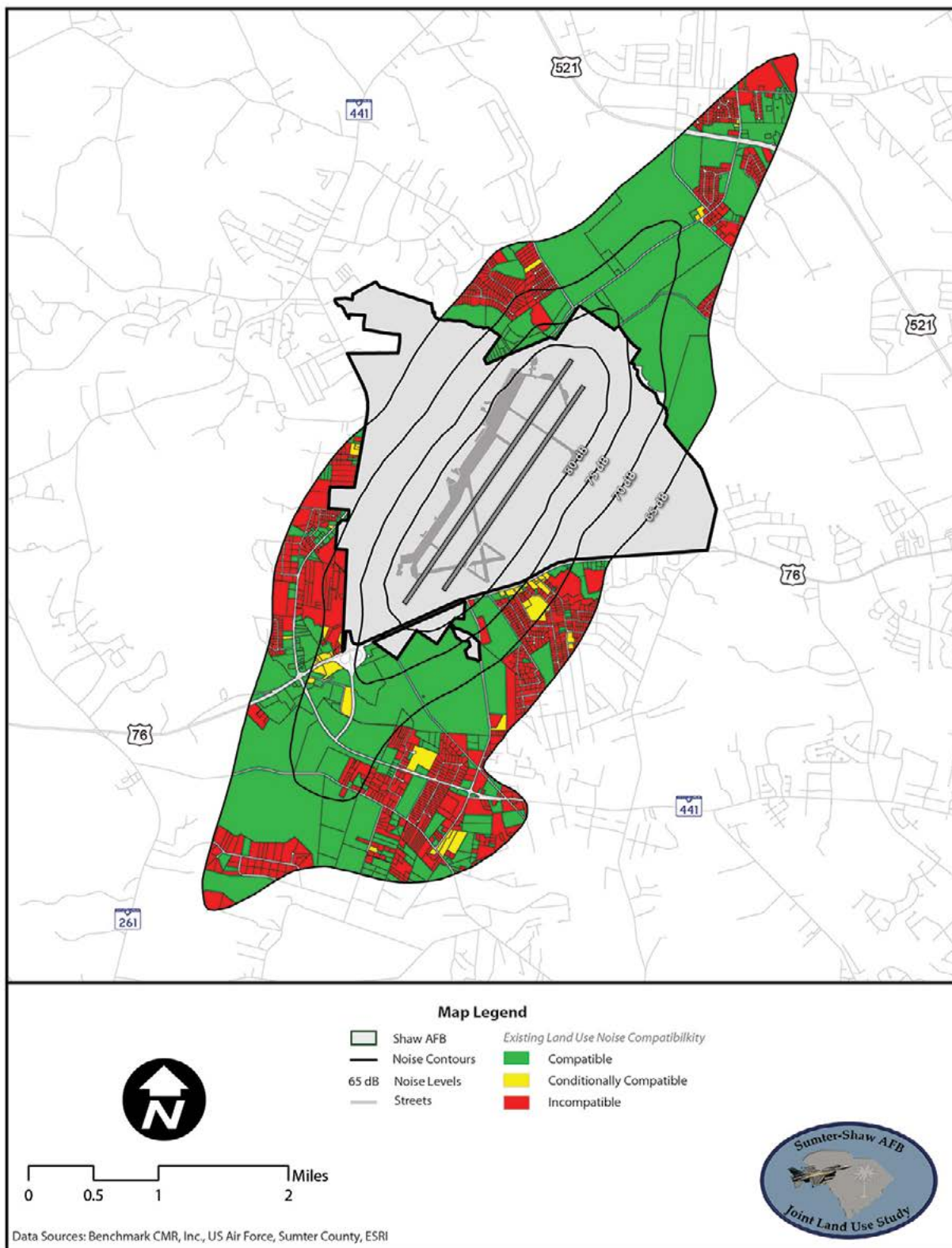
Using the 2015 Air Force AICUZ land use compatibility guidance (AFI 32-7063), the existing land use pattern within the 2013 aircraft operational noise impact area was analyzed to determine its compatibility with the noise levels established in the AICUZ (see Figure 3-29). Based upon the guidance, around two-thirds of the area within the noise zones was found to be comprised of land uses that are now compatible with the level of noise generated by aircraft operations at Shaw AFB. While the majority of the land found to be compatible consists of undeveloped and industrially used land, this still represents a substantial degree of compatibility. A small portion of the remainder of the land within the noise impact area was found to be conditionally compatible (3 percent), meaning that given individual circumstances, such as the degree of indoor noise level reduction, the specific use may be compatible. Nearly one-third of the land within the noise zone, consisting primarily of residential land uses, was found to be incompatible with the current F-16 aircraft operational noise impacts. The greatest concentrations of these likely incompatible uses are found in the Cherryvale community on the south side of US 76 and in the neighborhoods located west of Shaw AFB along Highway 441, with other smaller concentrations found scattered throughout the noise zone.

Figure 3-28: 2013 AICUZ Noise Zone Existing Land Use

Future Land Use	Acres	% of Noise Zone
Compatible	3,271	67.4%
Conditionally Compatible	125	2.6%
Incompatible	1,455	30.0%
Total	4,851	100.0%



Figure 3-29: 2013 AICUZ Noise Zone Existing Land Use Compatibility



## F. Zoning Compatibility

The compatibility of the zoning regulations with the current noise contours is shown on the map in Figure 3-30. This analysis evaluates the extent to which the City and County's current Airfield Compatibility Districts, which are described in Chapter 4, are adequately addressing compatibility according to 2015 Air Force guidance.

Nearly 30 percent of the land within the noise zone is currently zoned in a manner that is likely to be compatible with noise impacts, with industrially zoned land comprising the bulk of this designation. These areas deemed "compatible" also include several properties subject to compatible-use easements. A very small amount of land, less than 1 percent of the total, is zoned in an incompatible manner, with these areas concentrated in the highest noise impact areas where recommended compatible uses are very narrowly defined by the most recent AICUZ compatibility guidance

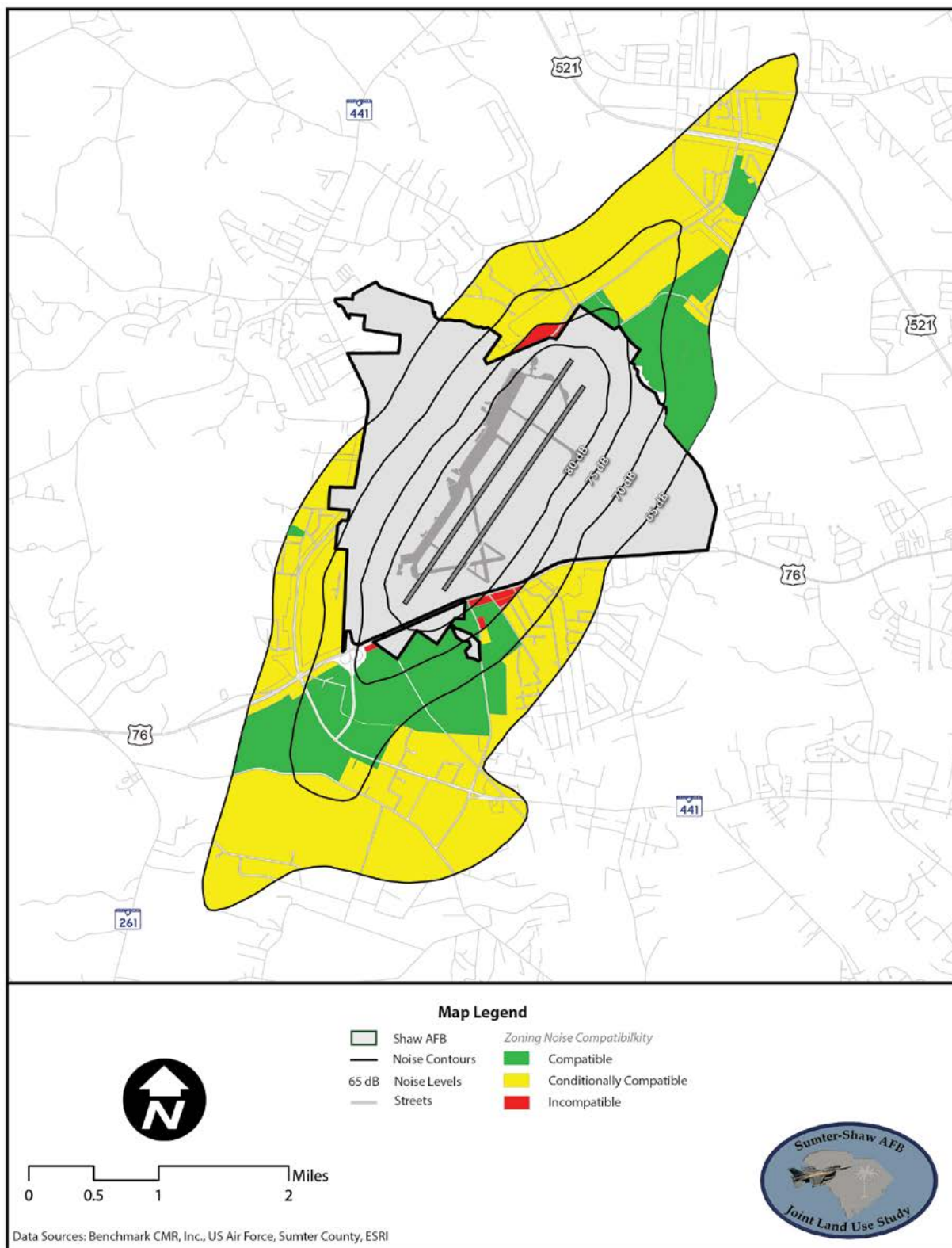
Approximately 70 percent of the land within the noise zones is regulated in a way in which it can be considered conditionally compatible with the current noise impacts. These areas are considered "conditionally" compatible because current regulations permit some residential uses. Under the updated Air Force guidance, residential land uses are considered "conditionally compatible" with indoor-outdoor noise level reductions (NLR) of 25 dB in the zones from 65 dB to 74 dB. Within these areas, the zoning is not incompatible with Air Force guidance but was indicated as conditionally compatible to highlight the fact that residential is allowed. Under the same Air Force guidance, however, residential is considered incompatible in noise areas above 75 dB. The City and County currently allow residential in these areas, with NLR standards of 30 dB. These areas are shown in Figure 3-31 in red.

Chapter 5 includes the JLUS Policy Committee's recommendations for increasing the degree of zoning compatibility in these areas.

Figure 3-30: 2013 AICUZ Noise Zone Generalized Zoning Compatibility

Future Land Use	Acres	% of Noise Zone
Compatible	1,372	28.2%
Conditionally Compatible	3,453	70.9%
Incompatible	45	0.9%
Total	4,870	100.0%

Figure 3-31: 2013 AICUZ Noise Zone Current Zoning Compatibility



## VIII. SHAW AFB F-35A EIS SCENARIO 3 NOISE ZONE LAND USE ANALYSIS

In contrast to the forgoing analysis related to the F-16's impacts, the following is an analysis and summary of the land use patterns and of land use compatibility within the area covered by the 65+ dB DNL noise contours as established in Scenario 3 in the F-35A Environmental Impact Study for Shaw AFB. Topics covered include analyses of the existing land use pattern, land subdivision pattern, zoning, and future land use (as established in the 2030 Comprehensive Plan). These are followed by analyses of the compatibility of the established land use and regulatory patterns with the USAF AICUZ guidance for compatible land use within areas of high noise potential from aircraft operations.

### A. Generalized Existing Land Use Pattern

Observations of the general existing land use pattern within the 65+ dB DNL noise zone in the F-35 EIS, as shown on the map in Figure 3-36 and detailed in the table below, reveal that nearly two-thirds of the land in the area potentially impacted by future high noise levels consists of undeveloped / agricultural lands. The highest concentrations of undeveloped land lie to the northeast of the installation and at the far southwestern tip of the noise zones. Land used for residential purposes accounts for around 25 percent of the acreage inside of the noise zones, with the greatest concentrations of residentially developed land found in the 65-69 dB noise contours to the south and west of Shaw AFB. Industrial land uses account for around 7 percent of the acreage within the noise zone with the greatest concentration of industrial development found due south of Shaw AFB on the south side of US 76. Commercial land uses (2 percent of the overall acreage) are found along the major corridors in the noise zone (primarily along US 76 and Highway 441), while community and institutional uses (such as churches and schools) are scattered throughout the area, accounting for less than 1 percent of the overall acreage within the noise zone.

Figure 3-32: F-35 EIS Scenario 3 Noise Zone Generalized Existing Land Use Summary

Existing Land Use	Acres	% of Noise Zone
Undeveloped/Agriculture	5,275	64.2%
Residential	2,124	25.8%
Community/Institutional	75	0.9%
Commercial	182	2.2%
Industrial	563	6.9%
Total	8,218	100.0%

## B. Land Subdivision

The degree of land subdivision within the potential F-35 noise impact area (see Figure 3-37) reveals a pattern that is primarily rural in nature given the significant share of the total acreage comprised of parcels greater than 10 acres. These tracts account for nearly 75 percent of the total acreage in the noise zone, and when combined with other suburban to rural scale parcels, they account for over 90 percent of the acreage in the noise zone. Smaller, more densely divided parcels that account for the remainder of the acreage in the study area, make up less than 7 percent of the total acreage in the area, and are concentrated in two primary areas: the Cherryvale community on the south side of US Highway 76 and in the northeastern reaches of the noise zone near US Highway 521.

Figure 3-33: F-35 EIS Scenario 3 Noise Zone Land Subdivision Summary

Parcel Size (Acres)	Parcels	Acres	% of Noise Zone
Less than 0.5	337	117	1.4%
0.5 – 1	702	410	5.0%
1 – 3	537	773	9.4%
3 – 10	172	829	10.1%
Greater than 10	121	6,059	74.0%
Total	1,869	8,188	100.0%

## C. Zoning

Agricultural Conservation zoning is the most prevalent district that has been applied within the potential F-35 noise impact area, accounting for nearly three-quarters of the acreage of the potential noise zone. Industrial zoning, found primarily along the northern and southern boundaries of Shaw AFB, accounts for the next largest share, comprising just over 16 percent of the acreage in the noise impact area. Commercial and residential districts, account for the remainder of the area, together comprising just over 10 percent of the potential noise impact area, with commercial zoning concentrated along primary road corridors and residential zoning found primarily to the south of the base on the south side of US 76.

Figure 3-34: F-35 EIS Scenario 3 Noise Zone Generalized Zoning Summary

Future Land Use	Acres	% of Noise Zone
Agricultural Conservation	5,967	72.6%
Residential	325	4.0%
Commercial	603	7.3%
Industrial	1,324	16.1%
Total	8,218	100.0%



## D. Future Land Use

The future land-use pattern, as established in the 2030 Comprehensive Plan, is shown in Figure 3-39 and detailed in the table below. Like the noise impact area associated with the F-16 under the 2013 AICUZ, the vast majority of the potential F-35 noise impact area falls within areas that have been designated as the Military Protection Area, in this case accounting for over 80 percent of the entire noise zone. Lands designated for conservation purposes, primarily along floodways but also extending into the western Sumter County conservation area along the Congaree River, account for over 15 percent of the potentially impacted acreage. The remainder of the acreage (around 1 percent) is designated as a commercial corridor with this designation found along Highway 441 on the west side of Shaw AFB. Note that Chapter 5 includes Policy Committee recommendations to amend the Military Protection Area to reflect the expanded noise zones of the F-35A at an appropriate time.

Figure 3-35: F-35 EIS Scenario 3 Noise Zone Future Land Use Summary

Future Land Use	Acres	% of Noise Zone
Conservation	1,289	15.7%
Military Protection Area	6,844	83.1%
Commercial Corridor	100	1.2%
Total	8,232	100.0%

Figure 3-36: F-35 EIS Scenario 3 Noise Zone Generalized Existing Land Use Pattern

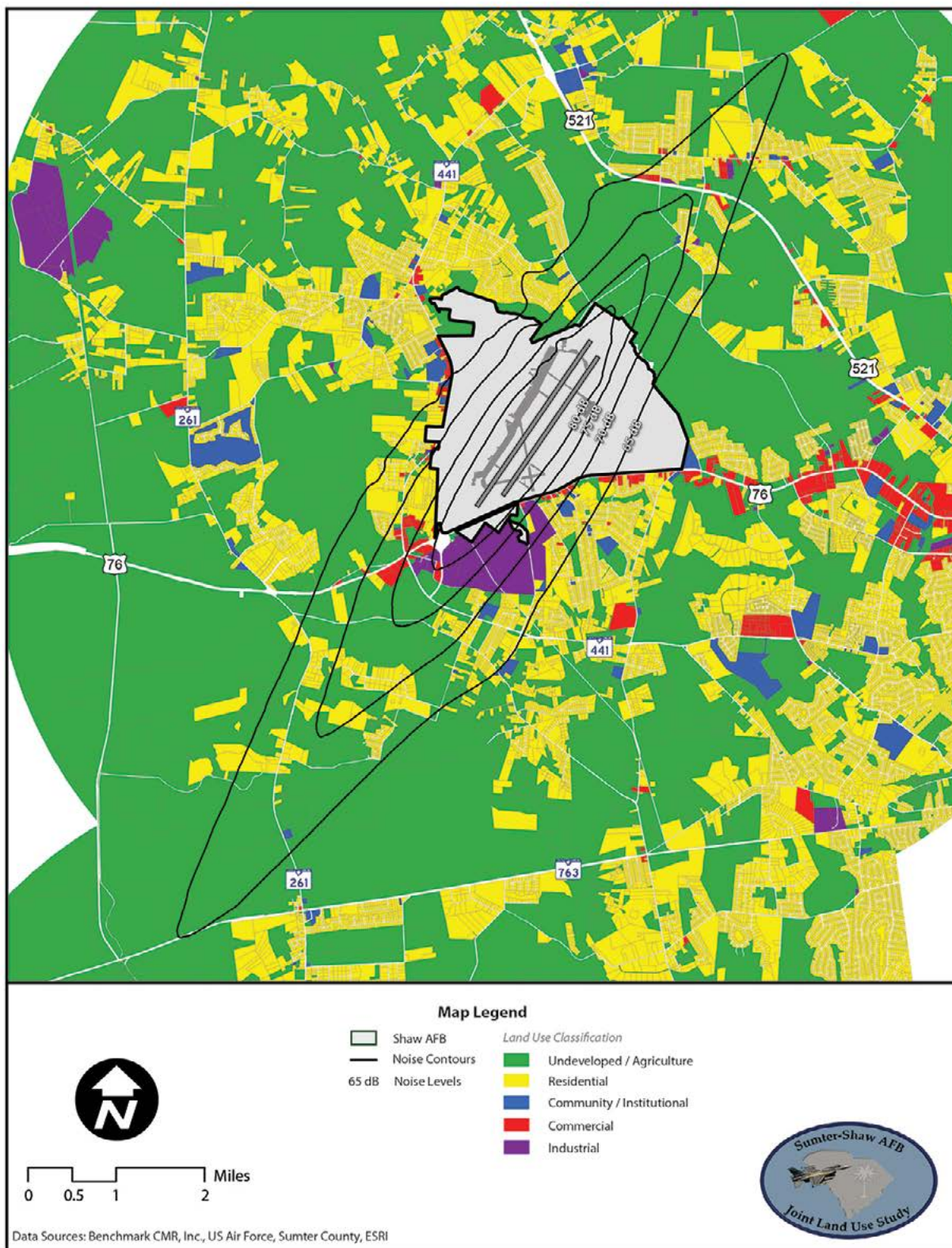




Figure 3-37: F-35 EIS Scenario 3 Noise Zone Land Subdivision Pattern

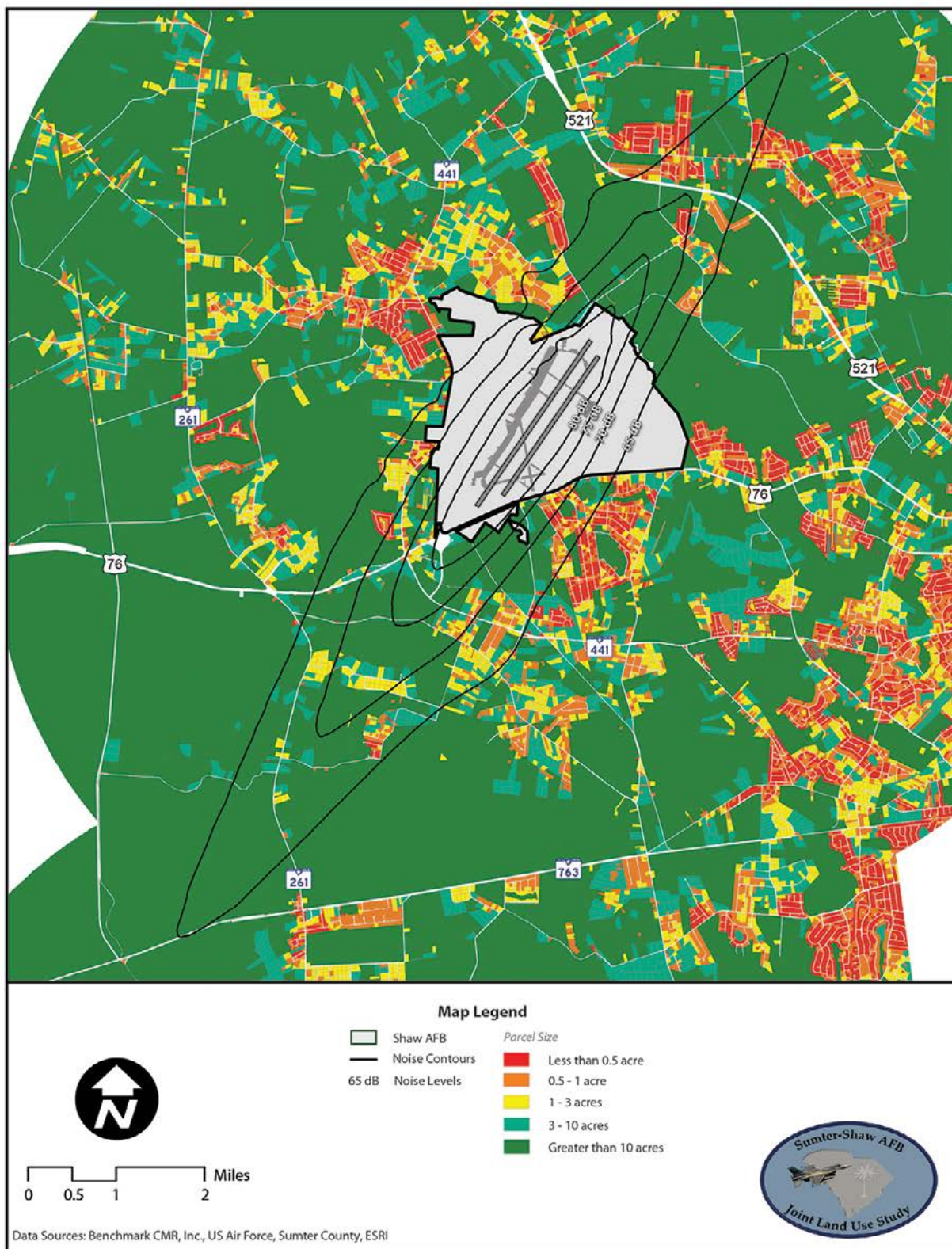




Figure 3-38: F-35 EIS Scenario 3 Noise Zone Generalized Zoning

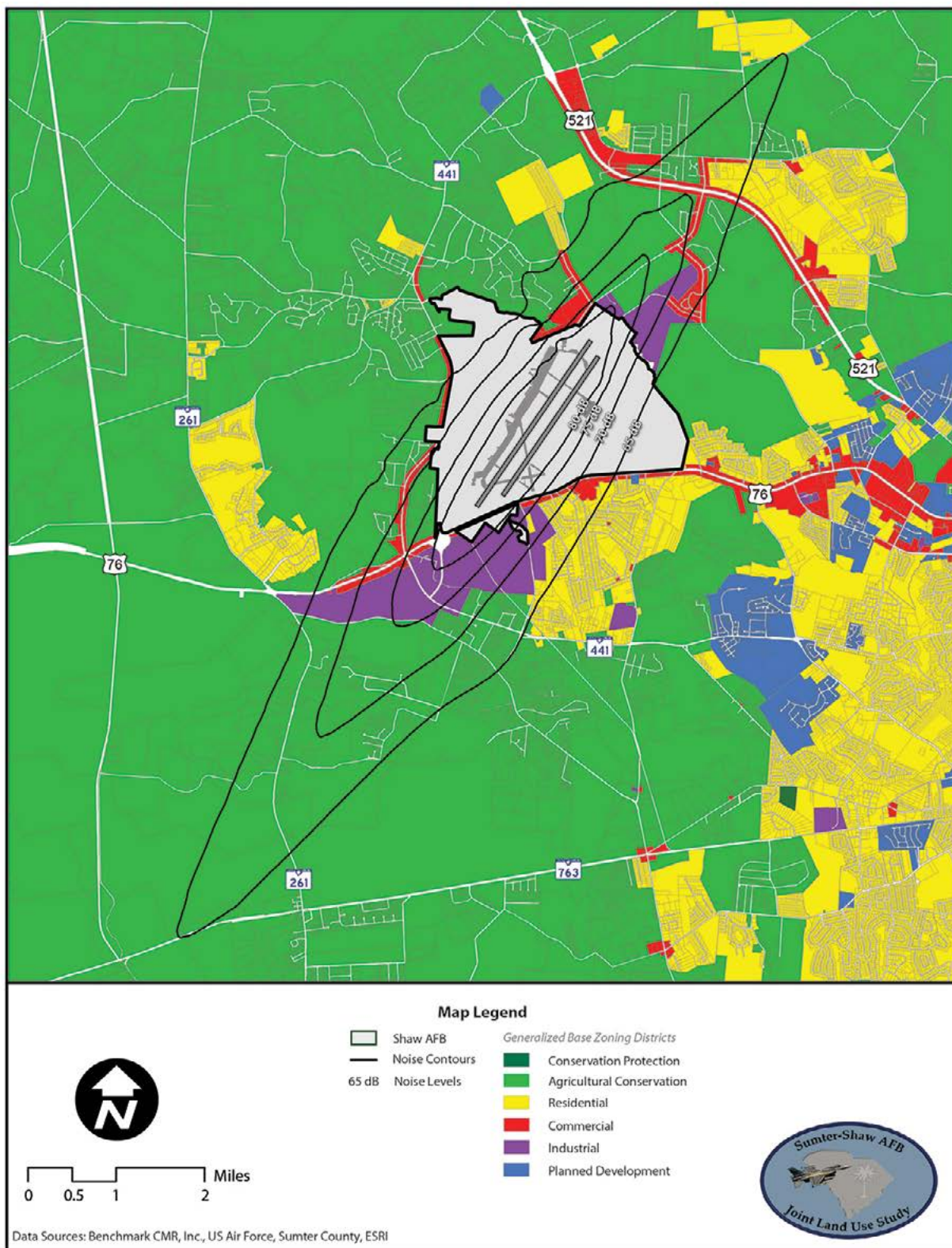
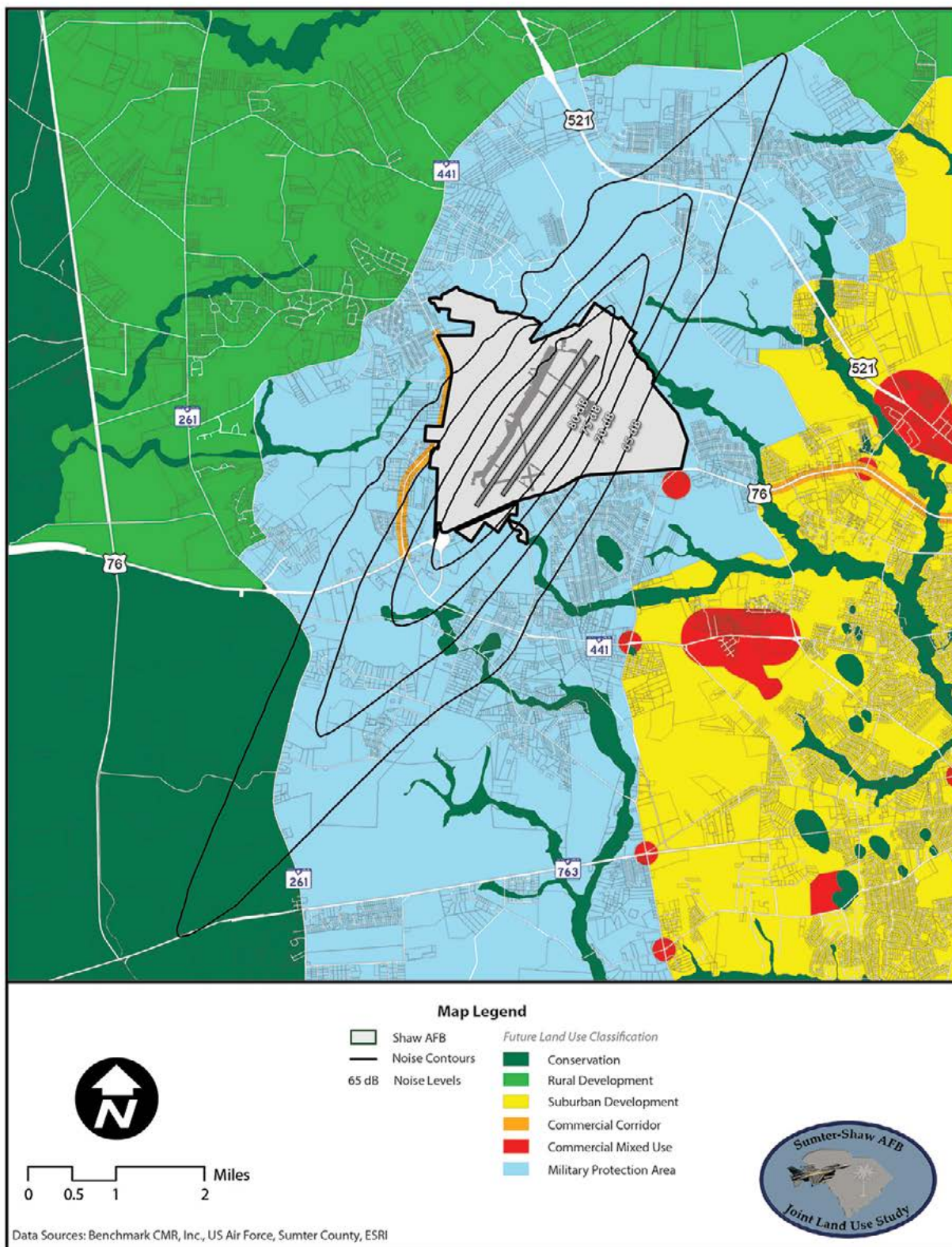




Figure 3-39: F-35 EIS Scenario 3 Noise Zone Future Land Use Pattern





## E. Existing Land Use Compatibility

Once again using the 2015 Air Force AICUZ land use compatibility guidance, the existing land use pattern within the potential F-35 aircraft operational noise impact area was analyzed to determine its compatibility with the noise levels established in the 2013 EIS (see Figures 3-40 and 3-41). Based upon the guidance, over 70 percent of the area within the noise zone was comprised of land uses that are now compatible with the level of noise projected for F-35 aircraft operations at Shaw AFB. While the majority of the land found to be compatible consists of undeveloped and industrially-used land, this represents a degree of compatibility proportionally greater than the current environment, given the larger overall size of the impacted area. A small portion of the remainder of the land within the noise impact area was either conditionally compatible (2 percent), meaning that given individual circumstances, such as the degree of indoor noise level reduction, the specific use may be compatible. Approximately 25 percent of the land within the potential future noise zone, consisting primarily of residential land uses, was incompatible with the potential F-35 aircraft operational noise impacts. As with the F-16 aircraft, the greatest concentrations of these likely incompatible uses are found in the Cherryvale community on the south side of US 76 and in the neighborhoods located west of Shaw AFB along Highway 441, with other smaller concentrations found scattered throughout the potential F-35 noise zones.

Figure 3-40: F-35 EIS Scenario 3 Noise Zone Existing Land Use Compatibility Summary

Compatibility	Acres	% of Noise Zone
Compatible	5,974	72.7%
Conditionally Compatible	186	2.3%
Incompatible	2,058	25.0%
Total	8,218	100.0%

Figure 3-41: F-35 EIS Scenario 3 Noise Zone Existing Land Use Compatibility



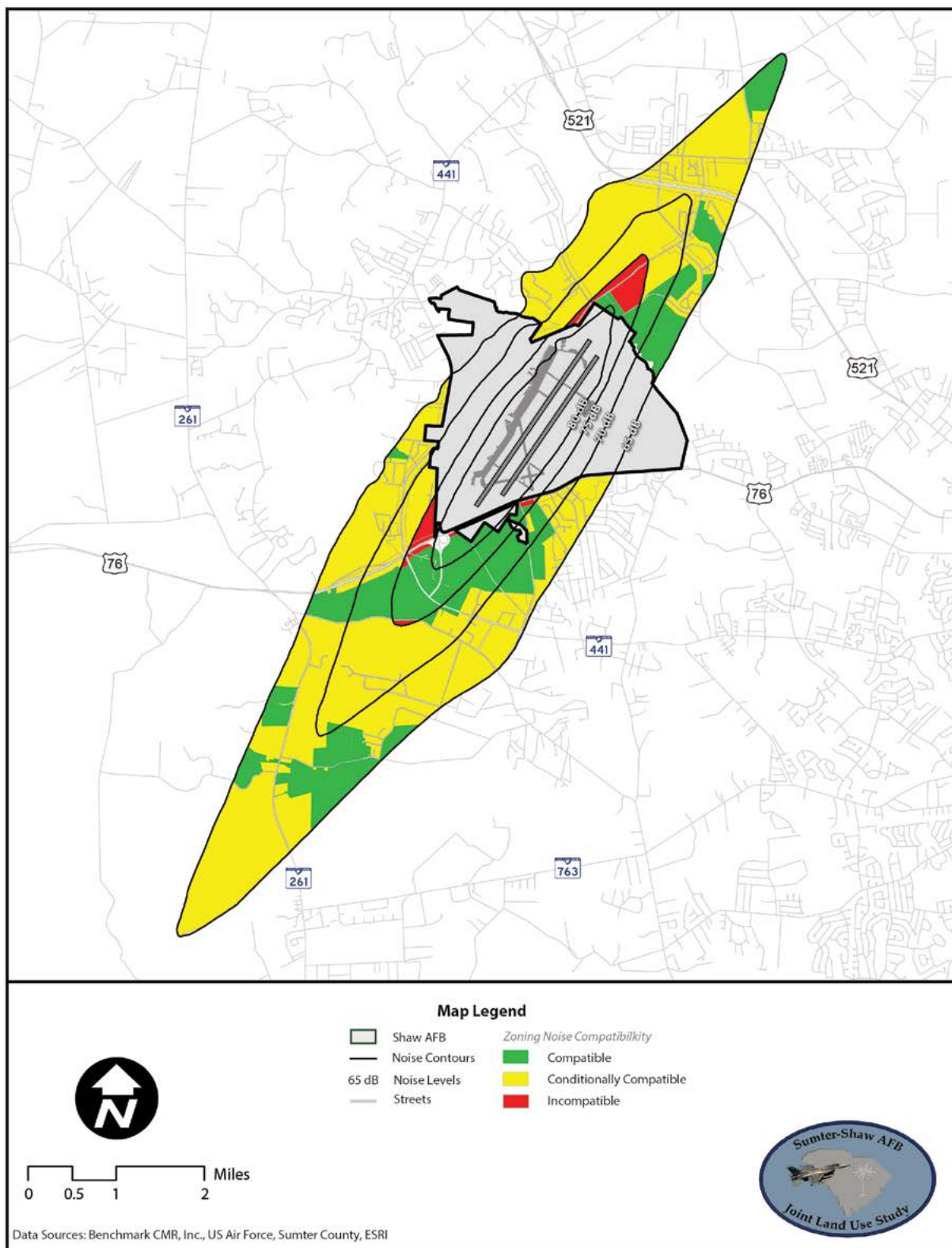
## F. Zoning Compatibility

The compatibility of the current zoning districts for the F-35 EIS Scenario 3 noise contours was evaluated based on an assumption that the current Airfield Compatibility District regulations would be extended to cover the F-35 noise zones to provide a more even comparison between the current regulatory environment and a theoretical future regulatory environment if the F-35 is based at Shaw in the future (see Figures 3-42 and 3-43). The ACD regulations for the City and the County are set forth in [Appendix B](#). Based on this assumption, the land within the noise impact area is zoned in a manner so that around 70 percent of the acreage would be considered conditionally compatible with the AICUZ guidance for land use compatibility. Slightly more than 25 percent of the land in the noise impact area is zoned in a manner that would restrict uses to those that are compatible with the noise environment. These areas consist primarily of land zoned for industrial purposes and land subject to compatible use easements. A small amount – less than 3 percent of the overall land in the noise impact area is zoned in a manner that is potentially incompatible with these areas concentrated in the highest noise contours near Shaw AFB.

Figure 3-42: F-35 EIS Scenario 3 Noise Zone Generalized Zoning Compatibility Summary

Compatibility	Acres	% of Noise Zone
Compatible	2,162	26.2%
Conditionally Compatible	5,872	71.2%
Incompatible	209	2.5%
Total	8,243	100.0%

Figure 3-43: F-35 EIS Scenario 3 Noise Zone Current Zoning Compatibility



## IX. SHAW AFB ACCIDENT POTENTIAL ZONE LAND USE ANALYSIS

Moving from the analyses of noise impacts, this section analyzes land use patterns and land use compatibility regarding the area that falls within the aircraft accident potential zones established in the 2013 Shaw AFB AICUZ study for F-16 aircraft operations. Though referred to generally as the “accident potential zones” here, the term encompasses the Air Force Clear Zones, Accident Potential Zone 1, and Accident Potential Zone 2. As with the noise contours, topics covered include analyses of the existing land use pattern, land subdivision pattern, zoning, and future land use (as established in the 2030 Comprehensive Plan). These are followed by analyses of the compatibility of the established land use and regulatory patterns with the 2015 Air Force AICUZ guidance for compatible land use within areas that are designated as aircraft accident potential zones (also AFI 32-7063).

### A. Generalized Existing Land Use Pattern

Observations of the general existing land use pattern within the aircraft accident potential zones as shown in Figure 3-48 and detailed in the table below reveal that nearly 70 percent of the off-base land within the zones is either undeveloped or used for agricultural purposes. The highest concentrations of undeveloped land are found in APZ 1 on the northeast side of Shaw AFB and APZ 2 on the southwest side of the base. Land used for residential purposes accounts for around 15 percent of the acreage inside of the accident potential zones with the greatest concentrations of residentially developed land found in both APZ 2 areas (southwest and northeast of Shaw AFB). Industrial land uses account for just over 10 percent of the acreage within the noise zone with the greatest concentration of industrial development found due south of the base in the clear zone and APZ 1. Commercial land uses (3 percent of the overall acreage) are found along the major corridors in the noise zone (primarily along US 76 and US 521), while community and institutional uses (such as churches and schools) are limited in presence in the APZs, accounting for less than 1 percent of the overall acreage.

Figure 3-44: Shaw AFB Accident Potential Zone Generalized Existing Land Use Summary

Existing Land Use	Acres	% of APZ
Undeveloped/Agriculture	1,462	69.7%
Residential	318	15.2%
Community/Institutional	5	0.2%
Commercial	60	2.9%
Industrial	252	12.0%
Total	2,096	100.0%

### B. Land Subdivision

The degree of land subdivision within the accident potential zones (see Figure 3-45 and 3-49) is limited with a primarily rural development pattern in terms of the amount of acreage contained in parcels larger than 10 acres. The most intensively subdivided areas are in the northeastern APZ 2 area near US 521. Overall, only around 6 percent of the land area within the APZs consists of parcels that are one acre or smaller, while over 90 percent of the acreage is contained in parcels larger than one acre.



Figure 3-45: Shaw AFB Accident Potential Zone Land Subdivision Summary

Parcel Size (Acres)	Parcels	Acres	% of APZ
Less than 0.5	187	67	3.2%
0.5 – 1	89	66	3.1%
1 – 3	75	147	7.0%
3 – 10	37	218	10.4%
Greater than 10	29	1,598	76.2%
Total	417	2,096	100.0%

## C. Zoning

The Agricultural Conservation district is the most prevalent district applied within the APZ areas, which fall outside of Shaw AFB, accounting for just over half of the impacted acreage. As shown in Figure 3-50, this district is found in greatest concentration in the APZ 2 area southwest of the base and in APZ 1 and 2 northeast of the base. Industrial zoning is the second most common type of district found in the APZ areas with the greatest concentration of industrial zoning found in APZ 1 south of Shaw AFB and, to a somewhat lesser extent, in the APZ 1 area on the northeast side of the base. Commercial zoning, accounting for just under 10 percent of the APZ area, is found primarily in APZ 2 on the northeast side of Shaw AFB along the highway corridors in that area. Residential zoning districts account for the smallest amount of acreage in the APZs, representing under 4 percent of the total land area in the APZs. The only concentrated area of residential zoning is in the far northern corner of the APZ 2 area located northeast of Shaw AFB.

Figure 3-46: Shaw AFB Accident Potential Zone Generalized Zoning Summary

Generalized Zoning Districts	Acres	% of APZ
Agricultural Conservation	1,171	55.9%
Residential	80	3.8%
Commercial	180	8.6%
Industrial	665	31.7%
Total	2,096	100.0%

## D. Future Land Use

The future land-use pattern established for the area in the 2030 Comprehensive Plan (see Figure 3-51) is heavily weighted toward land designated in the Military Protection Area, with almost 97 percent of the acreage in the APZs designated with that land use classification. The remaining 3 percent of the APZ area is designated with the Conservation land use classification, primarily along floodplains and other environmentally sensitive areas.

Figure 3-47: Shaw AFB Accident Potential Future Land Use Classifications

Future Land Use	Acres	% of APZ
Conservation	64	3.1%
Military Protection Area	2,032	96.9%
Total	2,096	100.0%

Figure 3-48: Accident Potential Zone Generalized Existing Land Use Pattern

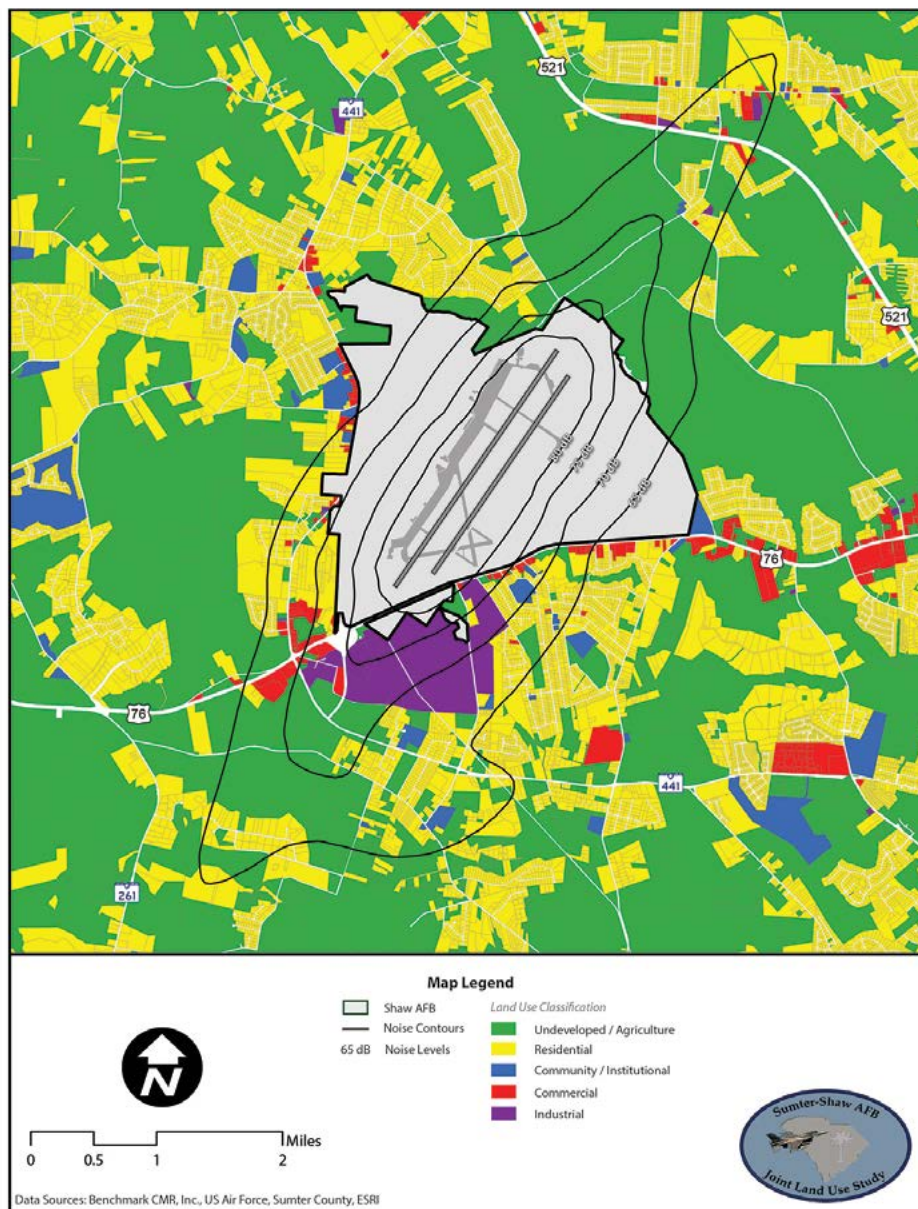


Figure 3-49: Accident Potential Zone Land Subdivision Pattern

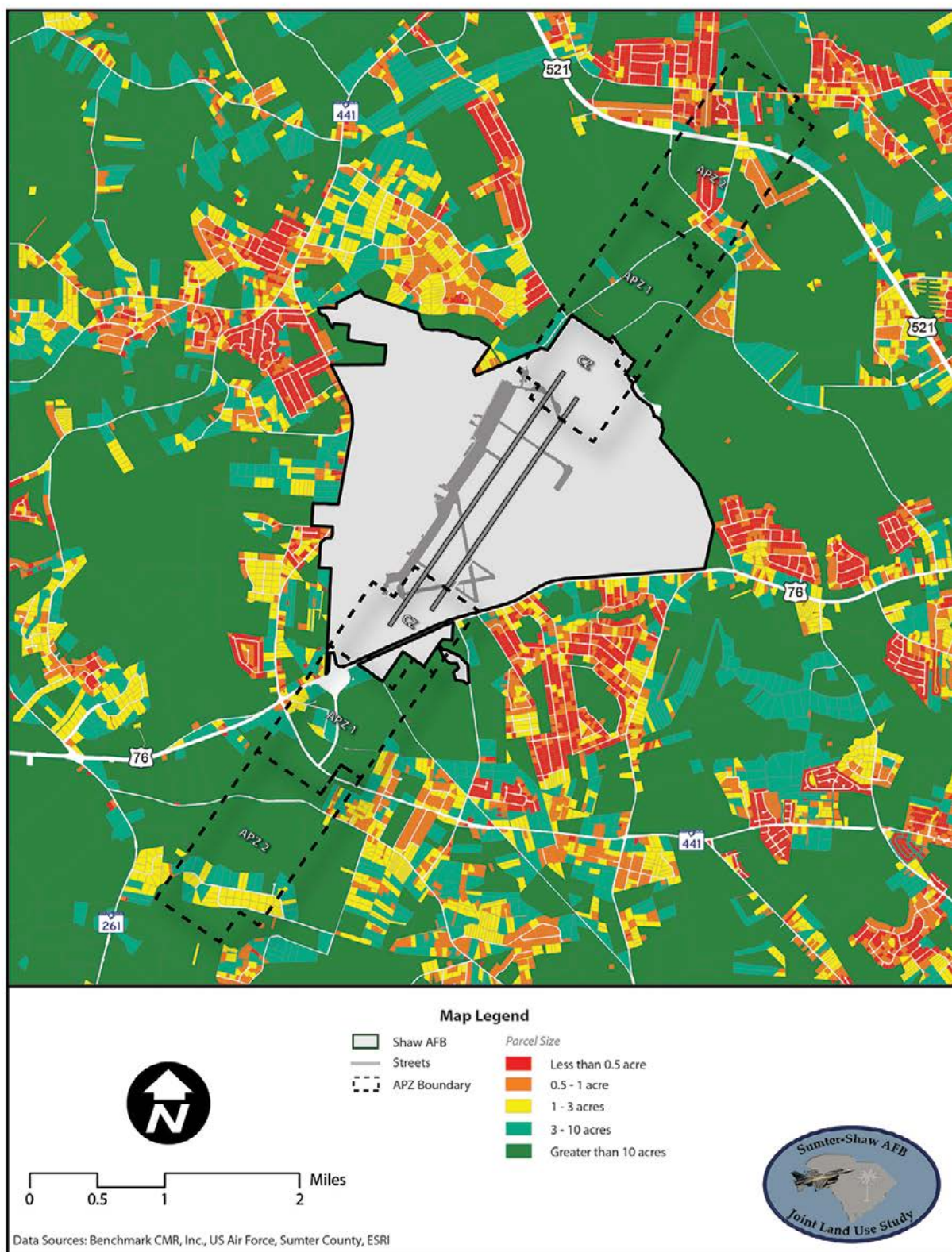




Figure 3-50: Accident Potential Zone Generalized Base Zoning Districts

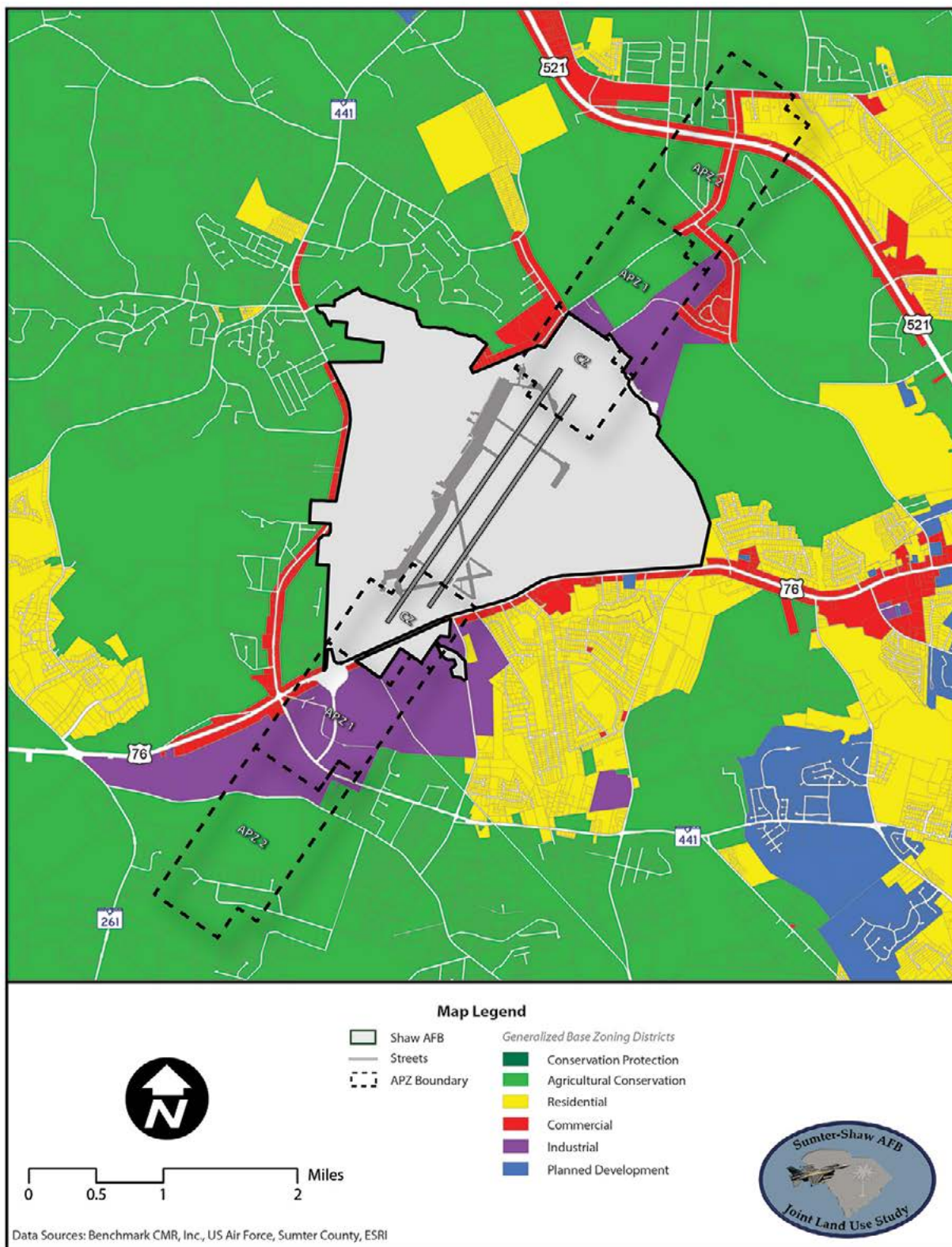
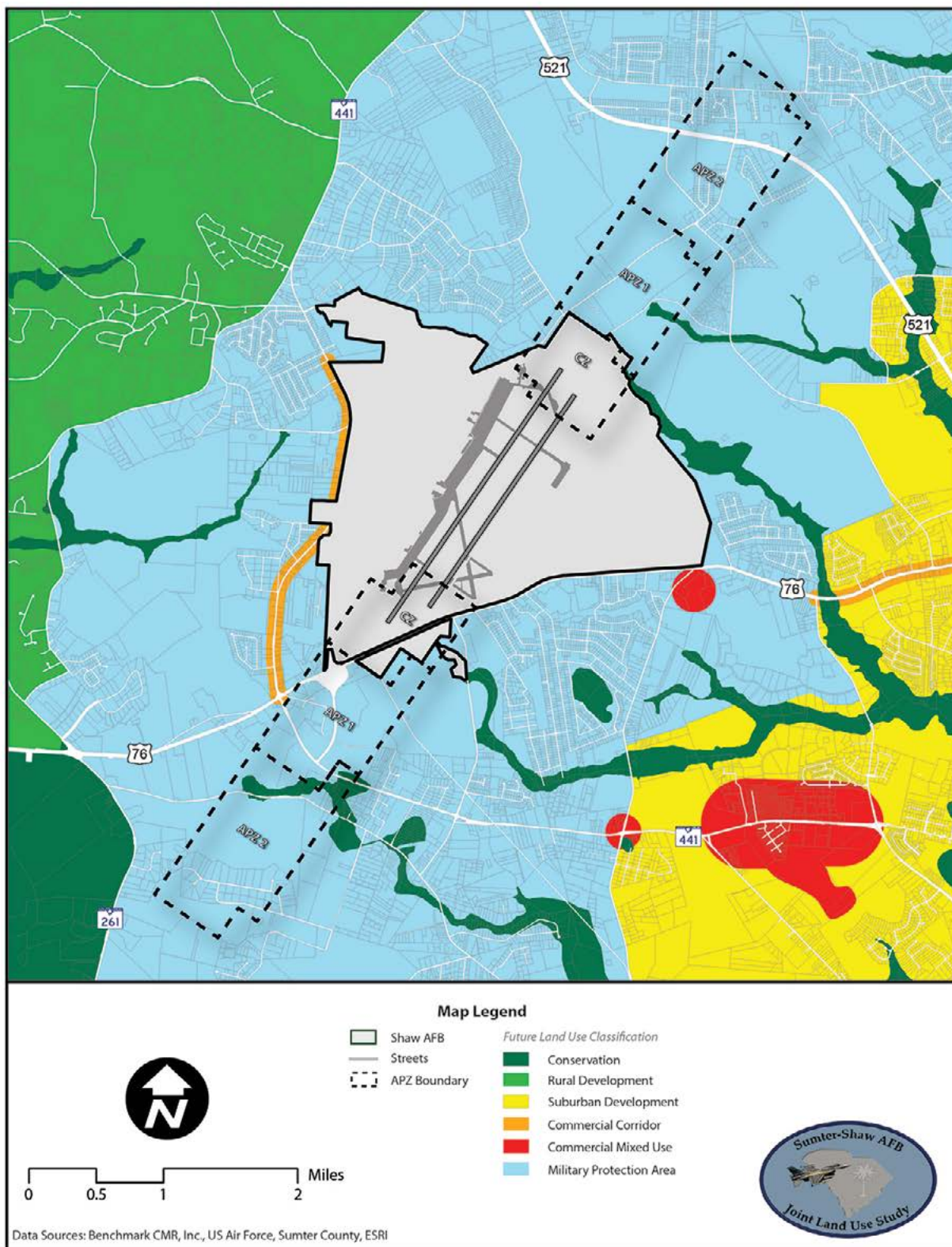


Figure 3-51: Accident Potential Zone Future Land Use Pattern





## E. Existing Land Use Compatibility

As the map shown in Figure 3-54 and the data in the table below demonstrate, the existing land use pattern within the APZ areas is highly compatible with the AICUZ guidance for compatible land use within areas subject to aircraft accident potential with over 75 percent of the land in these areas found to be compatible, based once again on 2015 Air Force guidance, which recommends avoiding concentrations of people within accident potential areas. Given that 85 percent of the off-base areas of the APZs is open space, non-residential uses, incompatible land uses within the APZ areas account for only slightly more than 10 percent of the total land area within the APZs. The greatest concentration of incompatible uses is in the APZ 2 area on the northeast side of Shaw AFB and in the Clear Zone immediately adjacent to Shaw AFB. The remaining land area within the APZs was found conditionally compatible with the APZ compatibility guidance given their potential for compatibility and given individual circumstances. These conditionally compatible uses also account for just over 10 percent of the land within the APZ areas and are primarily within the APZ 1 area on the southwest side of Shaw AFB.

Figure 3-52: Shaw AFB Accident Potential Zone Existing Land Use Compatibility Summary

Compatibility	Acres	% of APZ
Compatible	1,580	75.4%
Conditionally Compatible	268	12.8%
Incompatible	248	11.9%
Total	2,096	100.0%

## F. Zoning Compatibility

The compatibility of the current zoning regulations, including Sumter County's Airfield Compatibility District (ACD), with the degree of accident potential is shown in Figure 3-55. An analysis of the ACD and the AICUZ guidance reveals that just over 97 percent of the land in the APZs is zoned in a manner that is compatible, while just under 3 percent of the land is zoned in a potentially incompatible manner due to the types of uses permitted. The ACD includes overarching provisions that limit the concentration of people within APZ 1 and APZ 2, regardless of the land use being undertaken. These provisions result in increased zoning compatibility in these two areas. However, as shown in Figure 3-55, potentially incompatible areas are concentrated in the Clear Zone, specifically because the ACD does not currently include any regulatory provisions for this particular accident potential area. Chapter 5 includes the Policy Committee's recommendation that Air Force guidance for the Clear Zones be adopted into the ACD.

Figure 3-53: Shaw AFB Accident Potential Zone Generalized Zoning Compatibility Summary

Compatibility	Acres	% of APZ
Compatible	2,040	97.3%
Conditionally Compatible	0	0.0%
Incompatible	56	2.7%
Total	2,096	100.0%

Figure 3-54: Accident Potential Zone Existing Land Use Compatibility

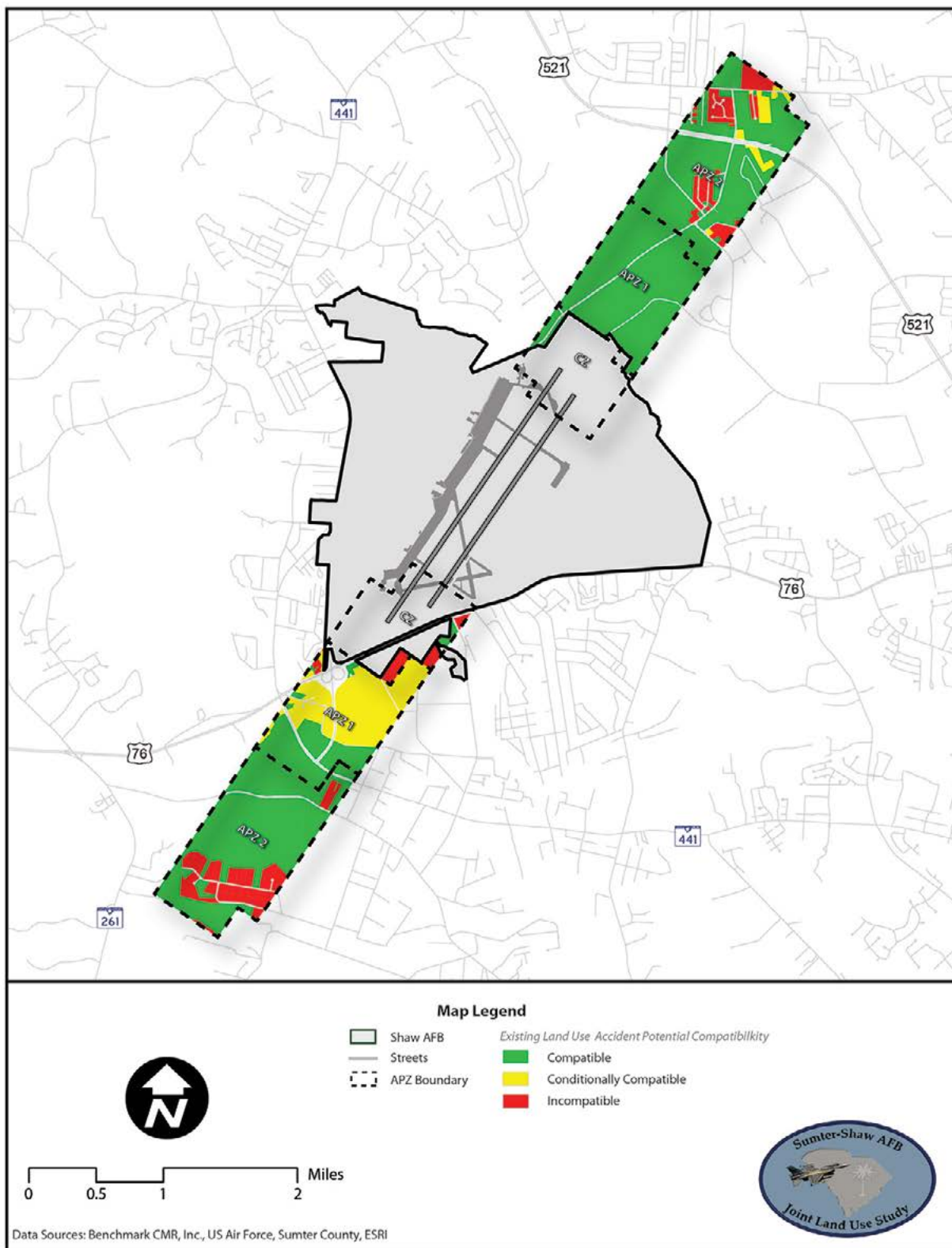
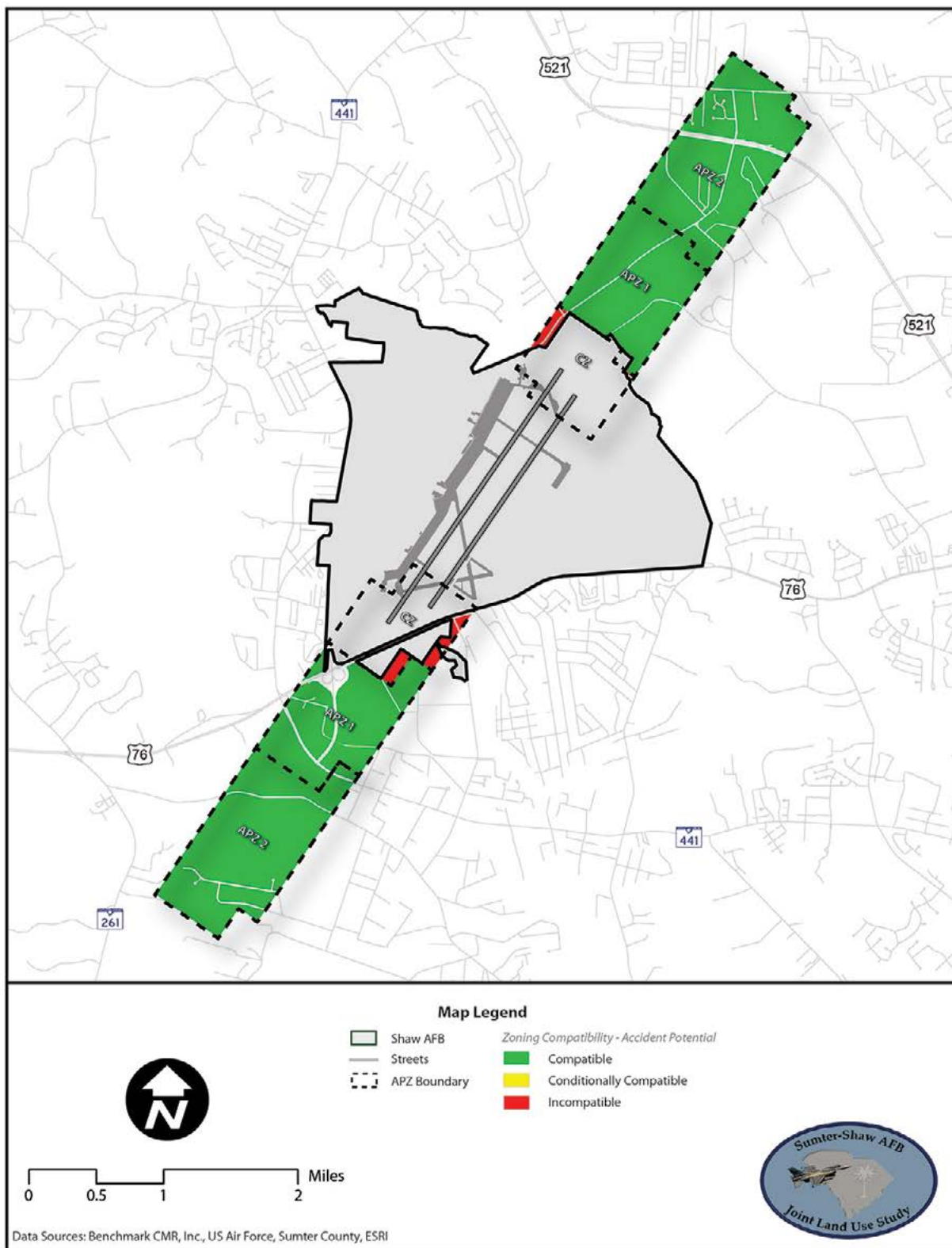


Figure 3-55: Accident Potential Zone Current Zoning Compatibility



## X. POINSETT ECR OVERVIEW

Poinsett Electronic Combat Range (ECR) is a multi-purpose range and training facility located south of Shaw AFB (see Figure 3-1) used for aerial gunnery, electronic warfare training, and bombing practice by a wide range of aircraft from all branches of the military, including both active and reserve components. In addition to the aircraft-related training mission of Poinsett ECR, the range is used for a variety of ground-based training activities, including small arms, light maneuver, and demolitions training. The following is an overview of the most prevalent impacts created by training operations at Poinsett ECR and the compatibility of land uses within the area of primary impact. Chapter 2 includes a detailed overview of the recent missions at Poinsett.

### A. Poinsett ECR Aircraft Operational Noise Impacts

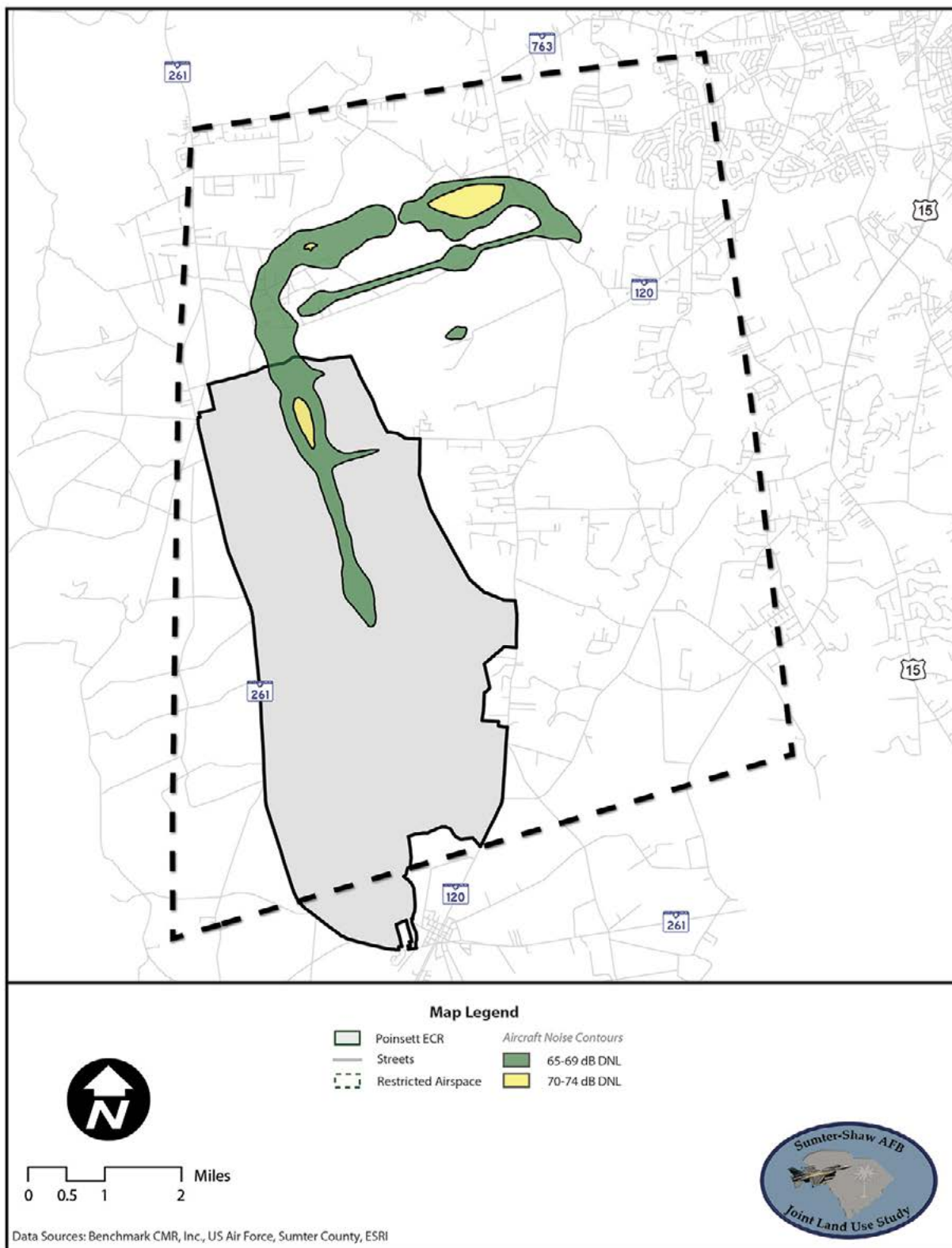
Noise contours were established for aircraft training operations prior to the 2002 Poinsett ECR Joint Compatibility Land Use Study. As no updates to these previously established noise contours have been made since the completion of the 2002 Poinsett JCLUS, the same aircraft operational noise contours are used for the purposes of the analysis conducted in this study (see Figure 3-57).

Figure 3-56: Poinsett ECR 65+ dB DNL Noise Zone Summary

Noise Zone (dB DNL)	On-Range Acres	Off-Range Acres	Combined Acres	% Off-Range
65-69	700	1,588	2,288	69.4%
70-74	64	192	256	75.0%
Total	764	1,780	2,544	70.0%

Training activities at Poinsett ECR are facilitated by a designated area of restricted airspace. This protected airspace (shown in Figure 3-57) allows military aircraft to fly low flight patterns without interference from civilian aircraft. Within this airspace, aircraft are not restricted as to their flight location, which means there is a potential to experience high noise levels throughout this area and beyond.

Figure 3-57: Poinsett ECR Restricted Airspace and Aircraft Noise Contours





## B. Poinsett ECR Boundary Status

Poinsett ECR shares a significant portion of its operating areas with land owned by the SC Forestry Commission. This significant common boundary helps to protect the range from encroachment by immediately adjacent incompatible land uses along more than half of its boundary (see Figures 3-58 and 3-59).

Figure 3-58: Poinsett ECR Boundary Status Summary

Status	Miles	% of Boundary
Protected	13.2	59.2%
Open	9.1	40.8%
Total	22.3	100.0%

## C. Compatible Use Regulations

Compatible land use is promoted in the area around Poinsett ECR by Sumter County and the City of Sumter through an overlay-zoning district known as the Range Compatibility District or "RCD" (see Figure 3-59). This overlay district is coterminous with the restricted airspace established by the FAA around Poinsett ECR to accommodate low level military flight operations and exclude civilian aircraft during times that the airspace is active.

Figure 3-59: Poinsett ECR Boundary Status

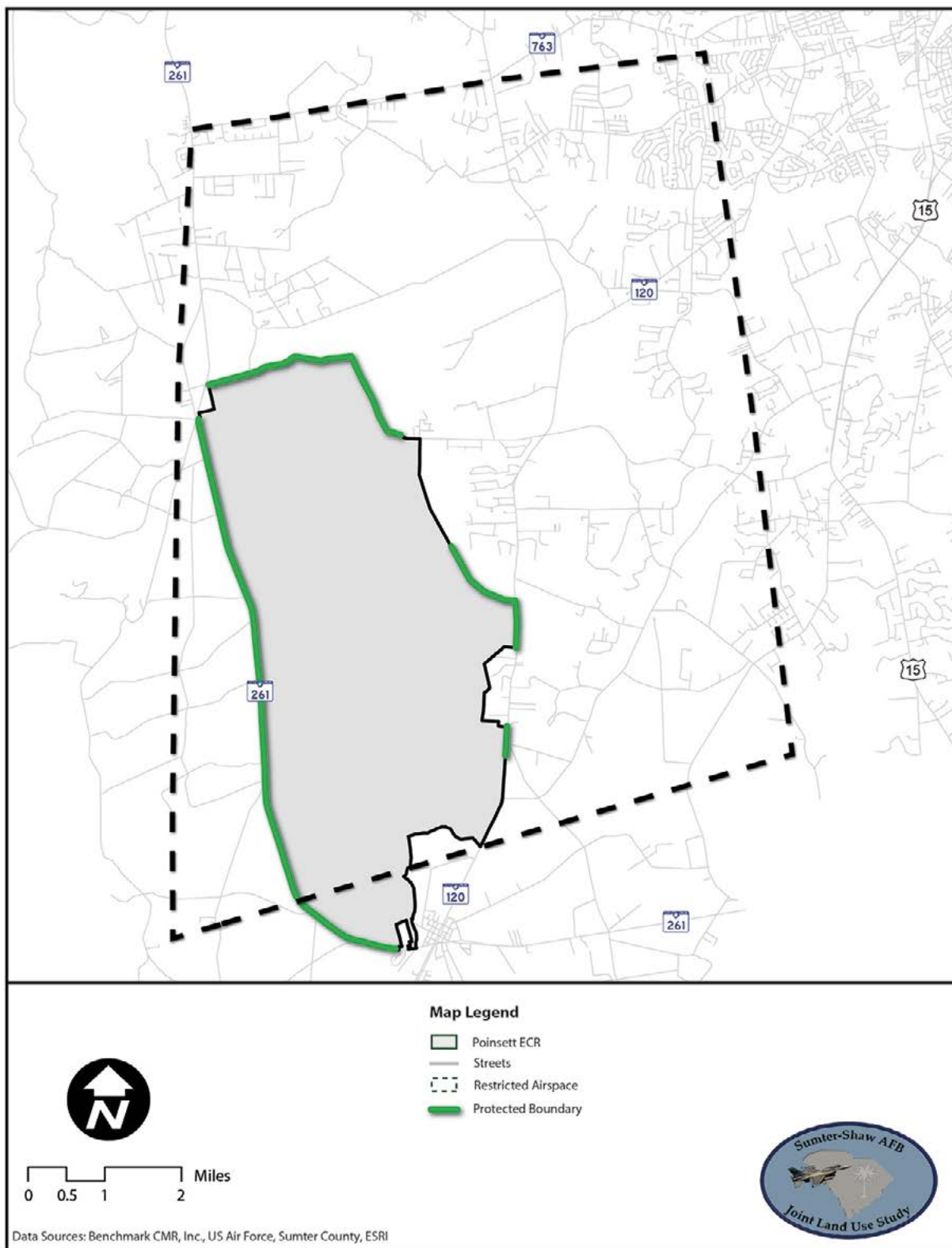
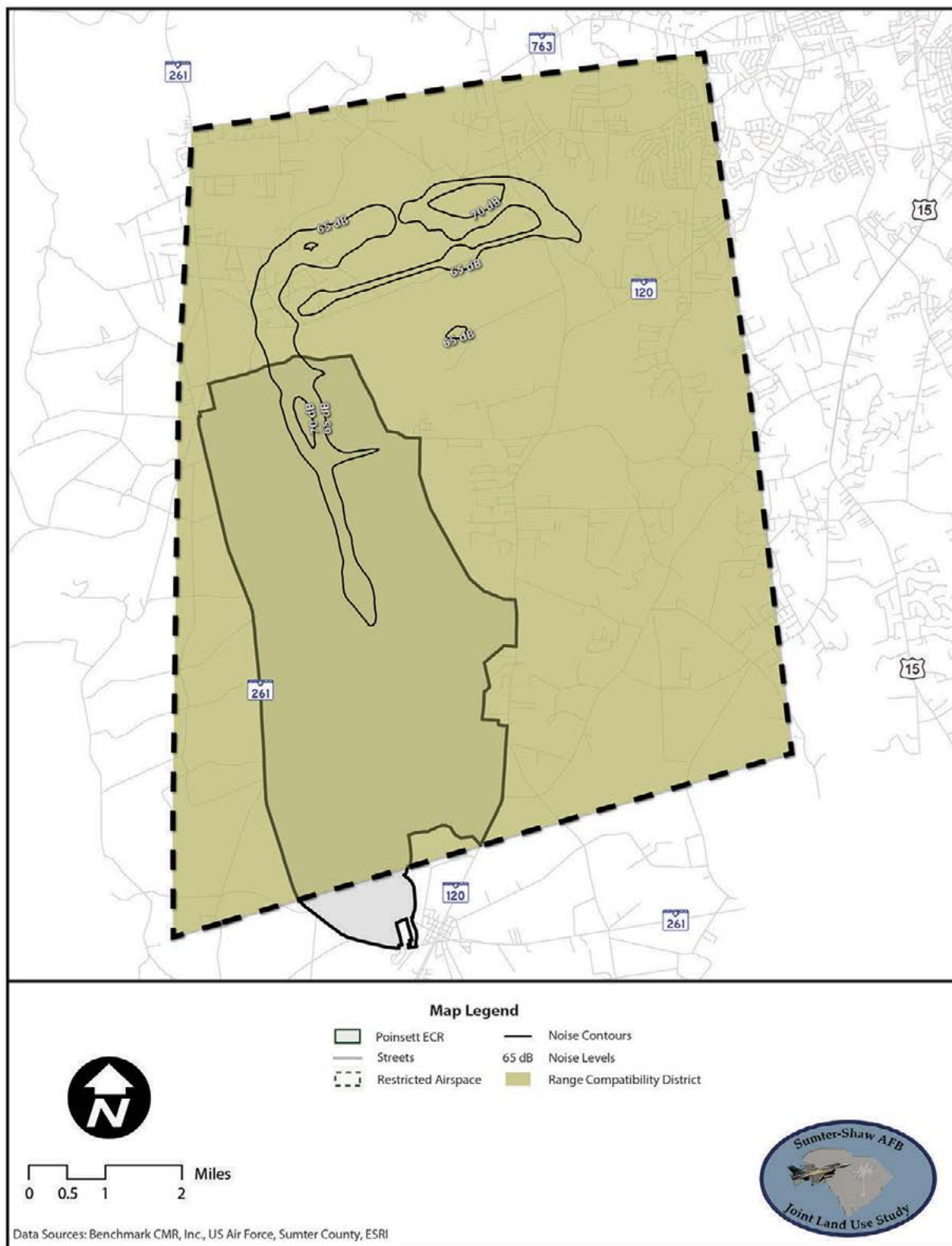


Figure 3-60: Poinsett ECR Compatible Use Zoning



## XI. POINSETT ECR LAND USE ANALYSIS

The following is an analysis and summary of the land use patterns within the restricted airspace around Poinsett ECR and land use compatibility within the area covered by the 65+ dB DNL noise contours established prior to the 2002 Poinsett JLUS (See Figure 3-57). Topics covered include analyses of the existing land use pattern, land subdivision pattern, zoning, and future land use (as established in the 2030 Comprehensive Plan). These are followed by analyses of the compatibility of the established land use and regulatory patterns with the USAF AICUZ guidance for compatible land use within areas of high noise potential from aircraft operations.

### A. Generalized Existing Land Use Pattern

Observations of the generalized existing land use pattern in the area around Poinsett ECR (see Figures 3-61 and 3-65) reveals a primarily rural land use pattern with almost 75 percent of the acreage in the RCD remaining undeveloped or in agricultural use, the greatest concentrations of undeveloped land found northeast of Poinsett ECR and along the western boundary of the range. The majority of the remaining land uses are residential in nature, accounting for 24 percent of the acreage in the area around Poinsett ECR. The greatest concentration of residential development is in the northeastern corner of the restricted airspace with lesser concentrations found to the north and east of the range. Commercial, institutional, and industrial land uses account for less than 1 percent each of the remaining acreage.

Figure 3-61: Poinsett ECR Generalized Existing Land Use Summary

Existing Land Use	Acres	% of Area
Undeveloped/ Agriculture	25,435	74.6%
Residential	8,182	24.0%
Community/Institutional	120	0.4%
Commercial	37	0.1%
Industrial	322	0.9%
Total	34,096	100.0%

### B. Land Subdivision

An analysis of the land subdivision and development patterns around Poinsett ECR reveals a primarily rural landscape with almost 80 percent of the acreage in the area contained in parcels greater than 10 acres in size. Altogether, approximately 95 percent of the total acreage around Poinsett ECR is contained in parcels greater than one acre in size. The area of the greatest concentration of a pattern of higher density land subdivision activity is in the far northeastern portion of the area within the restricted airspace. The land subdivision pattern around Poinsett ECR is shown in Figure 3-66 and is summarized in the following table.

Figure 3-62: Poinsett ECR Land Subdivision Summary

Parcel Size (Acres)	Parcels	Acres	% of Area
Less than 0.5	1,784	735	2.2%
0.5 – 1	1,902	1,485	4.4%
1 – 3	1,108	2,044	6.0%
3 – 10	504	2,762	8.1%
Greater than 10	349	27,070	79.4%
Total	5,647	34,096	100.0%

## C. Zoning

The base zoning districts that have been applied within the area around Poinsett ECR (see Figure 3-67) are primarily rural, low-density types of districts, with the Agricultural Conservation district accounting for 70 percent of the acreage and the Conservation Protection district accounting for slightly more than 20 percent of the acreage (see Figure 3-63). Residential districts comprise the majority of the remaining acreage, accounting for just over 7 percent of the total area. These residentially zoned areas are primarily in the northeastern corner of the area covered by the restricted airspace. The remaining acreage (less than 1 percent of the total area analyzed) consists of small portions of planned developments, industrial, and commercial zones. These underlying zoning districts are also subject to the RCD zoning overlay.

Figure 3-63: Poinsett ECR Generalized Zoning Summary

Future Land Use	Acres	% of Area
Agriculture Conservation	24,054	70.5%
Conservation Protection	7,466	21.9%
Residential	2,477	7.3%
Commercial	36	0.1%
Industrial	14	0.0%
Planned Development	56	0.2%
Total	34,096	100.0%

## D. Future Land Use

The future land-use pattern established for the area around Poinsett ECR in the 2030 Comprehensive Plan is shown in Figure 3-68. Note again that, as currently drafted, the Comprehensive Plan has the Military Planning Area (MPA) as a standalone future land-use category, distinct from others in the study area. However, the Policy Committee recommended the MPA be clarified in the plan to be in the nature of an overlay, so its



policies would apply in addition to those applicable through other future land-use categories within the outermost boundaries of the MPA.

While no single future land use classification encompasses a majority of the acreage under the restricted airspace, as currently drafted, the Military Protection Area land use category represents the largest share with almost half of the land falling in that category. As the map shows, the MPA falls primarily along the range's eastern and northern boundaries. Lands classified in the conservation category account for the second greatest amount of acreage, while land designated for rural development represents a similar amount of acreage. Conservation lands are on the west side of Poinsett ECR, while rural development areas are found in the southeastern corner of the area covered by the restricted airspace. Lands designated for more intensive suburban development are in the northeastern corner of the area within the restricted airspace. Suburban development areas account for slightly less than 15 percent of the total acreage. A very small amount of land, accounting for only 0.5 percent falling within the restricted airspace, is designated for future commercial uses. These commercially designated lands are in the northeastern portion of the area covered by the restricted airspace, in close proximity to the lands designated for suburban development.

Figure 3-64: Poinsett ECR Future Land Use Summary

Future Land Use	Acres	% of Area
Conservation	6,653	19.5%
Military Protection Area	16,435	48.2%
Priority Commercial	172	0.5%
Rural Development	6,180	18.1%
Suburban Development	4,681	13.7%
Total	34,121	100.0%

Figure 3-65: Poinsett ECR Generalized Existing Land Use Pattern

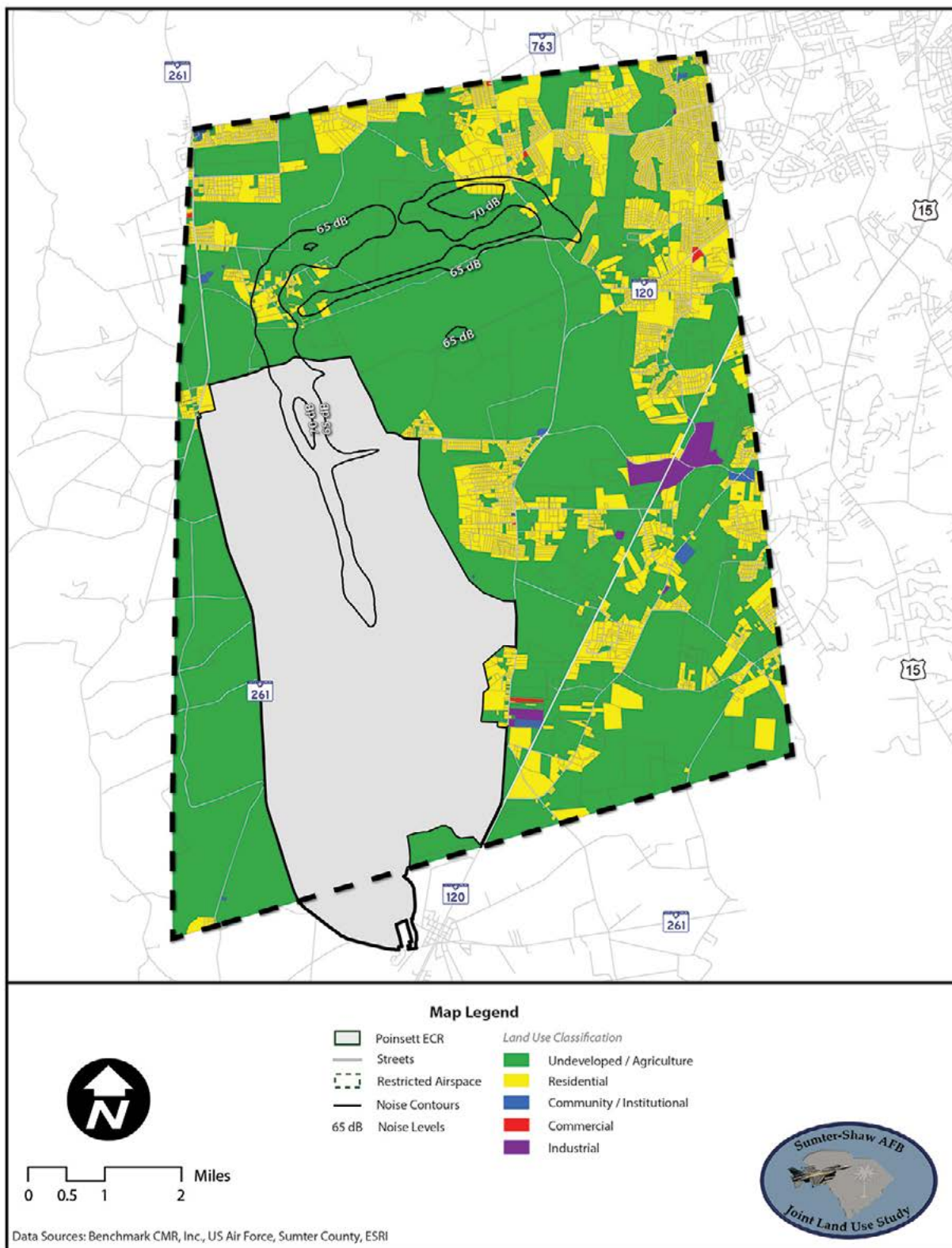


Figure 3-66: Poinsett ECR Land Subdivision Pattern

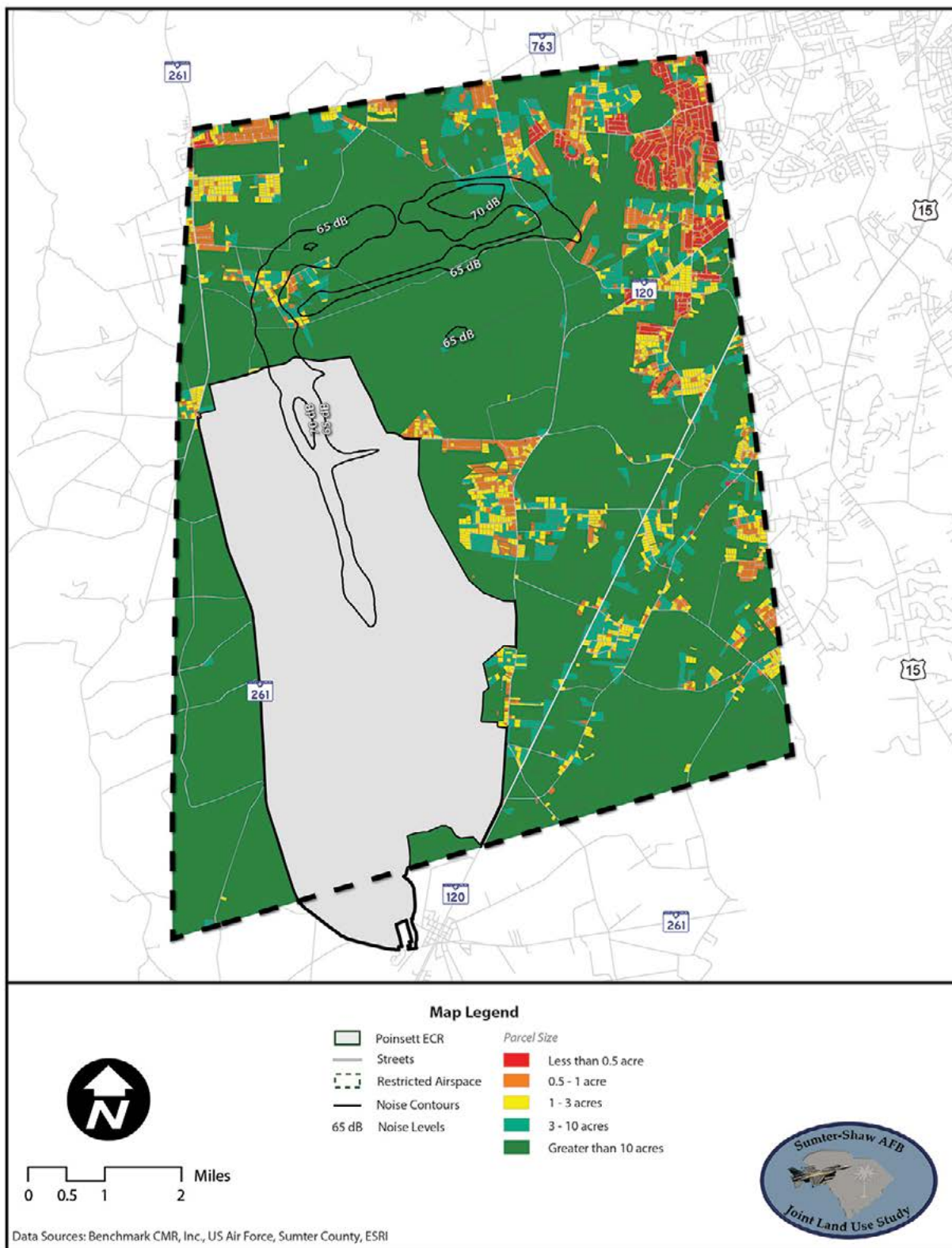




Figure 3-67: Poinsett ECR Generalized Base Zoning Districts

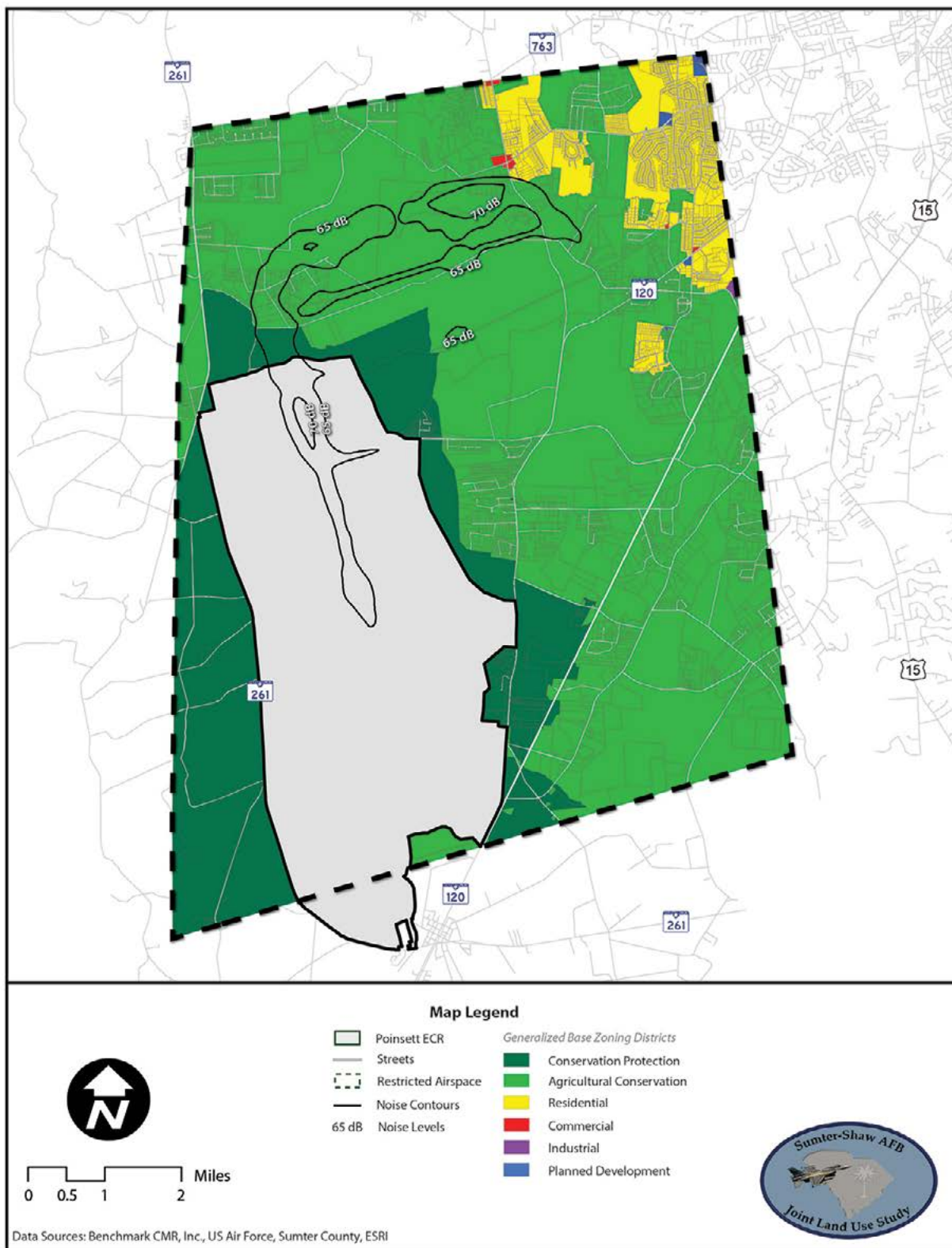
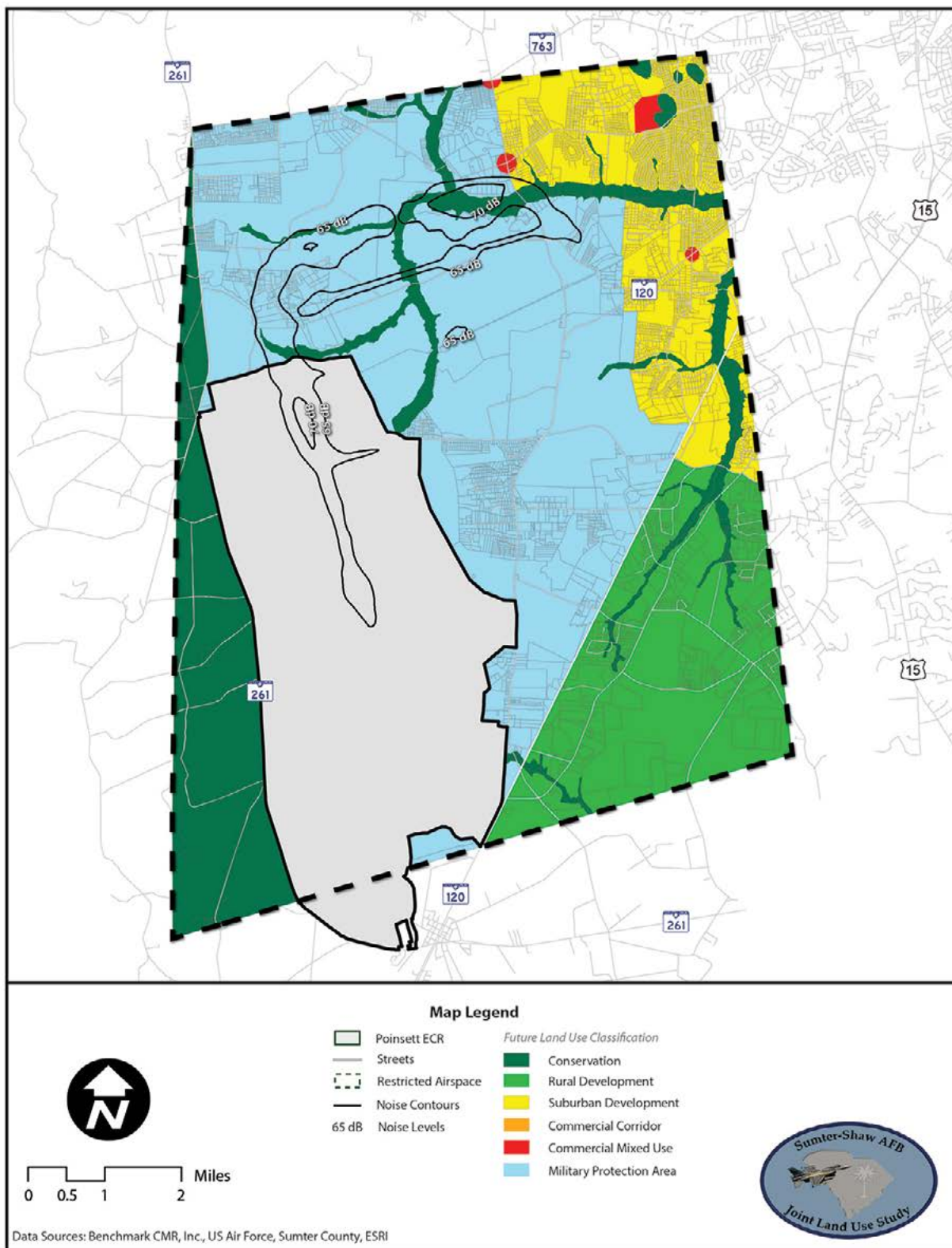


Figure 3-68: Poinsett ECR Future Land Use Pattern





## E. Existing Land Use Compatibility

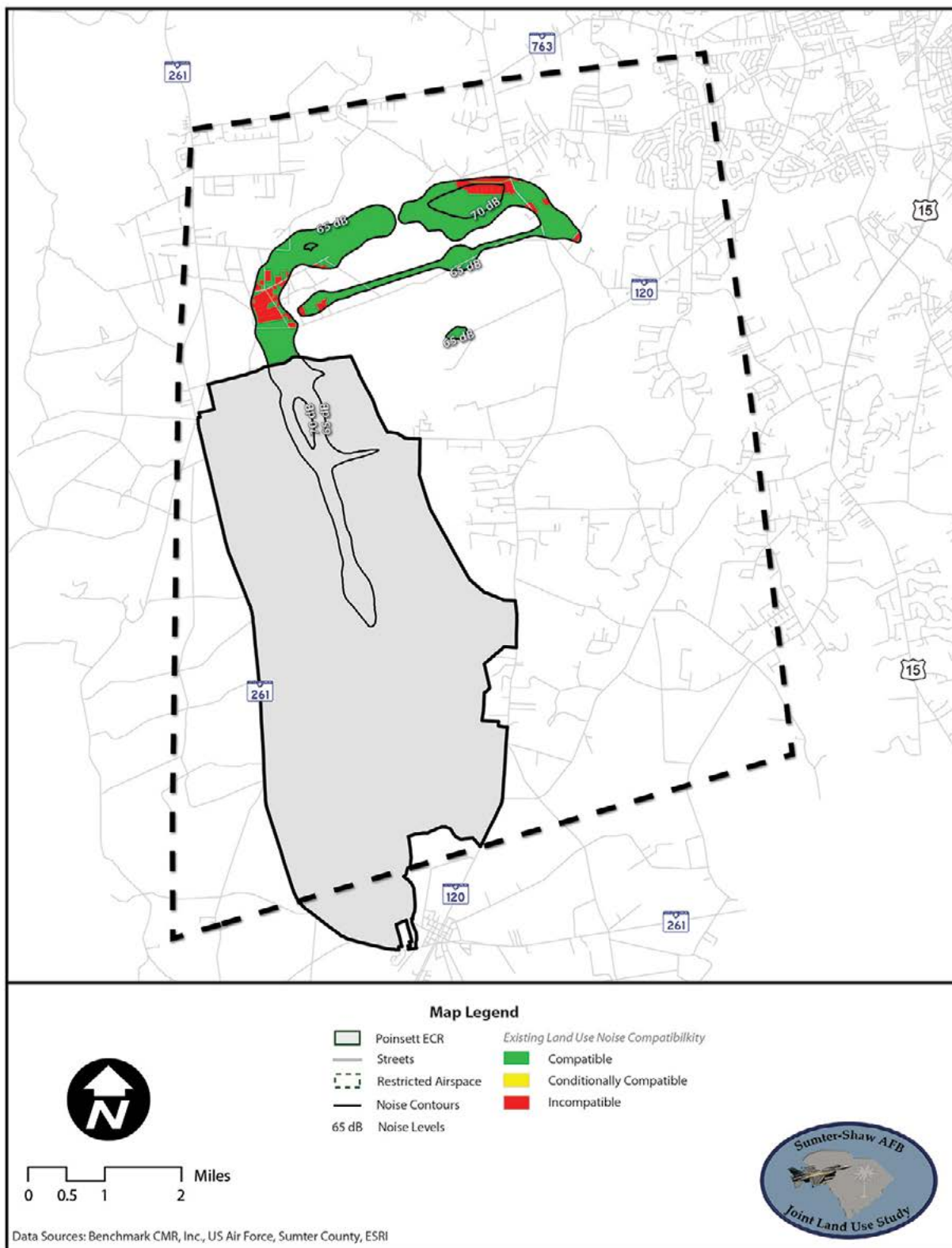
The compatibility of existing land uses within the defined noise contours associated with aircraft operations at Poinsett ECR is shown in Figure 3-70 and detailed in the table below. Over 85 percent of the “off-range” land within the noise contours is shown to be compatible with the AICUZ noise compatibility guidance, while the remaining acreage is deemed to be incompatible. The greatest concentrations of incompatible land uses are associated with an area of residential development located immediately north of the range, while compatible land uses are found throughout the noise zones.

Note that in the compatibility analysis the acreages in Figures 3-69 and 3-70 include only those lands to which specific noise zones have been applied, specifically the 65-69 dB and 70+ dB contours. This is because there are no official Air Force guidelines related to land use compatibility for an operating area like the Range Compatibility District, where, as discussed in Chapter 2, the nature of the training is sporadic and varied overtime. Nonetheless, the entire RCD is evaluated in the preceding section as to existing land use, zoning, and future land use in the entire RCD. However, in Chapter 5, the Policy Committee has recommended updating the impact data within the entire RCD to establish whether or how additional protections would be appropriate in the RCD as a whole.

Figure 3-69: Poinsett ECR Noise Zone Existing Land Use Compatibility Summary

Compatibility	Acres	% of Noise Zone
Compatible	1,512	86.6%
Conditionally Compatible	0	0.0%
Incompatible	234	13.4%
Total	1,746	100.0%

Figure 3-70: Existing Land Use Compatibility Within Poinsett ECR Noise Contours



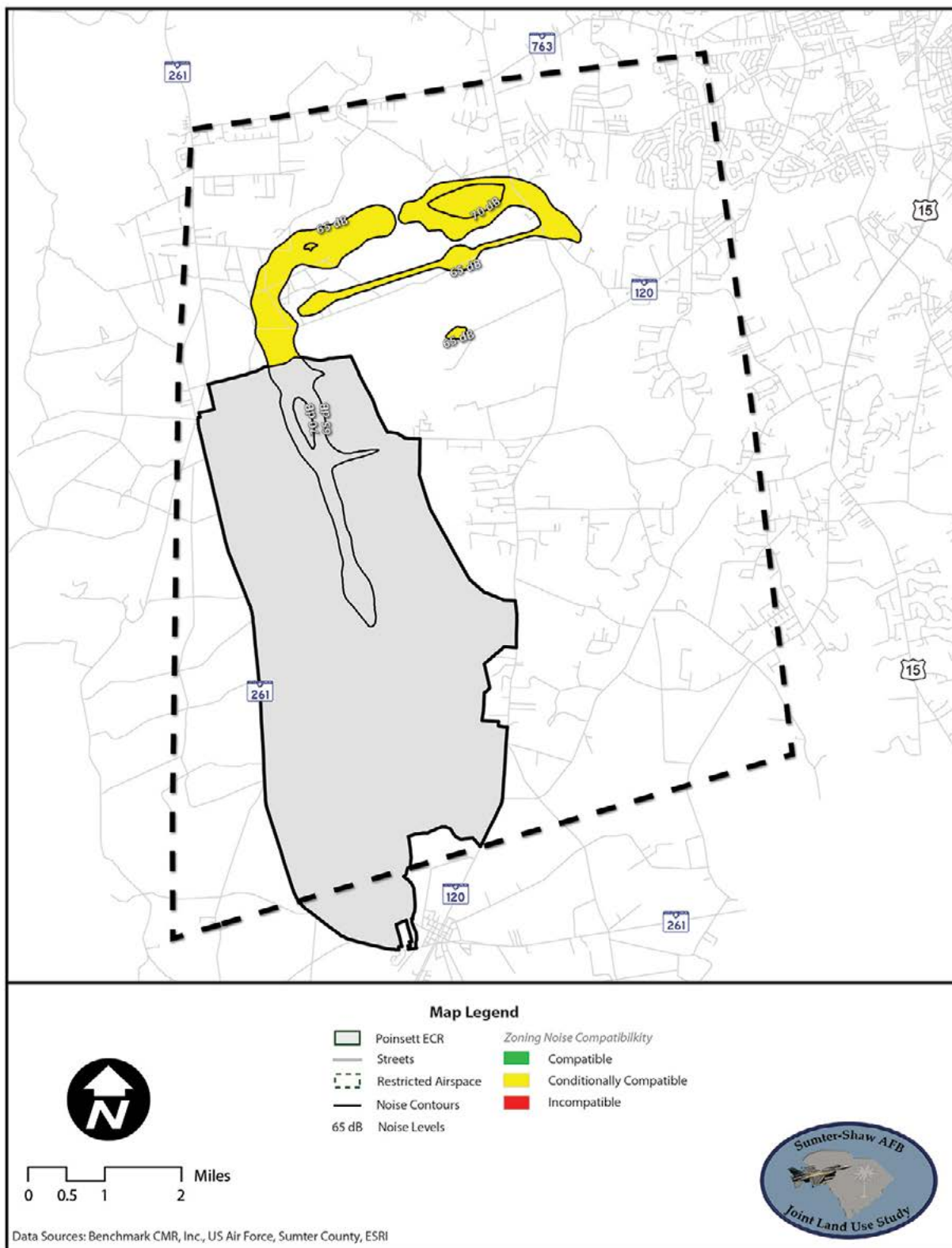
## F. Zoning Compatibility

Based on the current application of zoning and the RCD overlay, all of the land within the Poinsett ECR noise contours is zoned in a manner that is conditionally compatible with the AICUZ guidance for noise impact land-use compatibility (See Figures 3-71 and 3-72). As discussed with respect to Shaw AFB noise zones, since the county currently allows some residential development within the noise zones associated with Poinsett ECR– albeit with the recommended noise level reduction requirements in place – under updated Air Force guidance, residential uses here are considered to be “conditionally” compatible.

Figure 3-71: Poinsett ECR Noise Zone Generalized Zoning Compatibility Summary

Compatibility	Acres	% of APZ
Compatible	0	0.0%
Conditionally Compatible	1,747	100.0%
Incompatible	0	0.0%
Total	1,746	100.0%

Figure 3-72: Poinsett ECR Noise Zone Current Zoning Compatibility



THIS PAGE INTENTIONALLY LEFT BLANK



## CHAPTER 4:

# State, Local, and Federal Tools for Advancing Land Use Compatibility

## I. INTRODUCTION

Since the inception of the Joint Land Use Study program, communities around the country have put into place various strategies to avoid incompatibilities between civilian and military land uses. Successful programs involve the cooperation of military, civilian, and local government stakeholders. Sumter and Sumter County are great examples of this success. Having performed Joint Land Use Studies previously, Sumter County and the City of Sumter have adopted a number of Comprehensive Plans, zoning, subdivision, and general code provisions that facilitate land use compatibility in the vicinity of the Installations.

There are numerous state, local, and federal programs and tools available to the City, Sumter County, the Air Force, and this community to advance ongoing compatibility efforts in the face of an evolving military mission and a growing regional presence in Sumter. Chapter 4 reviews existing and available programs and tools that the Policy Committee determined as likely effective over the next decade. These tools range in nature from mandatory/compulsory regulations to voluntary/optional coordination tools. Chapter 5 describes those tools that the Policy Committee elected during the JLUS process to (a) continue implementing in Sumter-Sumter County; (b) amend and or update based on the findings of this JLUS; or (c) to evaluate as additional new tools to enhance land use compatibility.

As is detailed below, the City and County have a joint planning program, so, in most instances, City and County policies and regulations mirror one another – to the extent their circumstances are the same – and provide a consistent area wide policy approach to military-related land use issues. In addition to local policies, there are several federal and state statutes and programs relevant to the community's relationship with the Air Force and military/civilian land use compatibility. Chapter 4 summarizes existing local, state, and federal policies that affect land use planning and compatibility in the JLUS Study Area.

In addition to inventorying what already has been done, Chapter 4 lays out the authorities the City and County have under state law to take additional steps to protect compatibility, should it wish to do so. These discussions provide the basis for the recommendations of the JLUS Policy Committee set out in Chapter 5.



Commercial land uses southeast of the Shaw AFB main gate.

## II. THE SOUTH CAROLINA PLANNING AND LAND USE FRAMEWORK

The state of South Carolina has a history of protecting its military bases through state programs and statutory action. This section summarizes state requirements and policies in that regard, including the Federal Defense Facilities Utilization Integrity Protection Act and other state statutes as well as the South Carolina Military Base Task Force, which Governor Nikki Haley reconstituted in recent years to support military installations in the state.

### A. State Requirements and Policies related to Military Land Use Compatibility

The South Carolina statutes address military-related issues in a number of places, but the most relevant to land use in the vicinity of Shaw AFB and Poinsett ECR is the Federal Defense Facilities Utilization Integrity Protection Act, which is covered first followed by a discussion of Title 25: Military, Civil Defense, and Veterans Affairs, providing a more general treatment of military issues in the state.

### B. Federal Defense Facilities Utilization Integrity Protection Act.

The “Federal Defense Facilities Utilization Integrity Protection Act” is part of the 1994 Local Government Comprehensive Planning Enabling Act of South Carolina (the Planning Act). Since the statute’s primary purpose is to facilitate coordination between cities and counties and their local military installations, the statute is referred to in the JLUS as the “State Military Coordination Act.”

This law applies to federal military installations in the state, including the Shaw Air Force Base, which it identifies specifically. The State Military Coordination Act does not identify Poinsett ECR specifically as a “military installation” to which its provisions would apply, but the two are treated together for local coordination purposes of the JLUS.

The State Military Coordination Act statute recognizes that “uncoordinated development in areas contiguous to federal military installations ... can undermine the integrity and utility of land and airspace currently used for mission readiness and training.”<sup>1</sup> It, therefore, provides a formal process for receiving the input of federal military interests before certain local planning and zoning decisions are made that could affect the Installations.

Specifically, local governments must request a written recommendation from the Shaw AFB base commander at least thirty (30) days before considering any “land use or zoning decision” involving land located within a “federal military installation overlay zone” or, if no overlay zone exists, within 3,000 feet of the installation or within the 3,000-foot Clear Zone and Accident Potential Zones of the installation.<sup>2</sup>

It is assumed that the City and County Airfield Compatibility Districts, with respect to Shaw AFB, and the Range Compatibility Districts, with respect to Poinsett ECR, comply with the statutory definition of a “federal military installation overlay zone.” (Current City and County regulations are included at [Appendix B](#)). That statutory definition simply reads: “an ‘overlay zone’ as defined by Section 6-29-720(C)(5) in a geographic area including a federal military installation as defined in this section.”<sup>3</sup>



Storage land uses are compatible with Shaw operations within the Airfield Compatibility District

If the commander responds with a recommendation, it must be made part of the public record, and the local government must investigate and make findings as to the following (in addition to other findings required by different sections of the Code of Laws relating generally to land use proposals):

1. whether the proposal will permit a use that is suitable relative to its closeness to the installation;
2. whether the proposal will adversely affect the existing use or usability of nearby property;
3. whether the property to be affected by the land use plan or zoning proposal has a reasonable economic use as currently zoned;
4. whether the proposal results in a use that causes or may cause a safety concern with respect to streets, transportation facilities, utilities, or schools;
5. if the local government has an adopted land use plan, whether the proposal is in conformity with the policy and intent of the land use plan given its relative closeness to the installation; and
6. whether there are other existing or changing conditions affecting the use of the nearby property, such as the installation, which give supporting grounds for either approval or disapproval of the proposal.<sup>4</sup>

If the base commander does not submit a recommendation by the date of the public hearing, there is a presumption that the proposal does not include any adverse effect relative to these required findings.<sup>5</sup>

Finally, the State Military Coordination Act requires that, where practical, local governments must incorporate identified boundaries, easements, and restrictions for military installations into their official maps.<sup>6</sup> This the City and County already have done as part of prior JLUS efforts, although Chapter 5 of the JLUS does include some recommendations for mapping updates.

### C. Other existing laws

In addition to the State Military Coordination Act, other state laws have been passed in support of military personnel—both retired and active duty—and their families. Though not directly tied to land use, these policies are important because they reflect the steps the state legislature has taken to accommodate its military personnel and military retirees. These legislative steps, in turn, reflect the importance to the citizens of South Carolina of maintaining defense facilities here in the long term. These “other existing laws” are discussed here.

The primary source of military-related state law is Title 25 of the Code of Laws, entitled “Military, Civil Defense, and Veterans Affairs,” which includes the following chapters:

- |   |  |
|---|--|
| Chapter 1: Military Code                        | Chapter 13: Confederate Pensions                     |
| Chapter 3: South Carolina State Guard           | Chapter 15: Other Provisions for Benefit of Veterans |
| Chapter 7: Treason; Sabotage                    | Chapter 17: South Carolina Military Museum           |
| Chapter 9: Emergency Measures                   | Chapter 19: Prisoners of War Commission              |
| Chapter 11: Division of Veterans Affairs        | Chapter 21: Veterans Trust Fund <sup>7</sup>         |
| Chapter 12: Veterans Unclaimed Cremated Remains |  |

Additional statutes that relate to military matters and military personnel include:

1. Employment protections in public sector jobs for five years after the date of entering into the armed forces.<sup>8</sup>
2. 15 days of paid leave for reserve training and 30 days of paid leave for serving in the reserves during a time of emergency.<sup>9</sup>
3. Exemption for continuing education requirements during military service for certain licensed professions; the issuance of temporary professional licenses to spouses of military personnel; and the consideration of military education, training, and experience in licensure qualification evaluations.<sup>10</sup>
4. Participation in the Interstate Compact on Educational Opportunity for Military Children, which helps the children of service members with school enrollment issues.<sup>11</sup>
5. Education Oversight Committee's annual reporting of performance by military-connected children in the state, addressing attendance, academic performance in math, reading, and science, graduation rates, and other matters.<sup>12</sup>
6. Protection of parental rights during times of military service.<sup>13</sup>
7. The granting of in-state tuition rates to active military members and their dependents, as well as to inactive members who live in the state for at least 12 months prior to their discharge from service; also, the automatic granting of free tuition to dependents in special cases, such as when a service member is killed in action or receives a Purple Heart.<sup>14</sup>
8. Permission for charter schools located on military installations to give enrollment priority to children of military personnel.<sup>15</sup>
9. Property tax exemption for housing on military bases.<sup>16</sup>
10. Military-Connected Children's Task Force, assembled to identify issues related to military-connected children and opening communication between welfare agencies and the state's military installations.<sup>17</sup>
11. Veterans Treatment Courts that may be established by local solicitors, along with a veterans' treatment court program.<sup>18</sup>

In addition to state legislation that plays a key role in supporting military communities in the state, current and past governors also have taken steps to support of military installations, including by creation of a military base task force.

#### D. South Carolina Military Base Task Force

In March 2013, Governor Nikki Haley signed Executive Order 2013-04 to reconstitute the South Carolina Military Base Task Force "for the purpose of enhancing the value of military installations and facilities and the quality of life for military personnel located in this State."<sup>19</sup>

The Task Force consists of representatives from the state Adjutant General's office, the state Department of Commerce, the Governor's Office of Veterans Affairs, and the state Chamber of Commerce; representatives from the Beaufort, Charleston

During the JLUS, local officials participated in the recent Installation Innovation Forum, held in Charleston by the Association of Defense Communities





Metro, Columbia, and Sumter chambers of commerce; County Council representatives from Beaufort, Berkeley, Dorchester, Charleston, Richland, and Sumter; the mayors of Beaufort, Charleston, Columbia, North Charleston, Port Royal, and Sumter; members from the state legislature appointed by the Governor; and five at-large members appointed by the Governor.<sup>20</sup>

The S.C. Military Base Task Force addresses various incentives for military personnel, to coordinate the efforts of military communities with the public and private sectors in an effort “to maintain a significant military presence in the state” and to advise the Governor and General Assembly on any issues and strategies related to military base closures, realignments, and mission changes.<sup>21</sup>

Prior to its reconstitution in 2013, the Task Force was also charged with distributing funds allocated for military base preservation initiatives by the General Assembly to each of the four regions in the state with military communities (Sumter, Beaufort, Charleston, and Columbia).<sup>22</sup> These funds were to be used to help local communities undertake planning efforts in order “to prevent further encroachment around the perimeters of existing bases.”<sup>23</sup> For example, in 2009, the Beaufort area received \$250,000 from the Task Force for establishing a Transfer of Development Rights (TDR) Bank to mitigate encroachment around the Marine Corps Air Station Beaufort. A local match was required. The Lowcountry Council of Governments served as fiduciary agent for these funds.

The Task Force remains active. During the JLUS, in fact, the Task Force cosponsored an important national conference in Charleston related to military value awareness and enhancement. The three-day conference, held by the Association of Defense Communities, was entitled “Installation Innovation Forum 2016.” Presenters at the conference included local officials and Task Force members and focused on building and sustaining the military value of installations in communities.

In addition to these state policies and programs, local governments in South Carolina have exercised local powers to address military-civilian land use compatibility, including the City of Sumter and Sumter County. Beaufort, Beaufort County, and Port Royal also have adopted military overlays and Richland County had a draft overlay prepared in 2013 related to Fort Jackson and McEntire Joint National Guard Base.

## E. Local Government Land Use Powers

The next section sets out the land use powers cities and counties have in South Carolina, identifying the additional implementation tools available to the City of Sumter and Sumter County should they elect, after the JLUS is completed, to augment existing regulations and Comprehensive Plan policies related to land use compatibility in the vicinity of Shaw AFB and Poinsett ECR.

Prior to the 1970s, planning and land use functions were the purview of the General Assembly and carried out by local legislative delegates.<sup>24</sup> A major legislative reform effort in the 1970s changed that, however, when voters opted to vest powers directly in the local communities instead. The state’s Home Rule Act followed in 1975, and today the South Carolina General Assembly gives local governments the authority to develop land use plans and to adopt zoning ordinances through the 1994 Local Government Comprehensive Planning Enabling Act (the Planning Act).

Local governments must first create a planning commission to undertake planning activities by statute. Several types of commissions are authorized, although a single-jurisdiction planning commission for either a municipality or a county is most commonly used. Nonetheless, some jurisdictions, like Sumter and Sumter County, have created joint planning commissions.

The planning commission has the “duty to engage in a continuing planning program for the physical, social, and economic growth, development and redevelopment of the area within its authority.”<sup>25</sup> The Planning Act gives planning commissions the authority to prepare comprehensive plans and to implement them through land use regulations and other tools.<sup>26</sup>





In exercise of this authority, most jurisdictions in the state have adopted comprehensive plans, zoning ordinances, and land use regulations. The following sections detail the extent and nature of each of these land use powers.

## F. The Comprehensive Plan

Unlike in some states, South Carolina local governments are not required to adopt a comprehensive plan unless they intend to adopt zoning and land development regulations.<sup>27</sup> The comprehensive plan sets forth a community's land-use vision, helps the community examine existing conditions, and establishes a vision for the future. Successful plans reflect public deliberation and the input of community stakeholders who will affect and be affected by land use policy.<sup>28</sup>

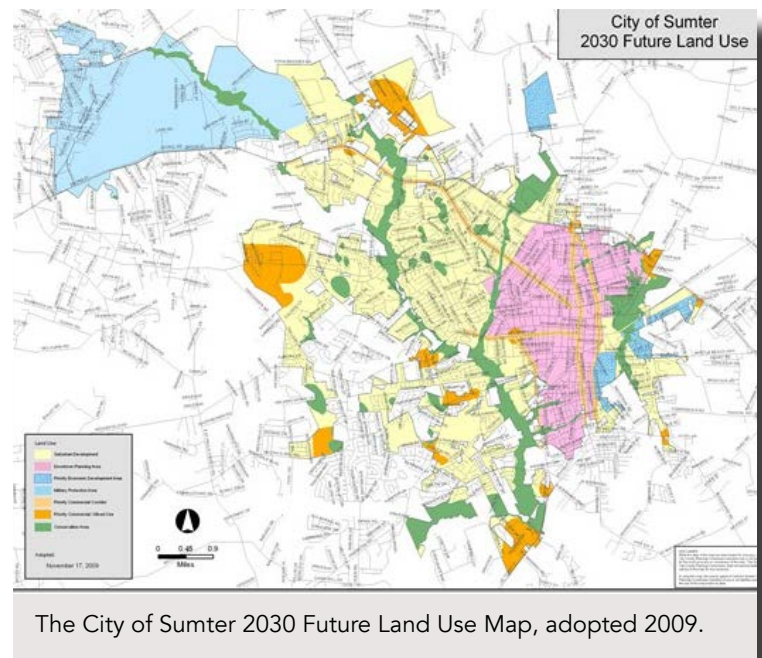
The Planning Act requires comprehensive plans to contain nine (9) separate planning "elements," although local governments are authorized to include additional elements if they wish. The nine (9) required elements are population, economic development, natural resources, cultural resources, community facilities, housing, land use, transportation, and priority investment (planning for public facilities such as roads, water, sewers, and schools).<sup>29</sup> The Planning Act requires local governments to update their plans every 10 years and to conduct a review/reevaluation at least every five.<sup>30</sup>

The Sumter and Sumter County Comprehensive Plans include each of the required comprehensive plan elements and each was reviewed and updated in 2014, as required by state statute. The next updates will be in 2019.

## G. Plan Implementation, Zoning, and Land Development Regulations

South Carolina local governments may implement their plan through a number of different tools, including:

1. the adoption of a zoning map along with a traditional zoning ordinance or a form-based code;
2. land development regulations, such as subdivision regulations;
3. a unified development ordinance, which contains both zoning and land development regulations;
4. a capital improvement program; and
5. land use policies and procedures relating to topics such as annexation and the dedication of streets and drainage easements.<sup>31</sup>



Where the Comprehensive Plan is a statement of policy, implementation tools, on the other hand, represent legal requirements that must be met and consistent with comprehensive plan policies when land is developed.

Zoning can be adopted only after a community adopts the land use element of a comprehensive plan, and all zoning regulations must "be made in accordance with" the comprehensive plan.<sup>32</sup> This is known as the "consistency requirement." Most jurisdictions in South Carolina have adopted zoning, as have the City and Sumter County, of course.

Under the rubric of zoning, the Planning Act specifically authorizes several specialized zoning techniques, including overlay zones, like the Air and Range Compatibility Districts that Sumter and Sumter County adopted following their prior Joint Land Use Study efforts.

The Planning Act also allows local governments to tailor their implementation tools to meet their own individual needs, so long as no tool is otherwise prohibited by state law.<sup>33</sup> This expansive view of local government power in South Carolina leaves its communities well-equipped to respond to land use challenges as locally appropriate, including those related to military-civilian land use compatibility.

In order to implement land development regulations, including subdivision laws, a South Carolina local government must have adopted the community facilities, housing element, and priority investment elements of a comprehensive plan.<sup>34</sup> Land development regulations guide property divisions and improvements, such as roads and sidewalks, and they may act in conjunction with, in lieu of, or independently of zoning regulations.

## H. Building Codes

Finally, in addition to zoning ordinances and land use regulations, local governments in South Carolina are authorized to adopt building codes to ensure buildings are built in accordance with accepted and professional safety standards. A discussion of local authority relative to building codes is informative here because of the limitations placed on the local communities by state law. If, for example, a local jurisdiction adopts a building code, the state requires that it adopt the code in its entirety. Modifications to particular code sections (such as to adopt special noise attenuation standards) are only allowed if approved by the state Building Codes Council as discussed below.

Most jurisdictions in the state, including Sumter County and the City of Sumter, have adopted building codes. Those in effect in the City of Sumter are as follows:

- 2012 Edition of the International Building Code;
- 2012 Edition of the International Residential Code;
- 2012 Edition of the International Fire Code;
- 2012 Edition of the International Plumbing Code;
- 2012 Edition of the International Mechanical Code;
- 2012 Edition of the International Fuel Gas Code; and the
- 2012 Edition of the National Electrical Code.

Additionally, the South Carolina Building Codes Council allows jurisdictions to adopt any of the following codes if desired:

- 2015 Edition of the International Property Maintenance Code;
- 2015 Edition of the International Existing Building Code;
- 2015 Edition of the International Swimming Pool and Spa Code; and the
- 2015 Edition of the International Performance Code for Buildings and Facilities.

There are two processes by which local governments may seek modifications to their building codes.<sup>35</sup> First, a jurisdiction may request that the Building Codes Council allow it to amend a code section. The request must be based on either a particular local physical or climatological condition.<sup>36</sup> If approved, the amended code section is only approved for the requesting jurisdiction. Second, professional organizations and local jurisdictions may request statewide modifications to the building codes. Such requests need not be based on a particular physical or climatological condition, and if approved, the amended section is approved for all jurisdictions in the state.

### III. EXISTING MILITARY-RELATED POLICIES AND REGULATIONS IN SUMTER AND SUMTER COUNTY

As noted in Chapter 2, Sumter and Sumter County participated in Joint Land Use Studies for Shaw AFB in 1994 and for Poinsett ECR in 2002. As a result of these past efforts, this community has taken significant steps to maintain the rural character of lands in the vicinity of Shaw AFB and Poinsett ECR, to pursue conservation funding, and to coordinate on a consistent basis with their military neighbors. Extensive comprehensive plan amendments have been made – including an area wide “Military Protection District” – and three (3) distinct zoning overlays have been adopted.

These plans and regulatory provisions are detailed in this section to complete the context within which the Policy Committee has made its recommendations in Chapter 5. Section II of this chapter laid out what steps the community is *authorized to take*, and this section describes the steps it *has taken*. In Chapter 5, additional steps to maintain land use compatibility between off-base civilian land uses and those occurring at Shaw AFB and Poinsett ECR are outlined.

#### A. City of Sumter and Sumter County Comprehensive Plans<sup>37</sup>

While technically two distinct plans, for purposes of the JLUS, the Sumter 2030 Comprehensive Plan essentially encompasses both the City’s and the County’s comprehensive plans. Prepared and adopted by the joint Sumter City-County Planning Commission, the plans are nearly identical, though each sets out independent “implementation” elements based on the individual needs and circumstances of the incorporated city and county. The plan is referred to here as it is locally: as a single plan.

The purpose of the *Sumter 2030 Comprehensive Plan*, last updated in 2014, is a guide to the location, nature, and appearance of future development in Sumter County and the City of Sumter. It is not a regulatory document, but rather a policy one that provides a path to achieving the following eight (8) community goals:

1. To protect Shaw Air Force Base and Poinsett Range, its facilities, and its mission from unwanted and incompatible development encroachment.
2. To transform the built, visual image of Sumter.
3. To direct new suburban development to areas planned for, or already served by, adequate infrastructure such as public water and sewer, public services, schools, transportation network capacity, and recreational opportunities.
4. To revitalize and redevelop existing residential neighborhoods and commercial corridors at risk or in decline.
5. To support the quality of life and existing pattern of development in the rural portions of the County.
6. To preserve the community’s Green Infrastructure, Natural, Cultural, and Historic resources.
7. To foster a diverse development pattern where opportunities to live, work, shop, and play are all within close proximity to one another in an atmosphere dedicated to quality architecture, landscaping, sustainability, and site design.
8. To create a Downtown Sumter that is the center of urban living, commerce, entertainment, education, government, and healthcare in a 24-hour, active, and lively environment.<sup>38</sup>

Clearly, when one takes into consideration the first stated goal of the communities’ comprehensive plan (highlighted above), it is without question that Shaw AFB and Poinsett ECR are seen as critical to this community’s interests and history. In fact, one of the three primary issues identified by the public during the

development of the Comprehensive Plan was the protection of the military facilities and mission.<sup>39</sup> The Plan thus recognizes the importance of the military to the community in virtually all areas.

The plan elements that include discussion of the Installations are:

1. Population
2. Land Use
3. Economic Development
4. Housing
5. Environmental & Natural Resources
6. Community Facilities
7. Historic and Cultural Resources
8. Implementation

A brief description of the Installations' mention in the Plan elements is provided here. The most critical element of the Plan to address Shaw AFB and Poinsett ECR is the land use element, of course. Therefore, after each element is overviewed, the Military Protection Area from the land use element is addressed separately.

### 1. Population<sup>40</sup>

The Plan's Population Element notes that much of the area's population growth over the past five decades is due to military personnel. It also notes a trend between 2000 and 2010 of residential development moving closer to Shaw than in the past.

### 2. Land Use

The Plan's Land Use Element is the component of the Plan that describes the current land use patterns in the community and discusses policies that could better protect the military from incompatible land uses.

The Plan explains that Shaw Air Force Base has several major impacts on land use. The most apparent, perhaps, is the constraint on westward development that the Installations create. Nonetheless, the Plan calls for the continued protection of lands in the vicinity of the Installations to avoid incompatible land uses in the future.

Earlier comprehensive plans recognized that "urban sprawl possesses a real threat as more land gets subdivided and built upon in the rural areas" and recommends maintaining "complete compatibility with Shaw Air Force Base and Poinsett Range." Prior plan iterations identified compatible land uses around the Installations as industrial, agricultural, and very low-density residential land uses. Protection of Shaw AFB was assigned "High" priority in the 2004 Plan.

The current Plan goes even further:

"The protection of Shaw Air Force Base's mission through land use policies is directly related to the viability of our local economy. This issue makes it plainly evident how land use decisions can affect other aspects of the Comprehensive Plan, or vice versa. Thus, the issue of land use compatibility and residential encroachment near the base is intertwined with our economy. Failure to protect Shaw and its mission, which includes the future F-35 Aircraft, is paramount to undermining our economic lifeblood."

The current land use element goes on to explain that in the pre-recessionary housing boom years, the area near the Shaw AFB had become more attractive for residential development, as well as strip commercial development serving the needs of those new residents. Several new neighborhoods, with thousands of housing units in total, were built or approved for construction. This movement of populations westward led to a decline in the urban core areas, and segregated people by race, income, and education. At the same time that the area around Shaw AFB was experiencing significant development pressure, the area around Poinsett ECR demonstrated little market demand for development, other than some low-density residential development.

### 3. Economic Development<sup>41</sup>

The economic development element of the Plan characterizes Shaw's impact on the community as "unrivaled." It lists Shaw AFB as the largest non-industrial employer in the planning area, with 6,866 employees at the time, and states that the Base generates approximately \$500 million annually to the local economy.<sup>42</sup>

The Plan explains that, for this reason, the protection of Shaw's mission through land use policies that ensure compatible land uses near the Base directly supports local economic interests. The Plan underscores the importance of this point, stating:

"Failure to protect Shaw and its mission, which includes the future F-35 Aircraft, is paramount to undermining our economic lifeblood."

### 4. Housing<sup>43</sup>

Sumter saw a boom in housing between the late 1990s and 2006, both in terms of the number of units and prices of available units. The Plan recognizes that rising pre-recessionary home values were attributable in part to the arrival of new military personnel in the area. However, it also points out a need for the County to do more in the area of affordable housing today; while the Zoning Code supports affordable housing instead of placing barriers on it, the Plan recommends that County consider incentivizing affordable housing opportunities in the future.

### 5. Green Infrastructure: Environmental and Natural Resources<sup>44</sup>

The natural resources element of the Plan explains that the Shaw AFB property is environmentally significant in two ways.

First, it contains large stands of long-leaf pine forest habitat, a habitat unique to the southeast region of the United States that has declined significantly in recent years. More than thirty threatened and endangered species of plants and animals dependent on long-leaf pine habitat for their existence are found on and around Shaw. Second, the base also includes a Red-cockaded Woodpecker colony, also an endangered species.

The Plan also lists Big Bay, under the control of Shaw AFB as part of the Poinsett Weapons Range, as having a rare area of white cedar trees. The military is planning to plant additional areas with this species as well.<sup>45</sup>

### 6. Community Facilities<sup>46</sup>

The Plan's community facilities element summarizes the existing public facilities, infrastructure systems, and community services available to the community, referencing Shaw AFB in several instances:

- a. Water and Sewer:** Shaw Air Force Base is one of 10 water districts inside Sumter County. At the time of the Plan, it provided potable water to on-base facilities but was prevented by federal law from providing excess capacity to off-base uses. Likewise, the base provides sanitary sewer on-base but cannot serve off-base areas.



- b. Fire Stations:** The fire station at Shaw AFB has a mutual aid agreement in place with the combined City-County Fire Department.
- c. Higher Education:** The University of South Carolina at Sumter, Saint Leo's University, and Troy University have satellite campuses at the base to serve active military personnel and their families.

#### 7. Historic and Cultural Resources<sup>47</sup>

The historic and cultural resources element notes that as military and civilian families have moved closer to Shaw AFB in recent years, Sumter's only residential historic district, Hampton Park, has been impacted. Population movement to a more suburban development pattern and away from a more compact urban form has made infill development more challenging in the historic core of the City of Sumter.

#### 8. Implementation

The Comprehensive Plan recommends the development of a small-area plan for the Military Protection Planning Area, discussed below, to help guide future land use decisions that could impact the Installations. The Plan also suggests reviewing the Zoning Code for noise attenuation standards.

#### 9. Military Protection Area

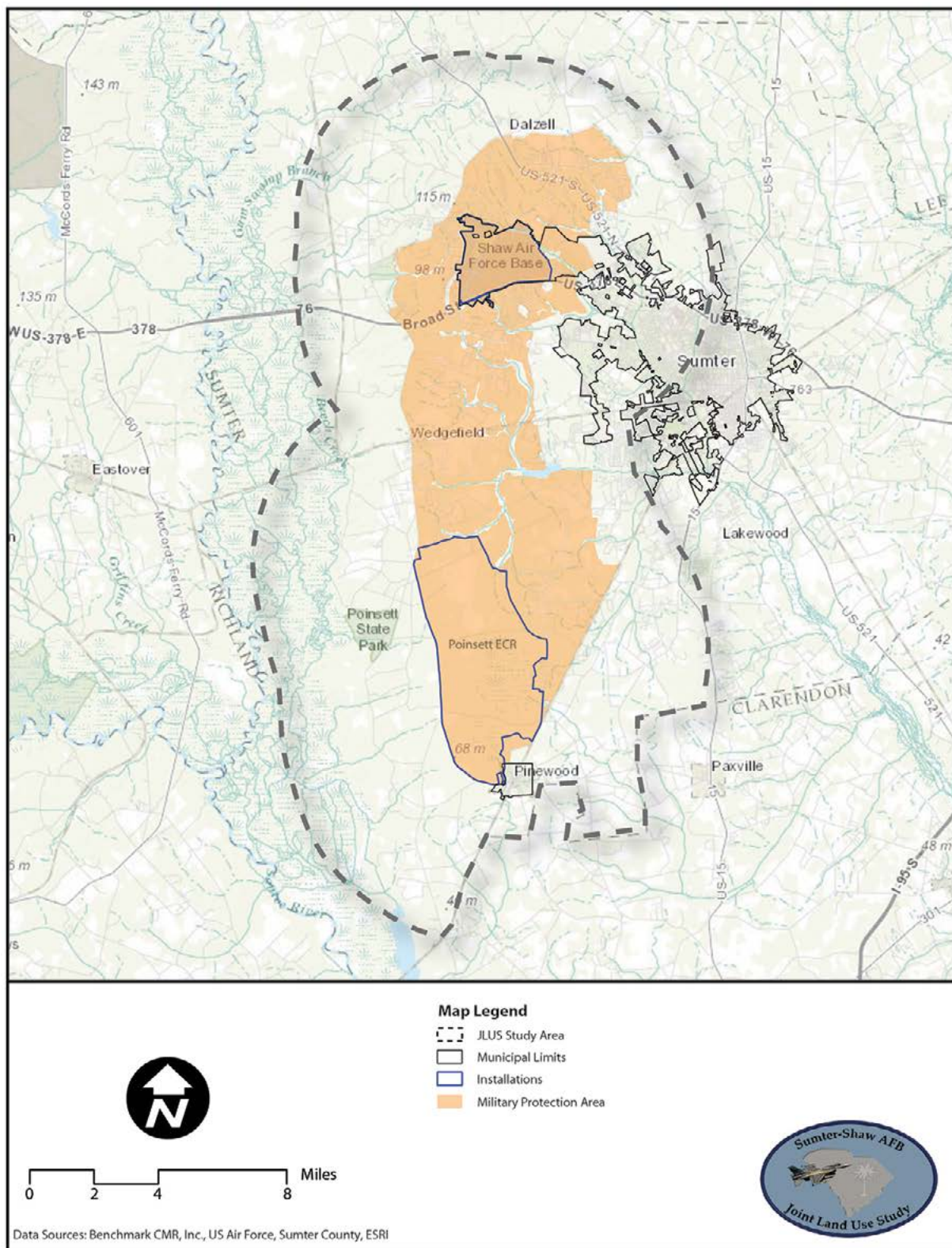
Because of the development pressures around Shaw, one of the significant changes in the 2009 update to the Comprehensive Plan was the expansion of the Military Protection Area, intended to preserve the airbase and range. The "Military Planning Area" is a planning concept only and is not codified in City or County zoning regulations. It also is distinguishable from the Noise Attenuation (NA) Districts, Noise (DNL) Zones, Clear Zones (CZs) and Accident Potential Zones (APZs), which are, in fact, codified in the zoning regulations and are discussed in the sections below.

The stated purpose of the Military Protection Planning Area is to protect Shaw AFB and Poinsett ECR "from encroachment of incompatible land uses and reduce the accident and noise potential to citizens in areas adjacent to these two critical military installations."<sup>48</sup>

*Continued on page 153*



Figure 4-1: Current MPA, JLUS Study Area, and Local Jurisdictional Boundaries



**Continued from page 151**

The “Military Protection Area” (MPA) includes lands in both the City and the County and is illustrated in Figure 4-1(above) along with other key City and County military-related contours. The current MPA is shaded in tan and the following eight (8) policies apply throughout:

1. The City and County support commercial, agricultural, and industrial development in this area of a type, which significantly limits the concentration of people.
2. The City and County support very low-density residential uses of one acre or more on private well and septic tank only. Public sewer infrastructure will not be extended to the Military Protection Area for residential uses.
3. The City and County will work with land conservation groups, the Air Force, and other partners to develop and implement land conservation, easement, and open space protection programs.
4. Existing residential zoning districts that are in clear conflict with these policies will be reviewed for potential rezoning implementation.
5. All new housing stock is expected to meet noise reduction and attenuation standards. The City and County will consider zoning amendments to restrict or prohibit the placement or replacement of mobile or manufactured homes in this planning area.
6. The recommendations adopted by City and County Council in the 1993 Joint Compatible Land Use Study for Shaw AFB and the 2002 Joint Compatible Land Use Study for Poinsett Range are incorporated into the 2030 Comprehensive Plan by reference.
7. The City and County will continue to work with Shaw Air Force Base, the Office of Economic Adjustment, and the United States Air Force on the development of a revised Joint Land Use Study for Shaw Air Force Base.
8. The City and County will reevaluate the boundaries and policies of the Military Protection Area upon receipt of technical noise and flight data relative to the F-35.

The existing Comprehensive Plan anticipated that the Military Protection Area may need to be expanded to accommodate future missions at Shaw AFB.

The Implementation elements also recommend completion of Small Area Plans for the Military Planning Area.

At the time of the 2009 Plan update, the community was aware that the F-35 Lighting II (Joint Strike Fighter aircraft) was a potential new mission at Shaw AFB within the next 10 years. As is discussed in Chapters 2 and 3, at the time of this JLUS, it had not yet been determined by the Air Force whether the F-35A aircraft would be used at Shaw.

By 2013, the Environmental Impact Statement (EIS) for the F-35A had been completed and included three operational scenarios for this aircraft at Shaw. The EIS does not amount to confirmation that the F-35A will be located here; however, were it to be, the EIS does include the projected noise and accident potential impacts that could be associated with that jet’s operations at Shaw. Based on the evolving nature of the F-35A question, the 2009 Plan anticipated that the MPA may need to be expanded to accommodate future missions at Shaw AFB.

The Plan policies that this community has adopted related to Shaw and Poinsett have been implemented through general code and Zoning Code amendments in the City and the County. These are discussed in the next section.

## B. City and County Regulations

### 1. Codes of Ordinances

The general codes for the City and County regulate intrusions into the airspace of the Installations.<sup>49</sup> However, these limitations do not regulate land use directly (as the Zoning Codes do, see below), though they would prohibit impacts stemming from the use of land that penetrates the airspace. The airspace covered by these code provisions include the following, by installation:

For Shaw AFB:

1. conical surface
2. inner horizontal surface
3. outer horizontal surface

For Poinsett ECR:

1. Poinsett buffer surface
2. Poinsett range surface

Within these areas, the Codes of Ordinances restrict heights (based on range and airbase elevation) and land uses that would create electrical interference, confuse or impair visibility, or endanger landing, taking off, or maneuvering of aircraft using the base or the range.<sup>50</sup> Current provisions allow existing structures to remain and be maintained, though no future use of lands in the regulated areas could be used in a manner inconsistent with these height and land use restrictions.

### 2. City and County Zoning and Development Standards Ordinances

The City and County also have adopted similar code and zoning and development standards related to land use around Shaw AFB and Poinsett ECR. These provisions are largely similar, though not in all cases. The main regulatory elements are outlined here and the differences between the City and County standards are indicated. For purposes of this discussion, however, the City and County Zoning Code is referred to as a single document.

#### *a. Administration:*

The Zoning Code lists six (6) primary purposes of the entire code,<sup>51</sup> one of which is “[t]he effects of aircraft noise and maximize the safety of land use in and around Shaw Air Force Base.”<sup>52</sup> It is notable that both the Comprehensive Plan and the Zoning Code identify land use compatibility with the Installations as a primary purpose. Presumably, the reference to Shaw AFB in the Zoning Code purpose statement would be read to encompass operations at Poinsett ECR as well, but this might be clarified during JLUS Implementation nonetheless (see Chapter 5).

#### *b. General and Supplemental Regulations:*

This section of the Zoning Code limits the height of “buildings and/or structures” to the underlying zoning district standards, unless that would create a hazard to air navigation or penetrate the airspace height restrictions at Shaw AFB. Again, though this section does not reference Poinsett ECR expressly, presumably the City and County intent includes both installations. Whether a particular building or structure would “create a hazard to air navigation or penetrate the airspace height restrictions at Shaw AFB,” would likely be measured by compliance with the Code of Ordinances provisions described in the above section of this chapter. Again, this might be clarified during JLUS Implementation.



Downtown Sumter



### *c. Subdivision Regulations:*

The Zoning Code also includes regulations governing the division of land in Sumter and Sumter County. Based on the recommendations of prior Joint Land Use Studies, subdivision requirements here require in some instances that (a) noise and accident potential zones be indicated on plats, and (b) plats include an express acknowledgement of the presence of Shaw AFB noise and accident potential zones by inclusion of the following statement directly on the plat:

“This Subdivision lies (wholly) or (partially) within a designated APZ and/or Noise Zone and is subject to the additional development requirements imposed by the Sumter City-County Zoning Ordinance.”

Noise and accident potential zones must be indicated on the following types of applications:

1. Major Application/Subdivision Preliminary and Final;
2. Minor Subdivisions and Site Plans; and
3. Major Applications and Final Site Plans.

The acknowledgement is required to be included on the following:

1. Major Application/Subdivision Preliminary and Final; and
2. Major Applications and Final Site Plans.
3. Military-Related Overlay Zones

Article III of the Zoning Code describes the zoning districts applicable to City and County lands and includes several “overlay” districts, including:

1. Airfield Compatibility Districts
2. Range Compatibility Districts
3. Noise Attenuation Districts

Each of these is described in this section, and are included in [Appendix B](#).

To provide a context for which military impacts are currently experienced and those that may be in the future (if F-35A squadrons were to operate at Shaw AFB), the following chart (Figure 4-2, next page) indicates the presence of accident potential and noise impact areas by jurisdiction, according to the 2013 AICUZ study and the F-35A EIS (Scenario 3, 2013 EIS, see Chapter 3 description).

These noise and accident potential impacts are addressed in the Airfield Compatibility Districts, Range Compatibility Districts, and Noise Attenuation Districts in the City and County. A detailed description of each of these overlays follows.



Figure 4-2: Presence of Aircraft Impacts in City of Sumter and Sumter County

	City		County	
	F-16	F-35A	F-16	F-35A
<b>Shaw AFB</b>				
Accident Potential				
APZ 1	No	No	Yes	Yes
APZ 2	No	No	Yes	Yes
CZ	No	No	Yes	Yes
Noise				
DNL 1 (65-69 dB)	Yes	Yes	Yes	Yes
DNL 1-A (70-74 dB)	No	Yes	Yes	Yes
DNL 2 (75-79 dB)	No	No	Yes	Yes
DNL 3 (80+ dB)	No	No	No	Yes
Noise Att Distr	Yes	Yes	Yes	Yes
<b>Poinsett ECR</b>				
Noise				
DNL 1 (65-74 dB)	No	No	Yes	Yes
DNL 2 (75-79 dB)	No	No	No	No
RCD/Noise Att Distr	Yes	Yes	Yes	Yes

Note: For F-16 impact contours, see Figure 3-6. For Scenario 3 F-35A noise impact contours, see Figure 3-15.

#### 4. Airfield Compatibility Districts (ACD):

The Airfield Compatibility Districts (ACDs) apply to City and County lands in the vicinity of Shaw AFB, not Poinsett ECR. The ACDs are not comprised of a distinct mapped area, however. Article III of the Zoning Code designates the following pre-existing contours as the ACD:

1. Accident Potential Zones (see Figure 3-5):
  - a. APZ 1
  - b. APZ 2
2. Noise Zones (DNL) 1-3 (see Figure 3-10);
  - a. DNL 1 (65-74 dB)
  - b. DNL 2 (75-79 dB)
  - c. DNL 3 (80+ dB)
3. Noise Attenuation (NA) District (see Figure 4-3).

It is within these six (6) geographic areas that the following land use restrictions currently apply.

### 1. Safety Standards:

Overlay provisions limit the concentration of people within APZ 1 and APZ 2 to reduce the presence of people in areas where accident potential is highest.

### 2. Height and size:

Height and size limitations, in addition to the height limitations set out in the Code of Ordinances (see County Code Chap. 4, Art. II; City Code Chap. 7, Art. II) and General and Supplemental Regulations in the Zoning Code (see, e.g., City Zoning and Development Standards Ordinance, § 4.d.1.), are proscribed in the ACDs pursuant to the "Ordinance Regulating the Height of Structures and other Activities in the vicinity of Shaw Air Force Base," as adopted October 13, 1981" (see e.g., section 3.r.5, County Zoning Ordinance).

### 3. Setbacks:

The County's ACD provisions do not include setback regulations in addition to those applicable through underlying zoning. However, the City's ACD provisions specify setbacks unique to the ACD areas.

### 4. Noise Hazard Signage:

The County requires new major subdivisions proposed in the ACD to install a noise notification/warning sign at the entrance to the subdivision. These signs are provided at the applicant's expense and are to be the "same as installed by Sumter County on the boundary of the NA [District]." The City of Sumter currently does not include this requirement in its ACD provisions, though it does in its Range Compatibility District (RCD) provisions.



Churches are permitted uses under Air Force Guidance in the 65-69 DNL contours, are allowed with proper noise attenuation in the 70-79 DNL contours, and are considered incompatible in the 80+ DNL contours.

### 5. Land Use Restrictions:

a. Accident Potential: The ACDs limit the types of land uses permitted in the Accident Potential Zones (APZ 1 and APZ 2), though there are currently no City lands within these areas (see Figure 4-2). The land uses on County lands in APZ 1 and 2 are limited by a land use chart that generally reflects Air Force guidance in effect when the ACD was adopted.<sup>53</sup> That guidance was updated a few months before the 2016 JLUS began and is indicated in AFI 32-7063 (18 December 2015). The 2015 guidance does include recommended land use compatibilities that are, in some cases, different from those permitted or prohibited, as the case may be, under the current regulation. However, current underlying zoning in the City and County prohibits residential development at densities greater than one dwelling unit per acre, which is within the maximum densities recommended by the Air Force Guidance. Nonetheless, Chapter 5 includes recommendations for updating the ACDs to comply with the revised Air Force Guidance in cases where the guidance and current ACD provisions differ.

b. *Noise Impacts:* The following three (3) noise zones are associated with current operations at Shaw AFB and Poinsett ECR and are illustrated in Figures 3-10 (Shaw AFB) and 3-56 (Poinsett ECR).

1. DNL 1 (65-74 dB)
2. DNL 2 (75-79 dB)
3. DNL 3 (80+ dB)

The ACDs require meeting “noise level reduction” standards for certain uses within each zone, again, based on the Air Force guidance in effect at the time the ACDs were adopted. However, the current ACDs do not restrict allowable land uses to those that are not noise sensitive. The 2015 Air Force Instruction (AFI 32-7063) identifies those land uses considered incompatible with these noise levels. Again, Chapter 5 recommends updating the ACD’s noise zones to reflect the Air Force land use guidance.

#### 6. Grandfathering:

a. *Land Uses and Structures:* Authorized land uses and structures in existence at the time the ACDs were adopted are allowed to continue and may be “replaced, substantially altered, or rebuilt” so long as they do not create a flight hazard or allow a non-conforming use or structure to increase navigation hazards or incompatibilities.<sup>54</sup>

b. *Platted Lots:* The County allows “existing” approved major subdivisions and mobile home parks (with infrastructure) to be built out without complying with APZ and Noise Zone requirements in the ACD. The City does not include this exemption in its ACD but does in its Range Compatibility District (RCD), which is discussed below.

#### 7. Variances:

The Sumter City-County Board of Appeals may grant variances to ACD provisions related to concentrations of population (in the APZs), setbacks, off-street parking, and subdivision noise hazard signs. However, variances cannot be granted unless the Shaw AFB commander is first notified and asked for input on the request.

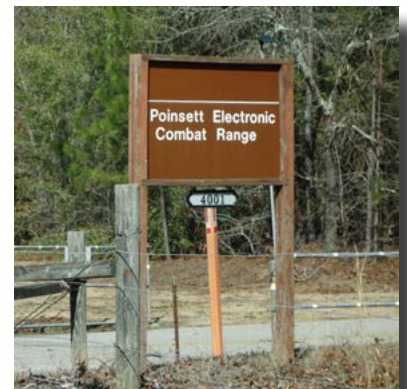
#### 8. Mobile Homes:

The County’s ACD prohibits mobile homes in APZ 1 and 2, as well as its Noise (DNL) Zones. The City’s ACD provisions do not include this prohibition at this time. Currently, however, there are no City lands in the APZs and only limited City lands in Noise Zone DNL 1 (65-69 dB). Under the projected worst-case scenario for potential F-35A operations, additional City lands would be included in DNL 1 and City lands would also be included in Noise Zone DNL 2 (70-74 dB).

#### 5. Range Compatibility District (RCD)

The Range Compatibility Districts (RCDs) apply to City and County lands in the vicinity of Poinsett ECR only (see Figure 3-57). The geographic areas included in the RCDs are as follows:

1. Range Compatibility District
2. Noise Zones (DNL) 1-2 (see Figure 3-57)
  - a. DNL 1
  - b. DNL 2
3. Noise Attenuation (NA) District (which is the same as the RCD boundary).



It is within three (3) geographic areas that the RCD provisions currently apply.

### 1. Height and size:

As with the ACDs, the RCDs include height and size limitations that are in addition to those set out in the Code of Ordinances (see County Code Chap. 4, Art. II; City Code Chap. 7, Art. II) and General and Supplemental Regulations in the Zoning Code (see, e.g., City Zoning and Development Standards Ordinance, § 4.d.1.) and which are set out in the “Ordinance Regulating the Height of Structures and other Activities in the vicinity of Shaw Air Force Base,” as adopted October 13, 1981.”

### 2. Setbacks:

The County’s RCD provisions do not include setback regulations in addition to those applicable through underlying zoning, although the City’s RCD does specify setbacks unique to its RCD lands.

### 3. Noise Hazard Signage:

The County and City require new major subdivisions proposed in the RCDs to install a noise notification/warning sign at the entrance to the subdivision. As is the case with the County’s ACD, these signs are provided at the applicant’s expense and are to be the “same as installed by Sumter County on the boundary of the NA [District].”



Existing Noise Hazard Sign in the Shaw AFB Airfield Compatibility District

### 4. Land Use Restrictions:

a. Accident Potential: There are no accident potential zones identified for Poinsett RCD.

b. Noise Impacts: There are two (2) noise zones associated with current operations at Poinsett ECR, which are illustrated in Figure 3-57. They are:

1. 65-69 dB DNL; and
2. 70-74 dB DNL.

As is the case with the ACDs, “noise level reduction” standards apply in these areas, based on current Air Force guidance. However, land uses are not restricted. As noted previously, the 2015 Air Force Instruction (AFI 32-7063) identifies those land uses considered incompatible with these noise levels, and Chapter 5 recommends an update to the RCDs accordingly. Note that while the RCD DNL ranges are as stated above (65-69 dB and 70-74 dB), the RCD overlay ranges are 65-74 dB and 74-79 dB (see, e.g., Exhibit 7, County Zoning and Development Standards Ordinance). Chapter 5 includes a recommendation that these intervals be made consistent.

### 5. Grandfathering:

a. Land Uses and Structures: Similar to the Airfield Compatibility Districts, authorized land uses and structures in existence at the time the Range Compatibility Districts were adopted are allowed to continue and may be “replaced, substantially altered, or rebuilt” so long as they do not create a flight hazard or allow a non-conforming use or structure to increase navigation hazards or incompatibilities.<sup>55</sup>

*b. Platted Lots: In the RCD, the City allows “existing” approved major subdivisions and mobile home parks (with infrastructure) to be built out without complying with RCD requirements. The County does not include this exemption in its RCD but does in its Airfield Compatibility District (ACD), as discussed above.*

#### 6. Variances:

*Similar to the ACD provisions, both the City and the County authorize the Sumter City-County Board of Appeals to grant variances to limited RCD provisions, if the Shaw AFB commander is first notified and asked for input on the request.*

#### 7. Mobile Homes:

*The City prohibits mobile homes in the Noise (DNL) Zones associated with the Poinsett RCD, even though it does not include a mobile home prohibition limitation in its ACD, as is discussed above. On the other hand, the County does not prohibit mobile homes in its portion of the RCD, though it does in its ACD, again, as is discussed above.*

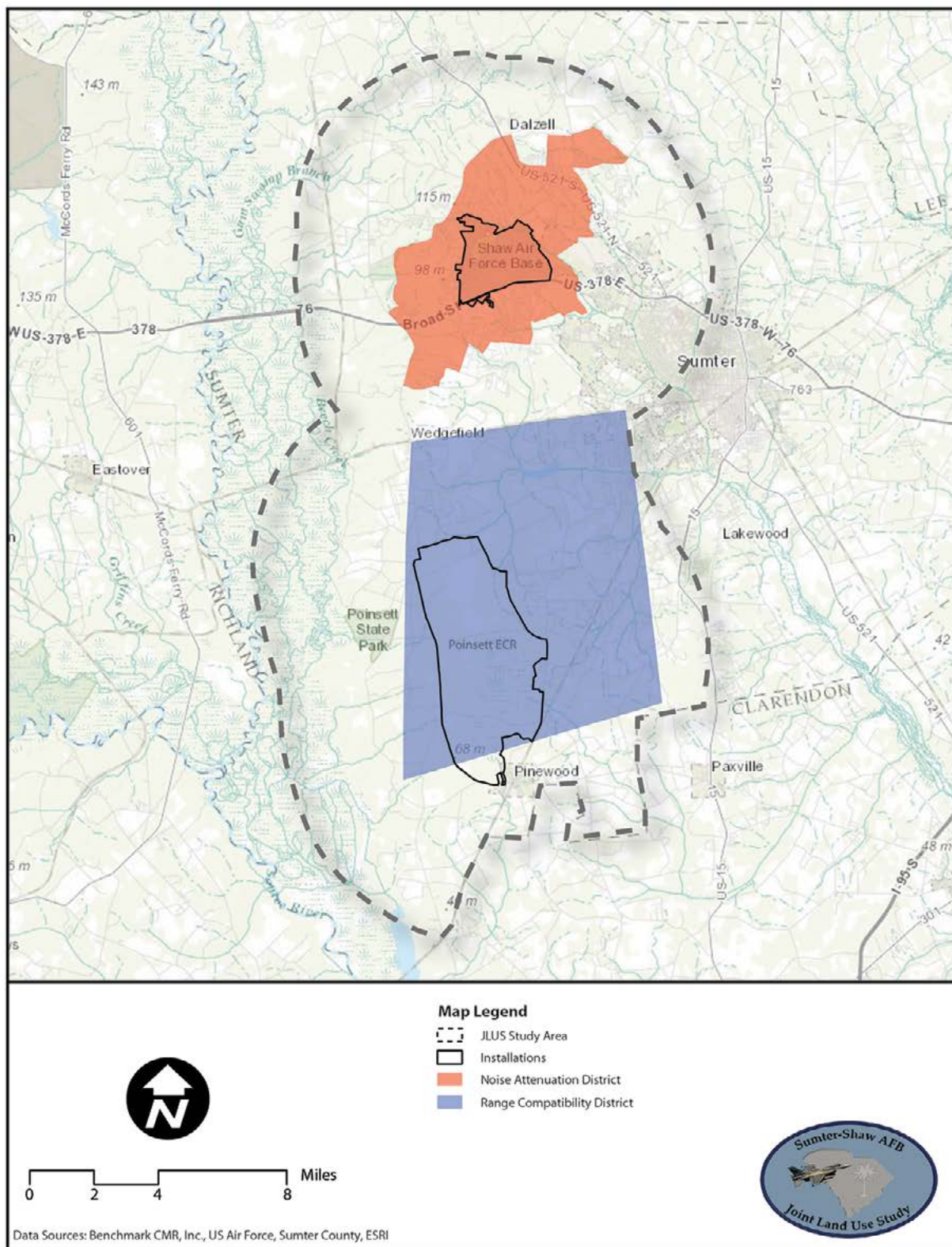
#### 6. Noise Attenuation District (NA District):

The final overlay that currently is in place is the “Noise Attenuation Districts,” which are illustrated in Figure 4-3 for both Shaw AFB and Poinsett ECR. The Shaw NA District is designated as such and the Poinsett NA District is the Range Compatibility District (RCD).

NA Districts regulations do not actually require noise attenuation or “noise level reduction” beyond those requirements already in place pursuant to the ACD and RCD district provisions discussed above. However, the NA District boundary must be shown on “plats, building permits, and other correspondence” in the City and County. In addition, as to County lands in the NA District, the same noise hazards signs required by ACD and RCD provisions also apply here. The City does not require additional subdivision signage in its portion of the NA District, however.



Figure 4-3: Current Noise Attenuation (NA) Districts



## IV. FEDERAL COMPATIBILITY PROGRAMS AND TOOLS

### A. Air Installation Compatible Use Zone (AICUZ) Studies

In 1973, the Department of Defense established the “Air Installation Compatible Use Zone” program to study and indicate the estimated extent of noise and safety impacts related to military airfields. In conjunction with safety, accident potential and clear zones also are identified, which indicate those lands off the runway most susceptible in the event of an aircraft mishap. In addition, noise zones, based on sound modeling, are identified according to noise level. Based on the mapped extent of these areas, AICUZ studies recommend land uses appropriate within the affected areas to sustain compatible land uses between military and civilian lands.

AICUZ policies are intended to promote public health, safety, and welfare of those in the vicinity of and on air installations without degrading air safety and mission. Further, AICUZ policies and implementation promote long-term land use compatibility by encouraging state and local governments to adopt responsive policies and legislation and, if necessary, to use limited restrictive use and conservation easements.<sup>56</sup>

As discussed in Chapter 3, Shaw AFB has had several AICUZ studies performed in conjunction with its air operations at the time. The most recent was performed in 2013 and reflected the current mission and F-16 aircraft presence. No AICUZ study has been performed for the potential F-35A since, as of the 2016 JLUS, no decision had been made whether that aircraft would be used at Shaw AFB. Therefore, the land-use compatibility analyses described in Chapter 3 are those associated with the 2013 AICUZ (F-16 operations)<sup>57</sup> and 2013 Environmental Impact Statement (Scenario 3, F-35A operations).<sup>58</sup> Notably, the Department of Defense amended its instruction in 2015 to require future AICUZ studies to address expressly certain solar and other renewable energy land uses and projects.<sup>59</sup>

### B. Air Force Encroachment Management (AFEM) Program

The Air Force Encroachment Management program gives a framework to Air Force installations for addressing encroachment and sustainment challenges that affect Air Force mission and civilian quality of life.<sup>60</sup> AFEM is considered a “cross-functional” program that integrates various Air Force efforts to enhance compatibility, including, of course, the Air Force AICUZ program, but also Installation Development Plans (IDPs), Joint Land Use Studies, and other airspace management programs, environmental programs, range management programs, and communications programs.<sup>61</sup> AFEM revolves around the following four (4) action elements:

1. Organize: create the structure and scope for the AFEM Program at all Air Force echelons.
2. Assess: develop and maintain enterprise-wide knowledge of all encroachment and sustainment challenge areas.
3. Act: implement encroachment management actions and strategies to achieve appointed goals.
4. Monitor: provide continuous situational awareness of encroachment and sustainment challenges.
5. Shaw AFB has an active encroachment management program, which, as referenced above, incorporates the Joint Land Use Study effort currently underway.



## C. Readiness and Environmental Protection Integration (REPI) program

The Readiness and Environmental Protection Integration (REPI) program uses voluntary agreements between military service branches and states, local governments, and non-federal conservation organizations to help protect training grounds from the negative impacts of encroachment. These agreements provide for the voluntary purchase of easements near military installations from willing sellers, which helps create a buffer area around military training and testing areas.

Local partners in the region have used the REPI program over the years to ensure funds are available to purchase voluntary easements on lands critical to Air Force/civilian land use compatibility. This primarily has been handled through the Midlands Area Joint Installations Consortium (MAJIC), a partnership between the Central Midlands Council of Governments, Shaw AFB, Poinsett ECR, McEntire Joint National Guard Base, Fort Jackson, and McCrady Training Center, local government partners, and non-profits (including the Congaree Land Trust and The Conservation Fund). These efforts are summarized in Chapter 2 of the JLUS report.

Air Force guidance requires that REPI funding be used to enhance Air Force operational requirements for current and future missions. REPI funds are not available to acquire development rights in the Clear Zones and should be used pursuant to a larger “comprehensive compatible land use strategy.”<sup>62</sup>

Since 2015, REPI proposals must address new evaluation criteria, as the program is focusing more on holistic planning approaches that address land use, zoning, and comprehensive planning, and that leverage other mutually-beneficial conservation partnerships. Successful REPI applicants also will be able to define a successful conservation “end state;” that is, an achievable conservation goal in the event REPI funding is awarded. Application criteria and procedures are accessible at [www.repi.mil](http://www.repi.mil).

## D. United States Department of Agriculture Partnerships

The Agricultural Act of 2014 established the “Agricultural Conservation Easement Program,” or ACEP, under the United States Department of Agriculture (USDA).<sup>63</sup> The ACEP assists local, state, and tribal governments in the protection of working agricultural lands and limitation of non-agricultural land uses. There are three primary components:

1. Agricultural Land Easements
2. Healthy Forests Reserve Program (HFRP)
3. Wetland Reserve Enhancement Partnership (WREP)

These programs replaced prior USDA easement efforts, including the Farm and Ranch Lands Protection Program (FRPP), Wetlands Reserve Program (WRP), and Grassland Reserve Program (GRP).

The REPI statute now allows use of USDA funding sources for protection of military lands under its mission. Mutual benefits can result in military communities with viable agricultural lands in the vicinity of the local installation, where the property owner is interested in receiving compensation in exchange for forgoing future incompatible, non-agricultural uses of their land. Continued use as farm and ranch land is usually allowed, since these uses are compatible with many military training impacts.

The USDA programs are administered by the USDA’s Natural Resources Conservation Service (NRCS). The programs are voluntary; none require landowner participation, and none involve condemnation of development rights or property. They are dependent upon available federal funding and, in November of 2015, the USDA announced \$350 million in funding available under the AECP.

### 1. Agricultural Land Easements (ALE)

Agricultural Land Easements are available to eligible partners for the protection of agricultural lands and to assist working farms to continue in production. Eligible farming activities include crops and grazing. Under



the ALE program, the NCRS may contribute up to 50 percent of the fair market value of the easement. There are exceptions upward for grasslands of exceptional value.

## 2. Healthy Forest Reserve Program (HFRP)

Similarly, the Healthy Forest Reserve Program (HFRP) is a USDA easement program available to interested property owners for preserving forest lands in participating states. Easements, thirty-year contracts, and 10-year cost share agreements are available under HFRP for promoting recovery of endangered/threatened species, improving biodiversity, and enhancing carbon sequestration.

## 3. Wetlands Reserve Enhancement Partnership (WREP)

The USDA's Wetlands Reserve Enhancement Partnership offers landowners the opportunity to protect wetlands through easements and cost-sharing agreements. Available funding depends on federal Farm Bill budgetary allocations and varies annually. Interested property owners may pursue this program. Permanent, thirty-year, and term easements are available under WREP, as are thirty-year contracts for acreage owned by Native American tribes.

## 4. Sentinel Landscapes

An additional USDA program has become available since June 2013: the "Sentinel Landscapes" program, which helps farmers and ranchers improve their land in a way that benefits their operation, enhances wildlife habitat, and enables DoD's training missions to continue. The NRCS runs this program as well, which is a partnership between the Department of the Interior, the USDA, and the DoD.

In a recent example of the use of Sentinel Landscapes funding, 1,385 acres of land impacted by the NAS Patuxent River-Atlantic Test Ranges have recently been protected. This preservation effort involves the Fish and Wildlife Service, NRCS, the Chesapeake Conservancy, and various other local conservation partners. Lands being preserved include farmland, forests, and wetlands along the Nanticoke River under the test ranges. The NRCS contribution (from both Maryland and Delaware) amounts to about \$1.5 million in financial and technical assistance. Farmlands will remain in private and productive use.

All of these USDA programs may be used to protect military installations from encroachment while offering incentives and benefits to nearby property owners. Interested property owners may contact the state NRCS office in Columbia:

Kellee M. Melton, Assistant State Conservationist for Programs  
South Carolina NRCS Office  
Strom Thurmond Federal Building  
1835 Assembly Street; Room 950  
Columbia, South Carolina 29201  
(803) 765-5685

## E. USFS Forest Legacy Program (FLP)

The U.S. Forest Service Forest Legacy Program (FLP) protects forestland by providing states with federal funding to purchase conservation easements or land to prevent private lands from being converted to non-forest use. The forestland remains in private ownership but is voluntarily conserved to limit incompatible development.

States enter the program voluntarily to develop and implement forest conservation plans; they also contribute a 25 percent match to the federal dollars available for the use. In cases where federal forest lands fall within areas impacting or impacted by military training, this program can have mutual benefits

to the military, the U.S. Forest Service, and the private citizens who encumber their land via easement. About 236 acres of land in the state of South Carolina have been protected through U.S. Forest Service's Forest Legacy Program.

## **F. Bird/Wildlife Aircraft Strike Hazard (BASH) Plans**

Each year the Air Force and Navy/Marine Corps report about 3,000 wildlife-related strikes involving military aircraft. In addition to safety concerns, estimates are that the resulting financial impact alone is \$75 million a year. In response to these concerns, the Department of Defense created the Bird/Wildlife Aircraft Strike Hazard (BASH) prevention program. Interventions to avoid airstrikes with wildlife include pilot education, scaring birds away from low altitude airspace, and in some cases, habitat modification. A successful BASH program involves extensive coordination by the installation's natural resources, aviation, safety, and air operations personnel.<sup>64</sup>

BASH plans define the nature and extent of wildlife hazards and plan implementation. The techniques to avoid wildlife strikes listed above are achieved through state and federal conservation agencies and are a component of the Integrated Natural Resources Management Plan (INRMP) for the installation.<sup>65</sup> As is described in Chapter 2 of the JLUS and Shaw AFB's INRMP, the base has an adopted BASH plan that is being implemented (91-212, October 2014).<sup>66</sup> During the JLUS development, the base reported few concerns related to wildlife strikes in recent years.

## **G. Air Force Community Partnership Program**

The Air Force Community Partnership Program is designed to bring local community leaders and Air Force leadership together to identify potential areas of mutual benefit and value (see 10 U.S.C. 2679). Once the process is initiated, a "Brokering Team" is provided and a series of six to seven meetings are held to identify mutually beneficial areas of partnership and to detail and develop tools for achieving a successful partnership. Areas where successful initiatives might be put into place include but are not limited to the following:

- shared use firing ranges;
- cooperative medical training/initiatives;
- youth programs and library operations;
- shared food service facilities;
- environmental mitigation.

Shaw AFB has been engaged in a Community Partnership program for several years now and is holding ongoing meetings with the community to identify areas of partnership. Existing areas of partnership success include the following:

- fire protection
- law enforcement and antiterrorism coordination
- firing range sharing
- local tours
- event wall for posting base and community events
- mentoring and "adopt a school" programs
- E911 cooperation and overflow coordination
- Religious resource teaming with Tuomey Hospital Chaplain Services for emergency counseling as needed





- Golf course use at Shaw's Carolina Lakes Golf Course and Sumter County's Crystal Lakes Golf Course

The Shaw AFB Community Planner and JLUS Technical Advisory Committee member, Jim Olsen, was, at the time of the JLUS, continuing to develop additional potential partnership areas through the Air Force Community Partnership Program.

Examples of other communities that have entered into partnership agreements include those associated with the following bases: Robbins Air Force Base (2013, shared medical training costs); Maxwell Air Force Base (2014, parks and recreation); and Tinker Air Force Base (2013, shared corrections facilities/operations).

## H. DoD Energy Siting Clearinghouse

The Department of Defense Siting Clearinghouse provides for the Department's assessment of proposed renewable energy projects to prevent or mitigate adverse impacts on military operations of those projects.<sup>67</sup> The program calls for the designation of a senior official to conduct reviews of proposed energy projects, a thirty-day timeframe for completing a hazard assessment, and specific criteria for objection by the DoD to certain proposed energy projects.

<sup>1</sup>Federal Defense Facilities Utilization Integrity Protection Act, S.C. Code Ann. § 6-29-1610 et seq. (2004).

<sup>2</sup>*Id.* The act's requirements generally apply to any "land use or zoning decision" in the specified area; specifically enumerated under the requirements of subsection 6-29-1630 (A)(1) are notice prior to the consideration of comprehensive plans and actions taken by zoning boards of appeals (e.g., variances and special exceptions).

<sup>3</sup>*Ibid.*

<sup>4</sup>*Ibid.*

<sup>5</sup>*Ibid.*

<sup>6</sup>*Ibid.*

<sup>7</sup>S.C. Code Ann. § 25-1-10 et seq. (1976).

<sup>8</sup>*Ibid.* at § 8-7-10 et seq.

<sup>9</sup>*Ibid.* at § 8-7-90.

<sup>10</sup>*Ibid.* at § 40-1-610 et seq.

<sup>11</sup>Interstate Compact on Educational Opportunity for Military Children, *Ibid.* at § 59-46-10 et seq.

<sup>12</sup>*Ibid.* at 59-18-900.

<sup>13</sup>Military Parent Equal Protection Act, *Ibid.* at § 63-5-900 et seq.

<sup>14</sup>*Ibid.* at § 59-112-50 and § 59-111-20.

<sup>15</sup>*Ibid.* at § 59-40-50.

<sup>16</sup>*Ibid.* at § 3-1-40.

<sup>17</sup>*Ibid.* at 63-11-2110.

<sup>18</sup>*Ibid.* at 14-29-30.

<sup>19</sup>Exec. Order No. 2013-04 (March 7, 2013), available at [scmilitarybases.com](http://scmilitarybases.com).

<sup>20</sup>*Ibid.*

<sup>21</sup>*Ibid.*

<sup>22</sup>Letter from Task Force Chairman Richard Eckstrom, Office of the Comptroller General, to Chris Bickley, Executive Director, Low Country Council of Governments, and Sherry G. Smith, Finance Director, Low Country Council of Governments (February 3, 2009).

<sup>23</sup>*Ibid.*

<sup>24</sup>A HANDBOOK FOR COUNTY GOVERNMENT IN SOUTH CAROLINA (2005), available at <http://www.sccounties.org/Data/Sites/1/media/publications/sccountieshndbk2012.pdf>.

<sup>25</sup>South Carolina Local Government Comprehensive Planning Enabling Act, S.C. Code Ann. at § 6-29-340 (1994).

<sup>26</sup>*Ibid.*

<sup>27</sup>MASTERING LAND USE AND PLANNING PROCESSES (2008), available through the National Business Institute.

<sup>28</sup>*Ibid.*

<sup>29</sup>S.C. Code Ann. at § 6-29-510 (amended 2007).

<sup>30</sup>*Ibid.*

<sup>31</sup>MASTERING LAND USE AND PLANNING PROCESSES (2008), available through the National Business Institute.

<sup>32</sup>S.C. Code Ann. at § 6-29-720 (amended 2007).

<sup>33</sup>*Ibid.*

<sup>34</sup>*Ibid.* at § 6-29-1130 (amended 2007).

<sup>35</sup>South Carolina Building Codes Council Building Codes Modification Information, available at [http://www.llr.state.sc.us/pol/bcc/index.asp?file=MODIFICATION\\_Process.htm](http://www.llr.state.sc.us/pol/bcc/index.asp?file=MODIFICATION_Process.htm) (last visited February 19, 2016).

<sup>36</sup>*Ibid.* Physical condition must relate to particularized “topography, geography, geology, water table or seismic activity.” Climatological condition is defined as “the susceptibility of specific unusual reoccurring weather or atmospheric conditions for a local jurisdiction, including hurricanes, tornadoes, damaging wind, lightning, or floods due to rainfall.”

<sup>37</sup>SUMTER 2030 COMPREHENSIVE PLAN (1999, UPDATED IN 2009), available at <http://www.sumtersc.gov/comprehensive-plan.aspx>.

<sup>38</sup>*Ibid.* at Introduction to Sumter 2030 Comprehensive Plan, page 1.

<sup>39</sup>*Ibid.* at Land Use Element, page LU8.

<sup>40</sup>*Ibid.* at Population Element, page 1.

<sup>41</sup>*Ibid.* at Economic Development Element, pages ED4 and ED5.

<sup>42</sup>These demographic figures have been updated for purposes of the 2016 JLUS. Please see Chapter 2.

<sup>43</sup>*Ibid.* at Housing Element, generally.

<sup>44</sup>*Ibid.* at Green Infrastructure Element: Environmental and Natural Resources, at GI10.

<sup>45</sup>See Chapter 2 of the JLUS for updated descriptions of environmental conditions at Shaw AFB and Poinsett ECR, which were based on current documentation available to the Policy Committee during the development of the 2016 JLUS.

<sup>46</sup>SUMTER 2030 COMPREHENSIVE PLAN at Community Facilities Element, at CF1, CF2, CF4, CF15, CF19, CF21, CF31, CF48, and CF53. See Chapters 2 and 3 for current community facility information updated during the 2016 JLUS.

<sup>47</sup>*Ibid.* at Historic & Cultural Resources Element at HCR4, HCR10 and HCR15.

<sup>48</sup>*Ibid.* at Land Use Element at LU 17.

<sup>49</sup>See County Code Chap. 4, Art. II; City Code Chap. 7, Art. II.

<sup>50</sup>See, e.g., sec. 4-23, Sumter County Code of Ordinances.

<sup>51</sup>See e.g., City Zoning Code, Section A, “Authority.”

<sup>52</sup>*Ibid.* at Section 1.a.3.

<sup>53</sup>See Exhibit 3-8, City Zoning and Development Standards Ordinance and Exhibit 7, County Zoning and Development Standards Ordinance.

<sup>54</sup>See e.g., City Zoning and Development Standards Ordinance, section 3.q.8.b.

<sup>55</sup>See e.g., City Zoning and Development Standards Ordinance, section 3.q.8.b.

<sup>56</sup>See DoDI 4165.57 (May 2, 2011), section 4.

<sup>57</sup>Air Installation Compatible Use Zone Update, Final Submittal, January 2013.

<sup>58</sup>Final United States Air Force F-35A Operational Basing Environmental Impact Statement, Vol. I, September 2013.

<sup>59</sup>See DoDI 4165.57 (May 2, 2011, incorporating change 1, effective March 12, 2015).

<sup>60</sup>See AFI 90-2001 (Sep. 3, 2014), section 1.1.

<sup>61</sup>See *Ibid.* at section 1.3.

<sup>62</sup>See AFI 32-7063 (Dec. 18, 2015), section 5.3.2.2.

<sup>63</sup>See 10 USC § 2648a(h), as amended by the National Defense Authorization Act for FY14.

<sup>64</sup>See [www.dodpif.org/bash](http://www.dodpif.org/bash) (visited on February 18, 2016).

<sup>65</sup>See AFI 91-202 (June 24, 2015), section 7.2.2.

<sup>66</sup>See Shaw Air Force Base Plan 32-7064 Integrated Natural Resources Management, section 7.13.

<sup>67</sup>See 32 CFR, Part 211; Air Force Instruction AFI 32-7063 (December 18, 2015).

## CHAPTER 5: JLUS RECOMMENDATIONS

### I. INTRODUCTION

Chapter 5 sets forth recommendations for maintaining and enhancing long-term land use compatibility between Shaw and Poinsett and the civilian populations that live and work near the Installations. The recommendations included here resulted from the analysis and strategies described in Chapters 2-4 of the Joint Land Use Study and the process described in Chapter 1.

Extensive stakeholder and community input was received throughout the JLUS process and is reflected in the recommendations in Chapter 5.

The process for implementing any of the Policy Committee's recommendations will also involve continued input from the community and will benefit from its continued support for ultimate adoption.

The next section sets forth a process through which the recommendations in Chapter 5 would be considered by the Shaw-Sumter community following the conclusion of the 2016 Joint Land Use Study process. Two separate phases are typically completed to implement the recommendations in this report fully: a "JLUS Implementation" phase and an "ongoing planning and coordination" phase, which will continue indefinitely.

#### SHAW AND THE COMMUNITY: AN ONGOING PARTNERSHIP

The City of Sumter, Sumter County, and its citizens and business communities have a long history of working in partnership with Shaw AFB and Poinsett ECR to avoid land use incompatibilities and encroachment threats, including the preparation of initial Joint Compatible Land Use Studies in 1993 and 2002.

Following those studies, the City and County both adopted significant planning and zoning tools to ensure this partnership continued. Those existing tools are detailed in Chapters 2 and 4 of this study.

This Chapter indicates further prudent measures the 2016 JLUS Policy Committee believed were advisable to further protect this ongoing partnership and to reflect an evolving mission at its local bases.

### II. THE NEXT PHASES: JLUS IMPLEMENTATION AND ONGOING PLANNING AND COORDINATION

The JLUS process is, of course, similar to other planning processes that the Sumter-Shaw community and most in South Carolina regularly undertake.

#### Phase I: "Joint Land Use Study" (JLUS)

The planning phase - the JLUS itself - is when background analyses are conducted, future needs and objectives assessed, and recommendations to address those needs are identified. This Joint Land Use Study report represents the culmination of this "planning" phase, which is somewhat similar to the comprehensive planning efforts Sumter and Sumter County undertake every 5-10 years pursuant to the 1994 Local

Government Comprehensive Planning Enabling Act (the Planning Act), a process detailed in Chapter 4. The JLUS was overseen by the JLUS Policy Committee, with support from the JLUS Technical Advisory Committee.

## Phase II: “JLUS Implementation”

Phase II, “JLUS Implementation,” would involve developing the tools to implement the recommendations in this chapter, including preparation of implementing documents, ordinances, agreements, comprehensive plan policies, and the like. The JLUS Implementation phase has historically been eligible for funding with a matching grant from the Office of Economic Adjustment, similar to the JLUS process itself. That funding, of course, is contingent upon availability.

JLUS Implementation will be overseen by the “JLUS Implementation Committee.”

## Phase III: “Ongoing Planning & Coordination”

Lastly, Phase III of the JLUS process, “Ongoing Planning & Coordination,” involves implementing the tools developed in Phase II by the appropriate implementation agencies (e.g., the City, County, business partners, and the Installations) for adoption and application. This would be commensurate with the implementation of a zoning ordinance, for example, after the ordinance has been adopted. Phase III represents the ongoing planning activities the community will undertake with respect to the presence of significant military activities in and near Sumter County and the City of Sumter.

This phase will be overseen on a continuing basis by a “Military Planning and Coordination Committee.” The following table illustrates the three phases.

	Phase I	Phase II	Phase III
	Joint Land Use Study	JLUS Implementation	Ongoing Planning and Coordination
Phase Objective	Needs Assessment	Implementation Documents Prepared, Feedback from Public, Elected Officials Received	Tools Adopted, Effective, Amended, as Needed
	Tools Identification		
Steering Committees	Policy Committee	JLUS Implementation Committee	Military Planning & Coordination Committee (MPCC)
	Technical Advisory Committee	Policy Advisory Committee	
Funding Eligibility	OEA-eligible	OEA-eligible	N/A
Military Planning & Coordination Agreement (MPCA)	MPCA Recommended	MPCA Drafted	MPCA Adopted & Effective



### III. JLUS IMPLEMENTATION COMMITTEE

A “JLUS Implementation Committee” will oversee Phase II and the “Implementation Tasks” set forth in Chapter 5 as well as the JLUS Recommendations Matrix. The length and cost of Phase II will depend, in part, on how many and which of the Implementation Tasks the community and the Implementation Committee wish to pursue in the near term. There is a prioritization scheme provided in the JLUS Recommendations Matrix to assist in planning for and guiding JLUS Implementation.

Therefore, as Phase II of the JLUS process begins, the administering local agency will set up the “JLUS Implementation Committee” to undertake the Implementation Tasks set forth in this chapter and in the Recommendations Matrix. The Implementation Committee would consist of members of the jurisdictions involved in the JLUS itself, other impacted levels of government, and affected stakeholder groups.

### IV. ORGANIZATION OF JLUS RECOMMENDATIONS

The recommendations are organized according to the “procedural context” in which they would be implemented.

For example, those implemented through the local comprehensive planning process have been grouped into section A, “Comprehensive Planning.” Matters implemented through strategic coordination among staff and designated officials have been grouped into section E, “Interagency Coordination.”

The seven Procedural Contexts, therefore, are as follows:

- A. Comprehensive Planning
- B. Zoning, Subdivision, and General Code Provisions
- C. Subdivision Regulations
- D. Notice to Property Owners and Occupants
- E. Interagency Cooperation
- F. Public Outreach and Communication
- G. Ongoing Planning and Coordination

The recommendations for avoiding future land use incompatibilities have been grouped within these seven Procedural Contexts.

Recall from Chapter 3 that the primary sources of potential land use incompatibilities identified during the study, included:

- Safety/accident potential related to military aircraft operations
- Noise related to military aircraft operations
- Identified land uses and densities within the Military Protection Areas (e.g., high-density subdivisions, renewable energy projects, or frequency emission producing uses)

#### A NOTE ABOUT THE FORM OF RECOMMENDATIONS

The reader will note that similar Implementation Tasks appear in more than one Procedural Context. This is because some tasks will be implemented through more than one procedure.

For example, Recommendation E.3. describes specific steps for improving logistics related to on-base Elementary Schools through “interagency coordination.”

Similarly, Recommendation F.5. describes a “public outreach” effort to ensure the public is aware of the steps that, in fact, are taken by Shaw AFB and the School Board in this regard.

Therefore, there are instances where the same substantive area is covered in two different Procedural Contexts.

- Transportation improvements within or near the Military Protection Areas

Therefore, it is generally within these areas that the JLUS Implementation Committee would work to develop tools to implement the recommendations outlined in this chapter.

This chapter sets forth the JLUS Policy Committee's recommendations for addressing these sources of potential incompatibilities in the vicinity of Shaw AFB and Poinsett ECR, in a way that protects the Air Force mission, as well as the quality of life of the civilian community near the Installations. The Policy Committee's recommendations are identified in the Recommendation Matrix as "Implementation Tasks," and are prioritized according to public and Policy Committee input received during the JLUS process.

## V. THE "JLUS RECOMMENDATIONS MATRIX" – SUMMARIZED

Following a detailed discussion of the Policy Committee's recommendations, the "JLUS Recommendations Matrix" summarizes the recommendations and should be used to guide Phase II, JLUS Implementation, and to help the community to prioritize that effort. Each Task has a letter/number identifier that cross-references the detailed discussion sections below for each recommendation (see the Matrix column designated as "Cross-Ref").

The agencies or parties holding the final responsibility for developing and adopting each tool are indicated for each Implementation Task listed in the matrix as the "Responsible Party." It should be noted, however, that the input and involvement of other key stakeholders and the public in developing each tool is assumed as a critical component. It goes without saying, as well, that representatives from Shaw AFB and Poinsett ECR will be involved in developing and implementing all the tools listed. They are indicated as a Responsible Party, however, only in instances where the Air Force must take final action to develop or implement a particular tool.

For example, the JLUS Implementation Committee, the City of Sumter, and Sumter County are indicated as the "Responsible Parties," for developing and ultimately adopting the City and County zoning code amendments recommended by the Policy Committee here. However, it is the express intention of the Policy Committee that, although they are not responsible for adopting these measures, the public and other specifically affected parties are involved in the process of preparing revised zoning codes. Once the JLUS Implementation phase begins, the JLUS Implementation Committee would engage stakeholders in addition to those currently listed in the Matrix, as needed—a process similar to that undertaken during the preparation of the JLUS itself. Indeed, additional key stakeholders may be asked to join the JLUS Implementation Committee as these tools are prepared for recommendation to the City and County Councils.

Finally, the estimated costs and timeframes for implementation are also provided in the JLUS Recommendations Matrix.

The range of estimated costs for each Implementation Task is shown as follows:

- \$ = less than \$5,000
- \$\$ = between \$5,000 and \$25,000
- \$\$\$ = greater than \$25,000

The anticipated timeframes for implementation are shown, as follows:

- S = Short-term, within the first 3 years following completion of the 2016 JLUS
- M = Medium-term, within the first 10 years following completion of the 2016 JLUS
- L = Long-term, within the next 20 years following completion of the 2016 JLUS

The timeframes were divided in this manner because the Policy Committee wished to encourage implementation at any time for any tool as resources are available or as the urgency of a particular recommendation changes over time. It is simply assumed that if a tool is marked for development in the “short-term,” for example, that available resources for JLUS implementation would be directed to that area more quickly than in others.

The overall priority given to a particular tool is relative to the urgency of the issue to be addressed, the costs associated with the tool, and, in particular, whether immediate safety and quality of life concerns are addressed by the tool. The Policy Committee prioritized the tools as either “low,” “medium,” or “high” priority according to their relevance to a present or anticipated encroachment threat in the short-term. Designation of a tool as low priority, for example, is not an indication of a lack of importance in the community in general, but simply an indication that implementation of this particular tool is not as urgent specifically as to an encroachment concern.

## VI. HIGH PRIORITY JLUS RECOMMENDATIONS – SUMMARIZED

The JLUS Policy Committee ranked the following Implementation Tasks within each “Procedural Context,” as “high priority.” This ranking is anticipated to help guide the City-County Planning Department staff in crafting Phase II, JLUS Implementation, and advising the JLUS Implementation Committee of its charge.

### Comprehensive Planning

- Update Military Protection Area Boundaries and Policies
- Update Comprehensive Plans Related to the 2016 Joint Land Use Study

### Zoning and General Code Provisions

- Revise ACD Overlay Noise Zones to reflect F-16 and potential F-35A Operations
- Noise Attenuation (NA) Districts
- Renewable Energy Projects
- Frequency Emissions and Interference Avoidance
- Require coordination per State Military Coordination Act
- Include Poinsett ECR in Height Restrictions
- Incorporate Clear Zones restrictions into Zoning Codes
- Noise Zone Restrictions Updated
- Non-Conforming land uses, structures
- Existing Platted Lots
- City-County Code Consistency Review
- Add Poinsett ECR to Zoning Codes Purpose Statements

### AN EVOLVING MISSION

At the time of the 2016 JLUS, no Record of Decision had been issued with respect to the potential arrival of F-35A squadrons at Shaw AFB.

However, based on the growth trends described in local Comprehensive Plans, the critical importance of Shaw AFB’s ongoing presence in the community, and the Land Use Compatibility Analyses conducted during the JLUS, the Policy Committee took a conservative approach by planning for the arrival of the new aircraft. This is to avoid the creation of incompatible land uses within its projected footprint.

Therefore, the JLUS Policy Committee recognized that, should new information emerge after the 2016 JLUS is completed, JLUS Implementation should reflect the most recent and reliable information related to actual Air Force operations at Shaw AFB and Poinsett ECR.

### **Subdivision Regulations**

- Add Poinsett ECR boundaries to Plat Notice Requirements
- Plat Acknowledgement Statements
- Expand Subdivision Signage for Operational Awareness in MPAs

### **Notice to Property Owners and Occupants Planning**

- Real Estate Disclosures

### **Interagency Cooperation**

- Appoint JLUS Implementation Committee
- Renewable Energy Project Review & Impacts
- Sumter School District Coordination/Logistics
- Coordinate regarding Proposed Growth-Inducing Infrastructure within the MPAs
- Coordinate with the South Carolina Military Base Task Force

### **Public Outreach and Communication**

- Civilian Unmanned Aircraft Systems (UAS)
- Increase Community Awareness of the Air Force Mission
- Noise Level Reduction Construction Standards
- Radio Frequency Interference Awareness
- On-base School Logistics
- Dedicated Webpage

### **Ongoing Planning and Coordination**

- Establish Military Planning and Coordination Committee (MPCC)
- Prepare Military Planning and Coordination Agreement
- Prepare MPCC Bylaws
- Monitor Status of F-35A Squadrons

The Policy Committee recognized, of course, that changing land use trends and, in particular, Air Force operations at Shaw AFB or Poinsett ECR may dictate a re-prioritization of items on the Recommendations Matrix. This ability to shift priorities is particularly important as, at the time of the 2016 JLUS, no Record of Decision had been issued for the potential arrival of the F-35A at Shaw AFB.

## **VII. JLUS RECOMMENDATIONS**

---

As noted earlier, the following narrative describes the recommendations of the JLUS Policy Committee. The recommendations are summarized in the Matrix that follows.

### **A. Comprehensive Planning**

Chapter 4 describes, in detail, the existing provisions in the Comprehensive Plans of the City of Sumter and Sumter County, which relate to military land use planning and the lands surrounding Shaw AFB and Poinsett ECR. Both plans include the plan elements required under the South Carolina Planning Act and each plan was last updated in 2014. The next full plan updates, therefore, will be in 2019, although, it is recommended

that the City and County implement the following plan-based JLUS recommendations prior to any regulatory changes that would be based in part on these plan changes. Recommended regulatory changes are described in the following Section B, “City and County Zoning, Subdivision, and General Code Provisions.”

### 1. Reevaluate MPA Boundaries and Policies for Update

As discussed in Chapter 4, the City and County comprehensive plans list eight policies that apply within the existing Military Protraction Area (see Figure 4-1). MPA Policy #8 reads as follows:

“The City and County will reevaluate the boundaries and policies of the Military Protection Area upon receipt of technical noise and flight data relative to the F-35.”

As discussed in Chapter 3, an Environmental Impact Statement was issued in 2013 to determine the most appropriate locations for basing the new F-35A Joint Strike Fighter aircraft. The EIS presented three scenarios for the bedding down of the new aircraft at Shaw AFB and the safety and noise impacts each scenario may create.

Given the importance of Shaw’s mission and presence in the region, and to ensure proper land use planning related to the lands in the JLUS Study Area, the Policy Committee determined that Scenario 3 was the appropriate scenario for which to prepare, because it involves that greatest potential increase in aircraft presence and additional personnel, as discussed in Chapter 2. Therefore, the noise contours and safety zones used in the modeling for that scenario were used for the land use compatibility analyses in Chapter 3. As is shown in the Figure 5-1, the boundaries of the F-35A 65 dB+ DNL noise zone extend beyond or to the edge of the existing MPA boundaries.

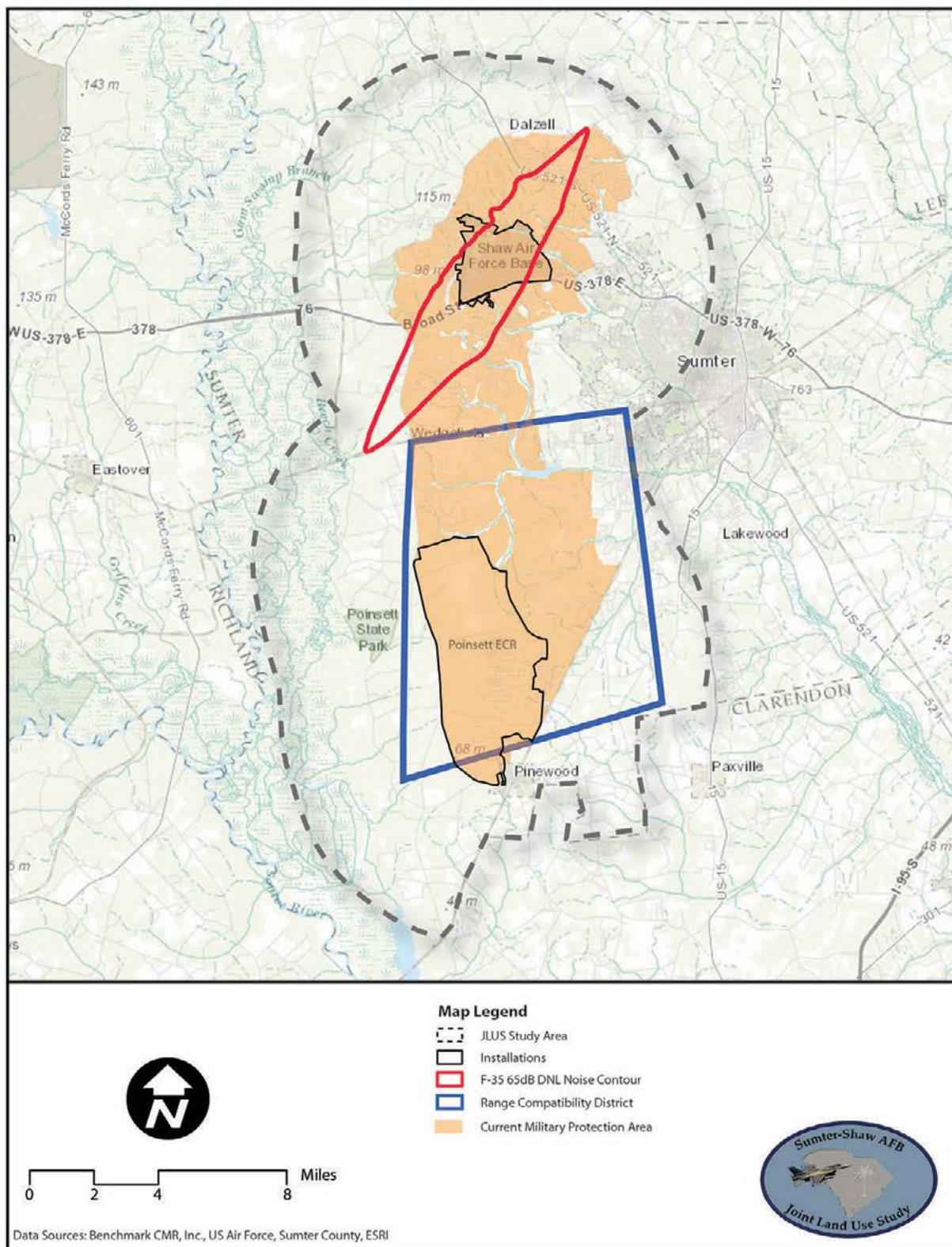
The JLUS Policy Committee felt it important that the City and County maintain a land use approach that appropriately reflects the importance of the Air Force’s ongoing presence in the region and state, particularly in light of the potential arrival of F-35A fighter jets; an uncertain and evolving Air Force training mission; the Comprehensive Plans’ projections of continued demand for new growth in the vicinity of the Installations; and the findings from the 2016 JLUS process and land use compatibility analyses. Therefore, the Policy Committee recommended that the City of Sumter and Sumter County consider amending the existing Military Protection Area to reflect the potential arrival of the F-35A aircraft, the full extent of the Poinsett Range Compatibility District, and the need for additional public awareness throughout the areas potentially impacted by current and potential future operations.

The Policy Committee recommends, therefore, that the current MPA policies be applied to lands potentially impacted by the arrival of F-35A aircraft on the lands near Shaw AFB. See Figure 5-2 (on page 177).

***Continued on page 177***



Figure 5-1: MPA, RCD, and F-35A 65+ dB Noise Contour



***Continued from page 175***

In addition, the Policy Committee recommended applying those same existing policies to the entirety of the Poinsett ECR Range Compatibility District. This area was not included in the original MPA, but landowners there may experience noise-related impacts associated with operations at Poinsett ECR and this condition is expected to continue in the future. This area, along with the areas of the MPA's expansion nearer to Shaw, will be designated as MPA-1 in order to accommodate F-35A impacts.

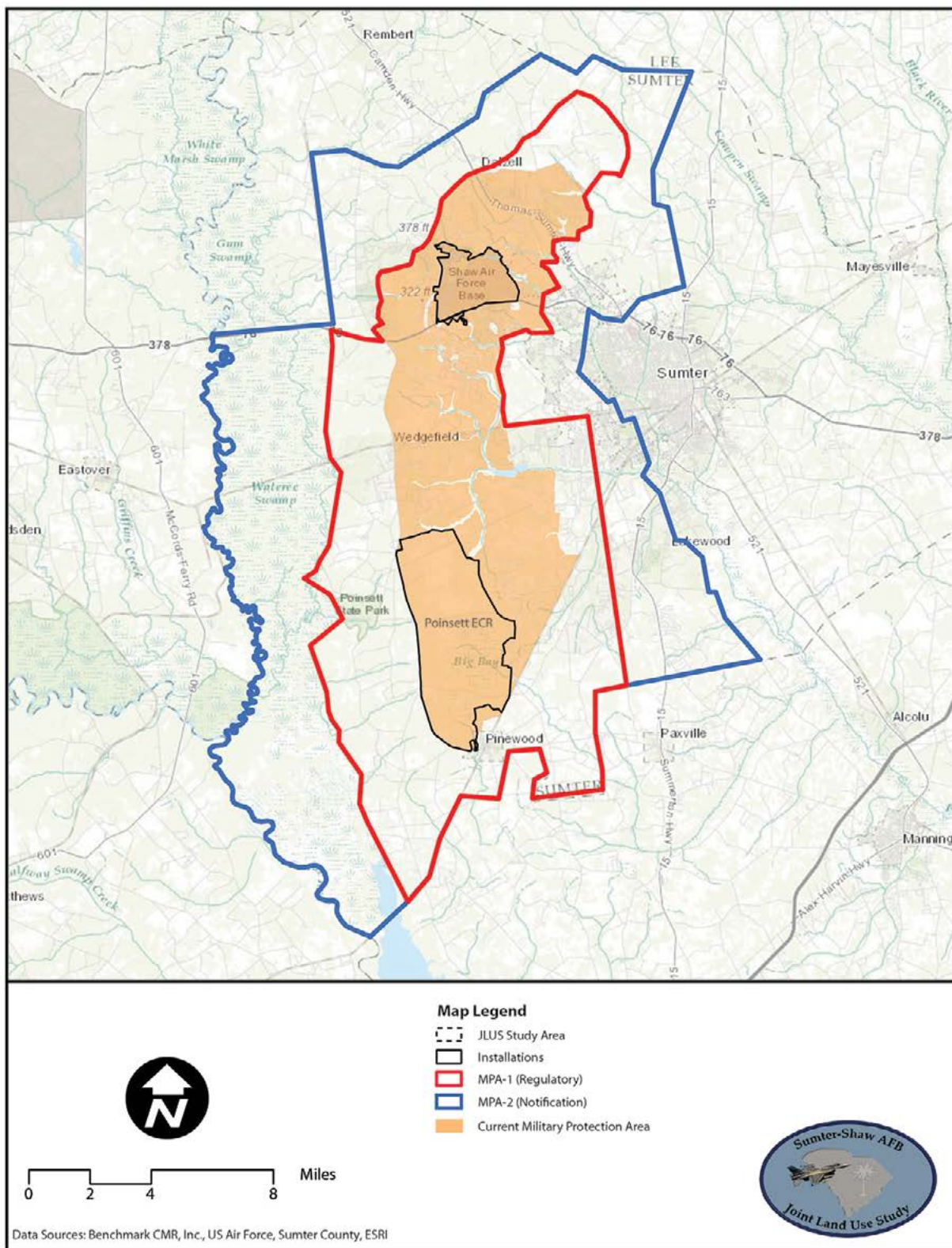
Finally, the Policy Committee recommended that, to prevent future conflicts and potential complaints related to existing and future operations at the Installations, additional "public awareness" requirements should be applied to an extended area beyond the amended MPA-1. It is within this expanded area, as well as MPA-1, that the following public awareness requirements are recommended to the City and County:

- Real estate disclosures notifying future occupants of potential military impacts;
- Notice of potential military training impacts on plats, building permits, site plans, and other development approvals;
- Signage at the entrances to subdivisions indicating the potential presence of military training impacts; and
- Road signage along certain major roadways indicating the potential presence of military training impacts.

This expanded area, inclusive of the lands within MPA-1, would be designated as MPA-2. Figure 5-2 indicates the lands recommended for inclusion within MPA-1 and MPA-2.



Figure 5-2: Revised Military Protection Areas-1 and -2



However, it should be noted that, at the time the JLUS was finalized, no final decision related to the F-35A's potential arrival had been made and the Policy Committee's recommendations were, at that time, made based solely on the information provided in the 2013 EIS. Therefore, as a separate JLUS recommendation below specifically provides, the Policy Committee further recommended that the City and County monitor the operations at Shaw AFB and Poinsett ECR and that final action on the Military Protection Areas reflect the best and most updated information available at the time of JLUS implementation. In addition, the Policy Committee noted that no changes to the MPA should occur until an opportunity for the input of property owners and residents impacted by the potential change has been provided.

There were two final structural recommendations of the Committee related to the update of the Military Protection Area. First, appropriate changes to City and County regulations should reflect the requirements of the applicable MPAs. For example, where the MPA-2 would require placement of subdivision signs, the subdivision code should be amended to reflect that Plan policy and the revised MPA-2 boundaries, if adopted.

The JLUS Policy Committee recognizes within the MPAs there are existing properties zoned for densities greater than the one-unit-per-acre policy in the Comprehensive Plans and for which city water and sewer access would be considered vested at the time of the JLUS. Nonetheless future rezoning requests that would increase density to greater than one-unit-per-acre should be discouraged in light of the MPA policies in the City's and County's Comprehensive Plans and the recommendations in the 2016 JLUS.

**Military Protection Area policies, including density limitations, should guide future rezoning requests within the MPAs.**

Second, it was recommended that all lands within the Military Protection Areas are subject to the requirements of the applicable MPAs, regardless of whether another future land use category also applies. In other words, the MPAs should operate as a plan "overlay" and should not exclude lands with other future land use designations. Based on discussions with Sumter City-County Planning Department staff, it appears that this was the original intent of the current policy.

## 2. Update City and County Comprehensive Plans Related to 2016 JLUS

The City and County comprehensive plans should be amended to reflect the efforts, processes, and recommendations of the 2016 Joint Land Use Study. This will provide policy support and background for any regulatory changes made pursuant to the recommendations in the JLUS, which are described in the following section B.

### 3. Small Area Plans

The Implementation Elements of the City and County Comprehensive Plans currently call for the creation of small area plans for the lands within the Military Protection Area. Based on the input of Planning Department staff during the JLUS, the Policy Committee recommends that this plan policy be removed and recommendations of the JLUS be made to the plans instead.

## B. City and County Zoning and General Code Provisions

All recommendations related to updating the existing zoning, subdivision, and general codes of the City and County are indicated as "High" priority because they are either necessary to facilitate existing or currently anticipated air operations or are necessary to clarify existing code provisions.

## 1. Revise ACD Overlay Noise Zones to reflect F-16 and potential F-35A Operations

Based on the Comprehensive Plans' findings that continued demand for growth is expected west of the historical urbanized areas of Sumter, the land use compatibility analyses conducted in Chapter 2 of the JLUS, and the critical economic importance of sustaining Shaw AFB's mission in the state and region, the Policy Committee recommended that the noise overlay zones encompass all lands likely to experience high noise levels associated with either the F-16 or the F-35A aircraft.

Furthermore, the Policy Committee took note of the changing noise contours associated with current air operations (with the F-16 as the primary aircraft) at Shaw AFB, and how those contours changed between those set forth in a 2004 AICUZ Study and those in a subsequent 2013 AICUZ Study. A comparison of the 65 dB+ DNL boundaries of the two studies is shown in Figure 3-13. Shaw AFB officials noted during discussions of the Policy Committee that these contours will vary over time according to the operational needs of the Air Force and Shaw AFB and that the areas shown in the 2004 AICUZ could once again experience similar impacts from F-16 operations at another date.

Therefore, the JLUS Policy Committee recommended that the noise zone overlays in the City and County ordinances be amended to reflect the outermost extent of each noise contour in the 2004 AICUZ, 2013 AICUZ, or 2013 EIS. This, it was determined, would ensure that City and County planning policies and regulations would reflect the likely impacts of air operations at Shaw AFB based on recent and existing F-16 aircraft operations and the potential arrival of the F-35A aircraft squadrons.

Figures 5-3 through 5-6 illustrate how this recommendation would be implemented, as follows:

- Figure 5-3 illustrates the recent noise zones reflected in the 2004 AICUZ Study for the F-16 aircraft.
- Figure 5-4 illustrates the existing noise zones reflected in the 2013 AICUZ Study for the F-16 aircraft.
- Figure 5-5 illustrates the potential noise zones reflected in the 2013 EIS for Scenario 3 for the anticipated F-35A aircraft.
- Finally, Figure 5-6 illustrates the combined areas of potential noise impacts associated with recent and existing F-16 operations and potential F-35A operations.

**The Policy Committee recommended that the City and County update their zoning maps, as soon as possible, to reflect the 2004 and 2013 F-16 noise contours; and that the F-35A contours be added during the JLUS Implementation Phase as the City and County Councils deem appropriate.**

*Continued on page 185*



Figure 5-3: 2004 AICUZ Noise Zones for Recent F-16 Operations

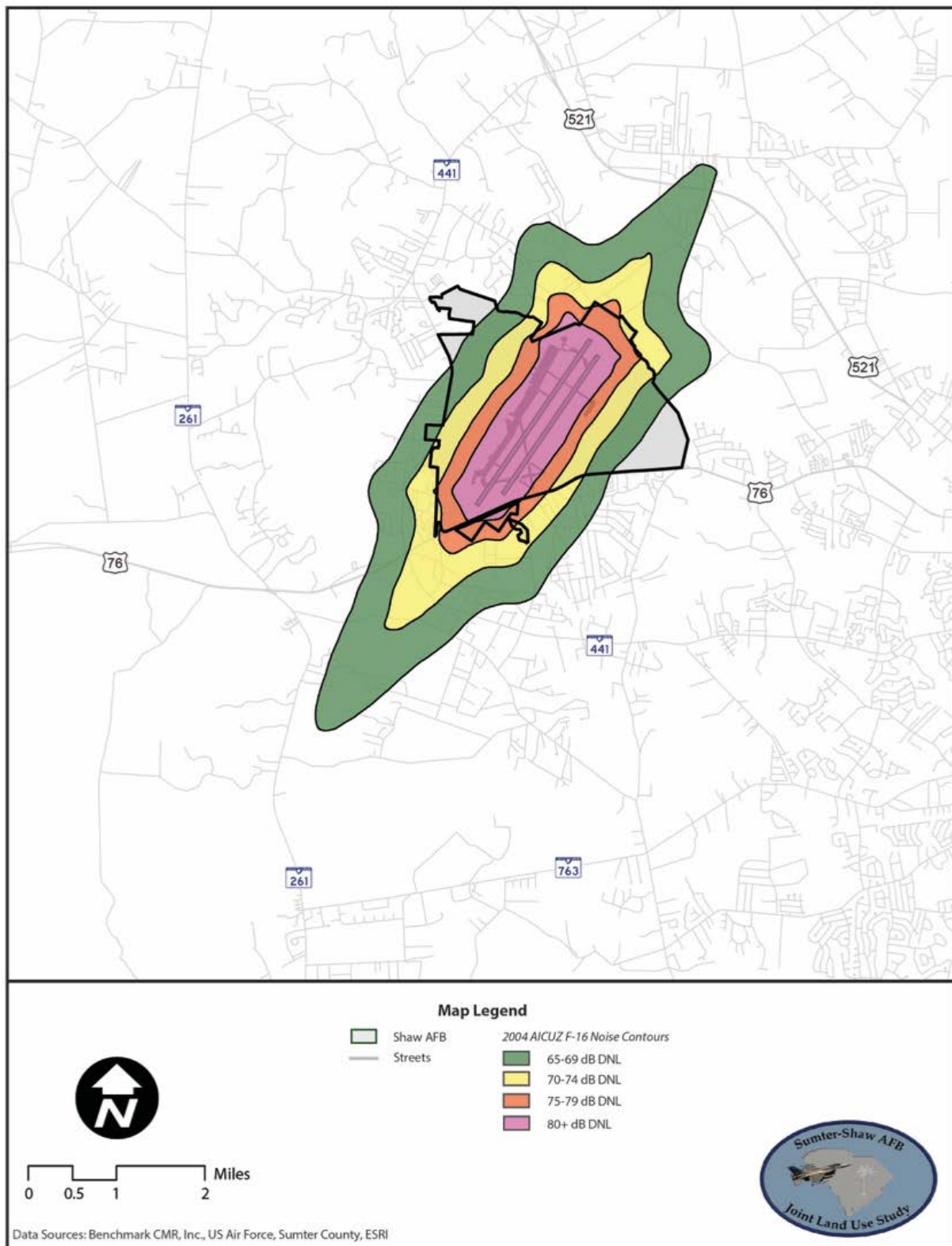


Figure 5-4: 2013 AICUZ Noise Zones for Existing F-16 Operations

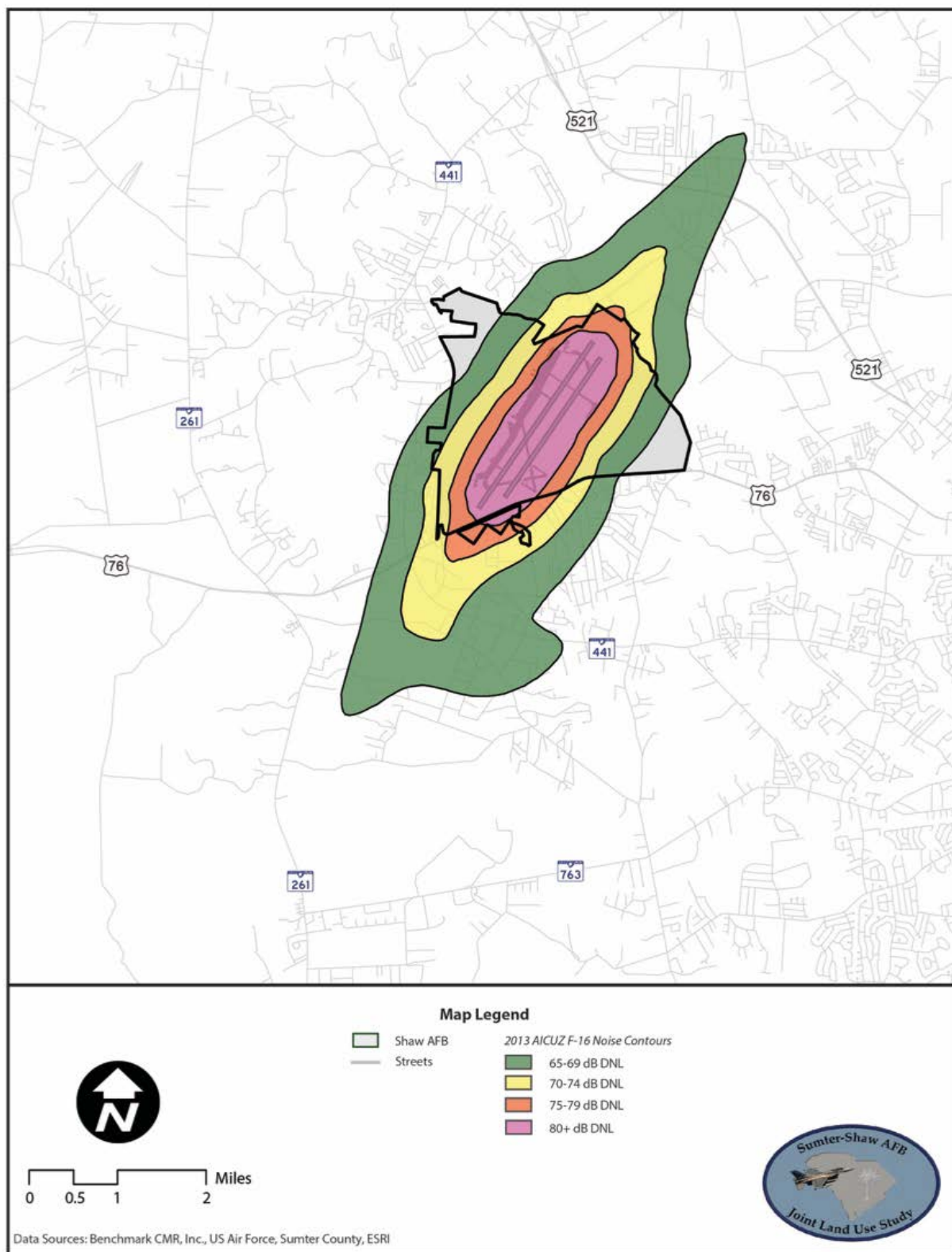


Figure 5-5: 2013 EIS Noise Zones for F-35A Operations (Scenario 3)

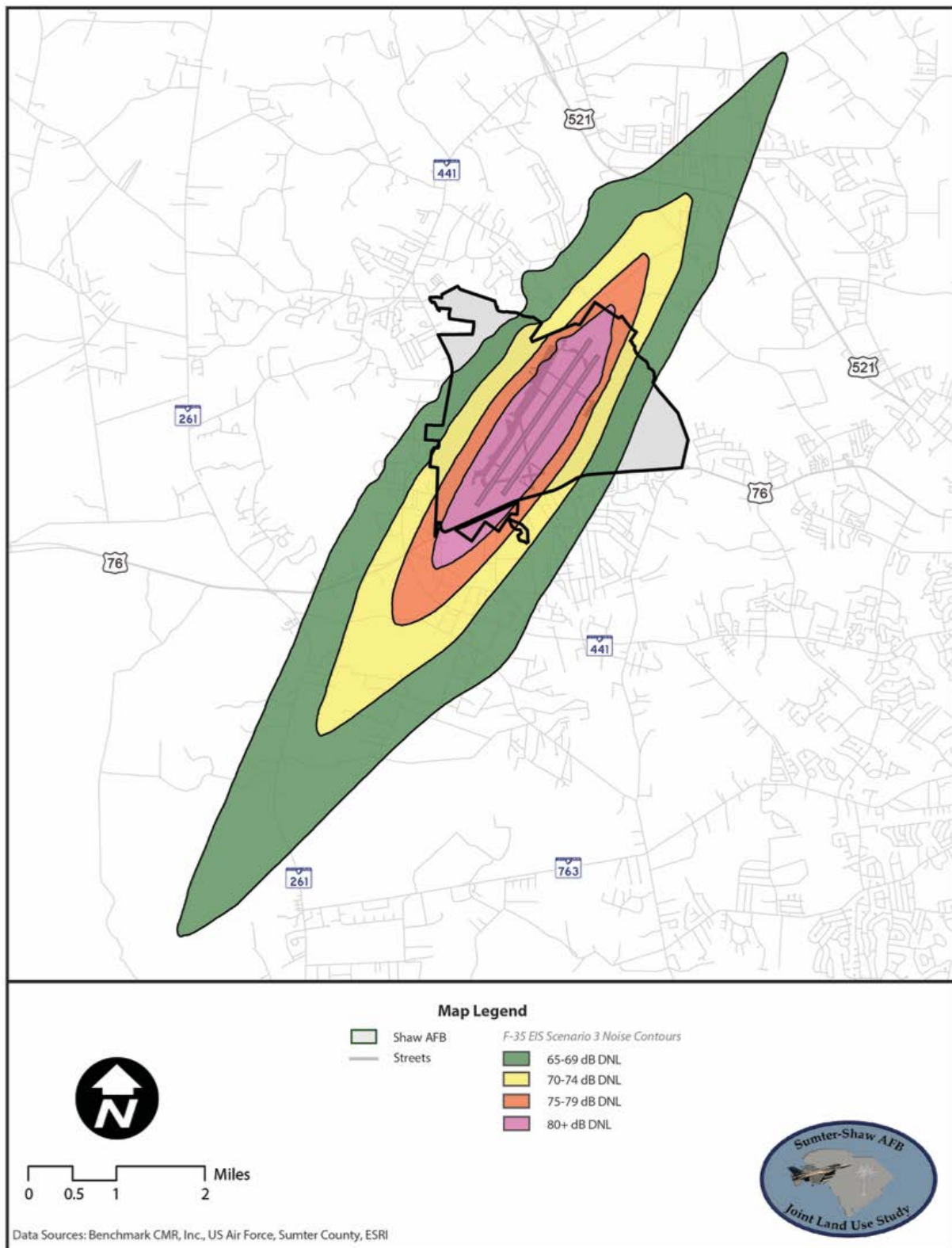
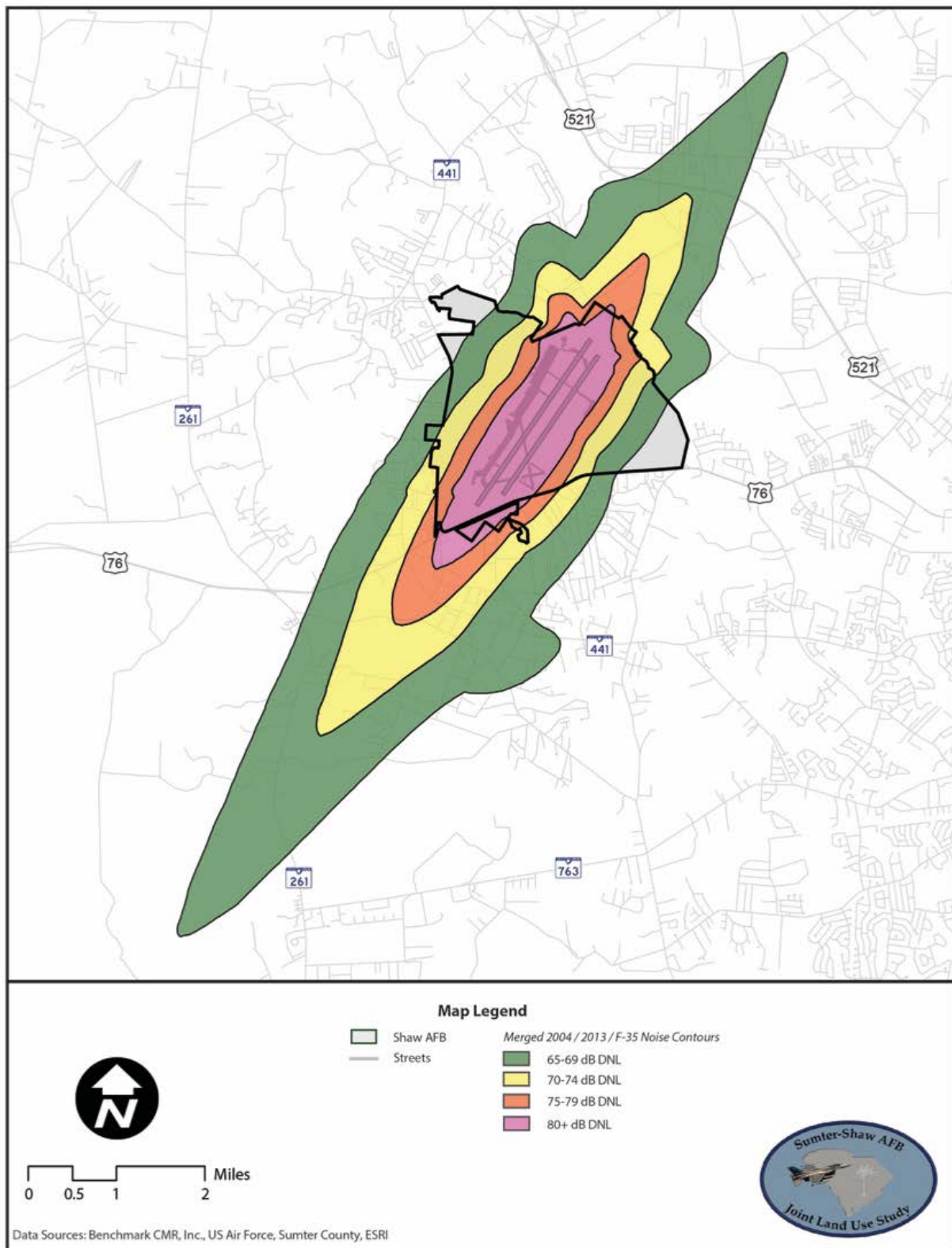




Figure 5-6: Merged Noise Zones for Recent and Existing F-16 Operations and Potential F-35A Operations



*Continued from page 180*

However, as is noted earlier in the chapter, at the time of the JLUS, no final decision as to the F-35A's potential arrival had been made. The final decision to implement the above recommendation should be considered in light of any Record of Decision issued related to the 2013 EIS and the most recent information available at the time of JLUS implementation.

## 2. Replace current Noise Attenuation Districts with MPA-2 boundaries and policies

The existing Noise Attenuation Districts, shown in Figure 4-3, though required to be shown on "plats, building permits, and other correspondence," do not include any additional attenuation or impact-mitigation requirements. Therefore, the JLUS Policy Committee recommended that this district be removed and replaced with an expanded "public awareness" district consistent with the MPA-2 area recommended above. It is within this regulatory area that the following public awareness requirement would apply:

- Real estate disclosures;
- Notice of potential military training impacts on plats, building permits, site plans, and other development approvals;
- Signage at the entrances to subdivisions indicating the potential presence of military training impacts; and
- Road signage along certain major roadways indicating the potential presence of military training impacts.

## 3. Renewable Energy Projects

The City and County zoning codes should be amended to expressly prohibit or condition the approval of any renewable energy projects within the City or County jurisdictions that could interfere with Air Force operations. Currently, County Code Chap. 4, Art. II; and City Code Chap. 7, Art. II, may by definition prohibit such land uses. However, currently, renewable energy projects are categorized as "utilities" and are allowed by-right in most zoning districts. These provisions should be reevaluated during JLUS Implementation to require full technical review by City, County, and Air Force officials to ensure renewable energy projects will not conflict with military operations at Shaw AFB or Poinsett ECR.

In addition, as is discussed below, the public should be made aware as soon as the City or County become aware of it, that any renewable energy project will be subject to review and comment by Shaw AFB and Poinsett ECR prior to the approval of any such project. Additional recommendations related to renewable energy projects are included under "Interagency Coordination" and "Public Outreach and Communication."

## 4. Frequency and Interference Avoidance

Currently, the City and County each regulate interference and other intrusions into the airspace at Shaw AFB and Poinsett ECR through their general code of ordinances, as discussed in Chapter 4 (see County Code Chap. 4, Art. II; City Code Chap. 7, Art. II). These code provisions prohibit land uses that create electrical interference, confuse or impair visibility, or endanger landing, taking off, or maneuvering of aircrafts within the conical, inner horizontal, or outer horizontal surfaces associated with Shaw AFB runways or the buffer or range surfaces at Poinsett ECR.

However, as is discussed in Chapter 2, during the JLUS study, frequency or spectrum interference was not identified as an urgent concern, at this time, at either installation. Nonetheless, the concerns for military installations include: line-of-sight conflicts; electromagnetic interference; increased demand for commercial use of frequencies, such as from cellular phone companies and radio stations; and alternative energy systems, which may block or interfere with spectrum frequencies.



Therefore, the Policy Committee recommended continued monitoring of potential impacts of frequency encroachment or incompatibilities and taking steps to ensure that existing code provisions are enforced. Should the Air Force, the City, the County, or the JLUS Implementation Committee determine that additional protections are warranted, the Policy Committee recommended consideration of the following steps:

- Incorporating into or cross-referencing the airspace regulations currently included in the general code of ordinances in the zoning regulations;
- Revising airspace regulations to reflect modern technologies and any land uses identified by the Air Force as a threat to military operations;
- Require coordination with Shaw AFB and, as applicable, Poinsett ECR with respect to any land uses within MPA-1 or the imaginary surfaces associated with current airport operations, pursuant to the State Military Coordination Act. Coordination could be accomplished by code requirement or through a non-binding Memorandum of Coordination, as appropriate.

### 5. Require Coordination per the State Military Coordination Act

As is discussed in Chapter 4, section 6-29-1630, S.C. Code Ann., requires military communities, such as Sumter and Sumter County, to consider the input of local “military installations” before any “land use or zoning decision” involving land located within a “federal military installation overlay zone.”

Although this coordination has tended to happen historically, the Policy Committee recommended during the JLUS that the state requirements be formally adopted into the relevant sections of the City and County zoning and subdivision codes for both Shaw AFB and Poinsett ECR.

It was recommended that coordination occur prior to delineated “land use and zoning decisions” related to lands located within (a) the imaginary surfaces described in city and county general codes; or (b) the existing Military Protection Area; or (c), once adopted, Military Protection Area-1 (see Figure 5-2).

### 6. Include Poinsett ECR Height Restrictions

As noted above, the City and County currently regulate the height of structures within areas that could penetrate the imaginary surfaces associated with aviation operations at Shaw and Poinsett. This is accomplished in two ways. First, by way of general code provisions and, second, by reference to same in the City’s and County’s “general and supplemental regulations,” which limits the height of “buildings and/or structures” to the underlying zoning district standards, unless that would create a hazard to air navigation or penetrate the airspace height restrictions at Shaw AFB.

The JLUS Policy Committee recommended that these ordinance sections be revised to also reference Poinsett ECR airspace protections.

### 7. Incorporate Clear Zones Restrictions into Zoning Codes

Although City-County zoning maps indicate the location of the Clear Zones (CZs) associated with Shaw AFB, the ACD regulations themselves do not include applicable restrictions to cover those portions of off-base lands within the CZs that have been identified by the Air Force. The Clear Zones are 3,000 ft. by 3,000 ft. areas at the end of each runway at Shaw and are shown in Figure 3-5 of Chapter 3. The Policy Committee recommended that current Air Force guidance as to land use compatibility be incorporated into the City and County’s Airfield Compatibility District regulations. This guidance was updated in December 2015, during the JLUS process (see AFI 32-7063).

## 8. Noise Zone Restrictions Updated

The current Airfield Compatibility District (ACD) and Range Compatibility District (RCD) only require Noise Level Reduction (NLR), but do not prohibit specific noise-sensitive land uses. Air Force Instruction AFI 32-7063, updated on December 18, 2015, includes recommended land use compatibility guidelines for these zones (see Table A.3.1).

In addition, as discussed in Chapter 3, current zoning, as to the F-16 impacts, currently allows some residential uses within noise zones between 65 dB and 80+ dB. Under the updated Air Force guidance, residential land uses are considered “conditionally compatible,” with indoor-outdoor noise level reductions (NLR) of 25 dB, in the zones from 65 dB to 74 dB. Within these areas, the zoning is not incompatible with Air Force guidance, but was indicated as conditionally compatible in Chapter 3 to highlight the fact that residential is allowed currently. Under the same Air Force guidance, however, residential is considered incompatible in noise areas above 75 dB. The City and County currently allow residential in these areas, with NLR standards of 30 dB, which is inconsistent with updated guidance. This would apply to both the F-16 and F-35A land use compatibility analyses in Chapter 3.

Therefore, the JLUS Policy Committee recommended the City and County update their ACD and RCD overlays to limit land use within designated noise zones (F-16 or F-35A, as applicable) to those that are compatible with noise generated in these areas by aviation operations, based on current Air Force guidance, and to prohibit residential land uses within the noise zones at 75+ dB, for both the F-16 and F-35A scenarios and for Poinsett ECR operations.

## 9. Non-Conforming Land Uses, structures

As is discussed in Chapter 4, the current ACD and RCD overlay regulations exempt certain land uses and structures from the zoning requirements if they were in existence at the time the regulations were adopted. However, additionally, some are allowed to be “replaced, substantially altered, or rebuilt” without complying with current ACD and RCD requirements. The Policy Committee recommended that public input be received and that the City and County Councils consider requiring that new land uses and structures, once abandoned or terminated for a period of time, comply with updated ACD and RCD requirements and updated Air Force guidance.

## 10. Existing Platted Lots

Similarly, some clarifications should be made regarding existing platted lots and whether new structures proposed on these lots must comply with current ACD and RCD code requirements. For example, Sumter County allows “existing” approved major subdivisions and mobile home parks (with infrastructure) to be built out without complying with APZ and noise zone requirements in the ACD. The City does not include this exemption in its ACD but does in its Range Compatibility District (RCD), which is discussed below.

## 11. City-County Code Consistency Review

It was indicated by Planning Department staff during the JLUS that, in most instances, there is an intention that code requirements related to Shaw AFB and Poinsett be applied consistently in the City and the County, unless conditions in one or the other necessitate differing approaches. As detailed in Chapter 4, there are some areas in which it appears differing requirements apply. Several of these have been noted specifically in this chapter.

Therefore, the Policy Committee recommended that the codes be reviewed for consistency (as applicable) between the City and County codes, with Military Protection Area plan policies, and with the most current Air Force Guidance (AFI 32-7063). This includes, for example, aligning DNL Noise Zones currently regulated for the RCD overlay (65-74 dB, 74-79 dB) and those indicated on RCD noise maps (65-69 dB, 70-74 dB).

## 12. Add Poinsett ECR to Zoning Codes' Purpose Statements

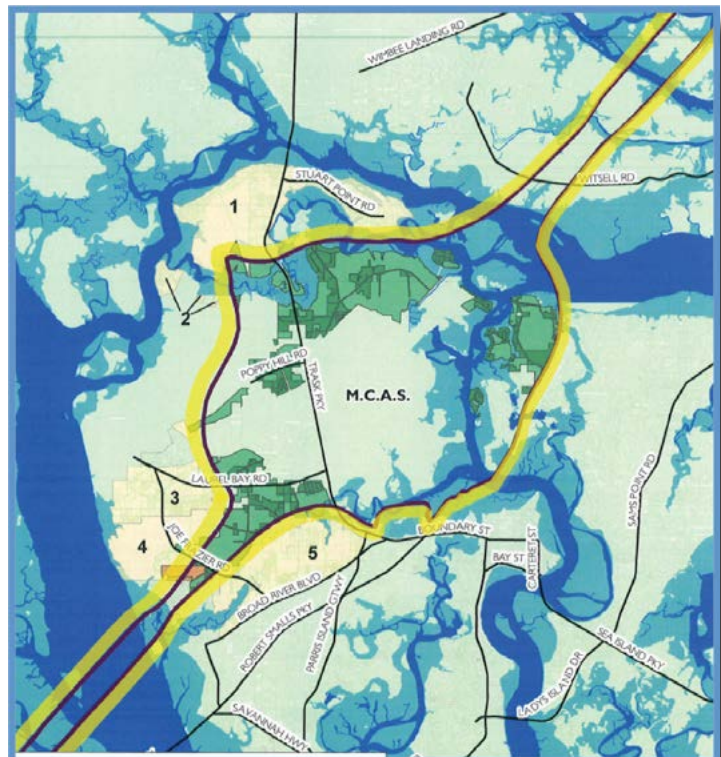
Sumter County and the City of Sumter's zoning codes list six (6) primary purposes of the entire code, one of which is to address "[t]he effects of aircraft noise and maximize the safety of land use in and around Shaw Air Force Base." It is assumed that this reference to Shaw AFB would be read to encompass operations at Poinsett ECR. However, to clarify the scope of the City and County's military planning and protection efforts, the Policy Committee recommended adding a reference to Poinsett ECR in the purpose sections of the existing zoning ordinances.

## 13. Evaluate Effectiveness and Feasibility of a Transferable Development Rights Program

Transferable Development Rights (TDRs) programs have been used in other parts of the state, including Greenville County and, notably, Beaufort County. In fact, Beaufort County adopted a TDR program in 2009 for the specific purpose of creating a private sector opportunity to move development rights from areas impacted by operations at Marine Corps Air Station Beaufort into designated growth areas in Beaufort County. The effort in Beaufort County was supplemented by a grant from the South Carolina Military Base Task Force to facilitate purchasing initial development rights from the impact areas. This type of early participation incentive is frequently the catalyst of private sector activity in TDR programs.

As is true in all instances, the success of a TDR program hinges on the ability to identify growth areas within which there is a demand for densities greater than those currently allowed by code. It is this dynamic, of course, that creates a market-driven incentive for property owners in these "receiving areas" to purchase rights from property owners in military impact areas, or "sending areas."

While it was not immediately clear whether this dynamic exists in the Sumter area, the JLUS Policy Committee wished for the concept to remain part of the discussion during the JLUS Implementation phase to determine whether such a program would be effective and feasible in this area.



Beaufort County Transferable Development Rights Program  
Map of Sending and Receiving Areas for Marine Corps Air Station-Beaufort

## C. Subdivision Regulations

### 1. Add Poinsett ECR boundaries to Plat Notice Requirements

The City and County's subdivision regulations currently require noise zones associated with Shaw AFB to be indicated on certain subdivision applications, but do not include this requirement as to the noise impact areas associated with Poinsett ECR. Therefore, the Policy Committee recommended the same be required for both installations.

## 2. Plat Acknowledgement Statements

Similarly, the Policy Committee recommended that an “acknowledgement statement” requirement be included for the same categories of subdivision applications for Poinsett ECR as is currently required for Shaw AFB.

## 3. Expand Subdivision Signage for Operational Awareness in MPAs

Sumter County and the City of Sumter currently require major subdivisions to post an entrance sign making residents and future residents aware of potential military impacts in the area. The Policy Committee recommended expanding the subdivision signage requirement – currently related only to major subdivisions – to include minor subdivisions as well.

It was further recommended that this requirement be applied in the City and County throughout both the recommended MPA-1 and MPA-2 areas, as shown in Figure 5-2.

## D. Notice to Property Owners and Occupants

### 1. Real Estate Disclosures

As is discussed above, the Policy Committee recommended expanded notification areas in order to (a) facilitate public awareness of existing and potential future military operations and (b) reduce land use conflicts and potential complaints related to operations. To that end, the Policy Committee recommended requiring real estate disclosures prior to closings or lease agreements for residential and commercial uses. The areas of applicability would be the Military Protection Area-2 illustrated in Figure 5-2, which includes lands in both MPA-1 and MPA-2.

The Policy Committee sought to ensure those moving into MPA-2 areas would be aware of aviation operations in the area and have the opportunity to get additional information related to those impacts. Beaufort County, the Town of Port Royal, and the City of Beaufort have adopted similar requirements related to the Marine Corps Air Station and have found that once the real estate community and developers were aware of the disclosure requirement, that compliance has followed.

However, it was noted that outreach efforts and a cooperative approach with the real estate community was critical in the development of disclosure language and processes for compliance in this area. Additionally, based in part on the experience in Beaufort County, it was recognized that the specific nature of any disclosure requirements and the use of any required forms should be widely available to the public and the real estate community.

Therefore, the Policy Committee recommended that, prior to the City’s or County’s adoption of a real estate disclosure requirement, the input of the real estate and development community and, specifically, the Sumter Board of Realtors, was critical.

### 2. Expand Road Signage for Operational Awareness in MPAs

To further public awareness and the quality of life for future residents, business owners, and employees, the Policy Committee wished to ensure the effectiveness of generalized notice being provided through the existing road signage program. This is a program that places signage at key locations where military impacts may be experienced, including lands within the AICUZ noise and safety zones and the larger Military Protection Areas.

First, the Committee recommended that the existing program be evaluated to confirm that, as implemented, the number, location, size, and content of roadway signs are providing effective generalized notice of military impacts to the public.

Second, the Committee recommended expanding the roadway signage program into all areas covered by both the MPA-1 and MPA-2 areas recommended above (see Figure 5-2).

However, the Policy Committee recognized that the extent of the road signage program and the ultimate number of signs would depend on available funding and resources. It was also confirmed that funds provided by the Office of Economic Adjustment for JLUS Implementation are not eligible for use on the placement of signs. Nonetheless, it was recommended that, during the JLUS Implementation phase, the above recommendations be implemented and available funding be identified to implement an expanded sign program.

## E. Interagency Cooperation

### 1. Appoint JLUS Implementation Committee

Once the 2016 JLUS report has been completed and accepted by the City and County Councils, it is recommended that the City-County Planning Department staff work with the City-County Planning Commission to have the JLUS Implementation Committee set up to undertake the development of the tools recommended by the Policy Committee here in Chapter 5. The JLUS Implementation Committee will be assembled and conducted in a manner similar to the JLUS Policy Committee during the JLUS itself. It would meet periodically and have staff available to provide technical support.

### 2. Renewable Energy Project Review and Impacts

Although large-scale renewable energy projects are not presently prevalent in South Carolina or in the Sumter County area, the state has high potential for photovoltaic (PV) solar energy capacity and, as detailed in Chapter 2, there is potential for wind energy development off the coast.

If a renewable energy project were proposed in Sumter County or the City of Sumter, it would be subject to the air hazard requirements related to the imaginary, buffer, and range surface areas associated with Shaw AFB and Poinsett ECR, as delineated in the City and County's general code. These requirements are detailed in Chapter 4.

However, as discussed in Chapter 2, renewable energy projects—in particular, large-scale wind energy projects—located far away from Shaw AFB and Poinsett ECR, but near or adjacent to their operational areas, can impair or “encroach” upon Air Force operations that originate from the Installations.

Therefore, with respect to potential encroachment or compatibility matters, the Policy Committee recommended the following:

- Ensure that when new developments are proposed within Sumter County and the City of Sumter, that the existing imaginary, buffer, and range surface area code provisions are being applied;
- Coordinate with Shaw AFB and Poinsett ECR officials whenever renewable energy projects are proposed within the City or County;
- Monitor local, state, and quasi-governmental agencies for requests for renewable energy projects that could impact the Installations;
- Work with the S.C. Military Base Task Force to augment awareness of potential compatibility conflicts that may arise with widespread, large-scale production of renewable energy in the vicinity of the Installations or their operational areas; and
- Publicize the Department of Defense Siting Clearinghouse procedures, which allow the DoD to assess proposed energy projects and, if applicable, to recommend techniques for mitigating potential impacts on air operations at the Installations.



### 3. Sumter School District Coordination/Logistics

The Policy Committee recommended that the Sumter School District work with Shaw AFB officials to identify means and resources for improving logistics related to High Hills and Shaw Heights Elementary school transportation matters. JLUS stakeholder interviews included the suggestion that appropriate points of contact be identified, based on type of coordination needed, including emergency events (e.g. lockdowns), daily transportation, access for school maintenance vehicles, and base access. It was also suggested that Shaw's ex officio membership role on the school board be maintained and remain active and that a school district liaison within Shaw AFB be identified.



### 4. Coordinate Regarding Proposed Growth-Inducing Infrastructure within the MPAs

Local, regional, and state agencies should coordinate with Shaw AFB and Poinsett ECR officials prior to approving plans, regulations, or the funding of "growth-inducing" infrastructure, including water, sewer, and road improvements within the Military Protection Areas (MPAs) (see Figure 5-2). This will give the Air Force (and the City and County, as applicable) an opportunity to determine whether planned infrastructure extensions could facilitate encroachment on either Shaw or Poinsett operations.

As discussed in Chapter 2, at the time of the JLUS, two capacity-adding transportation improvements were included in the Santee-Lynches Long Range Rural Transportation Plan 2040 of the Santee-Lynches Council of Governments (dated June 2014). These improvements (to US 521, between SC 441 and I-20; and to SC 441, between Secondary Route 282 and I-20) are just north of the existing Military Protection Area, but are partially included within the proposed MPA-1 and MPA-2 areas. However, these projects are not included in the fiscally-constrained list of projects, and are not expected to be funded or commenced in the near-term.

Additionally, it was recommended that the City of Sumter incorporate the MPA's comprehensive plan policies and recommendations of the 2016 JLUS report into its "Development Standards Ordinance."

Finally, it was recommended that the Santee-Lynches Regional COG should incorporate the policies associated with the Military Protection Area related to public sewer extensions into the 208 Water Quality Management Plan for the Santee-Lynches Region and related to transportation improvements into the Long-Range Transportation Plan during their next updates. Note that several additional recommendations related to regional coordination with the Santee-Lynches Regional COG are included in Recommendation G.5, related to ongoing military planning and coordination.

### 5. Coordinate with the South Carolina Military Base Task Force

Local officials have long been involved with the South Carolina Military Base Task Force. The Policy Committee recommended that local stakeholders remain engaged with the Task Force, specifically, to monitor national trends and statewide efforts related to mission sustainability in coming years and to monitor land use encroachment and compatibility efforts statewide. As noted above, the Task Force may provide an opportunity for statewide awareness and approaches to the impacts of large-scale renewable energy projects in the state on military installations.

### 6. Community Service Partnerships & Shared Services

As discussed in Chapters 2 and 4, the Shaw-Sumter "Air Force Community Partnership" Program began in November 2014. Since then, nine partnerships have been signed-off on, which create resource efficiencies and build community awareness and community relationships for the long-term.

The Policy Committee recommended that the JLUS Implementation Committee work with Shaw AFB, during JLUS Implementation, to participate in any additional partnership discussions it may be uniquely positioned to facilitate, vis-à-vis the recommendations in the 2016 Joint Land Use Study.

## 7. Coordinate Community Planning and Professional Development

To further integrate and formalize base and community planning efforts among planning professionals, the Policy Committee recommended holding rotating roundtable discussions and annual or semi-annual training sessions with area Air Force and local and regional government planners.

Although coordination between the Shaw AFB Community Planner and the Sumter City-County Planning Department staff already is well-established it was determined during the JLUS process that with the rapidly evolving military framework, uncertainty related to potential base restructuring, and the potential arrival of the F-35A aircraft, that a regular meeting of local, regional, and military planners would be beneficial. It was suggested that local planner professionals meet informally once or twice a year and as needed when circumstances warrant.

## 8. Land Conservation

As discussed in Chapters 2 through 4, there is already an active land conservation program in Sumter and Richland Counties that has preserved over 12,000 acres to increase or maintain compatibility with military activities in the region. The benefits of these efforts were evaluated during the JLUS process by the Policy Committee and are reflected in the land use analyses in Chapter 3. Therefore, the Policy Committee recommended, not only continued participation in these land conservation efforts, but also increased awareness of the USDA, state, non-profit, and DoD voluntary easement programs available to interested landowners in the Military Protection Areas.



## F. Public Outreach and Communication

### 1. Civilian Unmanned Aircraft Systems (UAS)

As detailed in Chapter 2, civilian use of Unmanned Aircraft Systems – “drones” in common parlance – has increased dramatically in recent years and is anticipated to continue to do so for both personal and commercial purposes. To date, few conflicts with drones have been reported by the FAA in the state (only 6 as of the date of the JLUS). However, the Policy Committee recommended that steps be taken to ensure that the public is aware of restrictions on the use of drones near the Installations and of their potential danger to Air Force operations in the area.

As the regulation of UASs is limited largely to the authority of the Federal Aviation Administration, the Policy Committee recommended that the issue be monitored for opportunities for local regulation over time and, in the interim, to publicize information related to federal requirements related to the use of drones in the vicinity of the Installations, including FAQs, maps illustrating federal requirements in the local region, and links to FAA and other relevant federal agencies (see, e.g., Public Law 112-95). In addition, the need for and potential effectiveness of signage near the Installations to increase public awareness of how to notify Shaw AFB or Poinsett ECR of drone use within federally protected areas was recommended (see Figure 2-14, “Shaw AFB, Poinsett Electronic Range, and Sumter Airport Five-Mile Boundary and Restricted Airspace”).

## 2. Increased Community Awareness of the Air Force Mission

As noted previously, good community relations are a prerequisite to maintaining quality of life for nearby civilian populations and land use compatibility in the vicinity of a military installation. This may be particularly important when missions are changing as they would if the F-35A aircraft is determined to replace F-16 squadrons at Shaw AFB in the coming years.

In turn, good community relations hinge largely on the extent to which a community is aware of current operations and is involved in the process of an evolving operational footprint. The JLUS Public Survey indicated, in fact, that only about 32% of the respondents were aware that the 2013 EIS had been prepared for the F-35A and only about 4% of those responding had been involved in the EIS process (see Public Survey Results, [Appendix A](#)).

Therefore, the JLUS Policy Committee recommended that several protocols be put into place to increase community awareness of what is happening at Shaw AFB, particularly with regard to any shift from current operations to the F-35A. These include:

- augmenting community awareness campaigns regarding a Record of Decision, when issued, related to the potential F-35A beddown and the planning preceding this process;
- increasing the availability and exposure of Air Installations Compatible Use Zones (AICUZ) studies and findings, as well as other impact area data;
- increasing Shaw's community presence in social media platforms, as well as that of the JLUS Implementation Committee;
- holding informational workshops, at least every two years, to present current missions and installation news and to receive generalized community input, feedback, and concerns; and
- continuing the history of informal "good neighbor" coordination on land use and mission changes, in addition to formal statutory/zoning coordination, as recommended above.

The Policy Committee recommended that these efforts are facilitated through an informal documentation or the Military Planning and Coordination Agreement discussed below, in the section titled, "Ongoing Planning and Coordination."

## 3. Noise Level Reduction Construction Standards

The Policy Committee recommended the City and County make construction standards available to the public that would achieve compliance with existing noise level reduction requirements within the noise zones associated with the Installations.

## 4. Radio Frequency Interference Awareness

Similarly, the Policy Committee recommended that additional steps be taken to increase public awareness of potential sources of frequency interference that could negatively impact operations at Shaw AFB or Poinsett ECR. As noted in Chapter 2, the most urgent concern with frequency interference is with respect to renewable energy projects in the region and throughout the state that could impact operations and radar use at Shaw AFB or Poinsett ECR.

## 5. On-Base School Logistics

Supplementing Recommendation E.3., the Policy Committee recommends that Shaw AFB and the Sumter School District coordinate a public awareness effort related to logistics at High Hills and Shaw Heights Elementary Schools on base. Most likely, this would involve a single webpage that parents could access for the latest policies and protocols for accessing the schools. This may be coordinated as part of Recommendation F.6 or as a standalone website or webpage. In either case, points of contact at both the school district and Shaw AFB should also be posted.

## 6. Dedicated Webpage

To facilitate a number of recommendations related to public awareness and outreach, the Policy Committee recommended that a single webpage or website be created to serve as a “clearinghouse” for public information related to land use planning and coordination with Shaw AFB and Poinsett ECR, including:

- anticipated changes in missions at the Installations;
- gate relocations and security status/base access procedures;
- GIS layers available to citizens to easily identify the regulations and policies that apply to their property (including any required real estate disclosure requirements or drone use restrictions);
- downloadable brochures identifying relevant regulations, policies, military impact areas, and points of contact;
- USDA, state, non-profit, and DoD voluntary easement programs available to interested landowners in the Military Protection Areas;
- opportunities to do business with the Air Force;
- how to avoid land uses and land use activities (like drone use, renewable energy projects, or frequency emissions) that could negatively impact Air Force operations;
- Department of Defense Siting Clearinghouse procedures for landowners interested in establishing renewable energy projects in Sumter County or the City or which would otherwise impact the local Air Force mission;
- materials associated with the JLUS and JLUS Implementation processes;
- contact information at the Installations, including reporting disruptive noise events or other impacts; and
- activities and materials resulting from the efforts of the Military Planning and Coordination Committee.

The website could be created by or in consultation with the Military Planning and Coordination Committee (or a local government designated by the Committee) after the JLUS Implementation phase is completed.

## 7. Noise Inquiries

During the JLUS, it was clear that Shaw AFB receives very few noise inquiries or complaints related to noise. In 2015, for example, only seven were received at the base and most stemmed from low-flying operations at Poinsett ECR. Nonetheless, as is discussed in Recommendation F.2., to maintain good standing and community relations, Shaw AFB may review its website and make any changes that might facilitate a citizen’s understanding of how the noise inquiry process works and how it can be undertaken.

## 8. Local Business Coordination

To the extent that local businesses and contractors are eligible and qualified to conduct business or perform services on or on behalf of the Installations, the Policy Committee recommended an outreach effort to ensure the business community is aware of the availability of such opportunities. This may be coordinated through the Greater Sumter Chamber of Commerce and other business organizations.

## G. Ongoing Planning and Coordination

This section describes the framework within which the community would operate after Phase II, “JLUS Implementation,” is completed. This continual process was referred to earlier in this chapter as the “Ongoing Planning and Coordination” phase. It would be steered by a standing “Military Planning and Coordination Planning Committee” and governed by committee bylaws and a “Military Planning and Coordination Agreement,” in the nature of a non-binding Memorandum of Understanding (MOU).

The committee, bylaws, and agreement will be developed by the JLUS Implementation Committee, during the JLUS Implementation phase, following completion of the 2016 JLUS.

### 1. Establish a Military Planning and Coordination Committee

During “JLUS Implementation,” the JLUS Implementation Committee will set up a “Military Planning and Coordination Committee” (MPCC) that will facilitate ongoing planning and coordination efforts between the Installations and the community after tools recommended in the 2016 JLUS have been developed and, as appropriate, approved by local officials, in Phase II.

The MPCC will be staffed by local, regional, and military planners and will be guided by a framework developed by the JLUS Implementation Committee, also during Phase II. This framework may be documented in separate bylaws, as discussed below, or simply incorporated in a Military Planning and Cooperation Agreement (MPCA), also discussed below.

The Military Planning and Coordination Committee will meet regularly, as frequently as is needed, based upon the tools eventually put into place. It is expected, however, that the committee would not need to meet more frequently than twice a year or when called by the chair on an as-needed basis. The MPCC will be the primary keeper of the Military Planning and Coordination Agreement, as discussed below.

### 2. Prepare Military Planning and Coordination Agreement

During Phase II, the JLUS Implementation Committee will prepare a “Military Planning and Coordination Agreement,” which will commit organizations in the community and local government agencies to an ongoing planning partnership with Shaw AFB and Poinsett ECR.

The Agreement will:

- Identify its member agencies and each applicable agency point of contact;
- Describe the commitments of each member agency to a military planning partnership in Sumter and Sumter County;
- Set forth a timeframe for effectuating recommended actions related to military land use planning and coordination.

### 3. Prepare MPCC Bylaws

While the Military Planning and Coordination Agreement will describe the ongoing activities of the Military Planning and Coordination Committee, a set of separate bylaws may be prepared to govern the composition of the committee and its general operating protocols. Therefore, during Phase II, “JLUS Implementation,” the JLUS Implementation Committee may prepare draft bylaws to guide the Military Planning and Coordination Committee in its planning commitments and coordination activities.

As an alternative, the composition of the MPCC, its procedures, and the roles of its members could also be set forth in the Military Planning and Coordination Agreement (the “MPCA,” discussed above). Whether to incorporate these procedural frameworks into the MPCA or a separate set of bylaws will be determined by the JLUS Implementation Committee and will depend on the relative complexity of the final recommendations implemented. However, the JLUS Policy Committee emphasized a preference of using existing staff-level processes where possible and avoiding redundancies in procedures and committees.

### 4. Monitor Status of F-35A Squadrons

It will be important for the JLUS Implementation and the Military Planning and Coordination Committees to monitor the status of the potential beddown of F-35A squadrons at Shaw AFB as each undertakes the recommendations in this report. As noted earlier, this report reflects the potential impacts of 3 squadrons



(76 aircraft) of F-35A fighter jets locating at Shaw AFB, according to the findings in the 2013 EIS. As noted in Chapter 3. However, it has not yet been confirmed that these squadrons will be placed at Shaw AFB or, if they are, how many will arrive and exactly when. Therefore, the recommendations of the Policy Committee set forth in this chapter should be considered and implemented in light of any final decisions and updated information related to the potential arrival of this aircraft. For example, were the aircraft to be slated for operations at Shaw, and a subsequent Air Installations Compatible Use Zone (AICUZ) Study be prepared to reflect new operational footprints, the Policy Committee recommends the JLUS Implementation and/or Military Planning and Coordination Committees take such updated information into account prior to making final recommendations and or developing final implementation documents.

### 5. Maintain Coordination with Santee-Lynches Regional COG

Since land-use planning related to Shaw AFB and Poinsett ECR increasingly implicates regional issues, the Santee-Lynches Regional Council of Governments (the COG) should continue to be involved in military planning and coordination efforts in Sumter County and the City of Sumter. During the JLUS, the COG's director of Economic and Community Sustainability recommended that, at a minimum, the COG would ensure that the following plans and strategies continued to reflect local military planning efforts:

- Long-Range Transportation Plan (LRTP),
- Water Quality Management Plan (208 Plan),
- Hazard Mitigation Plan, and
- Comprehensive Economic Development Strategy (CEDS).

### 6. Update Noise Contours for Poinsett ECR and Evaluate the Need for Additional Protections

As noted in Chapter 3, the present noise zones associated with the Poinsett ECR have not been recently updated and, further, the operations at Poinsett tend to vary depending on the needs of the particular training group using the range. Therefore, similar to the recommendation in G.4., above, it is recommended that the noise impacts at Poinsett be monitored to insure that the RCD footprint and associated noise zones at the northern end of the range continue to reflect ongoing training activities.

### 7. Monitor Non-Aircraft Military Impacts at Poinsett ECR

Although the air-related operations at Poinsett ECR predominate, as noted in Chapters 2 and 3, the range is used for some ground-based training activities, including small arms, light maneuver, and demolitions training. At the time of the 2016 Joint Land Use Study, these ground-based activities were not creating significant impacts outside the range. Nonetheless, the Policy Committee recommended that these impacts continue to be monitored and, should they increase to the point where land use compatibility and quality of life could be affected, that those impacts be measured and evaluated for additional compatibility tools. Note, in addition, that pursuant to Recommendation A.1., the Policy Committee has recommended that the existing Military Protection Area be amended to encompass the entirety of the current Poinsett RCD (see Figure 5-2), in part, to protect civilian lands from the potential extent of range-training impacts.

## VIII. JLUS RECOMMENDATIONS MATRIX

---

The recommendations detailed in Section VII above are summarized in the matrix that follows. The third column in the matrix cross-references the corresponding section in the discussion above. The planning term and estimated costs shown in the matrix are categorized as follows:

- \$ = less than \$5,000
- \$\$ = between \$5,000 and \$25,000
- \$\$\$ = greater than \$25,000

The anticipated timeframes for implementation are shown, as follows:

- S = Short-term, within the first 3 years following completion of the 2016 JLUS
- M = Medium-term, within the first 10 years following completion of the 2016 JLUS
- L = Long-term, within the next 20 years following completion of the 2016 JLUS



THIS PAGE INTENTIONALLY LEFT BLANK

Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
A. Comprehensive Planning	High	A.1.	Update Military Protection Area (MPA) Boundaries and Policies	Update the existing MPA to reflect the potential arrival of F-35A fighter jets; the full extent of the Poinsett ECR Range Compatibility District, and the need for expanded public awareness of potential military-related impacts in the region. Existing policies would apply to new projects or rezoning requests within Military Protection Area-1 (MPA-1) and additional public awareness requirement would apply with MPA-1 and Military Protection Area-2, as shown in Chapter 5.  Revise the Plans to reflect applicability to all lands within the outermost boundaries of the MPAs, regardless of future land use classification (i.e., operate as a plan "overlay") and revise City and County regulations to implement the policies within the revised MPA-1 and MPA-2, as applicable.  If during the implementation phase of the JLUS, additional information related to Shaw's ongoing and/or future mission has been provided to the community, this information should be taken into account as to the implementation of this recommendation.	JLUS Implementation Committee City of Sumter Sumter County	\$	\$
			Update Comprehensive Plans related to 2016 Joint Land Use Study	Update the City and County comprehensive plans to reflect the efforts, processes, and recommendations of the 2016 Joint Land Use Study.	City of Sumter Sumter County	\$	\$
			Small Area Plans	Revise Comprehensive Plans to remove recommendation that a small area plan be established in the MPA; this would be redundant of the other overlays that already have been created.	City of Sumter Sumter County	\$	\$
B. Zoning and General Code Provisions	High	B.1.	Revise ACD Overlay Noise Zones to reflect F-16 and potential F-35A Operations	Revise the City and County Airfield Compatibility District (ACD) maps to include, at this time, noise zones that reflect recent and existing F-16 contours (per the 2004 and 2013 AICUZ Studies) and, if/when appropriate, the projected F-35A footprint (per Scenario 3 of the 2013 EIS). If during the implementation phase of the JLUS, additional information related to Shaw's ongoing and/or future mission has been provided to the community, this information should be taken into account as to the implementation of this recommendation.	JLUS Implementation Committee City of Sumter Sumter County	\$	\$
			Replace current Noise Attenuation (NA) Districts with MPA-2 boundaries and policies	Remove the existing Noise Attenuation (NA) District boundaries and regulations and place with regulatory implementation of the MPA-2 policies recommended for the City and County Comprehensive Plans.	JLUS Implementation Committee City of Sumter Sumter County	\$	\$
	High	B.3.	Renewable Energy Projects	The City and County should evaluate current regulations to ensure that Renewable Energy projects proposed within the City and County will not be approved in such a manner as would allow intrusions or obstructions in conflict with operations and Shaw AFB and Poinsett ECR.	JLUS Implementation Committee City of Sumter Sumter County	\$	\$
			Frequency Emissions and Interference Avoidance	The Airbase Zoning code provisions for the City and County should be updated to reflect current and anticipated operation areas susceptible to civilian frequency emissions interference and modern and emerging technologies. (see County Code Chap. 4, Art. II; City Code Chap. 7, Art. II). In addition, the Zoning Ordinances of the City and County should evaluate the extent to which land uses that utilize the frequency spectrum should be restricted or the distances between same be mitigated. This is of particular concern with respect to future renewable energy projects in the region and the state.	JLUS Implementation Committee City of Sumter Sumter County	\$	\$

Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
B. Zoning and General Code Provisions	High	B.5.	Require coordination per State Military Coordination Act	Incorporate statutory notice and comment requirements (S.C. Code Ann. § 6-29-1610, et seq.) for land use and zoning decisions made as to lands impacting the imaginary surface hazard areas for Shaw AFB and Poinsett ECR, within the existing Military Protection Area, or, once adopted, within Military Protection Area-1.	JLUS Implementation Committee Shaw AFB/ Poinsett ECR City of Sumter Sumter County	S	\$\$
	High	B.6.	Include Poinsett ECR in Height Restrictions	Revise the "General and Supplemental Regulations" of the City and County zoning codes to include as a violation of height restrictions in underlying zoning districts, anything that would penetrate the airspace surfaces at Poinsett ECR, as well as Shaw AFB (as is currently provided), including frequency emissions that would impair Air Force operations or communications.	JLUS Implementation Committee City of Sumter Sumter County	S	\$\$
	High	B.7.	Incorporate Clear Zones restrictions into Zoning Codes	Add Clear Zones (CZs) compatibility guidance/regulations to the Airfield Compatibility Districts ordinances.	JLUS Implementation Committee City of Sumter Sumter County	S	\$\$
	High	B.8.	Noise Zone Restrictions Updated	Update ACD and RCD overlay district land use regulations to reflect updated Air Force Guidance related to noise-sensitive land uses.	JLUS Implementation Committee City of Sumter Sumter County	S	\$\$
	High	B.9.	Non-Conforming land uses, structures	Evaluate whether to prohibit non-conforming uses and structures from being "replaced, substantially altered, or rebuilt" without complying with ACD and RCD requirements.	JLUS Implementation Committee City of Sumter Sumter County	S	\$\$
	High	B.10.	Existing Platted Lots	Clarify that new homes and mobile homes may be built on lots and mobile home parks created prior to the adoption of the overlays, but consider whether noise attenuation requirements must now be complied with, as applicable, regardless of when the lot was created.	JLUS Implementation Committee City of Sumter Sumter County	S	\$\$
	High	B.11.	City-County Code Consistency Review	Review provisions of the City and County codes for consistency between City and County military provisions (as applicable); with Military Protection Area policies; and with the most current Air Force Guidance (AFI 32-7063); including alignment of DNL Noise Zones currently regulated	JLUS Implementation Committee City of Sumter Sumter County	S	\$\$



Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
B. Zoning and General Code Provisions	High	B.12.	Add Poinsett ECR to Zoning Codes' Purpose Statements	Revise the Purpose statement of the City and County Zoning Codes to include as a purpose for the zoning code to regulate impacts associated with Poinsett ECR, as well as Shaw AFB (as is currently provided).	JLUS Implementation Committee City of Sumter Sumter County	S	\$ \$
	Low	B.13.	Evaluate Effectiveness and Feasibility of a Transferable Development Rights Program	Evaluate feasibility of a TDR program as a market-driven mechanism for private parties to transfer development rights out of the military impact areas and into City and County areas designated for growth.	JLUS Implementation Committee City of Sumter Sumter County MAJIC	M	\$ \$ \$
C. Subdivision Regulations	High	C.1.	Add Poinsett ECR boundaries to Plat Notice Requirements	Require the noise (DNL) zones associated with Poinsett ECR to be shown on same categories of subdivision applications as currently are required for Shaw AFB.	JLUS Implementation Committee City of Sumter Sumter County	S	\$ \$
	High	C.2.	Plat Acknowledgment Statements	Require an "acknowledgement statement" to be included on the same categories of subdivision applications for Poinsett ECR as currently is required for Shaw AFB.	JLUS Implementation Committee City of Sumter Sumter County	S	\$ \$
	High	C.3.	Expand Subdivision Signage for Operational Awareness in MPAs	Require land developers to install signs at the entrance of major and minor subdivisions within MPA-1 and MPA-2 that indicate the potential presence of military impacts in the area.	JLUS Implementation Committee City of Sumter Sumter County	S	\$
D. Notice to Property Owners & Occupants	High	D.1	Real Estate Disclosures	Recommend requiring real estate disclosure of potential military impacts and sources of further information and details within the Military Protection Areas, after consultation with and input from the real estate and development communities.	JLUS Implementation Committee City of Sumter Sumter County Sumter Board of Realtors	S	\$



Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
D. Notice to Property Owners & Occupants	Med	D.2.	Expand Road Signage for Operational Awareness in MPAs	Evaluate effectiveness of current road sign requirements and consider whether additional recommendations are appropriate as to number, location, size, and content. For example, the County requires major subdivisions to post an entrance sign warning of noise. This requirement does not apply to minor subdivisions or other types of development and the City does not currently have a similar requirement for Shaw AFB, though it does for Poinsett ECR's Range Compatibility District. The County, but not the City, requires the same signage in the County RCD. The signage requirement should be expanded to include a greater range of proposed developments and the JLUS Implementation Committee should work with the community, City, and County to develop and publish standard language for required signage.	JLUS Implementation Committee City of Sumter Sumter County SCDOT	M	\$\$

Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
E. Interagency Cooperation	High	E.1.	Appoint JLUS Implementation Committee	Following completion and acceptance of the final 2016 Joint Land Use Study, the City and County shall appoint a JLUS Implementation Committee to undertake the Implementation Tasks described here.	City of Sumter Sumter County City-County Planning Commission	S	\$
	High	E.2.	Renewable Energy Project Review & Impacts	Monitor and mitigate, as appropriate, the impacts of proposed renewable energy projects in Sumter County, the City of Sumter, and in areas impacting the Special Use Airspace (SUA) of the installations. Ensure that existing City and County protections of the imaginary surfaces associated with Shaw AFB and Poinsett ECR operations are adequate, based on current operations, and are applied throughout the jurisdictions. Coordinate with local utility providers and monitor state databases regularly to remain aware of pending applications for renewable energy projects that could impact Shaw AFB or Poinsett ECR operations.	JLUS Implementation Committee Shaw AFB/Poinsett ECR/DoD City of Sumter Sumter County City-County Planning Department	S	\$
	High	E.3.	Sumter School District Coordination/Logistics	Shaw AFB and Sumter School Board personnel should identify means and resources for improving logistics related to High Hills and Shaw Heights Elementary school transportation matters; clarify points of contact within each agency, based on type of need; maintain an active ex officio membership role with the School Board; and identify a school liaison within Shaw AFB.	JLUS Implementation Committee Shaw AFB Sumter School District Sumter County	S	\$
	High	E.4.	Coordinate regarding Proposed Growth-Inducing Infrastructure within the MPAs	Coordinate prior to approving plans, regulations, or the funding of "growth-inducing" infrastructure, including water and sewer utilities, and roads within the Military Protection Areas (MPAs). Adopt "Development Standards Ordinance," or amendments thereto, to reflect Military Protection Areas comprehensive plan policies and recommendations of the 2016 JLUS report. The Santee-Lynches Regional COG should incorporate the policies associated with the Military Protection Area related to public sewer extensions into the 208 Water Quality Management Plan for the Santee-Lynches Region during its pending update and related to transportation improvements in its Long-Range Transportation Plan (LRTP) when it is updated in 2019.	LUS Implementation Committee Shaw AFB/Poinsett ECR Sumter School District City-County Planning Department Sumter County City of Sumter SCDOT Santee-Lynches COG	S	\$

Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
F. Interagency Cooperation	Med	E.5.	Coordinate with the South Carolina Military Base Task Force	Remain engaged with the S.C. Military Base Task Force to monitor national trends and statewide efforts related to mission sustainment and military value and matters related to encroachment (including Renewable Energy projects statewide; see above).	JLUS Implementation Committee Shaw AFB/ Poinsett ECR Sumter County City of Sumter	S	\$
	Med	E.6.	Community Partnership & Shared Services	Continue community's participation with Shaw AFB in its ongoing "Air Force Community Partnership" Program.	LUS Implementation Committee Shaw AFB/ Poinsett ECR Sumter School District City-County Planning Department Sumter County City of Sumter Other Service Providers	S	\$-\$
	Med	E.7.	Coordinate community planning and professional development	In order to further integrate and to formalize base and community planning efforts among planning professionals, hold rotating roundtable discussions; annual or semi-annual training sessions with area Air Force, local, and regional government planners.	JLUS Implementation Committee Shaw AFB/ Poinsett ECR City-County Planning Department Santee-Lynches COG	S	\$
	Med	E.8.	Land Conservation	Continue participation in land conservation efforts, including through the Readiness and Environmental Protection Integration (REPI) program and the Midlands Area Joint Installation Consortium (MAJIC). Conduct outreach to increase public awareness of USDA, state, non-profit, and DoD voluntary easement programs available to interested landowners in the Military Protection Areas.	JLUS Implementation Committee Shaw AFB/ Poinsett ECR City-County Planning Department MAJIC	S	\$

Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
F. Public Outreach & Communication	High	F.1.	Civilian Unmanned Aircraft Systems (UAS)	Publicize information as to federal requirements related to the use of Unmanned Aircraft Systems (sUAS), or "drones," in the vicinity of the installations, including FAQs, maps applying federal requirements in the local region, and links to FAA and other relevant federal agencies. Evaluate the need for signage near the Installations and increased public awareness of how to notify Shaw AFB or Poinsett ECR of drone use within federally protected areas.	JLUS Implementation Committee Shaw AFB/ Poinsett ECR City of Sumter Sumter County	\$	\$-\$
	High	F.2.	Increase Community Awareness of the Air Force Mission	<p>Particularly if there is a transition from the F-16 to the F-35A aircraft, maintain a community awareness campaign, to include, for example:</p> <ul style="list-style-type: none"> <li>• augmented community awareness campaigns regarding a Record of Decision, when issued, related to the potential F-35A beddown and the planning preceding this process;</li> <li>• Increase availability and exposure of Air Installations Compatible Use Zones (AICUZ) studies and findings, as well as other impact area data;</li> <li>• increasing Shaw's community presence in social media platforms;</li> <li>• holding informational workshops, at least every 2 years, to present current missions and installation news and to receive generalized community input, feedback, concerns; and</li> <li>• Continue history of informal "good neighbor" coordination on land use and mission changes, in addition to formal statutory/zoning coordination, as recommended above.</li> </ul>	JLUS Implementation Committee Shaw AFB/ Poinsett ECR City of Sumter Sumter County	\$	\$
	High	F.3.	Noise Level Reduction Construction Standards	Make noise level reduction (i.e., "attenuation) construction standards available to the community, which would achieve compliance with Noise Level Reduction (NLR) requirements in the noise (DNL) zones contours of the Airfield Compatibility Districts.	JLUS Implementation Committee City of Sumter Sumter County	\$	\$
	High	F.4.	Radio Frequency Interference Awareness	Publish and publicize sources of radio frequency interference (RFI) that civilian land uses and frequency spectrum users may generate that could interfere with training operations at the Installations; particularly with respect to new renewable energy projects in the region and state.	JLUS Implementation Committee Shaw AFB/ Poinsett ECR City of Sumter Sumter County	\$	\$
	High	F.5.	On-base School Logistics	Post to Shaw AFB and Sumter School District websites points of contact and information related to High Hills and Shaw Heights Elementary Schools.	Shaw AFB Sumter School District	\$	\$



Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
F. Public Outreach & Communication	High	F.6.	Dedicated Webpage	<p>The Military Coordination and Planning Committee (or a local government designated by the Committee) should maintain a single webpage clearinghouse for citizens and businesses seeking information including:</p> <ul style="list-style-type: none"> <li>• anticipated changes in missions at the Installations;</li> <li>• gate relocations and security status/base access procedures</li> <li>• GIS layers available to citizens in order to easily identify what regulations and policies apply to their property (including any required real estate disclosure requirements);</li> <li>• downloadable brochures identifying relevant regulations, policies, military impact areas, and points of contact;</li> <li>• opportunities to do business with the Air Force;</li> <li>• how to avoid land uses and land use activities (like drone use or renewable energy projects) that would negatively impact Air Force operations;</li> <li>• contact information at the Installations, including reporting disruptive noise events or other impacts; and</li> <li>• activities and materials resulting from the efforts of the Military Coordination and Planning Committee.</li> </ul>	JLUS Implementation Committee Shaw AFB/Poinsett ECR City of Sumter Sumter County	S	\$-\$
	Med.	F.7.	Noise Inquiries	Evaluate opportunities to supplement Shaw AFB noise inquiry processes and to increase presence of alternatives for inquiries on the Shaw AFB website.	Shaw AFB	S	\$
	Low	F.8.	Local Business Coordination	Identify and publicize opportunities for local firms to conduct business with the installations, including awareness of qualifications needed and requests for proposals and bids.	Shaw AFB/Poinsett ECR	S	\$-\$
G. Ongoing Planning and Coordination	High	G.1.	Establish a Military Planning and Coordination Committee (MPCC)	Maintain a standing "Military Planning and Coordination Committee" to facilitate ongoing planning and coordination efforts between the Installations and the community after tools recommended in the 2016 JLUS have been developed and approved. The "MPCC" would be comprised of local, regional, and military planners and staff members and would oversee planning activities related to the military in the region. The MPCC would also monitor the implementation of a Military Planning and Coordination Agreement (MPCA, see below) to be prepared during the JLUS Implementation phase. The JLUS Implementation Committee will outline a framework for how the MPCC will be staffed and how it will conduct its oversight efforts. This framework may be incorporated into the MPCA or into a separate set of bylaws.	LUS Implementation Committee Shaw AFB/Poinsett ECR City of Sumter Sumter County City-County Planning Department	S	\$
	High	G.2.	Prepare Military Planning and Coordination Agreement (MPCA)	During the JLUS Implementation process (following 2016 JLUS completion), a "JLUS Implementation Committee" will develop an ongoing Military Planning and Coordination Agreement (MPCA) between the City, County, Air Force, Sumter School District Board, and other key stakeholders, which will guide future coordination efforts with respect to land use coordination between the Installations and the community. The Agreement should include routine coordination and input opportunities from the public, particularly those living and working within the Military Protection Areas. Existing staff-level processes should be used where possible to avoid redundancies in procedures and committees.	JLUS Implementation Committee Shaw AFB/Poinsett ECR City of Sumter Sumter County City-County Planning Department	S	\$

Procedural Context	Relative Priority	Cross Reference	Implementation Task	Task Description	Responsible Parties	Time frame	Est. Costs
G. Ongoing Planning and Coordination	High	G.3.	Prepare MPCC Bylaws	The JLUS Implementation Committee may prepare separate bylaws to govern the operation of the standing Military Planning and Coordination Committee. As an alternative - depending on the relative complexity of the eventual recommendations - the protocols of the MPCC could be in simply included in the Military Planning and Coordination Agreement (MPCA).	JLUS Implementation Committee Shaw AFB/Poinsett ECR City of Sumter Sumter County City-County Planning Department	\$	\$
	High	G.4.	Monitor Status of F-35A Squadrons	The JLUS Implementation Committee and Military Coordination and Planning Committee should monitor the status of the Air Force's F-35 deployment program for its effects on the Shaw AFB mission and the community. Community involvement and awareness of this potentially evolving mission transition is critical.	JLUS Implementation Committee MPCC Shaw AFB/Poinsett ECR City of Sumter Sumter County City-County Planning Department	\$	\$
	High	G.5.	Maintain coordination with Santee-Lynches Regional COG	The regional planning activities at the Santee-Lynches Regional Council of Governments should incorporate land use planning associated with the Installations and the recommendations in the Joint Land Use Study, including with regard to the following COG plans and strategies: Long-Range Transportation Plan (LRTP), Water Quality Management Plan (208 Plan), Hazard Mitigation Plan, and Comprehensive Economic Development Strategy (CEDs).	MPCC Shaw AFB/Poinsett ECR City of Sumter Sumter County Santee-Lynches Regional COG	\$	\$
	Med	G.6.	Update Noise Contours for Poinsett ECR & Evaluate the Need for Additional Protections	Update or verify noise contours for Poinsett ECR to confirm mapped impacts and to determine whether additional "RCD-wide" compatibility protections are warranted and appropriate.	JLUS Implementation Committee Shaw AFB/Poinsett ECR	M	\$-\$-\$
	Low	G.7.	Monitor Non-Aircraft Military Impacts at Poinsett ECR	Consider need and feasibility of mapping off-range noise and vibrational impacts (i.e., impacts other than jet noise) at Poinsett ECR.	JLUS Implementation Committee Shaw AFB/Poinsett ECR City of Sumter Sumter County	M	\$-\$-\$

THIS PAGE INTENTIONALLY LEFT BLANK

# *Report Appendices*

THIS PAGE INTENTIONALLY LEFT BLANK



## Appendix A: Public Survey Results

### BACKGROUND

As part of the public outreach efforts of the Sumter-Shaw JLUS, a 31-question survey was created and distributed to the local public. The goal of the survey was to provide the JLUS steering committees and the project team with general demographic information about the local populace, a sense of the public's opinions about Shaw AFB and Poinsett ECR, and a sense of the Air Force's relationship with the community. There were two main options for the public to provide information via the survey: they could complete the survey online, or they could download a paper copy of the survey from the project website and complete it by hand. Surveys completed online were collected automatically. Paper copies of the survey could be delivered in person to the office of the Sumter City-County Director of Planning, or mailed to the JLUS project team.

A total of 101 surveys were collected – 97 surveys were completed online and four paper copies were collected. The survey questions can be divided into six main categories:

- General Demographics;
- Connection and Familiarity with Shaw AFB;
- Communication Between Shaw AFB and the Community;
- Perception of Shaw AFB in the Community;
- Impacts of Shaw AFB in the Community; and,
- the Future of the F-35A at Shaw AFB.

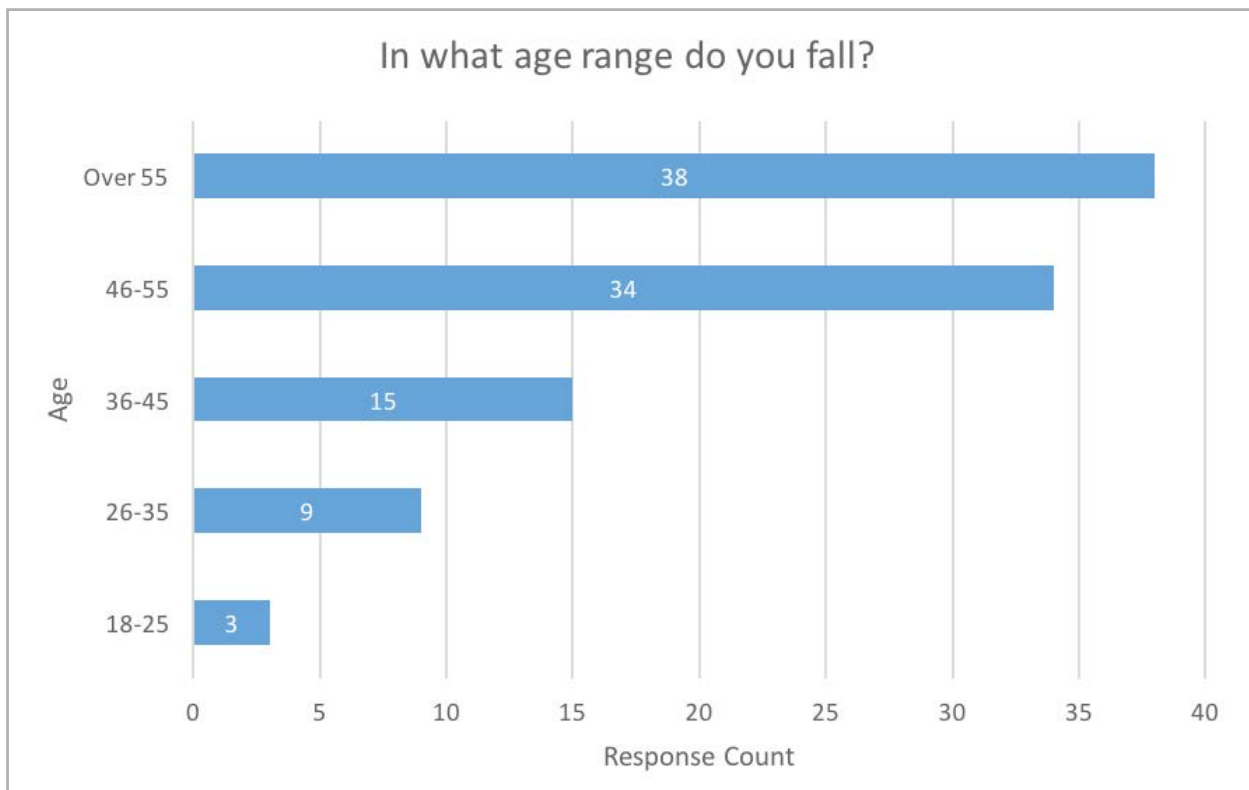
Additionally, survey participants were given the opportunity to provide general comments, questions, or other statements regarding the Sumter-Shaw JLUS at the end of the survey.

Observations of responses to questions in each category, as well as a general summary of the comments provided at the end of the survey, are shown below in "Key Observations." Charts and graphs are also included for select questions. The raw data for each question, including responses and comments provided, can be found in "Survey Results."

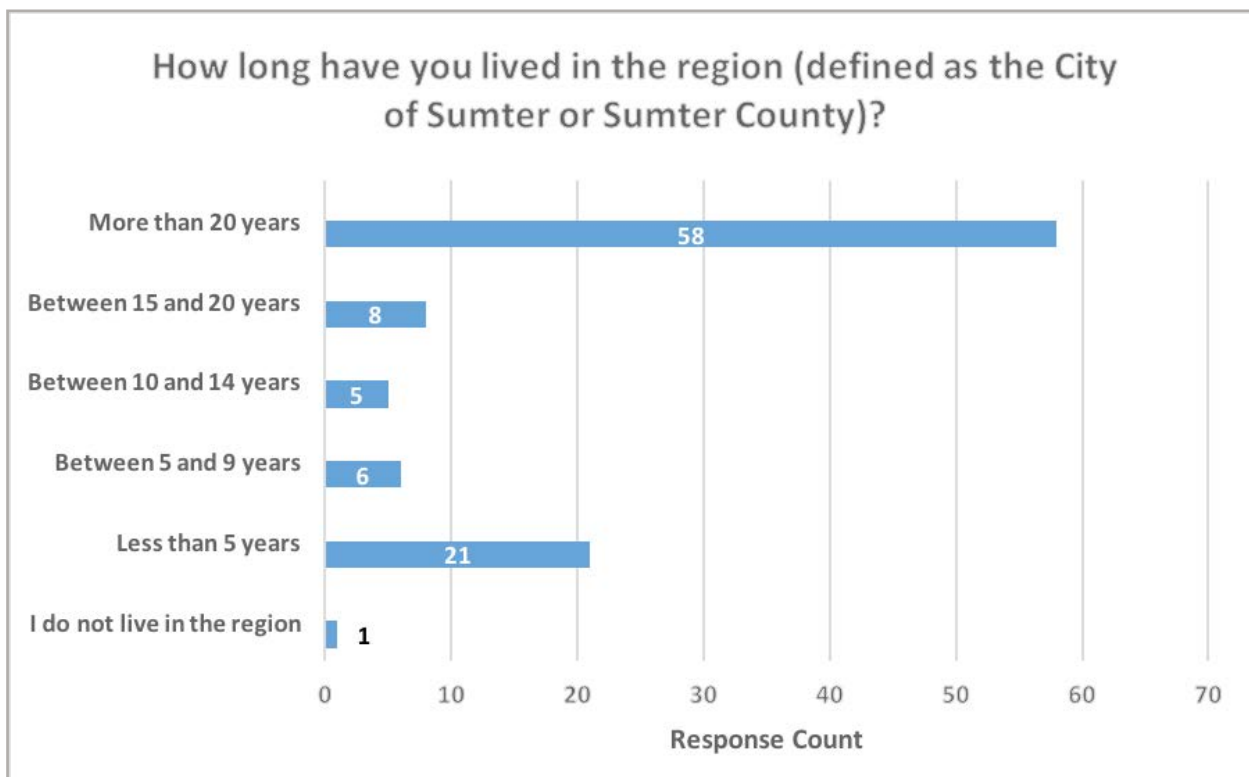
### KEY OBSERVATIONS

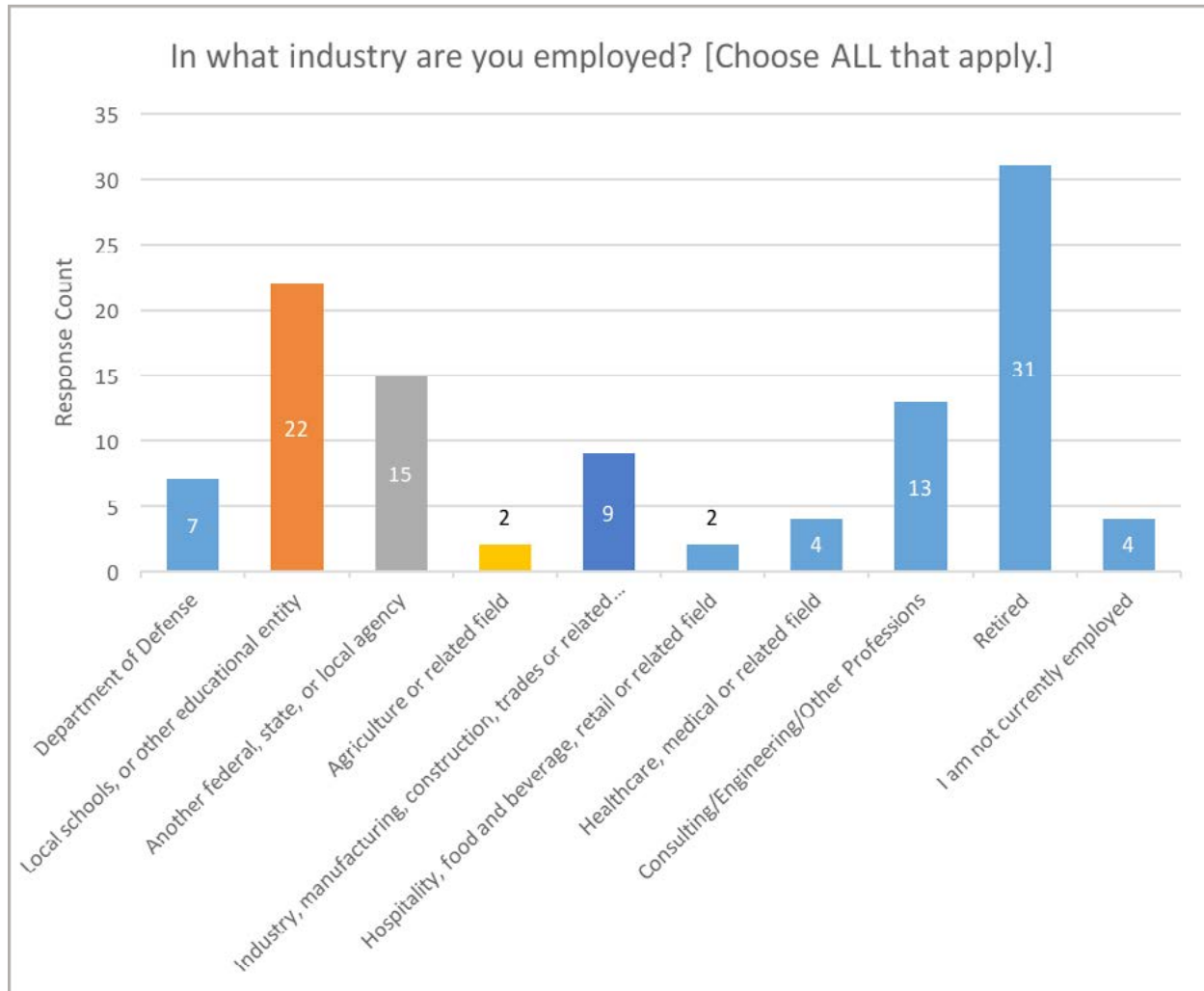
#### General Demographics

Most respondents are over the age of 36 (88%), including 39% of respondents who are over the age of 55. No respondents are under the age of 18. Most respondents (97%) live in either Sumter County (53%) or the City of Sumter (44%), while only three respondents live elsewhere. The majority of respondents have lived in the region, defined as within Sumter County or the City of Sumter, for more than 20 years (59%). However, a large percentage of respondents have lived in the region for less than 5 years (21%). Most respondents are homeowners that live in the region (85.9%), and the plurality of respondents identify as retired (32%). Local schools, or other educational entities, employ a large amount of respondents (22%) along with other federal, state, or local agencies (15%).



\*There were 0 responses for "Under 18."

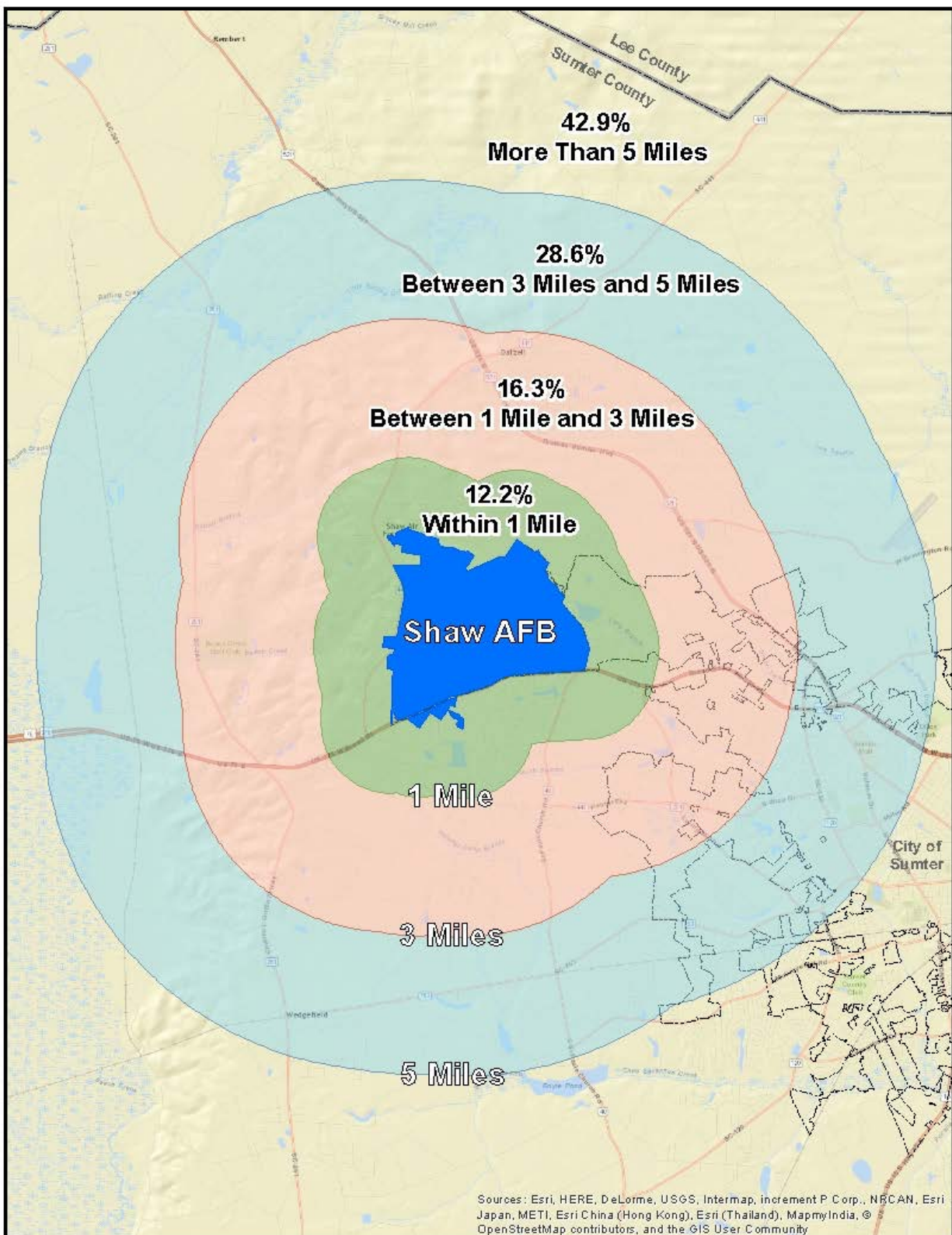




## Connection and Familiarity with Shaw AFB

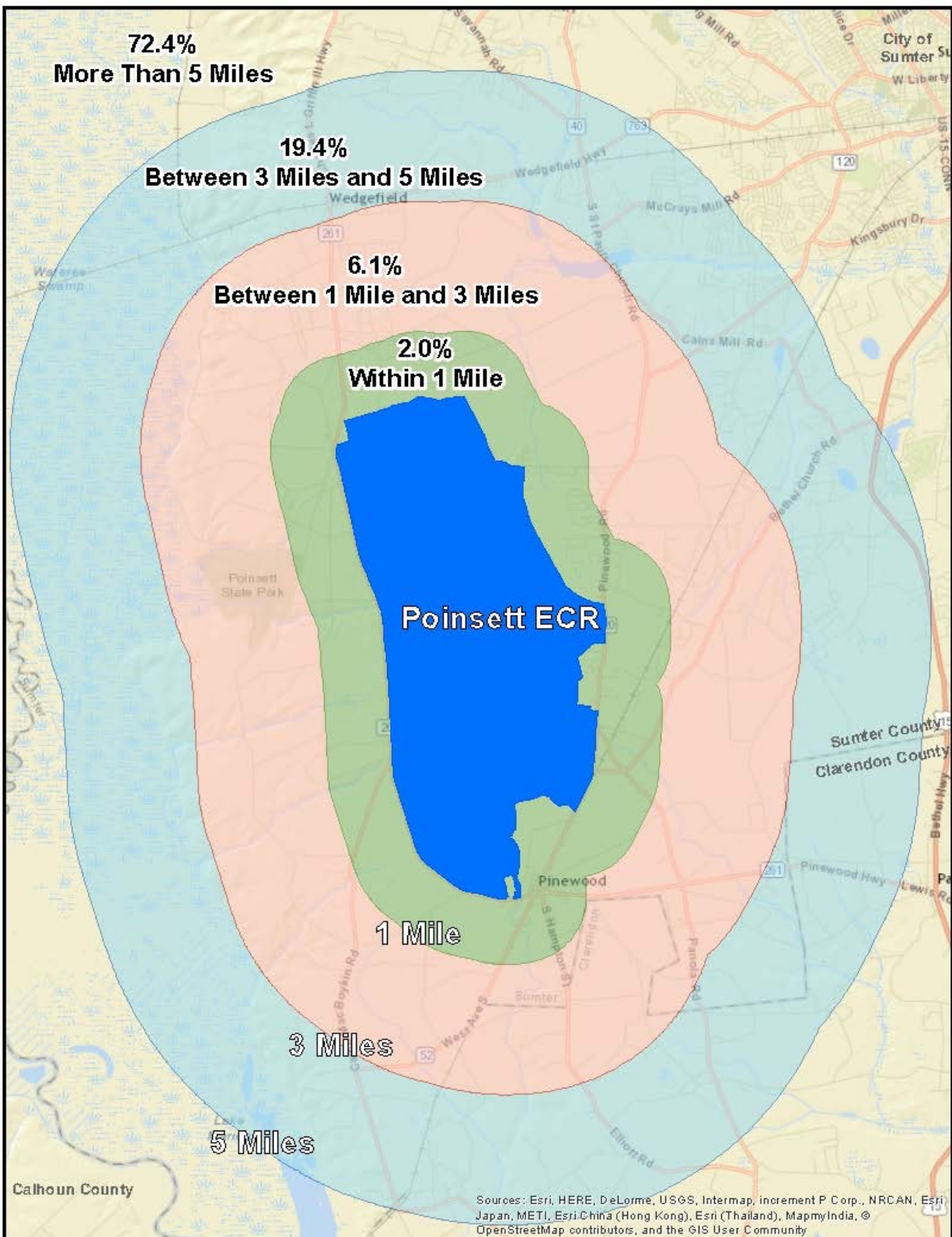
While very few respondents are currently on active duty (2%) and nearly half do not have a direct personal connection to the armed forces (46%), most respondents know someone who works or trains at Shaw AFB or Poinsett ECR (65%). Most respondents live in close proximity of Shaw AFB, within 5 miles (57.1%), but do not live near Poinsett ECR (72.4% of respondents live more than 5 miles from Poinsett ECR). Respondents are also aware of the types of training that takes place at Shaw AFB and Poinsett ECR; 86.9% are at least somewhat familiar with the types of military training conducted at Shaw AFB, while 76.5% are at least somewhat familiar with the types of military training conducted at Poinsett ECR. And although only 27.6% of respondents live within 5 miles of Poinsett ECR, 36.4% have visited Poinsett ECR for reasons including recreational activities and to watch air-to-ground weapons training.

Respondents' Proximity to Shaw AFB





## Respondents' Proximity to Poinsett ECR

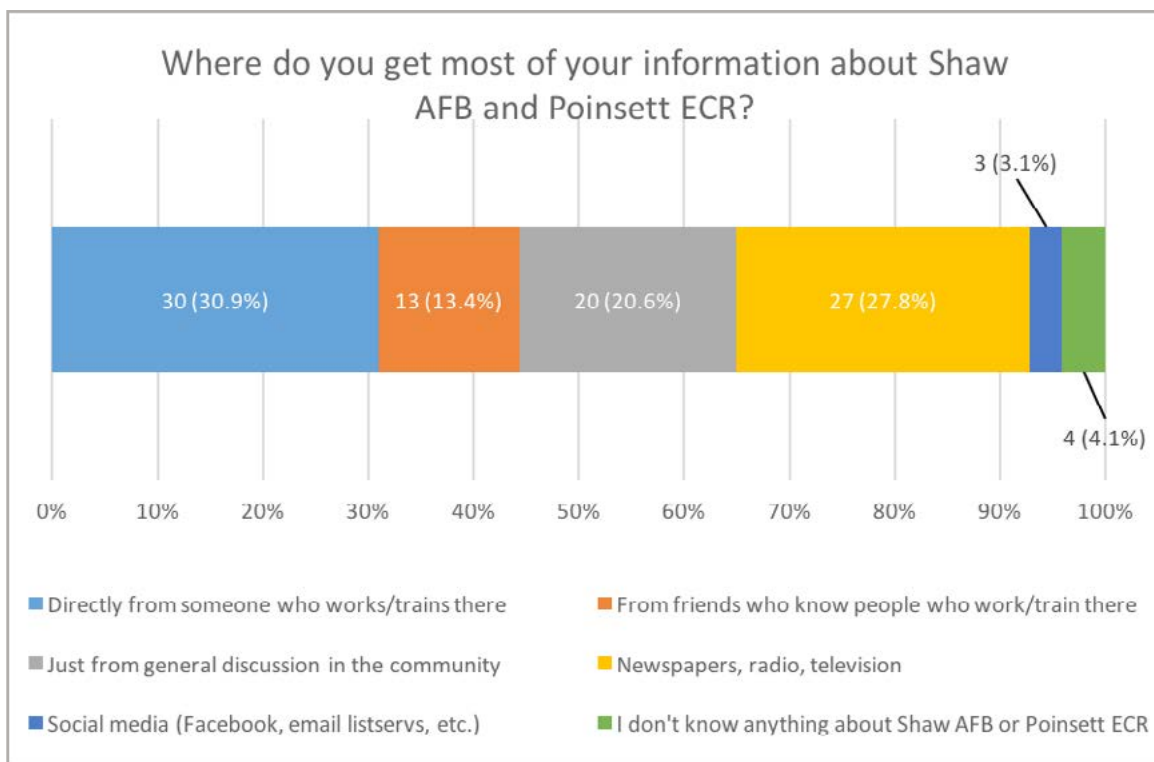




## Communication between Shaw AFB and the Community

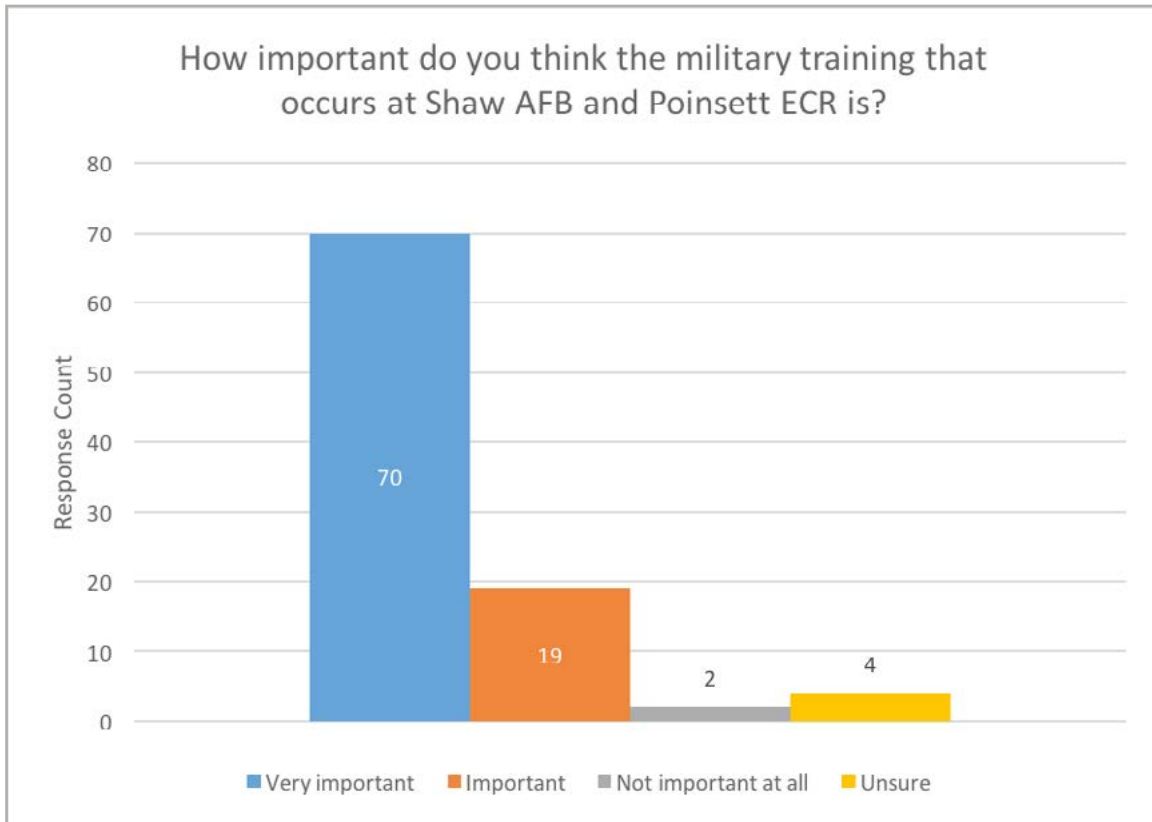
The ties between Shaw AFB and the community are apparent, as most respondents get most of their information about Shaw AFB and Poinsett ECR from people they know or from general community discussion (combined 65.3%). Only 3.1% of respondents get most of their information about the installations from social media. The vast majority (85.6%) of respondents characterize communication between the Air Force and the community as good (59.8%) or fair (25.8%). However, 8 respondents feel the communication between the Air Force and the community is poor.

A little less than half of respondents (48.4%) know who to contact at Shaw AFB if they have a question or a concern. Many respondents (45.4%) do not know who to contact, but have never needed to contact Shaw AFB. However, 6 respondents have wanted to contact the base but did not know who to reach out to. A majority of respondents do not know who to contact if they have a question about Poinsett ECR (76.3%).

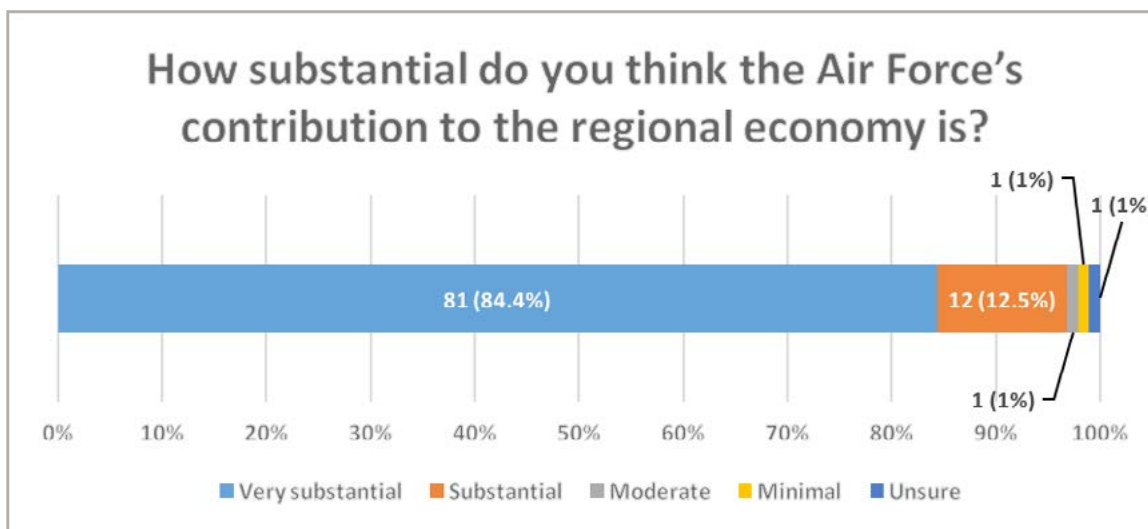
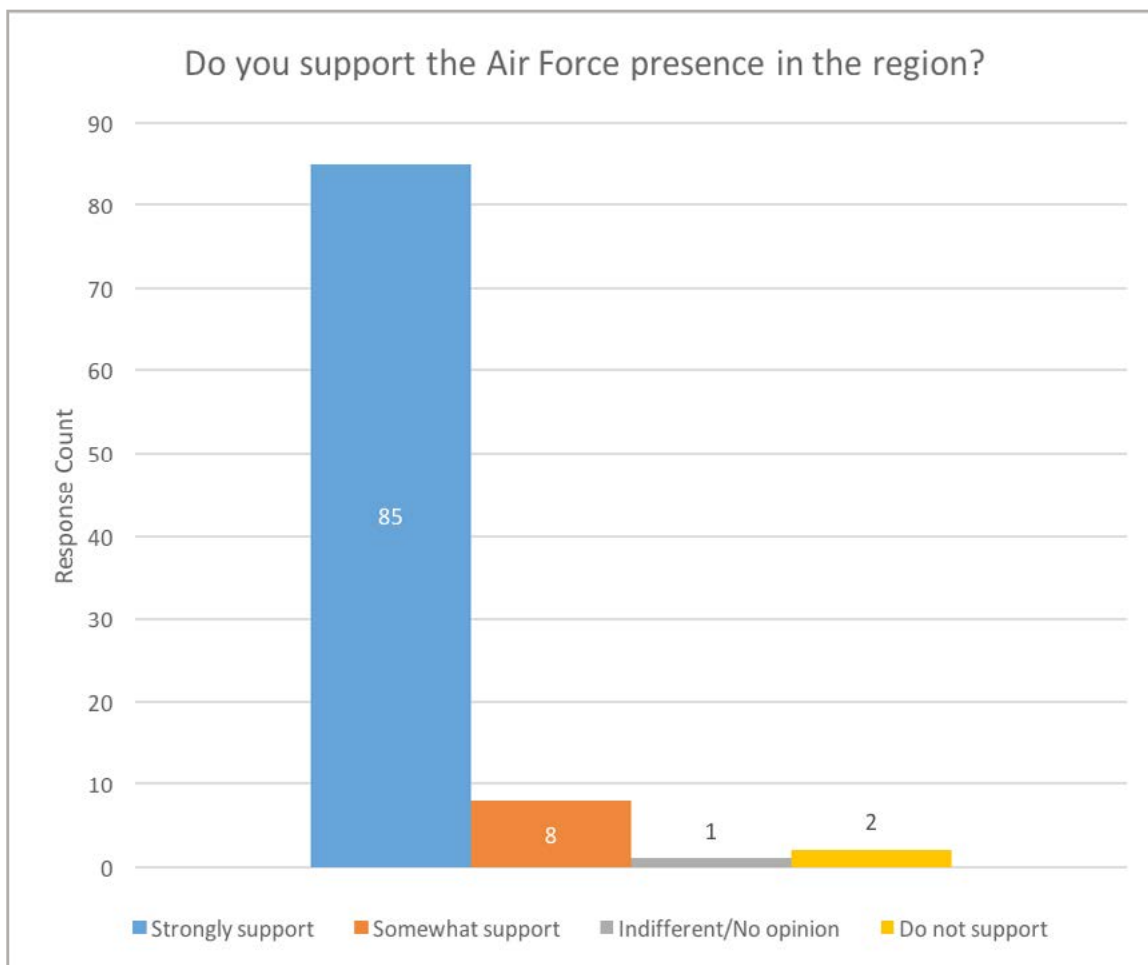


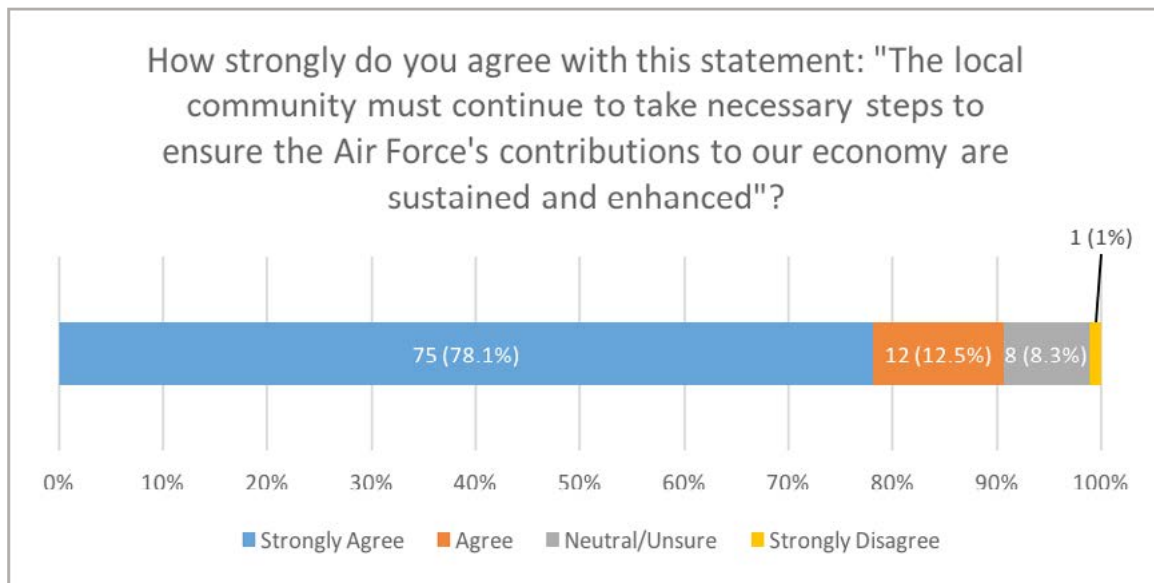
## Perception of Shaw AFB in the Community

Two respondents think the military training that occurs at Shaw AFB and Poinsett ECR is not important at all, but a vast majority (93.8%) of respondents think the military training is important (19.8%) or very important (74%). Similarly, 96.9% of respondents support the Air Force presence in the region, and two respondents do not support the Air Force presence. The majority of respondents (90.8%) agree that the local community must take the necessary steps to sustain and enhance the Air Force's contributions to the local economy, and 96.9% of respondents feel the Air Force's contribution to the regional economy is at least substantial.



\*There were 0 responses for "Not very important."

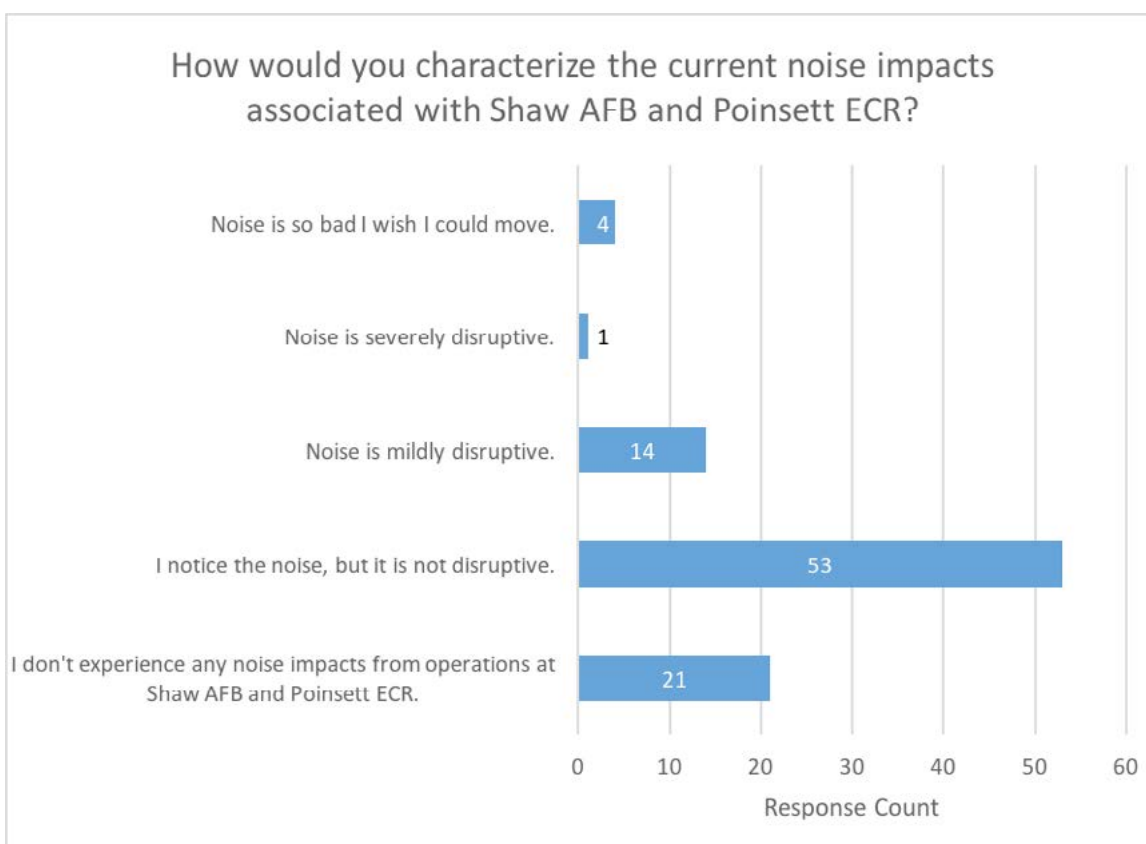




\*There were 0 responses for "Disagree."

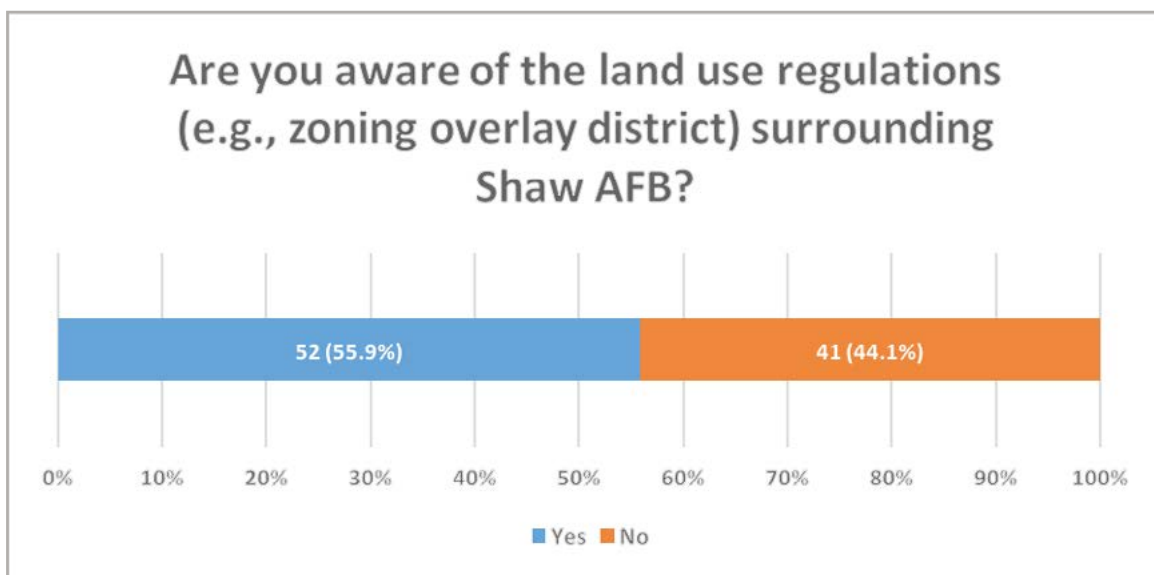
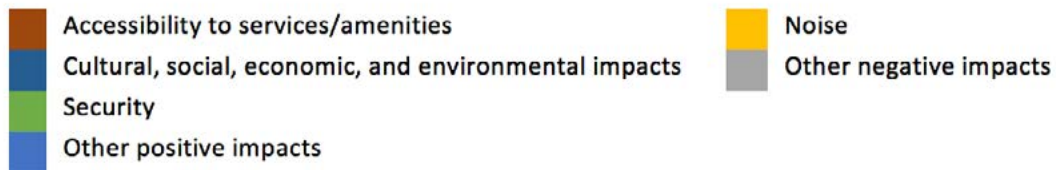
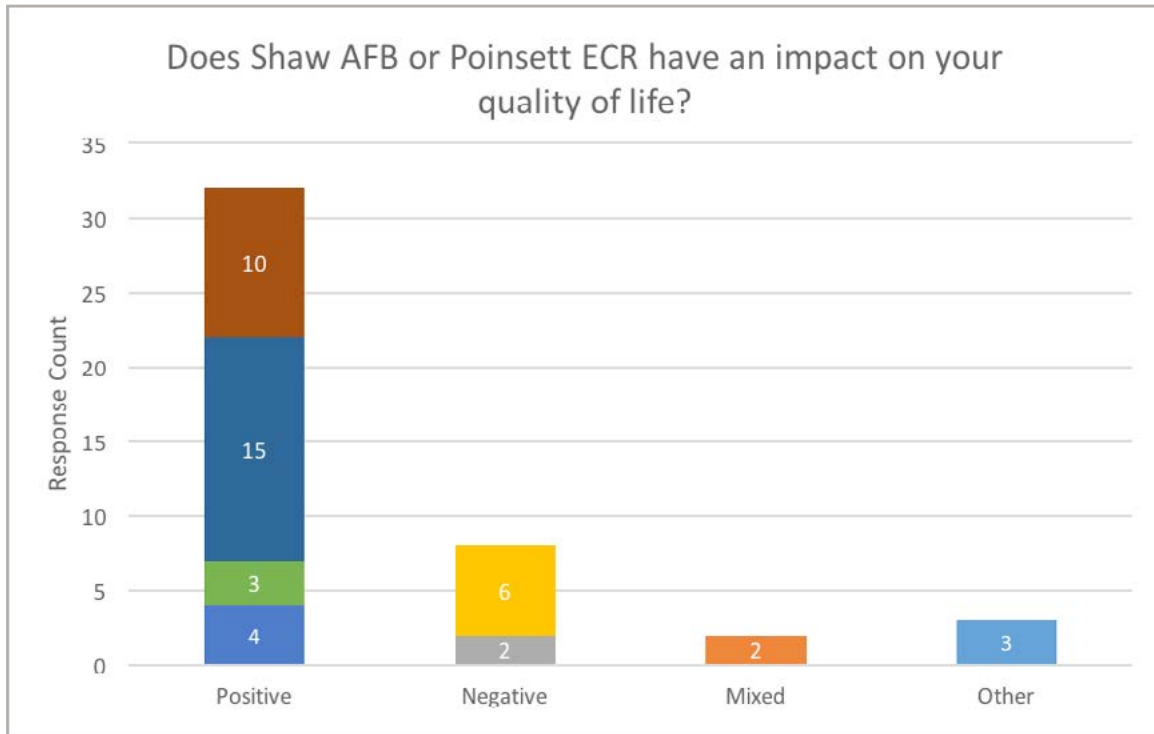
## Impacts of Shaw AFB in the Community

Noise associated with Shaw AFB and Poinsett ECR, notably aircraft noise, has a significant presence within the region. Jet or other aircraft noise from Shaw AFB or Poinsett ECR can be heard at least weekly by 72.6% of respondents and 40% of respondents hear aircraft noise daily. Other types of noise are also present, as 10.3% of respondents hear non-aircraft noise at least weekly. Other types of noise noted by respondents include bombing exercises at Poinsett ECR, firearm training, and the Giant Voice system that plays reveille, taps, and the National Anthem. However, most respondents either rarely (20.6%) or never (51.5%) hear other types of noise from Shaw AFB or Poinsett ECR. Although noise from Shaw AFB and Poinsett ECR is present in the community, most respondents either do not find the noise disruptive (56.4%), or do not experience noise impacts from operations at all (23.4%). However, one respondent finds the noise severely disruptive, and four respondents characterize the noise as so bad they wish they could move.



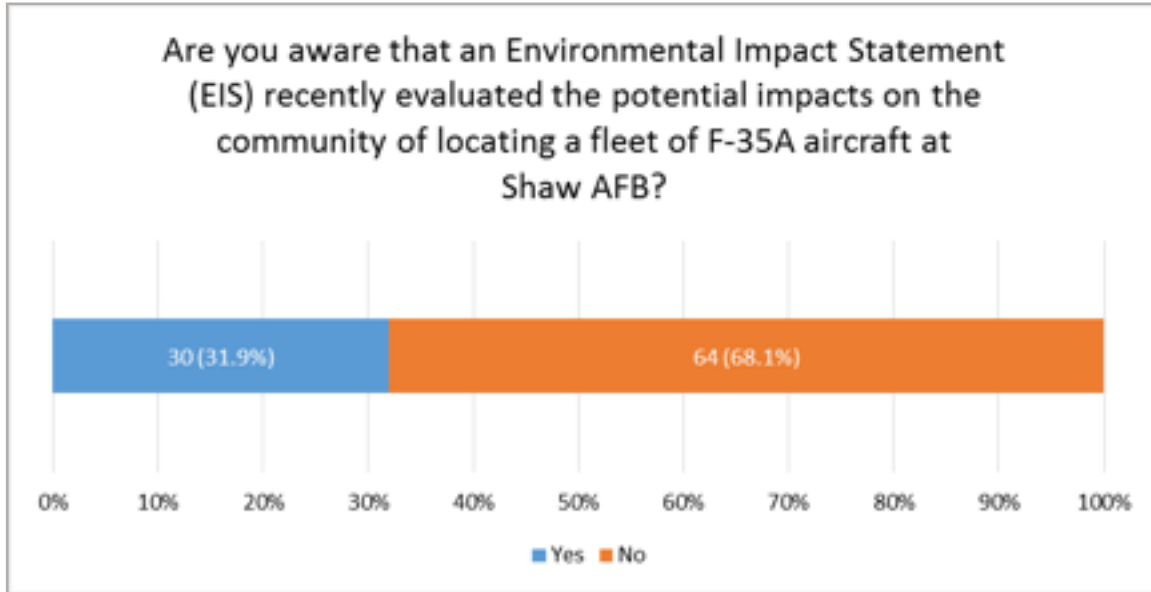
Most respondents (66.3%) indicate Shaw AFB or Poinsett ECR have an impact on their quality of life. A combined 8.5% of respondents feel the impact is negative (7.4%) or highly negative (1.1%). Some of the positive quality of life impacts felt by the installations include the impacts to the local economy and property values, and the access to facilities. Noted negative impacts include noise and traffic. Most respondents believe the installations have a positive impact on property values (54.2%), while 16% believe the installations have a negative impact on property values. A little over half of respondents (56.4%) are aware of the land use regulations associated with Shaw AFB.





## The Future of the F-35A at Shaw AFB

In 2013, the Air Force completed an Environmental Impact Statement (EIS) which assessed the potential impacts to Shaw AFB and the surrounding community, should Shaw AFB receive a fleet of F-35A aircraft. Over two-thirds of respondents (68.1%) are not aware of the EIS that took place, and only 4 of the 94 respondents participated in the EIS. It should be noted, however, that this does not indicate whether respondents are aware of the potential arrival of the F-35A to Shaw AFB, but instead indicates that most respondents are not aware of the study that took place.

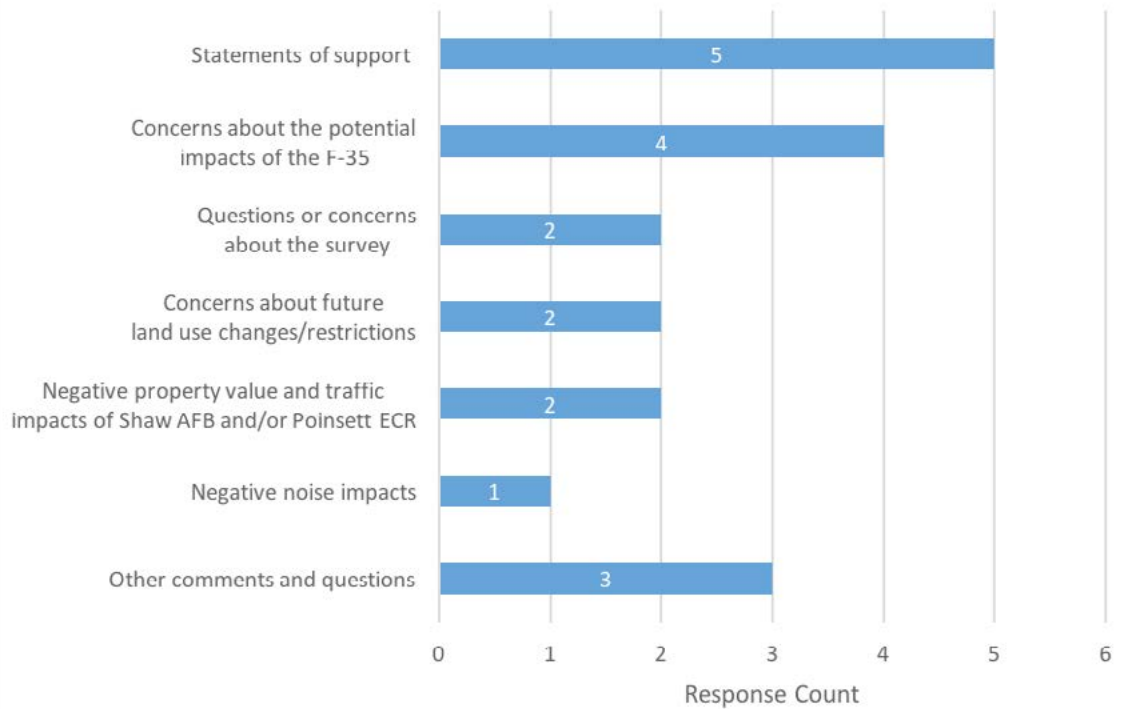


## General Comments

At the end of the survey, respondents were given the opportunity to provide general comments, questions, or other statements regarding the JLUS. The comments, provided in full, are shown in the "Survey Results" section.

Of the 101 survey participants, 20 provided general comments. The graph below breaks them down into general categories. General statements of support, or support for keeping Shaw AFB in Sumter made up 6 of the comments. Noise was mentioned in 4 comments, and 2 comments expressed concern over potential land use changes or restrictions.

If you would like, please enter any additional questions or comments for our review in the space below.



## SURVEY RESULTS

The raw results and responses to each of the thirty-one questions in the survey, as well as all comments provided, are detailed in this section. Please note that the comments have not been edited or altered by the JLUS Project Team in any way.

### 1. In what area do you live?

Answer Options	Response Percent	Response Count
City of Sumter	44.0%	44
Sumter County	53.0%	53
Other (please specify)	3.0%	3
Answered question		100
Skipped question		1

Other (please specify)
Shiloh Community
Dalzell
Columbia

### 2. How long have you lived in the region (defined as the City of Sumter or Sumter County)?

Answer Options	Response Percent	Response Count
More than 20 years	59.0%	59
Between 15 and 20 years	8.0%	8
Between 10 and 14 years	5.0%	5
Between 5 and 9 years	6.0%	6
Less than 5 years	21.0%	21
I do not live in the region	1.0%	1
Answered question		100
Skipped question		1

## 3. What is your current land ownership status?

Answer Options	Response Percent	Response Count
I own property within the region, but do not live there.	5.1%	5
I own property and live in the region.	85.9%	85
I rent property in the region.	5.1%	5
I do not own or rent property in the region.	4.0%	4
Answered question		99
Skipped question		2

## 4. In what industry are you employed? [Choose ALL that apply.]

Answer Options	Response Percent	Response Count
Department of Defense	7.0%	7
Local schools, or other educational entity	22.0%	22
Another federal, state, or local agency	15.0%	15
Agriculture or related field	2.0%	2
Industry, manufacturing, construction, trades or related field	9.0%	9
Hospitality, food and beverage, retail or related field	2.0%	2
Healthcare, medical or related field	4.0%	4
Consulting/Engineering/Other Professions	13.0%	13
Retired	32.0%	32
I am not currently employed	4.0%	4
Answered question		100
Skipped question		1



5. Do you have any personal connection to the armed forces? [Choose ALL that apply.]

Answer Options	Response Percent	Response Count
Currently on active duty	2.0%	2
Current member of a National Guard or Reserve Component	0.0%	0
Military veteran	20.0%	20
Military retiree	21.0%	21
Spouse (including widow/widower) of active duty, veteran, or retired military	18.0%	18
None of these apply	46.0%	46
Answered question		100
Skipped question		1

6. Do you know anyone who works or trains at Shaw AFB or Poinsett ECR?

Answer Options	Response Percent	Response Count
Yes	65.0%	65
No	35.0%	35
Answered question		100
Skipped question		1

7. In what age range do you fall?

Answer Options	Response Percent	Response Count
Under 18	0.0%	0
18-25	3.0%	3
26-35	9.0%	9
36-45	15.0%	15
46-55	34.0%	34
Over 55	39.0%	39
Answered question		100
Skipped question		1

8. How far away do you live from Shaw AFB? (See map below)

Answer Options	Response Percent	Response Count
Within 1 mile	12.2%	12
Between 1 mile and 3 miles	16.3%	16
Between 3 miles and 5 miles	28.6%	28
More than 5 miles	42.9%	42
Answered question		98
Skipped question		3

9. How far away do you live from Poinsett ECR? (See map below)

Answer Options	Response Percent	Response Count
Within 1 mile	2.0%	2
Between 1 mile and 3 miles	6.1%	6
Between 3 miles and 5 miles	19.4%	19
More than 5 miles	72.4%	71
Answered question		98
Skipped question		3

10. Are you familiar with the types of military training conducted at Shaw AFB?

Answer Options	Response Percent	Response Count
Yes	52.5%	52
Somewhat	34.3%	34
No	13.1%	13
Answered question		99
Skipped question		2

11. Are you familiar with the types of military training conducted at Poinsett ECR?

Answer Options	Response Percent	Response Count
Yes	40.8%	40
Somewhat	35.7%	35
No	23.5%	23
Answered question		98
Skipped question		3

12. Have you ever visited Poinsett ECR for the following reasons? [Choose ALL that apply.]

Answer Options	Response Percent	Response Count
I have not visited Poinsett ECR	63.6%	63
To watch air-to-ground military training	11.1%	11
Hunting	3.0%	3
Other recreational activities	19.2%	19
Other (please specify)	9.1%	9
Answered question		99
Skipped question		2

Other (please specify)

I was employed as the community planner for Shaw and conducted the previous JLUS.

Conducted operations on Poinsett ECR

Put out Fires with the Fire Dept

Worked at the Range for 13 Years

pick up husband from work

Job related

shooting

I visited the gun range.

Sumter Enduro Riders Motorcycle Association (SERMAClub.com) used to host off-road motorcycle races through the bombing range. We still use Manchester State Forest. Economic impact to our community estimated by Sumter County at \$1.5 million.

## 13. Where do you get most of your information about Shaw AFB and Poinsett ECR?

Answer Options	Response Percent	Response Count
Directly from someone who works/trains there	31.6%	31
From friends who know people who work/train there	13.3%	13
Just from general discussion in the community	20.4%	20
Newspapers, radio, television	27.6%	27
Social media (Facebook, email listservs, etc.)	3.1%	3
I don't know anything about Shaw AFB or Poinsett ECR	4.1%	4
Answered question		98
Skipped question		3

## 14. How would you characterize communication between the Air Force and the community?

Answer Options	Response Percent	Response Count
Good	59.8%	58
Fair	25.8%	25
Poor	8.2%	8
Unsure/No Opinion	6.2%	6
Answered question		97
Skipped question		4

## 15. If you had a question or concern about Shaw AFB, do you know who to contact?

Answer Options	Response Percent	Response Count
Yes, and I have contacted Shaw AFB in the past	24.7%	24
Yes, but I have never needed to contact Shaw AFB	23.7%	23
No, but I have wanted to contact Shaw AFB in the past	6.2%	6
No, but I have never needed to contact Shaw AFB	45.4%	44
Answered question		97
Skipped question		4

Other (please specify)
Public Affairs
public affairs office
20 FW Ops Group/OSS or 20 FW PA
Call Public Affairs Office
Public Affairs office
Public Affairs Office.
Public Affairs Office
Public Affairs
Public Information
Base public relations office
The people who run the PA system on base.
public affairs
Col. Stephen F. Jost, Judith A. Forshee, Robert Sexton
Rob Sexton/James Olsen
Shaw's Visiting Center Security Policing
Base Commanders Office
legal, chapel gym
George McGregor
The one I know



16. If you had a question or concern about Poinsett ECR, do you know who to contact?

Answer Options	Response Percent	Response Count
Yes, and I have contacted Poinsett ECR in the past	6.2%	6
Yes, but I have never needed to contact Poinsett ECR	17.5%	17
No, but I have wanted to contact Poinsett ECR in the past	6.2%	6
No, but I have never needed to contact Poinsett ECR	70.1%	68
Answered question		97
Skipped question		4

Other (please specify)
Public Affairs
20 FW Ops Group/OSS or 20 FW PA
Public Affairs Office
Col. Stephen F. Jost, Robert Sexton
411 or 211
called the range phone number and talked with personnel
Never really had the need to

17. How important do you think the military training that occurs at Shaw AFB and Poinsett ECR is?

Answer Options	Response Percent	Response Count
Very important	74.0%	71
Important	19.8%	19
Not very important	0.0%	0
Not important at all	2.1%	2
Unsure	4.2%	4
Answered question		96
Skipped question		5

18. Do you support the Air Force presence in the region?

Answer Options	Response Percent	Response Count
Strongly support	88.7%	86
Somewhat support	8.2%	8
Indifferent/No opinion	1.0%	1
Do not support	2.1%	2
Answered question		97
Skipped question		4

19. How substantial do you think the Air Force's contribution to the regional economy is?

Answer Options	Response Percent	Response Count
Very substantial	84.5%	82
Substantial	12.4%	12
Moderate	1.0%	1
Minimal	1.0%	1
Unsure	1.0%	1
Answered question		97
Skipped question		4

20. How strongly do you agree with this statement: “The local community must continue to take necessary steps to ensure the Air Force’s contributions to our economy are sustained and enhanced”?

Answer Options	Response Percent	Response Count
Strongly agree	78.4%	76
Agree	12.4%	12
Neutral/Unsure	8.2%	8
Disagree	0.0%	0
Strongly disagree	1.0%	1
Answered question		97
Skipped question		4

21. How often do you hear jet or other aircraft noise associated with Shaw AFB or Poinsett ECR from your residence or property?

Answer Options	Response Percent	Response Count
Daily	40.0%	38
Weekly	32.6%	31
Sometimes	20.0%	19
Rarely	6.3%	6
Never	1.1%	1
Answered question		95
Skipped question		6



22. How often do you hear other kinds of noise (e.g., gunfire, other) related to Air Force training areas from your property?

Answer Options	Response Percent	Response Count
Daily (Please explain below)	5.9%	4
Weekly (Please explain below)	4.4%	3
Sometimes (Please explain below)	17.6%	12
Rarely (Please explain below)	20.6%	14
Never	51.5%	35
Answered question		68
Skipped question		33

Explanation of Other Noises Associated with AF Training
Depending on conditions, will hear sound from bombing range.
Bomb type noise
Ordinance detonation (sometimes)
Heard explosions in the past couple of weeks
Sounds like a bomb going off
Bombing at Poinsett
Ordinance detonation
bombing exercises from Poinsett
I live close to the firing range on shaw
I live within a mile from the commercial gate so can hear the gunfire from both the firing range and the skeet and trap area. However I had to sign a document about noise when I purchased my house. There is also a sign as you enter my neighborhood
Gunfire when I am outside my house.
the side of the base we live on is near the combat arms range and trap and skeet.
live within 5 miles of back airstrip of Shaw AFB
Property I own would hear noise daily but where I reside rarely other than a jet flying by occasionally.
F-16 's fly over regularly and a loud rumbling noise early in the mornings

## Explanation of Other Noises Associated with AF Training (cont.)

We unknowingly moved into the airspace of the Poinsett Bombing Range 13 years ago. When we first moved we experienced extremely low flying aircraft flying over our home. At times the aircraft noise would vibrate our windows. The noise was unbearable and we could not believe that we were not notified about moving into the training air space. After extensive communication with the Air Force and City some changes were made, such as homeowners were notified and noise sensitive signs were posted at the entrance of new developments. We still experience noise and we are very concerned about newer and louder aircraft and further training missions conducted at the bombing range.

Occasional engine/rumbling noise , but Shaw may not actually be the source.

Not sure what I'm hearing but it's from Shaw-

If atmospheric conditions are just right but noise is not at all a problem.

Jets fly over my house while training at the bombing range and the SERMA club house is next to the bombing range. Bells Mill and Spots Roads (2300 Spots Road, Wedgefield. Pretty cool stuff. A-10 cannons, when they trained at Shaw, often fired at the range above our club house. Awesome!

I can hear the National Anthem played at 1700 daily and Taps at 2200 daily with the correct wind conditions!

Rarely--Taps, Reveille

Fire arm training, gaint voice, skeet and trap,

If the wind in the right direction sometimes some gunfire,helicopters etc.

Currently used train tracks are within one mile from me.

while visiting adjacent land

With my ears.

Some nights and I recognize the sound



23. How often do you experience other impacts (e.g., traffic, odor, dust, other) related to the Air Force base or training operations from your property?

Answer Options	Response Percent	Response Count
Daily (Please explain below)	1.2%	1
Weekly (Please explain below)	1.2%	1
Sometimes (Please explain below)	2.3%	2
Rarely (Please explain below)	7.0%	6
Never	88.4%	76
Answered question		86
Skipped question		15

Explanation of Other Noises Associated with AF Training
Traffic on the roads at going to work and getting off work times.
Traffic is terrible on a daily basis due to traffic being routed from other base roads onto Frierson Road. All school traffic and base traffic on one road at the same time is a HORRIBLE idea. I also believe that the Frierson gate opening for certain hours of the day is very inconvenient and not only adds miles to commute, but also time.
Air Shows Large deployments/returns
Once with the fire at bombing range
Just look at where shaw has had an impact. Ride down hwy 441 behind the base. It's a dump. Shaw will eventually ruin Sumter. It's too bad (but not surprising) the panel is appointed instead of elected. The same corrupt power hungry greedy people are using the taxpayers money to steer projects toward their personal agenda. Wake up Sumter!
S/A
Very rarely to never. Not enough to truly notice
live within 5 miles of back airstrip of Shaw AFB

24. How would you characterize the current noise impacts associated with Shaw AFB and Poinsett ECR?

Answer Options	Response Percent	Response Count
I don't experience any noise impacts from operations at Shaw AFB and Poinsett ECR.	23.4%	22
I notice the noise, but it is not disruptive.	56.4%	53
Noise is mildly disruptive.	14.9%	14
Noise is severely disruptive.	1.1%	1
Noise is so bad I wish I could move.	4.3%	4
Answered question		94
Skipped question		7

25. Do you ever feel unsafe due to your proximity to Shaw AFB or Poinsett ECR?

Answer Options	Response Percent	Response Count
Often	3.2%	3
Sometimes	8.4%	8
Never	88.4%	84
Answered question		95
Skipped question		6



## 26. Does Shaw AFB or Poinsett ECR have an impact on your quality of life?

Answer Options	Response Percent	Response Count
Highly positive impact (Please explain below)	28.4%	27
Positive impact (Please explain below)	29.5%	28
Negative impact (Please explain below)	7.4%	7
Highly negative impact (Please explain below)	1.1%	1
No impact at all	33.7%	32
Answered question		95
Skipped question		6

Explanation of Other Noises Associated with AF Training
I use the Hospital, gym, bx, and commissary
Services
Sumter Facilities for active duty and retired military are great (commissary, PX, gym, outdoor sports complex
I use the hospital. gym, commissary, BX, golf course, and the club.
Use of facilities on base such as the commissary.
Enjoy the benefits offered from Shaw as am a Retiree. Plus "The Sound of Jet Noise is the Sound of Freedom."
As a retired AF we use many of the benefits of the base
As a retired AF member, we go to Shaw often to shop or the the club.
I use the Fitness Center, BX and Commissary.
as a retired member we value the commissary and exchange, as well as the pharmacy
I am a Veteran and most of my neighbors are present and/or former military affiliated.
I believe my grandchildren's lives are enriched, by the military presence, in our community.
We have met many lifelong friends associated with Shaw AFB. Many have retired in our community which says a lot about Sumter.
Our military community provides us with a more diverse city & county than we would have otherwise, economically and socially.

Explanation of Other Noises Associated with AF Training (cont.)
I think having Shaw AFB is a positive influence on the economy in Sumter.
Shaw provides a major economic impact on the region and brings new people to be local residents as many retire and stay here with great skills
I work in retail. The economic impact alone is important to my lifestyle.
Home values and local economy
My husband is employed at Shaw AFB, so of course it has positive impact on our lives.
If Shaw AFB were to move away, the impact on our area would be tremendous in an economic way and with the quality of life. The personnel changes the personality of the community in a positive fashion.
Financial
Business' and schools thrive much better with having more people from these two locations in our area. Benefits the whole Sumter community.
Economy in the region and that these areas will never be built upon while they are used for training. Good for my pocket and good for the environment
Provides jobs to the community as well as providing a great level of support to the community. The folks from Shaw often volunteer heavily in the community
The diversity of the people, the gift of service that they share with the community, and knowing that they are not only ready to fight on foreign soil, but they are able to fight here if needed.
I do not believe Sumter would be the growing and thriving community it is without the USAF and Army presence. We owe the presence of many of our businesses to that. However, the rapid propagation of tract homes has destroyed property values in this city. Some limitation on new building needs to be in place.
It's interesting that they use my neighborhood as a bird sanctuary. I also rarely mind the aircraft, and the shooting is done in a manner that is non-disruptive to my evening habits. It is a boon to the local community, however, though the noise doesn't bother me so much, I am concerned about dropping property values in my neighborhood although I am not certain that it has much to do with the base. Mostly people complain about the high cost of renting and owning in the better neighborhoods surrounding Shaw.

## Explanation of Other Noises Associated with AF Training (cont.)

We unknowingly moved into the airspace of the Poinsett Bombing Range 13 years ago. When we first moved we experienced extremely low flying aircraft flying over our home. At times the aircraft noise would vibrate our windows. The noise was unbearable and we could not believe that we were not notified about moving into the training air space. After extensive communication with the Air Force and City some changes were made, such as homeowners were notified and noise sensitive signs were posted at the entrance of new developments. We still experience noise and we are very concerned about newer and louder aircraft and further training missions conducted at the bombing range. It does seem that the training missions that cause the aircraft to fly directly over our home have decreased over the past 5-6 years, but we would have never moved to this location if we were informed about the airspace and flight paths!!

The jets fly directly over my house. This week they have started flying at about 10pm. Normally the noise disrupts trying to talk in the yard or train the horses. My father is retired Air Force so I tolerate the noise. The late flying makes sleep impossible. I understand the flying is required at times. Helicopters from another base were playing in my field a few years back and almost made my horses hurt themselves.

Jet noise too loud; proximity too close to residential neighborhoods; flight pattern too low which causes extreme noise disturbance-need to move rang further out

On occasion they fly low and fast over the house. I can't carry a conversation with someone in my own yard. Bring retired from an F16 AMU on Shaw I now notice it more than I used to.

Noise from bombing training

Traffic, noise etc

Family member employment. Sense of readiness/security.

Just feel safer, more secure with them here.

I feel safe

The in and out of people and them making decision for the community that they will not be here to support in the future.

Some times it affects my cell phone reception

I enjoy seeing the different aircraft from visiting bases as well as our own F-16's

We like living near Shaw AFB. There are multiple benefits of living near it.

Great to have the military in town

Good for Sumter, the country and the world.

Never A Dull moment. It keeps them employed

having the 3rd Army come to Shaw forced Sumter into the 21st century as regards Blue Laws

I teach their children.



27. What impact do you believe Shaw AFB and Poinsett ECR have on your property values?

Answer Options	Response Percent	Response Count
Highly positive impact	22.3%	21
Positive impact	31.9%	30
Negative impact	11.7%	11
Highly negative impact	4.3%	4
No impact at all	25.5%	24
I do not own property in the City of Sumter or Sumter County.	4.3%	4
Answered question		94
Skipped question		7

28. Are you aware of the land use regulations (e.g., zoning overlay district) surrounding Shaw AFB?

Answer Options	Response Percent	Response Count
Yes	56.4%	53
No	43.6%	41
Answered question		94
Skipped question		7

29. Are you aware that an Environmental Impact Statement (EIS) recently evaluated the potential impacts on the community of locating a fleet of F-35A aircraft at Shaw AFB?

Answer Options	Response Percent	Response Count
Yes	31.9%	30
No	68.1%	64
Answered question		94
Skipped question		7

30. Did you participate in the EIS public review process?

Answer Options	Response Percent	Response Count
Yes	4.3%	4
No	95.7%	90
Answered question		94
Skipped question		7

31. If you would like, please enter any additional questions or comments for our review in the space below.

Answered question	20
Skipped question	81

General Comments
Keep up the great job
Thanks for all you guys do. I really feel safe knowing that Shaw AFB is here and aware of whats going on.
We fully support Shaw AFB and believe Sumter should also.
In view of the current world situation we feel more secure having Shaw AFB in our community.
Keep Shaw...
There appears to be a need to expand the noise protection zone around Shaw concerning the F-35 aircraft that will be assigned to the base.
F- 35A missions will cause extensive noise, and we highly suggest the flight paths and missions change so that aircraft does not fly over the populated areas of Stonecroft and Meadowcroft.
The safety and overall usefulness to the Air Force of the F35A are my primary concern.
Really don't know the results of the EIS. Hope noise levels from F-35As aren't too much above F-16s. If they are would like to see steps taken to lessen impacts as much as practical but regardless would still support Shaw.
Yes I've lived here in Sumter for almost 20 years, but we are also Retired Military. This survey does not have questions pertaining to the large retired community, especially # 13. Please keep in mind of all the retired Military we have in our community and we put a lot of money into the community

General Comments (cont.)
This survey is useless. Sumter government is nothing but a puppet being driven by a few wealthy business owners who have too much influence.
If restrictions are placed on property after it is purchased the owner should be compensated.
I strongly request that any land use changes be addressed by public vote.
Shaw artificially inflates property values making it difficult for regular citizens to rent and/or buy homes.
Traffic is terrible on a daily basis due to traffic being routed from other base roads onto Frierson Road. All school traffic and base traffic on one road at the same time is a HORRIBLE idea. I also believe that the Frierson gate opening for certain hours of the day is very inconvenient and not only adds miles to commute, but also time. I also believe that having the schools located off the base would benefit the security of the base and the schools. There would be much more parent/guardian involvement with the schools if the schools were not located on the base. There is no consistency to the protocols used at the base gates to allow school guests on the base; this usually depends on who is working at the gate and what protocol they were last briefed on using. There should be one protocol used by all gate guards and school officials. There are school visitors that are told to pull over and wait and sit there for 30 minutes or more to validate the person, even after base security was called an hour or more prior to them trying to access the gate. Then there are days the school does not call to validate the person and there are non-military visitors that do not have a school-base pass that show up in the office.
As community grows it heightens the need to relocate the range; I live off McRays Mill Rd and the aircraft are constantly buzzing my neighborhood during the day during range use. I often work nights and cannot rest as a result of the noise (always multiple aircraft practicing). Too low! Too loud!
My club used to use the bombing range for years to host off-road motorcycle races. We are no longer allowed. It is a compatible use. We still use Manchester State Forest. The club would like to have access to the range. Race occurs once a year on Sunday. \$1.5 million economic impact, largest Enduro Race in North America. For the sixth time, SERMA will be the opening round of the National Enduro Series. (NEPG.com) <a href="http://www.nationalenduro.com/">http://www.nationalenduro.com/</a> Contact information at SERMAClub.com
None at this time
What is the EIS Public review
Sumter's identity is the military

THIS PAGE INTENTIONALLY LEFT BLANK

## Appendix B: City and County Airfield Compatibility, Range Compatibility, and Noise Attenuation District Regulations

### SECTION Q: AIRFIELD COMPATIBILITY (ACD) DISTRICTS

**3.q.1. Purpose:** The intent of the ACD is to prevent incompatible land uses or the creation of flight hazards which would impair the utility and public investment of the Shaw Air Force Base and the Sumter Airport.

**3.q.2. Types of Districts:** With the ACD there are several overlay districts which are shown on the Official Zoning Map(s) as follows:

- a. APZ-1, Accident Potential Zone I;
- b. APZ-2, Accident Potential Zone II;
- c. DNL-1, Day-Night Noise Level Zone I;
- d. DNL-2, Day-Night Noise Level Zone II;
- e. DNL-3, Day-Night Noise Level Zone III;
- f. NA, Noise Attenuation District.

**3.q.3. Restrictions Within the Airfield Compatibility Districts:** Land designated APZ-1, APZ-2, DNL-1, DNL-2, or DNL-3 may not be used for any purpose other than those indicated by Exhibit 7, and under the conditions attached thereto. Property owners or land users should consult both the text of this Section and the Official Zoning Map to determine the location of properties in question and the limitations imposed thereon by this Section.

**3.q.4. Land Use:** The use of land within these zones shall be subject to the following safety and performance standards and the requirements of Exhibit 3-8. Where permitted uses listed in Exhibit 3-8 are at variance with the applicable residential or non-residential zoning districts within which they are proposed, the more restrictive shall apply.

- a. Safety Standards – the concentration of persons per use shall be in compliance with Exhibit 3-7.
  - 1. Maximum Number of Persons – The maximum number of persons per use shall be a function of the number of hours of operation per day of the use and shall be expressed on an acre per hour basis. Furthermore, a structure or use or contiguous structure or use, shall not accommodate a gathering of individuals, including employees and non-employees, that would result in an average density of greater than twenty-five (25) persons per acre per hour during a 24-hour period or that would exceed fifty (50) persons per acre at any given time.

Such limitations shall be a special condition of the issuance of the building permit and the certificate of occupancy. The occupant of any such premises



shall not permit such limitations to be exceeded. The premises shall thereafter continuously be posted with a form of notice of such limitations, as prescribed by the Sumter City-County Planning Commission.

2. Concentrations of Persons Per Acre Standard

<b>Exhibit 3-7</b> <b>Concentrations of Persons Per Acre Standards</b>	
<b>Hours of Operation Per Day</b>	<b>Maximum Persons Allowed Per Acre/During the Day</b>
24	25
23	26
22	27
21	28
20	30
19	31
18	33
17	35
16	37
15	40
14	42
13	46
12 or less	59*

\*Concentrations of persons per acre cannot exceed 50 persons per acre at any time.

**Note:** Fractions in the maximum persons allowed column are rounded to the lowest whole number.

3. Formula – The maximum persons per acre per hour for the duration of Time that persons are expected to be on site during a 24-hour period may be determined as follows:
- a. Average densities of persons per hour during a 24-hour period are determined by calculating the number of persons per acre expected on a site, multiplying by the number of hours they will be on the site, and dividing the total by 24.

Example #1: One 8-hour shift of 30 workers on a one (1) acre site.

$$30 \text{ persons expected} \times 8 \text{ hours on site} = 240$$

$$\frac{240}{24} = \text{average density of 10 persons per acre per hour during a 24-hour period.}$$

Example #2: Two 8-hour shifts of 30 workers on a one (1) acre site.

$$30 \text{ persons expected} \times 16 \text{ hours on site} = 480$$

$$\frac{480}{24} = \text{average density of 20 persons per acre per hour during a 24-hour period.}$$

- b. The maximum number of persons allowed per acre per hour is calculated by dividing 24 hours by the number of hours persons will be on the site, and multiplying the results by 25 persons per acre per hour.

Example #3: A use on a one (1) acre site has two 8-hour shifts.

$$\frac{24 \text{ hours}}{16 \text{ hours}} \times 25 \text{ persons} = 37.5 \text{ maximum}$$

**3.q.5. Performance Standards:** Height and size requirements shall be evaluated in accord with the “Ordinance Regulating the Height of Structures and other Activities in the vicinity of Shaw Air Force Base,” as adopted October 13, 1981.

- a. Setbacks:
- |       |                         |
|-------|-------------------------|
| Front | 50 feet                 |
| Rear  | 50 feet                 |
| Side  | Interior Side – 20 feet |
|       | Exterior Side – 50 feet |
- b. Off-Street Parking: Off-street parking for uses within this district shall comply with Article 8, Section I as appropriate.

**3.q.6. Prohibited Uses:** All uses indicated by a “NO” in the applicable sub-zone column of Exhibit 3-8 are expressly prohibited.

**3.q.7. Non-Conforming Uses:** The regulations prescribed by this section shall not be construed to require the removal, lowering of the height or other changes or alteration of any structure or use not conforming to the regulations as of December 30, 1991, or otherwise interfere with the continuance of any non-conforming use. Nothing herein contained shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which has begun or plans or residential plats which have been filed in the Planning Commission Office prior to December 30, 1991.

**3.q.8. Permits:** Building permits and sign permits shall be required for all construction, in accordance with Section 1.p.1.

- a. Future Uses: Each application for a building permit shall indicate the purpose for which the permit is desired, with sufficient information to determine whether the resulting use or structure would conform to the regulations herein prescribed.
- b. Existing Uses: Any existing non-conforming use or structure may be replaced, substantially altered, or rebuilt in accord with the permit requirements in Article Six, Section A; provided such non-conforming use will not:
1. Create a flight hazard or use not authorized by this Ordinance, or

2. Permit a non-conforming use or structure to be made or become a greater hazard to air navigation or less compatible in use than it was on December 30, 1991, or than it is when the application for a permit is made.

**3.q.9. Variance Permits:** The Sumter City-County Board of Appeals shall have the power to grant variances to the Safety Requirement Standards and/or the Performance Standards Regulations of this Section and to authorize the issuance of variance permits therefor as defined in Article 1, Section H of this Ordinance; provided that the Commander of Shaw Air Force Base, or his designee, shall be notified of any variance being requested and shall be asked for comments on such requests.

**3.q.10. Other Ordinance:** Adoption of this Ordinance shall not invalidate any existing Ordinance, and shall be used in addition to such Ordinances, such as the “Ordinance Regulating the Height of Structures and other Activities in the Vicinity of Shaw Air Force Base,” as adopted on October 13, 1981.

**EXHIBIT 3-8**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

LAND USE CATEGORY	APZ-1	APZ-2	DNL-1 65-75 dB	DNL-2 75-80 dB	DNL-3 80+dB
Single-Family	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Mobile Homes *	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Single-Family **	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Multi-Family ***	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Mobile Home Parks	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Hotels, Motels	NO	NO	30 <sup>(14)</sup>	35 <sup>(14)</sup>	35 <sup>(14)</sup>
INDUSTRIAL/ MANUFACTURING	APZ-1	APZ-2	DNL-1 65-75 dB	DNL-2 75-80 dB	DNL-3 80+dB
Food & Kindred Products	NO	YES <sup>1</sup>	(10)	(12)	(13)
Textile Mill Products	NO	YES <sup>1</sup>	(10)	(12)	(13)
Apparel	NO	NO	(10)	(12)	(13)
Lumber & Wood Products	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Furniture & Fixtures	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Paper & Allied Products	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Printing, Publishing	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Chemicals & Allied Products	NO	NO	(10)	(12)	(13)
Petroleum Refining & Related Industries	NO	YES <sup>1</sup>	(10)	(12)	(13)
Rubber & Plastics	NO	NO	(10)	(12)	(13)
Stone, Clay & Glass	NO	YES <sup>1</sup>	(10)	(12)	(13)

City Zoning and Development  
Standards Ordinance  
January 2014

Article 3 | 75

**EXHIBIT 3-8 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

INDUSTRIAL/ MANUFACTURING	APZ-1	APZ-2	DNL-1 65-75 dB	DNL-2 75-80 dB	DNL-3 80+dB
Primary Metals	NO	YES <sup>1</sup>	(10)	(12)	(13)
Fabricated Metals	NO	YES <sup>1</sup>	(10)	(12)	(13)
Professional, Scientific Control Instruments	NO	NO	(10)	(12)	(13)
Misc. Manufacturing	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
TRANSPORTATION, COMMUNICATIONS, UTILITIES	APZ-1	APZ-2	DNL-1 65-75 dB	DNL-2 75-80 dB	DNL-3 80+dB
Railroad, Rapid Rail	YES <sup>2</sup>	YES	(10)	(12)	(13)
Motor Vehicle Transportation	YES <sup>2</sup>	YES	(10)	(12)	(13)
Aircraft Transportation	YES <sup>2</sup>	YES	(10)	(12)	(13)
Highway & Street ROW	YES <sup>2</sup>	YES	(10)	(12)	(13)
Auto Parking	YES <sup>2</sup>	YES	(10)	(12)	(13)
Communications	YES <sup>2</sup>	YES	(10)	30 <sup>(10)</sup>	30 <sup>(10)</sup>
Utilities	YES <sup>2</sup>	YES	(10)	(12)	(13)
Landfills & Hazardous Waste	NO	NO	(10)	(12)	(13)



**EXHIBIT 3-8 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

COMMERCIAL/RETAIL TRADE	APZ-1	APZ-2	DNL-1 65-75 dB	DNL-2 75-80 dB	DNL-3 80+dB
Wholesale Trade	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
Building Materials—Retail	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
General Merchandise—Retail					
<10,000 sq. ft./acre	YES <sup>1,11</sup>	YES <sup>1,11</sup>	30	(12)	(13)
>10,000 sq. ft./acre	NO	NO	30	(12)	(13)
Food Retail—Groceries	NO	NO	30	(12)	(13)
Other Food Retail	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
Automotive, Marine, Aviation—Retail	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
Apparel & Accessories—Retail	NO	YES <sup>1</sup>	(10)	(12)	(13)
Furniture—Home	NO	YES <sup>1</sup>	30	(12)	(13)
Furniture—Retail	NO	YES <sup>1</sup>	30	(12)	(13)
Eating & Drinking Places	NO	YES <sup>1</sup>	30	(12)	(13)
SERVICES	APZ-1	APZ-2	DNL-1 65-75 Db	DNL-2 75-80 dB	DNL-3 80+dB
Finance, Insurance, Real Estate	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	(13)
Personal Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	(13)
Cemeteries	YES <sup>1,3,4</sup>	YES <sup>1,3,4</sup>	NA	NA	NA
Business Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	(13)
Warehousing & Storage Services	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)

**EXHIBIT 3-8 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

SERVICES	APZ-1	APZ-2	DNL-1 65-75 Db	DNL-2 75-80 dB	DNL-3 80+dB
Explosive Storage	NO	NO	30	(12)	(13)
Repair Services	YES <sup>1,3</sup>	YES <sup>1,3</sup>	30	(12)	(13)
Medical & Other Health Services	NO	NO	30	25	25
Hospitals	NO	NO	30	25	25
Legal Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	30
Other Professional Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	30
Contract Construction Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	30
Government Services	NO	YES <sup>1,3</sup>	30	30	30
Educational Services	NO	NO	30	30	30
Religious Activities	NO	NO	30	30	30
CULTURAL, ENTERTAINMENT AND RECREATION	APZ-1	APZ-2	DNL-1 65-75 dB	DNL-2 75-80 dB	DNL-3 80+dB
Cultural Activities	NO	NO	25	30	30
Nature Exhibition	YES <sup>5</sup>	YES <sup>5</sup>	NA	(12)	(13)
Entertainment Facilities Indoor/Outdoor	NO	NO	NA	(12)	(13)
Sports Activities Indoor/Outdoor	NO	YES <sup>5,6,7</sup>	NA	(12)	(13)
Water & Other Recreation Areas	YES <sup>5</sup>	YES <sup>5</sup>	NA	(12)	(13)
Resort & Group Camps	NO	NO	NA	(12)	(13)
Parks & Golf Courses	YES <sup>5</sup>	YES <sup>5</sup>	NA	(12)	(13)

**EXHIBIT 3-8 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

RESOURCE PRODUCTION EXTRACTION & OPEN LAND	APZ-1	APZ-2	DNL-1 65-75 dB	DNL-2 75-80 dB	DNL-3 80+dB
Agricultural Related Activities	YES	YES	NA	(12)	(13)
Dairy & Livestock Farms	YES	YES	NA	(12)	(13)
Forestry & Mining	YES	YES	NA	(12)	(13)
Fishing, Hunting, and Water Areas	YES	YES	NA	(12)	(13)
Permanent Open Space	YES	YES	NA	(12)	(13)

**SPECIAL NOTE:**

- (A) \* Less than or equal to two (2) dwelling units per acre  
 \*\* More than two (2) dwelling units per acre  
 \*\*\* Including duplex, triplex, and quadruplex

(B) Computations for residential density include road's right-of-ways

(C) dB=Decibels

(D) 25,30 or 35 db – measures to achieve 25, 30, or 35 dB must be incorporated into design and construction of structures in accord with the "Guidelines for the Sound Insulation of Residences Exposed to Aircraft Operations," prepared by the Naval Facilities Engineering Command, Special Advisors for Planning Administration, Office of Environment and Energy; and office of Airport Planning and Programming, Washington, D.C. latest edition.

(E) NA – not applicable

**FOOTNOTES:**

- (1) Uses compatible only if they do not result in a large concentration of people. A large concentration of people is defined as a gathering of individuals in an area that would result in an average density of greater than 25 people per acre per hour during a 24 hour period, or a single event that would result in the gathering of 50 persons per acre at any time. (See Safety Requirement Standards)

City Zoning and Development  
 Standards Ordinance  
 January 2014

Article 3 | 79

In addition, the following factors need to be considered: Labor intensity, structural coverage, explosive characteristics, air pollution, size of establishment, peak period (including shopper/visitor) concentrations.

- (2) No passenger terminals and no major above ground transmission lines.
- (3) Meeting places, auditoriums, etc. not allowed
- (4) Excludes chapels
- (5) Facilities must comply with Safety Requirements Standards and no high-intensity use of facilities, such as structured playgrounds, ballfields, or picnic pavilions.
- (6) Clubhouse not allowed.
- (7) Concentrated rings with large classes not allowed.
- (8) Includes livestock grazing but excludes feedlots and intensive animal husbandry
- (9) Includes feedlots and intensive animal husbandry.
- (10) Measures to achieve Noise Level Reduction (NLR) of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- (11) General Merchandise – Retail compatible provided that individual shops do not exceed 2,500 sq. ft. and that not more than four (4) shops per acre are allowed.
- (12) Measures to achieve Noise Level Reduction (NLR) of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal level is low.
- (13) Measure to achieve Noise Level Reduction (NLR) of 35 dB must be incorporated into the design and construction of portion of these buildings where the public is received, office areas, noise sensitive areas, or where the normal level is low.
- (14) Mitigation measures to reduce noise within structures in noise contour zones.

## SECTION R: RANGE COMPATIBILITY DISTRICTS (RCD)

**3.r.1. Purpose:** The intent of the RCD is to prevent incompatible land uses or the creation of flight hazards, which would impair the utility and public investment of Poinsett Electronic Combat Range (PECR).

**3.r.2.** Within the RCD, there are several overlay districts, which are shown on the Official Zoning Map as follows:

- a. DNL-1, Day-Night Noise Level Zone 1
- b. DNL-2, Day-Night Noise Level Zone
- c. NA, Noise Attenuation District

**3.r.3. Restrictions Within the Range Compatibility Districts:** Land designated DNL-1, and DNL-2 may not be used for any purpose other than those indicated by Exhibit 7 and under the conditions attached thereto. Property owners or land users should consult both the text of this Section and the Official Zoning Map to determine the location of properties in question and the limitations imposed thereon by this Section.

**3.r.4. Land Use:** The use of land within these zones shall be subject to the safety and performance standards in Sections 3.q.4 and the requirements of Exhibit 3-8.

**3.r.5. Performance Standards:** Height and size requirements shall be evaluated in accord with the "Ordinance Regulating the Height of Structures and other Activities in the vicinity of Shaw Air Force Base," as adopted October 13, 1981.

- a. Setbacks:
 

Front	50-feet
Rear	50-feet
Side	Interior Side 20-feet
	Exterior Side 50-feet
- b. Off-Street Parking: Comply with Article 8, Section I as appropriate.
- c. Noise Hazard Signs: Developers for all new major subdivisions will install at their expense a noise notification /warning sign (same as installed by Sumter County on the boundary of the NA) at each entrance to the subdivision before building permits may be issued.

**3.r.6. Prohibited Uses:** As indicated in Exhibit 3-8 for appropriate districts.

**3.r.7. Non-Conforming Uses:** The regulations prescribed by this section shall not be construed to require the removal, lowering of the height, or other changes or alterations of any structure or use conforming to the regulations as of December 31, 2002, or otherwise interfere with the continuance of any non-conforming use. Nothing herein contained shall require any



change in the construction or alteration of which has begun or plans or residential plats which have been filed in the Planning Commission Office prior to December 31, 2002.

**3.r.8. Permits:** As described in Section 3.q.8 of this Ordinance.

**3.r.9. Variance Permits:** The Sumter City-County Board of Appeals shall have the power to grant variances to the Safety Requirements Standards and/or the Performance standards Regulations of this Section and to authorize the issuance of variance permits therefore as defined in Article 1, Section H of this Ordinance; provide that the Commander of Shaw Air Force Base, or his designee, shall be notified of any variance requested and shall be asked for comments on such requests.

**3.r.10. Other Ordinance:** Adoption of this Ordinance shall not invalidate any existing Ordinance, and shall be used in addition to such Ordinances, such as the "Ordinance Regulating the Height of Structures and other Activities in the Vicinity of Shaw Air Force Base," as adopted on October 31, 1981.

**3.r.11. DNL Lines:** No manufactured / mobile homes may be placed inside the DNL lines as developed by the US Air Force and published by the Sumter Planning Commission GIS Department.

**NOTE:** Existing, approved major subdivisions, and mobile home parks with current city business licenses that have infrastructure in place will be allowed to continue to develop any/all remaining parcels/lots. No new parcels/lots may be added to the subdivision or mobile home park after the adoption of this revision. However, all existing lots/parcels may be fully used/reused or developed. This note applies to both APZ 2s and the DNL restriction. Any subdivision and/or mobile home parcels started after the adoption of these changes must be developed in accordance with all the new regulations.

## SECTION S: NOISE ATTENUATION (NA) DISTRICT

**3.s.1. Purpose:** The intent of this district is to define areas by physical features, which are prone to exposure to airport and range operations noise and changes in the patterns thereof. Therefore, the purpose of the district is to reduce the noise, which may accrue to the benefit of the health, safety, welfare of the occupants of or those associated with the uses of land therein.

**3.s.2. Noise Notification Zone:** Noise Notification Zone is hereby created by map action, which depicts the area adjacent to Shaw Air Force Base and/or Poinsett Range. This notification would be shown on all plats / building permits and other correspondence regarding construction within the area so designated.

**3.q.9. Staff Action on Approved PD Amendments:** Once a PD District is established on the official zoning map, no building permit shall be issued therein unless the City or County of Sumter has approved plans and reports for the development as adopted by the City or County council, whole or in stages that are deemed satisfactory in relation to the total development.

Upon approval, building permits shall be issued in such manner as for building permits generally. All plans and reports approved shall be binding on the applicant(s) and any successors in title so long as the PD zoning is applicable.

**3.q.10. Changes in Approved Plans:** Minor changes in approved final plans and reports may be approved by the planning staff only upon findings identical to those required for original approval. Major changes shall be subject to further amendatory action by the Planning Commission and City or County Council.

## SECTION R: AIRFIELD COMPATIBILITY DISTRICTS (ACD)

**3.r.1. Purpose:** The intent of the ACD is to prevent incompatible land uses or the creation of flight hazards which would impair the utility and public investment of the Shaw Air Force Base and the Sumter Airport.

**3.r.2. Types of Districts:** With the ACD there are several overlay districts which are shown on the Official Zoning Map(s) as follows:

- a. APZ-1, Accident Potential Zone I;
- b. APZ-2, Accident Potential Zone II;
- c. DNL-1, Day-Night Noise Level Zone I;
- d. DNL-2, Day-Night Noise Level Zone II;
- e. DNL-3, Day-Night Noise Level Zone III;
- f. NA, Noise Attenuation District.

**3.r.3. Restrictions Within the Airfield Compatibility Districts:** Land designated APZ-1, APZ-2, DNL-1, DNL-2, or DNL-3 may not be used for any purpose other than those indicated by Exhibit 7, and under the conditions attached thereto. Property owners or land users should consult both the text of this Section and the Official Zoning Map to determine the location of properties in question and the limitations imposed thereon by this Section.

**3.r.4. Land Use:** The use of land within these zones shall be subject to the following safety and performance standards and the requirements of Exhibit 7. Where permitted uses listed by Exhibit 7 are at variance with the applicable residential or non-residential zoning districts within which they are proposed, the more restrictive shall apply.

- a. **Safety Standards** – the concentration of persons per use shall be in compliance with Exhibit 6.

1. **Maximum Number of Persons** – The maximum number of persons per use shall be a function of the number of hours of operation per day of the use and shall be expressed on an acre per hour basis. Furthermore, a structure or use or contiguous structure or use, shall not accommodate a gathering of individuals, including employees and non-employees, that would result in an average density of greater than twenty-five (25) persons per acre per hour during a 24-hour period or that would exceed fifty (50) persons per acre at any given time.

Such limitations shall be a special condition of the issuance of the building permit and the certificate of occupancy. The occupant of any such premises shall not permit such limitations to be exceeded. The premises shall thereafter continuously be posted with a form of notice of such limitations, as prescribed by the Sumter City-County Planning Commission.

2. **Concentrations of Persons Per Acre Standard**

<b>Exhibit 6</b> <b>Concentrations of Persons Per Acre Standards</b>	
<b>Hours of Operation Per Day</b>	<b>Maximum Persons Allowed Per Acre/During the Day</b>
24	25
23	26
22	27
21	28
20	30
19	31
18	33
17	35
16	37
15	40
14	42
13	46
12 or less	59*

\*Concentrations of persons per acre cannot exceed 50 persons per acre at any time.

Note: Fractions in the maximum persons allowed column are rounded to the lowest whole number.

3. **Formula** – The maximum persons per acre per hour for the duration of Time that persons are expected to be on site during a 24-hour period may be determined as follows:
- a. Average densities of persons per hour during a 24-hour period are determined by calculating the number of persons per acre expected on a

site, multiplying by the number of hours they will be on the site, and dividing the total by 24.

Example #1: One 8-hour shift of 30 workers on a one (1) acre site.

30 persons expected x 8 hours on site = 240

$\frac{240}{24} =$  average density of 10 persons per acre per hour during a 24-hour period.

Example #2: Two 8-hour shifts of 30 workers on a one (1) acre site.

30 persons expected x 16 hours on site = 480

$\frac{480}{24} =$  average density of 20 persons per acre per hour during a 24-hour period.

- b. The maximum number of persons allowed per acre per hour is calculated by dividing 24 hours by the number of hours persons will be on the site, and multiplying the results by 25 persons per acre per hour.

Example #3: A use on a one (1) acre site has two 8-hour shifts.

$\frac{24 \text{ hours}}{16 \text{ hours}} \times 25 \text{ persons} = 37.5 \text{ maximum}$

**3.r.5. Performance Standards:** Height and size requirements shall be evaluated in accord with the “Ordinance Regulating the Height of Structures and other Activities in the vicinity of Shaw Air Force Base,” as adopted October 13, 1981.

- a. Setbacks: As designated for each zoning district.
- b. Off-Street Parking: Off-street parking for uses within this district shall comply with Article 8, Section J as appropriate.
- c. Noise Hazard Signs: Developers for all new major subdivisions will install at their expense a noise notification/warning sign (same as installed by Sumter County on the boundary of the NA) at each entrance to the subdivision before building permits may be issued.

**3.r.6. Prohibited Uses:** All uses indicated by a “NO” in the applicable sub-zone column of Exhibit 7 are expressly prohibited.

**3.r.7. Non-Conforming Uses:** The regulations prescribed by this section shall not be construed to require the removal, lowering of the height or other changes or alteration of any structure or use not conforming to the regulations as of December 30, 1991, or otherwise interfere with the



continuance of any non-conforming use. Nothing herein contained shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which has begun or plans or residential plats which have been filed in the Planning Commission Office prior to December 30, 1991.

**3.r.8. Permits:** Building permits and sign permits shall be required for all construction, in accordance with Section 1.p.1.

- a. Future Uses: Each application for a building permit shall indicate the purpose for which the permit is desired, with sufficient information to determine whether the resulting use or structure would conform to the regulations herein prescribed.
- b. Existing Uses: Any existing non-conforming use or structure may be replaced, substantially altered, or rebuilt in accord with the permit requirements in Article Six, Section A; provided such non-conforming use will not:
  1. Create a flight hazard or use not authorized by this Ordinance, or
  2. Permit a non-conforming use or structure to be made or become a greater hazard to air navigation or less compatible in use than it was on December 30, 1991, or than it is when the application for a permit is made.

**3.r.9. Variance Permits:** The Sumter City-County Board of Appeals shall have the power to grant variances to the Safety Requirement Standards and/or the Performance Standards Regulations of this Section and to authorize the issuance of variance permits therefor as defined in Article 1, Section H of this Ordinance; provided that the Commander of Shaw Air Force Base, or his designee, shall be notified of any variance being requested and shall be asked for comments on such requests.

**3.r.10. Other Ordinance:** Adoption of this Ordinance shall not invalidate any existing Ordinance, and shall be used in addition to such Ordinances, such as the "Ordinance Regulating the Height of Structures and other Activities in the Vicinity of Shaw Air Force Base," as adopted on October 13, 1981.

**3.r.11. DNL:** No manufactured / mobile homes may be placed inside the DNL lines as developed by the US Air Force and published by the Sumter Planning Commission GIS Department.

NOTE: Existing, approved major subdivisions, and mobile home parks with current county business licenses that have infrastructure in place will be allowed to continue to develop any / all remaining parcels/lots. No new parcels/lots may be added to the subdivision or mobile home park after the adoption of this revision. However, all existing lots/parcels may be fully used/reused or developed. This note applies to both APZ 2s and the DNL restriction. Any subdivision and/or mobile home parcels started after the adoption of these changes must be developed in accordance with all the new regulations.



**EXHIBIT 7**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

LAND USE CATEGORY	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Single-Family	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Mobile Homes*	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Single-Family**	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Multi-Family***	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Mobile Home Parks	NO	NO	30 <sup>(14)</sup>	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Hotels, Motels	NO	NO	30 <sup>(14)</sup>	35 <sup>(14)</sup>	35 <sup>(14)</sup>
INDUSTRIAL/ MANUFACTURING	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Food & Kindred Products	NO	YES <sup>1</sup>	(10)	(12)	(13)
Textile Mill Products	NO	YES <sup>1</sup>	(10)	(12)	(13)
Apparel	NO	NO	(10)	(12)	(13)
Lumber & Wood Products	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Furniture & Fixtures	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Paper & Allied Products	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Printing, Publishing	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
Chemicals & Allied Products	NO	NO	(10)	(12)	(13)
Petroleum Refining & Related Industries	NO	YES <sup>1</sup>	(10)	(12)	(13)
Rubber & Plastics	NO	NO	(10)	(12)	(13)
Stone, Clay & Glass	NO	YES <sup>1</sup>	(10)	(12)	(13)

County – Zoning and Development  
Standards Ordinance  
May 2012

Change # 4

Article 3| 80

**EXHIBIT 7 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

INDUSTRIAL/ MANUFACTURING	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Primary Metals	NO	YES <sup>1</sup>	(10)	(12)	(13)
Fabricated Metals	NO	YES <sup>1</sup>	(10)	(12)	(13)
Professional, Scientific Control Instruments	NO	NO	(10)	(12)	(13)
Misc. Manufacturing	YES <sup>1</sup>	YES <sup>1</sup>	(10)	(12)	(13)
TRANSPORTATION, COMMUNICATIONS, UTILITIES	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Railroad, Rapid Rail	YES <sup>2</sup>	YES	(10)	(12)	(13)
Motor Vehicle Transportation	YES <sup>2</sup>	YES	(10)	(12)	(13)
Aircraft Transportation	YES <sup>2</sup>	YES	(10)	(12)	(13)
Highway & Street ROW	YES <sup>2</sup>	YES	(10)	(12)	(13)
Auto Parking	YES <sup>2</sup>	YES	(10)	(12)	(13)
Communications	YES <sup>2</sup>	YES	(10)	30 <sup>(14)</sup>	30 <sup>(14)</sup>
Utilities	YES <sup>2</sup>	YES	(10)	(12)	(13)
Landfills & Hazardous Waste	NO	NO	(10)	(12)	(13)

Change # 4

County – Zoning and Development  
Standards Ordinance  
May 2012

Article 3| 81

**EXHIBIT 7 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

COMMERCIAL/RETAIL TRADE	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Wholesale Trade	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
Building Materials--Retail	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
General Merchandise--Retail					
<10,000 sq. ft./acre	YES <sup>1,11</sup>	YES <sup>1,11</sup>	30	(12)	(13)
>10,000 sq. ft./acre	NO	NO	30	(12)	(13)
Food Retail--Groceries	NO	NO	30	(12)	(13)
Convenience Store - <5,000 sq. ft.	NO	YES <sup>1,11</sup>	30	(12)	(13)
Other Food Retail	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
Automotive, Marine, Aviation--Retail	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)
Apparel & Accessories--Retail	NO	YES <sup>1</sup>	(10)	(12)	(13)
Furniture--Home	NO	YES <sup>1</sup>	30	(12)	(13)
Furniture--Retail	NO	YES <sup>1</sup>	30	(12)	(13)
Eating & Drinking Places	NO	YES <sup>1</sup>	30	(12)	(13)
SERVICES	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Finance, Insurance, Real Estate	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	(13)
Personal Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	(13)
Cemeteries	YES <sup>1,3,4</sup>	YES <sup>1,3,4</sup>	NA	NA	NA
Business Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	(13)
Warehousing & Storage Services	YES <sup>1</sup>	YES <sup>1</sup>	30	(12)	(13)

County -- Zoning and Development  
Standards Ordinance  
May 2012

Change # 4

Article 3| 82

**EXHIBIT 7 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

SERVICES	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Explosive Storage	NO	NO	30	(12)	(13)
Repair Services	YES <sup>1,3</sup>	YES <sup>1,3</sup>	30	(12)	(13)
Medical & Other Health Services	NO	NO	30	25	25
Hospitals	NO	NO	30	25	25
Legal Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	30
Other Professional Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	30
Contract Construction Services	YES <sup>1</sup>	YES <sup>1,3</sup>	30	30	30
Government Services	NO	YES <sup>1,3</sup>	30	30	30
Educational Services	NO	NO	30	30	30
Religious Activities	NO	NO	30	30	30
CULTURAL, ENTERTAINMENT AND RECREATION	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Cultural Activities	NO	NO	25	30	30
Nature Exhibition	YES <sup>3</sup>	YES <sup>2</sup>	NA	(12)	(13)
Entertainment Facilities Indoor/Outdoor	NO	NO	NA	(12)	(13)
Internet Sweepstakes Café	NO	YES <sup>1</sup>	30	(12)	(13)
Sports Activities Indoor/Outdoor	NO	YES <sup>3,6,7</sup>	NA	(12)	(13)
Water & Other Recreation Areas	YES <sup>3</sup>	YES <sup>3</sup>	NA	(12)	(13)
Resort & Group Camps	NO	NO	NA	(12)	(13)
Parks & Golf Courses	YES <sup>3</sup>	YES <sup>2</sup>	NA	(12)	(13)

County – Zoning and Development  
Standards Ordinance  
May 2012

Change # 4

Article 3| 83

**EXHIBIT 7 (Continued)**  
**AIRFIELD COMPATIBILITY DISTRICT (ACD) USE REGULATIONS**  
**ACD DISTRICTS**

RESOURCE PRODUCTION EXTRACTION & OPEN LAND	APZ-1	APZ-2	DNL-1 65-74 dB	DNL-2 74-79 dB	DNL-3 80+dB
Agricultural Related Activities	YES	YES	NA	(12)	(13)
Dairy & Livestock Farms	YES	YES	NA	(12)	(13)
Forestry & Mining	YES	YES	NA	(12)	(13)
Fishing, Hunting, and Water Areas	YES	YES	NA	(12)	(13)
Permanent Open Space	YES	YES	NA	(12)	(13)

**SPECIAL NOTE:**

(A) \* Less than or equal to two (2) dwelling units per acre

\*\*\* More than two (2) dwelling units per acre

\*\*\* Including duplex, triplex, and quadruplex

(B) Computations for residential density include road's right-of-ways

(C) dB=Decibels

(D) 25,30 or 35 db – measures to achieve 25, 30, or 35 dB must be incorporated into design and construction of structures in accord with the "Guidelines for the Sound Insulation of Residences Exposed to Aircraft Operations," prepared by the Naval Facilities Engineering Command, Special Advisors for Planning Administration, Office of Environment and Energy; and office of Airport Planning and Programming, Washington, D.C. latest edition.

(E) NA – not applicable

County – Zoning and Development  
Standards Ordinance  
May 2012

Change # 4

Article 3| 84



**FOOTNOTES:**

- (1) Uses compatible only if they do not result in a large concentration of people. A large concentration of people is defined as a gathering of individuals in an area that would result in an average density of greater than 25 people per acre per hour during a 24 hour period, or a single event that would result in the gathering of 50 persons per acre at any time. (See Safety Requirement Standards)

In addition, the following factors need to be considered: Labor intensity, structural coverage, explosive characteristics, air pollution, size of establishment, peak period (including shopper/visitor) concentrations.

- (2) No passenger terminals and no major above ground transmission lines.
- (3) Meeting places, auditoriums, etc. not allowed
- (4) Excludes chapels
- (5) Facilities must comply with Safety Requirements Standards and no high-intensity use of facilities, such as structured playgrounds, ballfields, or picnic pavilions.
- (6) Clubhouse not allowed.
- (7) Concentrated rings with large classes not allowed.
- (8) Includes livestock grazing but excludes feedlots and intensive animal husbandry
- (9) Includes feedlots and intensive animal husbandry.
- (10) Measures to achieve Noise Level Reduction (NLR) of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- (11) General Merchandise – Retail compatible provided there are no more than four (4) individual shops under one roof, and / or total gross floor area of one or up to four shops combined does not exceed 10,000 sq. ft per acre, and customer traffic is not expected to exceed 50 per hour.
- (12) Measures to achieve Noise Level Reduction (NLR) of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal level is low.
- (13) Measure to achieve Noise Level Reduction (NLR) of 35 dB must be incorporated into the design and construction of portion of these buildings where the public is received, office areas, noise sensitive areas, or where the normal level is low.
- (14) Mitigation measures to reduce noise within structures in noise contour zones.

## SECTION S: RANGE COMPATIBILITY DISTRICTS (RCD)

**3.s.1. Purpose:** The intent of the RCD is to prevent incompatible land uses or the creation of flight hazards, which would impair the utility and public investment of Poinsett Electronic Combat Range (PECR).

**3.s.2.** Within the RCD, there are several overlay districts, which are shown on the Official Zoning Map as follows:

- a. DNL-1, Day-Night Noise Level Zone 1;
- b. DNL-2, Day-Night Noise Level Zone 2;
- c. NA, Noise Attenuation District.

**3.s.3. Restrictions Within the Range Compatibility Districts:** Land designated DNL-1, and DNL-2 may not be used for any purpose other than those indicated by Exhibit 7 and under the conditions attached thereto. Property owners or land users should consult both the text of this Section and the Official Zoning Map to determine the location of properties in question and the limitations imposed thereon by this Section.

**3.s.4. Land Use:** The use of land within these zones shall be subject to the safety and performance standards in Sections 3.r.4 and the requirements of Exhibit 7.

**3.s.5. Performance Standards:** Height and size requirements shall be evaluated in accord with the "Ordinance Regulating the Height of Structures and other Activities in the vicinity of Shaw Air Force Base," as adopted October 13, 1981.

- a. Setbacks: As designated for each zoning district.
- b. Off-Street Parking: Off-street parking for uses within this district shall comply with Article 8, Section J as appropriate.
- c. Noise Hazard Signs: Developers for all new major subdivisions will install at their expense a noise notification/warning sign (same as installed by Sumter County on the boundary of the NA at each entrance to the subdivision before building permits may be issued.)

**3.s.6. Prohibited Uses:** As indicated in Exhibit 7 for appropriate districts.

**3.s.7. Non-Conforming Uses:** The regulations prescribed by this section shall not be construed to require the removal, lowering of the height, or other changes or alterations of any structure or use conforming to the regulations as of December 31, 2002, or otherwise interfere with the continuance of any non-conforming use. Nothing herein contained shall require any change in the construction, alteration, or intended use of any such structure, the construction or alteration of which has begun or plans or residential plats which have been filed in the Planning Commission Office prior to December 31, 2002.

**3.s.8. Permits:** As described in Section 3.r.8 of this Ordinance.

**3.s.9. Variance Permits:** The Sumter City-County Board of Appeals shall have the power to grant variances to the Safety Requirements Standards and/or the Performance Standards Regulations of this Section and to authorize the issuance of variance permits therefore as defined in Article 1, Section H of this Ordinance; provide that the Commander of Shaw Air Force Base, or his designee, shall be notified of any variance requested and shall be asked for comments on such requests.

**3.s.10. Other Ordinance:** Adoption of this Ordinance shall not invalidate any existing Ordinance, and shall be used in addition to such Ordinances, such as the “Ordinance Regulating the Height of Structures and other Activities in the Vicinity of Shaw Air Force Base,” as adopted on October 31, 1981.

## SECTION T: NOISE ATTENUATION (NA) DISTRICT

**3.t.1. Purpose:** The intent of this district is to define areas by physical features, which are prone to exposure to airport and range operations noise and changes in the patterns thereof. Therefore, the purpose of the district is to reduce the noise, which may accrue to the benefit of the health, safety, welfare of the occupants of or those associated with the uses of land therein.

**3.t.2. Noise Notification Zone:** Noise Notification Zone is hereby created by map action which depicts the area adjacent to Shaw Air Force Base and/or Poinsett Range. This notification would be shown on all plats / building permits and other correspondence regarding construction within the area so designated.

**3.t.3. Performance Standards:** Height and size requirements shall be evaluated in accord with the “Ordinance Regulating the Height of Structures and other Activities in the vicinity of Shaw Air Force Base,” as adopted October 13, 1981.

- a. **Setbacks:** As designated for each zoning district
- b. **Off-Street Parking:** Off-street parking for uses within this district shall comply with Article 8, Section J as appropriate.
- c. **Noise Hazard Signs:** Developers for all new major subdivisions will install at their expense a noise notification/warning sign (same as installed by Sumter County on the boundary of the NA at each entrance to the subdivision before building permits may be issued.)

## SECTION U: AIRPORT OVERLAY DISTRICT (AP)

**3.u.1. Purpose:** That it is hereby found that an obstruction has a potential for endangering the lives and property of users of Sumter Airport, and property or occupants of land in its vicinity; that an obstruction may affect existing or future instrument approaches of Sumter Airport; and

Article 3 | 87

County - Zoning and Development  
Standards Ordinance  
May 2012

## Appendix C: Meeting Notes from Public Meetings

### MEETING NOTES FROM PUBLIC KICK-OFF MEETING

**October 26, 2015 6:30 P.M.**

The Kick-Off meeting convened at about 6:30 p.m. Information boards and handouts were provided to for the public.

George McGregor, the local JLUS Project Manager welcomed the public and recognized local elected officials in attendance. George gave the public some background on the Joint Land Use Study efforts previously undertaken in the Sumter area related to Shaw Air Force Base (Shaw AFB) and Poinsett Electronic Combat Range (Poinsett ECR) and then introduced Tyson Smith, from White & Smith Planning and Law Group, whose firm is leading the consulting team performing the current Joint Land Use Study, which will encompass both Shaw AFB and Poinsett ECR.

Tyson introduced other members of the consulting team: Vagn Hansen, from the Charlotte office of Benchmark Planning and Doug Allen from the Richmond office of Marstel-Day, briefly describing each firm's role in the project.

The consulting team gave a slide presentation (posted at [www.sumtershaw-jlus.org/project-materials/](http://www.sumtershaw-jlus.org/project-materials/)), which covered the following background information related to the project and the resulting written JLUS report. the Charlotte office of Benchmark Planning and Doug Allen from the Richmond office of Marstel-Day, briefly describing each firm's role in the project.

The consulting team gave a slide presentation (posted at [www.sumtershaw-jlus.org/project-materials/](http://www.sumtershaw-jlus.org/project-materials/)), which covered the following background information related to the project and the resulting written JLUS report.

- The history of JLUSs being conducted around the country in military communities to identify potential conflicts and ways of resulting conflicts between military and civilian uses of land;
- The types of land use "encroachment" that can occur between a military installation and the lands in its vicinity; specifically including the manner in which a military installation may have impacts on the community surrounding it and in which a community can have impacts on the military;
- The seven "areas of concern" the Planning Commission identified in Sumter/Sumter County as areas to be evaluated as part of the 2016 JLUS, including:
  - Urban growth
  - Rise of low-density residential
  - Energy compatibility & availability conflicts
  - Spectrum encroachment
  - Airspace management
  - The F-35 and Shaw's changing mission
  - Noise;

- The stakeholders that would be interviewed to ensure that the consulting team had a complete picture of the nature and type of land use trends and patterns that are emerging, as well as the anticipated operations at Shaw AFB and Poinsett ECR;
- The JLUS Study Area, within which the team and committees will focus their attention during the study;
- The primary deliverables for the JLUS process, which the public would subsequently be asked to comment on, including:
  - Land Use Compatibility Assessments
  - Public Input and Surveys
  - Draft and Final JLUS Reports
- The three (3) phases of the JLUS process used to complete the JLUS and arrive at a final written report; including:
  - Evaluation of Existing Conditions
  - Land Use Compatibility Assessments
  - Implementation Options
- Land use compatibility assessments that would be performed were described, with examples of similar assessments recently completed by this consulting team at Marine Corps Air Station in Beaufort during its 2015 Joint Land Use Study;
- The potential areas of implementation that could be recommended to the committees and presented to the public for feedback; including:
  - Interagency coordination
  - Public Outreach
  - Business and Economic Development
  - Training and Mission Strategies
  - Land Conservation Efforts
  - Planning
  - Guidelines
  - Regulations
- The team then conducted a live polling exercise, asking those in attendance to indicate the views of various initial areas of interest, including:
  - About 25% knowing someone working at Shaw AFB or Poinsett ECR.
  - A majority being familiar with the types of training that is occurring at the bases.
  - Getting information about the base from a variety of sources, including traditional media, social media, word of mouth, and general community discussions.
  - Communication between the community and the Air Force was seen as generally positive among attendees; though some were unfamiliar with how those communications occur.
  - Training at the installations was seen as important or very important among those giving input.
  - Those in attendance generally support the Air Force's ongoing presence in the region.



- Most perceive the significance of the economic contribution the Air Force makes on the community.
- Support was generally strong but somewhat mixed for continuing to take necessary steps to ensure the ongoing economic impact of the Air Force in the area.
- Noise associated with aircraft, gunfire, and amplified voice was reported to be heard variously off\*base and transportation impacts were noted.
- The frequency of noise events or other impacts from the bases varied according to where attendees lived or worked in the community.
- The estimation of the impact of the bases on property values varied.
- Some participants, but not all, were aware that an EIS had been performed to evaluate the impacts of bring an F\*35A fleet to Shaw AFB; though many did not know the current status.

Doug Allen from Marstel Day explained the public awareness efforts being made throughout the project, including:

- A project Website ([www.sumtershaw-jlus.org](http://www.sumtershaw-jlus.org))
- A Facebook page
- Hardcopy and downloadable brochures
- Public Survey (online and hardcopy), open until 12/31/15

Tyson then opened the floor for additional public comment. None was received.

Tyson informed those in attendance that the next public meeting likely would be held in the spring of next year and would include getting public feedback on initial findings and land use compatibility assessments. About 9 members of the public were in attendance, in addition to local staff.

## MEETING NOTES FROM PUBLIC OUTREACH WORKSHOP

---

### July 18, 2016 6:30 P.M.

JLUS Project Manager, George McGregor opened the public meeting at 6:30 p.m. and gave some background to those in attendance on the Joint Land Use Study effort. George outlined the process, discussed funding, and noted that the community had undertaken similar efforts in the early 1990s and 2000s. George thanked those in attendance and asked JLUS lead consultant Tyson Smith to begin the team's presentation.

Tyson once again welcomed everyone and expressed the appreciation of the JLUS team and policy committee for their attendance. Tyson began the presentation attached here and briefly reviewed the purpose of the JLUS planning process in general and locally.

Tyson reviewed the prior JLUS efforts and described the 2004 and 2013 AICUZ Studies and 2013 Environmental Impact Statement, which had shed additional light on current F-16 and potential F-35 future operations at Shaw AFB specifically. It is these types of changes in mission and available inputs that drive the need to update the JLUS at a given installation over time.

Doug Allen, JLUS Team member from Marstel-Day, then outlined the results of the public survey, which are included in the attached presentation and let those in attendance know that hardcopy results of the survey were on-hand at the meeting and available on the project website as well. Doug then reviewed

the background information assembled into Chapter 2 of the JLUS report, including population, growth, economic, and other demographic trends. Doug also described the potential encroachment concerns that arise in conjunction with spectrum interference and civilian use of drones.

Vagn Hansen, JLUS Team member from Benchmark, described in detail the findings of the land use compatibility analysis he had conducted and which would be set forth in Chapter 3 of the JLUS report. Vagn detailed the methodology used, the updated 2015 Air Force compatibility guidance, and the results of the team's analysis related to existing land uses and the noise and safety impacts associated with Shaw AFB and Poinsett ECR. The analysis included impacts associated with the F-16 and potential F-35A fighter jets. Vagn explained that the Policy Committee had decided to base its efforts and recommendations in the JLUS on the 3-squadron scenario for the potential beddown of the F-35A at Shaw (Scenario 3). It was recognized, however, that whether the F-35A would be used at Shaw had not yet been confirmed and that updated noise impact data would be prepared and available before any F-35 squadrons would be permanently located at Shaw. Vagn described also the operations currently in place at Poinsett ECR and the fact that these operations change according to the nature and needs of the installation using the facility and that available noise impact data was somewhat outdated.

Tyson then reviewed the recommendations of the JLUS Policy Committee at this point and explained that it was the intent of the Policy Committee to receive any input or concerns the public had prior to its finalizing the JLUS in the coming months.

The floor was then open to public comment and questions, which included:

- Clarification that Shaw and Poinsett do not operate and are not at this time anticipated to operate drones; that the JLUS recommendations and information related to drones are provided solely as to civilian use of drones and how they could impact air operations at Shaw;
- That the addition of the U.S. Army Central (USARCENT) facilities did not necessitate additional property/land at Shaw, but was accommodated on existing available lands;
- That the JLUS land use compatibility analysis included existing residences in the accident potential zones;
- That a 1992 MOU was executed to facilitate coordination between Shaw and the City and County.

Tyson then outlined the remaining steps in the Joint Land Use Study process, including the JLUS Team's preparation of the final chapters and sections of the JLUS and the presentation of the full report to the committees and the public for review and comment. It was anticipated at that time that the final public meeting on the JLUS would be held in the evening of September 12, 2016 and that the final draft report and details of the public meeting would be posted to the project website.

The public meeting was adjourned at around 7:45 p.m. About 15 members of the community were in attendance.

## Appendix D: Meeting Notes from Policy and Technical Advisory Committees Meetings

### POLICY AND TECHNICAL ADVISORY COMMITTEES KICK-OFF MEETING

**October 26, 2015 10:00 A.M.**

JLUS Project Manager, George McGregor, welcomed those in attendance at the meeting and explained the background of the Joint Land Use Study efforts in the Sumter area related to Shaw Air Force Base (Shaw AFB) and Poinsett Electronic Combat Range (Poinsett ECR). George introduced Tyson Smith, from White & Smith Planning and Law Group, which is leading the consulting team performing the current Joint Land Use Study. Tyson introduced other members of the consulting team: Vagn Hansen (Benchmark Planning) and Doug Allen (Marstel-Day) and described their role in the project. Each Policy and Technical Advisory Committee member in attendance then introduced themselves as well.

The consulting team gave a slide presentation (attached hereto), which introduced the following background information to the committee members.

The role of both the Policy and Technical Advisory Committees and the anticipated number and nature of the meetings each would likely hold over the course of the approximately one-year project;

- The purpose of a Joint Land Use Study; their history of use around the country in military communities; and the funding role OEA and the community has in the study process;
- The general nature of “encroachment” and the manner in which a military installation will have impacts on the community it is in and in which a community can have impacts on the military installation;
- The seven “areas of concern” the community had already identified in Sumter/Sumter County as areas to be evaluated as part of the 2016 JLUS, including:
  - Urban growth
  - Rise of low density residential
  - Energy compatibility & availability conflicts
  - Spectrum encroachment
  - Airspace management
  - The FR35 and Shaw’s changing mission
  - Noise;
- The implementation of encroachment avoidance measures that were adopted following past Joint Land Use Studies at Shaw AFB (1993) and at Poinsett ECR (2002), including:
  - Military Compatible Use zoning districts (City and County);
  - Military Planning Areas in the 2030 Comprehensive Plan (City and County jointly);
  - Height restrictions
  - Notice on permits/plats

- Noise Attenuation
- Roadway signage
- Land conservation efforts;
- State military planning efforts, including recent legislation proposed and, in some cases, adopted; the “Federal Defense Facilities Utilization Integrity Protection Act,” which requires local government coordination with its military base command prior to taking significant land use actions; and the South Carolina Military Base Task Force;
- The national effort to advance land planning and coordination between military installations and local governments surrounding them;
- The three-phase approach the consulting team and committees will use to complete the JLUS process and arrive at a final written report; including:
  - Evaluation of Existing Conditions
  - Land Use Compatibility Assessments
  - Implementation Options
- The phases that can follow a “Joint Land Use Study,” namely “JLUS Implementation,” which involves the development of tools and processes recommended in the JLUS, which is a separate process under the OEA framework; noting that the Lowcountry Council of Governments and the Central Midlands Council of Governments each pursued this separate phase after completing JLUSs in those communities;
- The Study Area (included in the original RFP) within which the team and committees would focus their attention during the study, compared to the land use compatibility assessment areas, which reflect documented areas of off-base impact and are closer to the installations, and the need to increase the study area slightly on the eastern side to capture the northeastern portion of the Poinsett ECR range compatibility district;
- The nature of the land use compatibility assessments that would be performed with examples of similar evaluations recently completed by the consulting team at Marine Corps Air Station in Beaufort during its 2015 Joint Land Use Study;
- The three FR35 scenarios that were developed as part of the Environmental Impact Statement (EIS) completed in 2012;
- An overview of the initial tasks for the consulting team and the committees; including:
  - Stakeholder interviews to be held Oct 26/28
  - Public Kick-Off Meeting to be held Oct 26
  - Launch of the Public Awareness Campaign, including:
    - Website
    - Facebook presence
    - Hardcopy and downloadable brochures
    - Public Survey (online and hardcopy), open until 12/31/15
- Scheduling of the next meetings of the committees and expected tasks (meeting set for Feb 8, 2016 at 10 a.m.); including:
  - Overview of Public Input from Oct 26 KickROff Meeting

- Overview of Stakeholder Interview feedback
- Results of the Public Survey
- Initial Land Use Compatibility Assessments
- Initial Encroachment Avoidance Tools

Tyson then led discussions with the committees related to the following points:

- Real Estate Disclosure: That real estate disclosures related to the potential existence of military impacts are not currently required in Sumter or Sumter County; the committee members indicated an interest in exploring whether this type of requirement would be useful and effective in this community so that new land owners and/or renters would be aware of the nature of the property they are considering for purchase or rent.
- The outreach for the study could be included on the websites of the City, County, School Board, and local newspaper.
- To ensure that City and County zoning clearly delineated those areas currently regulated and in what manner and to clarify the clear zones (versus the accident potential zones) associated with Shaw AFB.
- The experience of local command with Joint Land Use Studies in other areas of the country and the importance of capturing the local perspective and establishing a clear goal in the study.
- To use the Scenario #3 from the 2012 EIS for purposes of the land use compatibility assessment for Shaw AFB, as well as the new and existing contours combined for the existing aircraft and operations at Shaw.

## POLICY AND TECHNICAL ADVISORY COMMITTEES MEETING

---

### February 8, 2016 10:00 A.M.

The meeting began at about 10:00 a.m. with both the Policy and the Technical Advisory Committees in attendance as follows: Policy Committee Members Mayor Joseph McElveen, Col. Stephen Jost, Col. John Thomas, Burke Watson, School Board Vice Chair Karen Michalik, County Administrator Gary Mixon, City Manager Deron McCormick; Technical Advisory Members City-County Planning Director George McGregor, Zoning Administrator Donna McCullum, GIS Manager Charles Robbins, County Attorney Jonathan Bryan, City General Counsel Eric Shytle, COG Director Kyle Kelly, Shaw AFB Community Planner Jim Olsen, Senior Planner Helen Roodman, and Senior Planner Joey Adams.

JLUS Project Manager, George McGregor, welcomed everyone and turned the agenda over to Tyson Smith, the JLUS project leader for the consulting team. Tyson gave the committee an overview of the agenda and briefly reminded the committees of the purpose of the JLUS process and of the 3 steps involved in conducting the process and assembling a final report and recommendations: Evaluation of Existing Conditions, Land Use Compatibility Analyses, and Implementation Recommendations.

Tyson briefed the committees as to the input received from the public during the kick-off meeting on October 26th and during the stakeholder interviews from Oct. 26-28. These are summarized in the attached presentation. Doug Allen, from the consultant team, presented the results of the public survey, which ran from October 26th to Dec. 31st. The summary results are included in the attached presentation (and will be on the project website). School Board Vice Chair Michalik asked about the ability for additional comment and feedback. The team reviewed the methodology for survey distribution and collection and described the ongoing opportunities the public has throughout the JLUS process to provide feedback. Doug indicated that



the survey's purpose was to gauge the overall understanding of community sentiment early in the process to help identify any unexpected issues and to help shape the JLUS process. The project website and handout materials indicate who to contact with additional input from the public.

Vagn Hansen, from the consulting team, next presented the initial land use compatibility analyses for existing land uses for noise and accident potential. As is shown in the attached slides, the analyses has been conducted for the existing F-16 aircraft as well as Scenario 3 for the F-35A since there is the possibility of that aircraft being used at Shaw in the future. In addition, Vagn presented compatibility results under both the prior Air Force compatibility guidance and the newest, which was issued July 15, 2015 (AFI 32-7063). Vagn described how existing land uses are compared to the guidance and modeled through GIS.

The committee discussed the options it has for addressing remaining compatibility issues, including conservation purchases, regulations, notice and coordination, and comprehensive planning tools. Col. Jost shared his experience at Eglin Air Force Base and emphasized the safety issues the Air Force faces when unrestrained encroachment occurs and the manner in which that can threaten base missions. Mayor McElveen emphasized the importance of taking the steps necessary to avoid encroachment at Shaw and Poinsett to protect the base's long-term viability.

Finally, Tyson concluded the presentation by presenting to the committee the current slate of regulatory and planning policies that were implemented following past JLUS efforts and options the committee will explore for adding additional protections should it wish. These are presented in the attached slides as well. The Committee confirmed that the areas of encroachment to be primarily evaluated are noise and accident potential, particularly as to the potential transition from F-16 equipment to F-35A aircraft. However, the committee also wishes to evaluate potential radio frequency and airspace management issues related to drones and other local airspace use, to confirm that none are anticipated to arise in a way that would hamper base mission. Tyson also indicated an ongoing statewide interest in solar and other renewable energy sources and the need to monitor that as a potential local threat to compatibility.

The Policy Committee confirmed its next two meeting dates: March 7 and April 25th.

The meeting adjourned at about 11:15 a.m.

The Technical Advisory Committee met briefly following the joint meeting with the Policy Committee and determined to meet on February 22nd by phone to begin reviewing "Policy Concepts" for subsequent consideration by the full Policy Committee and recommendations for the JLUS report. The TAC also recommended that the next public outreach meeting occur once the Policy Committee has established a set of draft recommendations in order to receive public input before those are finalized.

## POLICY AND TECHNICAL ADVISORY COMMITTEES KICK-OFF MEETING

---

### March 7, 2016 10:00 A.M.

The meeting began at about 10:05 a.m.

JLUS Project Manager, George McGregor, welcomed those in attendance and introduced Tyson Smith, the JLUS project leader for the consulting team. Tyson gave the committees an overview of the agenda and updated them on the following tasks having occurred since their prior meeting on February 8th:

- Preparation by the consulting team of internal drafts of Chaps 2-4 of the JLUS report, which are going through internal review currently and will be provided to the TAC for review and comment prior to the next meeting of the Policy Committee, where it will review these chapters.

- Of the February 22nd meeting with the TAC to review the JLUS Team's summary of existing regulations and policies and the initial "policy concepts;" the TAC's feedback has been incorporated into the existing policy concepts which have been included in the agenda packet and accompanying cover memo for full consideration today by the Policy Committee.
- Spoke with Sumter airport personnel about their coordination efforts with Shaw AFB and that no problems or concerns were reported.
- Since the consultants and several Policy Committee members attended the 2016 Installation Innovation Forum held by the Association of Defense Communities in Charleston February 29-March 2, Tyson and City Manager Deron McCormick and County Administrator Gary Mixon shared their takeaways from the conference with the full committee.

Vagn Hansen, from the consulting team, then presented the remaining components of the land use compatibility analyses begun at the February 8th meeting. Vagn described land use compatibility, based on the December 18, 2015 Air Force Instruction (AFI 32-7063), as to existing land uses, future land uses, and existing zoning (include Airfield Compatibility District (ACD) and Range Compatibility District (RCD) overlays). The consultants' attached presentation includes Vagn's slides related to these analyses.

The Committee members discussed the impacts of noise and how noise contours are modeled. Vagn explained how the measurements by the Air Force are weighted based on factors, which include frequency of events, time of day, noise levels, number/types of maneuvers. He also elaborated on the experience of noise and how a single event will be experienced according to location, operations, weather conditions, and frequency. The committee discussed noise complaints and how they will vary based on the resident's location and particular sensitivities. Policy Committee members County Council Chair Vivian Fleming-McGhaney and County Councilman Charles Edens expressed the view that the Committee should recommend to local officials the necessary steps to avoid future incompatibilities and especially to ensure future residents are aware of the nature of the noise environment in the study area. Tyson offered to provide the committee with a handout that illustrates the listener's experience of noise at its next meeting. The full land use analyses are being incorporated in detail into the JLUS report (anticipated to be Chap. 3 at this point).

Tyson then gave an overview of the existing policies and regulations, identifying the extent to which the various impact areas (noise, accident potential, regulatory, and planning) are present in the City and the County, under both the scenarios of the F-16 and the potential FK35A. This is summarized in detail in the memorandum included in the agenda packet and will be in detailed narrative form in the JLUS report itself.

Next, Tyson walked the committees through the initial policy concepts recommended by the Technical Advisory Committee and detailed in the agenda packet. Tyson explained that the intent of the policy concepts listing and discussion today was to build upon the background, needs assessment, and land use compatibility analyses laid out previously and to eventually lay out the Policy Committee's recommendations. For example, Tyson pointed out that where Vagn's zoning compatibility analyses had indicated conditional compatibility with zoning, (shown in yellow) that greater compatibility (in green) could be achieved if the City and County updated their overlays per the 2015 Air Force Guidance, restricted residential land uses in the loudest noise zones, and removed previous non-conformity and previously-platted lot exemptions.

The seven (7) areas of policy concepts presented were:

- Comprehensive Planning
- Zoning
- Subdivision Regulations
- Notice to Property Owners & Occupants

- Ongoing Implementation
- Interagency Cooperation
- Public Outreach and Communication

Committee concurred in the recommendations made by the TAC, but wished to have further discussion related to the following:

- How and when to transition into the use of the noise contours illustrated in the 2013 EIS as to the potential beddown of F-35A aircraft at Shaw AFB;
- The extent to which amendments to the Military Planning Area are appropriate at this time, based on the potential arrival of the F-35A, the uncertainty related to military operations and needs in the future, the critical role Air Force presence plays in the economy of the region, and the City's projected growth patterns;
- The options for initiating real estate disclosures related to military impacts in the area; and
- The options for incorporating building construction/noise attenuating standards locally.

Committee comments included Policy Committee member Col. John Thomas (Shaw AFB) describing the importance, from the Air Force's perspective, of having flexibility to accommodate changing missions over time given the reality that planned and projected missions change and that the impacts of mission changes vary dramatically over time. For example, that FK16 operations could again reflect those indicated in the 2004 AICUZ in the future. Col. Thomas also described Shaw AFB's existing efforts to curb noise and mission impacts on the civilian community and highlighted the lengths to which some bases must go to limit operations where encroachment and citizen complaints are great (in contrast to Sumter and Sumter County's current circumstance). Col. Thomas shared with the committee the experiences at Luke AFB and Hill AFB and the efforts those bases have made to deal with land use compatibility in the face of extensive, unchecked encroachment (again, in contrast to the local circumstance today).

In addition, the committee recommended adopting standard language for the noise notification signs placed at the entrance to new developments; that the historical and present noise impacts of the FK16 be used in the overlay zones; and that real estate disclosures, if adopted, be used within the Military Planning Area.

Tyson agreed to update the policy concepts pursuant to the Committees' input today and to bring back the four issues identified above for further discussion by the committee at its next meeting.

The committee agreed to reconvene in May (date to be determined) and to hold a public meeting in the JLUS Study Area in July (date to be determined).

The meeting adjourned at about 11:30 a.m.

## POLICY AND TECHNICAL ADVISORY COMMITTEES MEETING

---

### May 23, 2016 10:00 A.M.

JLUS Project Manager, George McGregor was called to jury duty, so Tyson Smith, lead JLUS consultant opened the meeting at about 10:05 and welcomed those in attendance, which included: Maria Thomas, Vivian Fleming-McGhaney, Joe McElveen, Kyle Kelly, Jim Olsen, Chris Arnold, Deron McCormick, Gary Mixon, Charles Edens, Jonathan Bryan, Helen Roodman, Donna McCullum, Joseph Adams-Raczkowski. Also, in attendance from the JLUS Team were Doug Allen and VagnHansen.

Tyson reviewed the agenda and agenda packet with the committee and briefed the committee on what had occurred in the project since its meeting on March 7, 2016. Among the primary tasks was the preparation of the first three chapters of the JLUS report, which had been provided to the Policy Committee for its review and feedback today. Prior to being provided to the Committee, the Technical Advisory Committee reviewed prior drafts and provided feedback to the consulting team, which was incorporated into the Policy Committee drafts.

Doug Allen, from Marstel-Day, then gave an overview of the background at Shaw/Poinsett and the Community and a summary of the draft Chapter 2 to the Joint Land Use Study report. Doug described the existing missions at Shaw AFB and Poinsett; noted missions at Shaw and Poinsett aren't anticipated to change much; with the exception being, of course, if the F-35 is slated to operate at Shaw. Doug, noted, however, that, as the report indicates, the EIS projects that F-35 operations would be lower in number than the current F-16, although final operations will not be known until a final decision is made and would reflect training needs at the time. More training in simulators is expected than with the legacy aircraft. Jim Olsen, Shaw AFB, noted that the F-35s wouldn't be able to use Poinsett very much given their operational needs and footprint. Doug noted that about 3/5 of the operations at Poinsett currently originate from Shaw and that the remaining 2/5 originate from other installations, including Fort Bragg in North Carolina (C-17s and other four-engine jets).

Doug went on to outline Chapter 2's demographic discussions and background related to the civilian side of the community, including recent trends in population and growth patterns.

Mayor McElveen reminded the Committee that the 1990 Census included an approximate 6,000 person "overcount," which was later corrected. This creates the appearance of a drop in population after 1990 in some of the data. The JLUS team will get a copy of the letter from the Federal government acknowledging the miscount and will footnote same in the report. Doug reviewed with the committee the census tract maps that show the trend in growth in the Sumter region to be west of the City and in the direction of Shaw from 2000 to 2014. Doug also presented some of the economic impact data from Chapter 2.

Next Doug discussed the growth in the drone industry and the ways and extent to which this is creating concerns among military installations, including the Air Force. He noted that the incidents of drone interference/accidents, according to the FAA, in South Carolina has been quite small (6 at last count), but that even in the last 6 months the popularity of drones by non-pilots has skyrocketed and created concern on the part of the Air Force. A 5-mile buffer around Shaw and Poinsett was shown and discussed among the committee as the area within which the operator would need to notify the show air controller for any drone use of .5 to 55 lbs. Chris Arnold from Shaw indicated that Shaw's concern is with any drones in the area, regardless of size. Doug suggested and the committee supported additional efforts to increase public awareness of the concern and to clarify how local drone operates should operate drones and when and how to coordinate with Shaw if required under federal law.

Next, Doug described the Spectrum Encroachment issues that could arise at Shaw over time. There are no major concerns being reported from Shaw or Poinsett, but the JLUS report describes the potential spectrum issues that could occur; include related to the MUTES or mini-MUTES program. Though the FCC controls spectrum allocation; line-of-site concerns still need to be monitored. Jim Olsen, Shaw AFB, noted that he was coordinate with other installations on how spectrum issues are being handled, include White Sands, and will report back any applicable information to the committee.

Doug summarized the easement information the JLUS team now has been provided, which is being incorporated into the JLUS report. Finally, Doug described the Air Force Community Partnerships program that is very active already at Shaw and indicated agreements in the local community that already have been entered into. These are set forth in the attached slides from the presentation.

Vagn Hansen, JLUS Team member from Benchmark planning then quickly reviewed the Chapter 3 contents, which largely were discussed and presented at the March meeting. However, since that time, the team has been provided easement information within the JLUS study area, which will be incorporated into the next round of drafts of the JLUS report. Furthermore, the additional information allowed the Team to update the compatibility analyses, essentially increasing the number of acres considered to be compatible under both the F-16 and F-35 operational footprints.

Tyson then reviewed the contents of Chapter 4, the existing codes and policies already in place under South Carolina law and locally, which were detailed previously with the Technical Advisory Committee in February and the Policy Committee in March.

Tyson then reviewed the “policy concepts” that were introduced to the Committee at its March meeting and sought feedback on four issues that the Committee wished to discuss further after its March meeting.

First, Tyson discussed the Committee’s interest in reevaluating the Military Planning Area current in the 2030 Comprehensive Plans, pursuant to MPA policy #8, which calls for updating the MPA as changes occur. Tyson explained that 2 options had been developed by the JLUS Team and reviewed by local planning staff and the Technical Advisory Committee, which had been provided in the Policy Committee’s packet. The potential bases for a revised MPA could include not only the existing policies in the Comprehensive Plans, some of which could be described as “regulatory” in nature since they limit certain land uses, densities, and water and sewer extensions. In addition, however, the JLUS Team is recommending that the notification policies of the current “Noise Attenuation” districts be expanded to include areas beyond the current or proposed amended MPA. These options are illustrated in the slides attached. After extensive discussion related to the nature and impacts of a potential change to the MPA, the Committee recommended Options A for the extent of the current policies application, as well as an additional area of notification. Option A in both instances included less land area than did Option B, as is shown in the slides. The committee within the “notification” (blue) areas, the committee recommended the following public awareness tools:

- Consideration of real estate disclosures, based on further review of sample disclosure forms and input from the real estate community.
- Notice of potential military impacts on plats, building permits, site plans, and other development approvals.
- Signage at the entrances to subdivisions in the notification area.
- Road signage along certain major road ways indicating the potential presence of military-related noise, though the number of signs, sign content, sources of funding, and ongoing maintenance would need to be addressed.

Second, Tyson discussed with the Committee the potential use of real estate disclosures and the statutory context within which residential real estate disclosures are addressed in S.C. The committee was generally supportive of a recommendation in the JLUS report that the elected officials consider mandatory real estate disclosures within the “blue area” of an amended MPA, but it would like to review a sample disclosure and receive feedback from the Sumter Board of Realtors, particularly with respect to enforcement and awareness of the requirement.

Third, Tyson discussed the existing statutory framework related to local building codes and, specifically, how that relates to the existing requirement in the zoning codes that noise levels be attenuated within the noise zones associated with Shaw and Poinsett. After discussion, the Committee recommended increasing the availability of noise attenuation construction standards and “best practices” so that the community is aware of how to increase attenuation in the vicinity of Shaw and/or Poinsett.



Fourth, Tyson reviewed and the Committee discussed options for being prepared for the eventuality of the arrival of F-35 aircraft at Shaw, and, specifically, how the community would transition from the impacts it current is experiencing to those projected to be associated with the F-35. It was noted that if the F-35 does arrive at Shaw, that the F-16 would likely continue to operate for a period of time as the F-35 ramps up. The Committee recognized that there is some uncertainty associated with the F-35's potential arrival, but also as to the eventual or future needs of the F-16 or other aircraft over time, based, for example on the changes from 2004 to 2013 in the noise footprints of just the F-16. This uncertainty, along with the critical role Shaw plays in the local community and growth pressure that continues to the west of the City of Sumter, towards Shaw AFB and Poinsett ECR, inclined the Committee to recommend in the JLUS that the noise contours associated with EIS scenario 3 of the F-35 be reflected in the Air Compatibility Districts of the City and County at present, along with those of the F-16 as the past two AICUZ Studies have indicated. These individual and "merged" noise maps are shown in the attached slides. The Committee also recognized that, again based on the uncertainty related to the F-35s arrival, that during the JLUS Implementation phase, adjustments may be called for if new information emerges related to the Shaw primary training mission.

The committee agreed to meet again at 10 a.m. at City Centre on July 18th and to hold its next public meeting that same evening at 6 p.m. at the Catchall-Shaw Community Center.

Finally, Tyson reviewed the remaining steps in the project, including the anticipated final outline of the JLUS report. The Committee decided to block September 12, 2016 for its next meeting following the July meeting and recognize that this could be its final meeting to approve the JLUS report and perhaps present it to the public that evening as well. However, this final phase will be discussed and firmed up at its meeting on July 18th, based on progress at that point and public input received at the next public meeting on July 18th.

The meeting adjourned at about 11:50 a.m.

## POLICY AND TECHNICAL ADVISORY COMMITTEES MEETING

---

### July 18, 2016 10:00 A.M.

JLUS Project Manager, George McGregor opened the meeting at 10:05 and introduced Tyson Smith, from White & Smith Planning and Law Group, lead JLUS consultant, who opened the meeting and welcomed those in attendance; which included: Mayor Joe McElveen, Kyle Kelly, Deron McCormick, Gary Mixon, Charles Edens, Helen Roodman, Donna McCullum, Joseph Adams-Raczkowski, Eric Shytle, Burke Watson, Calvin Hastie, and Karen Michalik. Also, Doug Allen, from Marstel-Day, and Vagn Hansen, from Benchmark, were in attendance from the JLUS Team.

Tyson reviewed the agenda and agenda packet with the committee and briefed the committee on what had occurred in the project since its meeting on May 23rd, include finalizing the first three chapters of the JLUS report, which the Policy Committee reviewed at that meeting and preparation of Chapter 5, JLUS recommendations and the JLUS Recommendations Matrix. Tyson explained that the Technical Advisory Committee had reviewed and commented on these deliverables at its June meeting and its members' input had been incorporated into the drafts provided to the Policy Committee for this meeting.

Tyson then went through Chapter 5 and the key recommendations with the committee members, explaining first the JLUS process, the following JLUS implementation phase, and final adoption and implementation. Tyson then went over several issues of particular importance and several for which the Policy Committee had requested additional research at its prior meeting.

After Tyson reviewed the recommendations of the Committee related to revised Military Protection Area boundaries and policies, Vagn Hansen presented a parcel analysis of the effects of the changed boundaries as they would relate to current zoning. This analysis was also included in the slides presented, which are attached here. Tyson clarified that the recommendation of the Committee was to apply the MPA policies within the new MPA-1 only to future rezoning, water/sewer, project approval requests, not to those project already receiving such approvals or with vested rights to them.

Next, Tyson reviewed the recommendations of the Committee from it's last meeting to adopted noise contours during the JLUS Implementation process that reflect the combined 2004 AICUZ (F-16), 2013 AICUZ (F-16), and the 2013 EIS (F-35A) noise contours. The Committee clarified that sooner rather than later, the City and County should amend their zoning codes to reflect the 2004 and 2013 AICUZ contours for the F-16 since the current code maps are based only on the 2004 AICUZ. The committee felt it important not to wait on this implementation component for the completion of the entire JLUS Implementation Phase.

Tyson then reviewed the effects of an earlier recommendation of the Committee to update the City and County ACDs to reflect the 2015 Air Force Guidance related to land use compatibility, noting specifically the prohibition of residential uses in the noise contours greater than 74 dB, which the current codes do not prohibit. The Policy Committee noted that this would ultimately be a decision for the City and County Councils to make but that the recommendation to update the codes per current Air Force Guidance was confirmed.

Finally, Tyson reviewed several real estate disclosure examples from South Carolina and around the country, as well as regulatory language requiring same. Policy Committee member and County Councilman Charles Edens reported that the Sumter Board of Realtors recently discussed and seemed generally to support the use of these disclosures. It was noted that the details of what would be included in the disclosures and to which types of developments they would apply would be determined during the JLUS Implementation phase.

Next, Doug Allen, from Marstel-Day, gave an overview of recent changes to FAA rules related to civilian drone use and how increased use of drones for personal and commercial purposes likely could impact military installations. Tyson then described the JLUS recommendations related to public outreach and awareness related to civilian drone use and the limitations on local authority to regulate drone use.

Doug then reviewed the process renewable energy providers are required to follow in South Carolina and he and Tyson outlined the recommendations for monitoring state and utility databases so that City, County, and Air Force input could be provided early in the process.

Tyson then discussed with the Committee the remaining steps in completing the Joint Land Use Study, including the JLUS Team's preparation of the final chapters and sections of the JLUS and the presentation of the full report to the committees and the public. It was decided that the final committee and public meetings would be held on September 12, 2016.

Finally, Tyson reviewed the anticipated agenda for that night's (July 18, 2016) public meeting and the Committee confirmed the approach.

The Meeting was adjourned at about 11:05 a.m.

## POLICY AND TECHNICAL ADVISORY COMMITTEES MEETING

---

### September 12, 2016 10:00 A.M.

The meeting began at 10:00 with opening comments from George McGregor, who introduced Tyson Smith, lead JLUS consultant. In attendance were: Deron McCormick, Gary Mixon, Charles Robbins, Helen Roodman, Donna McCullum, Joseph Adams-Raczowski, Johnathan Bryan, and Susan Landfried. Also, Vagn Hansen, from Benchmark, was in attendance from the JLUS Team.

Tyson reviewed the agenda distributed earlier to the committees and updated those in attendance on what had occurred in the project since its meeting on July 18th, including the Public Meeting held the evening of July 18th. Tyson indicated that about 15 citizens were in attendance at the Public Meeting, in addition to various local, regional, and military personnel. The meeting provided the opportunity for the team to answer questions for the public and to share with those in attendance the content of the Policy Committee's recommendations for inclusion in the JLUS Report.

Tyson then went through the finalized JLUS, explaining that the only substantive changes since the July meeting were the additions of the Executive Summary and Chapter 1. Tyson suggested and the Committee confirmed, in addition to its inclusion in the JLUS report, providing the executive summary on the project website as a separate document for the public to download as well.

Tyson explained that Chapter 1 included an overview of the report and set out the process used to complete the JLUS, including the Public Awareness Campaign, website, social media, and brochures. Tyson then reviewed the final informational brochure which had been provided to the Committee members and which explained the results of the study. Tyson then reviewed the remaining components of the study, which the committee had previously reviewed and provided input on.

Following his presentation, the committee made a motion to approve the JLUS Study and to recommend its approval and support by the Sumter City-County Planning Commission, the City Council, and the County Council.

Tyson then reviewed the anticipated agenda for the final Public Meeting to be held that night at City Centre (September 12, 2016) and the Committee confirmed the agenda.

Finally, Tyson discussed with the Committee the remaining steps in completing the Joint Land Use Study, and presenting it to the Planning Commission and City and County Councils. The Committee supported a request that the Councils pass a resolution adopting the Study and recommending the pursuit of an implementation process to consider the recommendations in the study. This "JLUS Implementation" process would involve public input, the input of two steering committees (the "JLUS Implementation" Committee and Policy Advisory Committee), with final considerations and adoption by the City and County Council.

The Committee discussed the composition of the JLUS Implementation steering committees and the process for moving from the JLUS phase to the JLUS Implementation Phase.

The Meeting was adjourned at about 10:40 a.m.

