

We Be People

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C P R J L U S



Marine Corps Air Station Cherry Point

# Cherry Point Regional Joint Land Use Study

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## Table of Contents

<b>Chapter 1: Study Purpose</b>	<b>1-1</b>
1.1 Overview: What is a Regional Land Use Study's Purpose?	1-1
1.2 Problem/Issues Statement	1-1
1.3 Study Guiding Principles and Goals	1-2
1.4 Vision Statement	1-2
<b>Chapter 2: Organization</b>	<b>2-1</b>
2.1 Planning Area, Participating Agencies, & Jurisdictions	2-1
2.2 Organizational Structure / Process / Responsibilities	2-3
2.3 Public Participation	2-4
2.4 Guiding Principles & Vision	2-7
<b>Chapter 3: Background Information</b>	<b>3-1</b>
3.1 Chronology of Events Leading up to CPRJLUS	3-1
3.2 Economic Impacts of the Installation on the Region	3-1
3.3 Current Community & Regional Plans/Studies	3-2
3.4 Current AICUZ/RAICUZ & Station Master Plan	3-6
<b>Chapter 4: Technical Information</b>	<b>4-1</b>
4.1 Planning Area Profile, Existing and Projected	4-1
4.2 Existing Development Controls – "Gap Analysis"	4-3
4.3 Military Operations & Impacts on Community	4-12
4.4 Civilian Development Impacts on Mission Accomplishment	4-16
<b>Chapter 5: Compatibility and Land Suitability Analysis</b>	<b>5-1</b>
5.1 Compatibility Analysis	5-1
5.2 Land Suitability Analysis - Regional Development & Growth	5-6
<b>Chapter 6: Recommendations</b>	<b>6-1</b>
6.1 Community Facilities, Infrastructure, and Services	6-1
6.2 General Policy Recommendations	6-3
<b>Chapter 7: Practitioner's Guide</b>	<b>7-1</b>
7.1 Overview	7-1
<b>Appendices</b>	<b>A-1</b>
Glossary of Terms	
Table of Contents	

Semper Fidelis





# We Be People

## Article 1

1

S T U D Y P U R P O S E



## Chapter 1: Study Purpose

*The purpose and objectives of the Study, and a brief review of the context of the study area. The people involved in the Study are cited, as well as the methodology employed to conduct it.*

### 1.1 Overview: What is a Regional Land Use Study's Purpose?

A Joint Land Use Study (JLUS) is a collaborative planning process used to bring together military installation personnel, local government officials, and interested members of the community to discuss the relationship of the activities of both the military and local communities surrounding it. The three-county study area creates the need for a Regional JLUS, termed throughout this report as the CPRJLUS (Cherry Point Regional Joint Land Use Study).

Established military bases represent important, if not the most important, source of economic development energy in a community that helps create the need for service, construction, and other secondary opportunities. The resulting development pressures in areas bordering both the community and military installation can create circumstances that, if left unexamined, result in serious impediments to the normal military functions of the military base. Conversely, poor planning can also result in long-term discomfort realized by residents and businesses outside the military installations.

The purpose of this CPRJLUS is to build on previous planning initiatives such as the 2002 *Eastern Carolina Joint Land Use Study* and develop recommendations to assist in preserving the military mission and foster economic development. This study also focuses on MCAS Cherry Point, and more specifically on outlying/auxiliary facilities (ALF Bogue, OLF Atlantic, BT-9, and BT-11 installations).

### 1.2 Problem/Issues Statement

In addition to providing new and updated detail on a more narrowly defined geographic area of interest, the current CPRJLUS will address the following concerns.



***Incursion by Land.*** Many of the new residents in the region are retirees that are not used to living near the noise associated with military operations. Hence, even though these residents may never encroach on military property, the number of complaints generated by the public is an increasing concern to the installations, since they strive to be good neighbors to civilian populations. Additionally, population growth in the surrounding areas has aggravated a number of known conflicts where civilians have encroached on military property. This is especially true of the OLF Atlantic installation, which has a boundary that is more accessible. The resulting impact has been an increased focus on perimeter safety, requiring more personnel to monitor the boundary of these spaces, and an increased concern about the dangers to civilian personnel.

***Incursion by Water.*** In a similar vein, increasing traffic resulting from recreational boaters on the local waterways pose a known threat to the perimeters of the base. The result is an increased attention to monitoring the perimeter of ALF Bogue, the Neuse River at MCAS Cherry Point, and the Pamlico Sound around BT-9 and BT-11. All of these locations require constant monitoring

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

by military and civilian personnel to ensure public safety. All of these incursions result in negative impacts to training extent and realism.

**Structure Heights.** The Region around the installations represents a tremendous resource for wind energy. However, the erection of high-level wind turbines poses a serious threat to military flights as well as scrambling radar signals and surveillance. A similar threat is posed by tall cell phone towers conflicting with training routes to the west and south of the installations.

The methodology employed throughout the CPRJLUS is the identification of compatibility factors; description of how these factors are realized by the surrounding communities and influence military operations; and recommendations on how to eliminate, minimize, avoid, or mitigate the conflicts that are identified.



## 1.3 Study Guiding Principles and Goals

Study Guiding Principles were developed based on the collaborative efforts between local citizenry, key stakeholders, and military station officials. The Plan Steering Committee comprised of local planning staff and military representatives subsequently endorsed these principles as planning themes to help guide this study. This CPRJLUS is meant to:

- Enable Current and Future Military Mission
- Promote and Preserve Economic Vitality

- Create Livability / Quality of Life Enhancements
- Develop Practical Implementation Strategies
- Encourage Regional Collaboration

The CPRJLUS addresses several key objectives, as noted in the project's Request for Proposals (December 19, 2014) and supported through these guiding principles:

- To **promote compatible development** in the study area through revisions and updates to existing Zoning Ordinances and Comprehensive Plans plus to prepare new Plans and Ordinances where none now exist.
- To identify existing and **potential non-compatible uses and propose mitigation options** (particularly in the waterways in and near to the Base's facilities),
- To develop **enhanced communication** between the community and MCAS Cherry Point about cell phone and wind towers proposed in the Restricted Air Space, and
- To support the Region's continued **economic vitality** while maintaining the community's character.

## 1.4 Vision Statement

The following Vision Statement represents the collaborative efforts of those involved with the development of the CPRJLUS. This statement was used throughout the plan process to reinforce the importance of the military mission and the quality of life for those that surround its footprint and interact with its leadership.

*"We encourage viable/pragmatic solutions (policies, strategies and regulations) to enable the mission of MCAS Cherry Point by balancing the mission with regional economic development, meaningful community/stakeholder/public engagement, quality of life enhancements and environmental stewardship."*

- CPRJLUS Steering Committee (August 2015)



# We Be People

## Article 1

# 2

O R G A N I Z A T I O N



### Chapter 2: Organization

*A description of the study area is presented, as well as the composition of the study's steering committee, stakeholders, and summary of public inputs to the planning process.*

#### 2.1 Planning Area, Participating Agencies, & Jurisdictions

The following areas were identified for study in this CPRJLUS:

- Primary Study Area: The area of intense study closest to Marine Corps operations for MCAS Cherry Point, ALF Bogue, OLF Atlantic, and BT-9 and BT-11;
- Secondary Study Area: The area within influence of Marine Corps (and other federal operations) that are of concern, but not deemed as critical as the Primary Study Area; and
- General Study Area: The identification of areas in Carteret, Craven, and Pamlico counties appropriate for those land uses and activities that are of concern in the Primary and Secondary Study Areas.

The military installation of MCAS Cherry Point Complex consists of nine widely dispersed properties located in Craven, Carteret, Jones and Pamlico counties in eastern North Carolina, including several outlying airfields and bombing targets (BT-9 and BT-11 Piney Island). These properties cover approximately 26,073 acres of land and 18,000 acres of water, and are strategically located to meet operational and training requirements of the United States Marine Corps (USMC). Additionally, dedicated airspace is associated with much of the MCAS Cherry Point complex. Cherry Point includes the following properties, bombing targets, and airspace:

- Main Station Cherry Point
- Auxiliary Landing Field (MCALF) Bogue
- Outlying Landing Field (MCOLF) Atlantic
- Outlying Landing Field (MCOLF) Oak Grove
- Bombing Target 9 (BT-9) Brant Shoal
- Bombing Target 11 (BT-11) Piney Island
- Maw Point
- Pamlico Point
- Restricted Airspace 5306A (R5306A)
- Restricted Airspace 5306C (R5306C)
- Core Military Operating Area (MOA)
- Hatteras Fox MOA

*MCAS Cherry Point (Main Station).* Main Station Cherry Point consists of about 12,000 acres and is located in Craven County, NC and lies primarily between Slocum and Hancock Creeks (tributaries of the Neuse River) and roughly bounded by NC-101, HWY-70, and the city of Havelock. The Station is the home of the 2d Marine Aircraft Wing, II Marine Expeditionary Force (II MEF) and is the largest airfield for Marine Corps aviation on the east coast; maintaining and/or operating facilities, services, and materials to support the 2d MAW, tenant Units including Fleet Readiness Center East (FRCEAST) and the Naval Health Clinic. Main Station has a water restricted area encompassing portions of the Neuse River within 500 feet of the shore along the installation boundary and all the waters of the Slocum, Tucker, Hancock, and Cahoogue Creeks within the installation boundary. Public access through these restricted areas is not currently prohibited although MCAS Cherry Point may enforce restrictions in the case of heightened Force Protection levels.

*Marine Corps Auxiliary Landing Field [MCALF] Bogue Field.* MCALF Bogue is an 875-acre landing field located in Carteret County, North Carolina on Bogue Sound that serves as the Marine Corps' only training site on the east coast for aircraft to practice LHD/LHA (amphibious assault ship) landings.

MCALF Bogue is partially surrounded by residential housing, and this encroachment has



## Regional Joint Land Use Study Marine Corps Air Station Cherry Point

largely restricted training after 11:00 PM. While the public has become accustomed to this, the reality is that Bogue Field is a 24-hour, 7-days-a-week training area, and its mission is integral to the capability of the Marine Expeditionary Forces stationed in North Carolina. There is also increased activity at MCALF Bogue involving the Marine Corps Special Operations Command.

hulks grounded on the shoal. Authorized activities on BT-9 include air to surface and surface to surface warfare training, including bombing, strafing, special (laser systems) weapons, and surface fires, using non-explosive and explosive ordnance. Airspace associated with BT-9 (R5306A) is from the surface to 17,999 feet above mean sea level. Prior to government use and control, the shoal had been used by



*MCOLF Atlantic.* MCOLF Atlantic encompasses about 1,500 acres and is situated northwest of the town of Atlantic, North Carolina on the Core Sound. The communities of Sea Level and Stacy lie to the Southwest and Barry Bay to the Northeast. Topography is level, with few elevations exceeding 20 feet. Military activities at MCOLF Atlantic include heliborne, tilt-rotor, and Unmanned Aerial System (UAS) aviation operations as well as ground training events at multiple sites such as the Military Operations in Urban Terrain (MOUT) facility (airfield seizure facility). Integrated ground and aviation operations take place at MCOLF Atlantic year round in support of the 2D Marine Aircraft Wing and II Marine Expeditionary Force.

*Bombing Target (BT)-9 Brant Island Shoal.* BT-9, also known as Brant Island Shoal, is a bombing target within Pamlico Sound approximately 28 miles from MCAS Cherry Point main station. BT-9 has multiple surface dangers zones and a 3 statute mile Prohibited Area controlled by Code of Federal Regulations at Title 33 Section 334.420(a). The BT-9 target area consists of ship

fisherman for pound nets and other fisheries harvest in surrounding waters.



*Bombing Target (BT)-11 Piney Island.* BT-11 is a bombing target with Restricted and Prohibited Areas. It is authorized by Title 33 CFR, 334.420(a). Within R-5306A, BT-11 (Piney Island complex) encompasses approximately 19.5 sq miles and includes both land (all of Piney Island) and surrounding water areas in the Pamlico Sound in Carteret County, NC. Piney Island is located approximately 22 NM east-northeast of MCAS

Cherry Point and is bounded by Pamlico Sound on the north, east, and west, and a built canal named Indian Ditch on the south. The Piney Island complex cannot be reached by road and is a 20 minute ride by boat from the Thoroughfare Bridge on NC Rt. 12.

BT-11 is a procedurally controlled, manned, multi-purpose air and ground target complex designed for conventional and special weapons delivery.

*MCOLF Oak Grove.* MCOLF Oak Grove is a military and recreational use facility located near the town of Pollocksville, NC. The Oak Grove operating area consists of training areas for ground units, two Tactical Landing Zones and 3 runway surfaces. The runway surfaces are unimproved and not authorized for civilian use. There are no airfield services available at Oak Grove. Oak Grove is used heavily by military helicopters and tilt-rotor aircraft conducting aviation training operations.

*Maw Point, Pamlico Point, and Cat Island.* Pamlico Point is approximately 141 acres in size, and is located in northeastern Pamlico County, North Carolina, approximately 11 miles north of Maw Point. Maw Point is approximately 55 acres in size, and is located on the western edge of Pamlico Sound in eastern Pamlico County, North Carolina, approximately 6 miles northwest of BT-11 Piney Island. Cat Island is a small island, approximately 18 acres in size, and is located in Bogue Sound, western Carteret County, North Carolina, approximately three miles east of MCALF Bogue. All three of these parcels had been bombing targets and are currently being managed by MCAS Cherry Point. Cat Island is an inactive bombing target and is not subject to any active training activities.

## 2.2 Organizational Structure / Process / Responsibilities

To ensure a successful outcome to the planning process, the CPRJLUS brought together a wide range of participants. The CPRJLUS was sponsored by Carteret County and endorsed by

the Department of Defense Office of Economic Adjustment (OEA) representatives and other military installation personnel. Local government, military representatives and private interests formed the basis of two leadership committees:

- *Policy Steering Committee (PSC)* was established to provide guidance and leadership towards the development of the planning process. Comprised of key decision-makers in the region, the PSC provided oversight through periodic reviews of the analysis, findings and recommendations for the CPRJLUS.
- *Technical Advisory Committee (TAC)* provided invaluable feedback and direction towards the technical and historical context of the CPRJLUS planning efforts. The TAC was involved with the outreach efforts (including stakeholder interviews), work sessions, and review of all mapping, analysis, recommendations and documentation products.

Table 2-1 is a complete listing of all PSC and TAC (or both) committee members.

<i>Eddie Barber (PSC)</i>	<i>Don Baumgardner (TAC)</i>
<i>Tim Buck (PSC)</i>	<i>Beth Bucksot (TAC)</i>
<i>Robin Comer (PSC)</i>	<i>Charles Cox (PSC)</i>
<i>Josh Edmondson (TAC)</i>	<i>Patrick Flanagan (TAC)</i>
<i>Eugene Foxworth (TAC)</i>	<i>Tyler Harris (TAC)</i>
<i>David Heath (PSC)</i>	<i>Franky Howard (TAC)</i>
<i>Zack Koonce (PSC)</i>	<i>Amber Levofsky (OEA Representative)</i>
<i>George Liner (PSC)</i>	<i>Ken Lohr (TAC)</i>
<i>Katrina Marshall (TAC)</i>	<i>Christeen Mele (PSC)</i>
<i>Russell Overman (PSC)</i>	<i>Lee Padrick (PSC)</i>
<i>Herbert Page (PSC)</i>	<i>Col. Chris Pappas III (PSC)</i>
<i>Frank Rush (PSC)</i>	<i>Nick Santoro (TAC)</i>
<i>David Smith (PSC)</i>	<i>Jack Veit III (PSC)</i>

Table 2-1. PSC and TAC Members

The TAC was primarily made up of subject experts for military operations and facilities, local planning staff (regulatory), managed lands officials and economic development representatives.



## 2.3 Public Participation

Several tools were used to gain meaningful input into the CPRJLUS planning process. These efforts provided an opportunity to understand the value and impacts associated with the military presence of MCAS Cherry Point on the surrounding region. Specific outreach tools included:

- **Public Participation Plan (PPP)** was developed to target specific populations and stakeholders.
- **Stakeholder Interviews** were conducted one-on-one with 29 decision-makers, public officials and regional agencies.
- **CPRJLUS Website** was created to bring awareness to the region regarding the intent of the CPRJLUS. Mapping materials and survey information were updated periodically as well as meeting announcements and a Blog.
- **Public Symposium** was conducted at the inception of the planning process. It specifically targeted elected officials and the results (using Push Button technology) led to the endorsement of the CPRJLUS Guiding Principles.
- **Public Informational Meetings & Traveling Roadshows** were conducted in an effort to get the word out and encourage more citizen participation; the project team hosted public workshops as well as Traveling Roadshow events. These events specifically targeted meetings or activities already scheduled, where feasible, providing a captive audience to work with. Additionally, significant public outreach was provided by the staff of the Allies for Cherry Point Tomorrow (ACT), the local chambers of commerce, the CPRJLUS website as well as the Carteret County website.
- **Board Briefings** were administered to the participating boards of commissioners providing up-to-date status of the CPRJLUS as well as an opportunity for elected officials to interact with the project team.



The key takeaways from these meetings included the following points.

- *Military mission affirmation*
- *Encroachment prevention is critical*
- *Recognition of Cherry Point economic impact*
- *Wind turbines is a continued threat*
- *Quality of Life – preserve and promote*
- *Major landholders- cooperation is needed and desire for participation in the process*
- *Regional governmental cooperation/ collaboration is essential*
- *Public engagement and communication is needed to bring a higher awareness of military influence and need*

**CityZen Social Media.** An important element of the overall engagement effort was a social media presence (CityZen) to make people aware of the study and gather opinions through surveys and meetings.

The Internet-based survey was conducted between June 1, 2015 and January 6, 2016. Over 20,000 area residents were reached via a regional Facebook messaging exercise. A total of 2,031 unique visitors looked at the site. The survey generated 77 total respondents and 30 open-ended comments.

Key findings from the survey are summarized in the infographic figure on the following page (Figure 2-1).

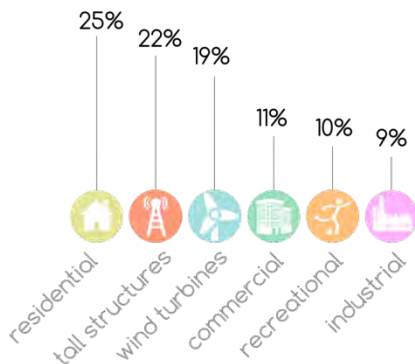
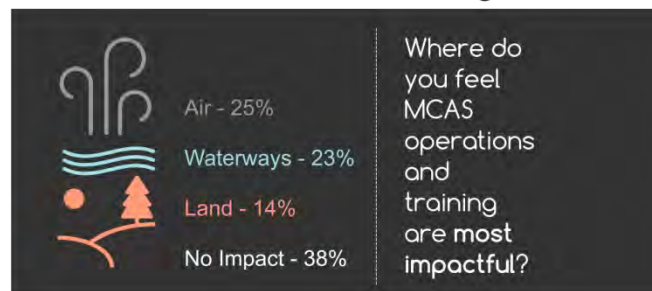
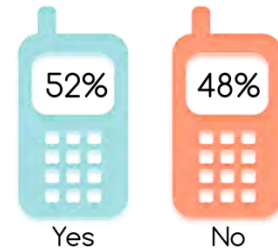




## Survey Summary



If you have a question or concern about MCAS Cherry Point, do you know who to call?



Types of land use that concern you with its incompatibility with MCAS Cherry Point

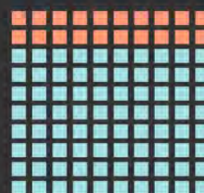


They are the bonus for our economy...we would not be able to survive without them during off season



80%

say that the relationship between Cherry Point and the surrounding community is great



compatibility issues...

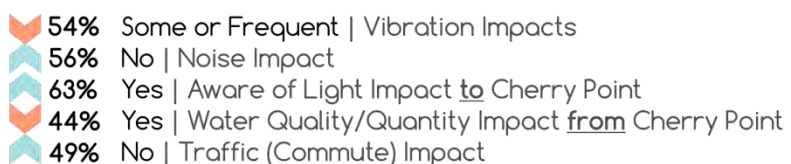


Figure 2-1. Graphic Summary of Internet-Based Survey Results

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

**Demographics of the Respondents:** Just over half (51%) of respondents live in Carteret County, and 31% live in Craven. Over 40% of respondents had lived in the area at least 20 years.

**Impacts:** 44% of respondents believed that MCAS Cherry Point has an impact on water quality/quantity; and 54% have experienced aircraft vibration “sometimes” or “frequently.”

**Noise:** While over half (56%) of respondents said that they did not consider noise to be an issue, those that did cite issues with noise suggested that it was due to helicopter (27%) or other aircraft (28%). Another 26% said that ordnance or bombing exercises were the source of noise.



**Compatibility Issues:** Nearly two-thirds (63%) said that they were aware that ambient light from surrounding communities might affect night training. Air (25%) and waterways (23%) were the two areas where respondents felt that MCAS was most impactful. Over 90% said that they would at least consider additional use restrictions to maintain security and public safety. While almost half (49%) of respondents said that their commute was not impacted by MCAS operations (some of these were likely retired), another 41% said that MCAS Cherry Point (25%) or FRC-East (16%) impacted traffic conditions during their commute. Growth in the residential (25%), tall structures (22%), and wind turbines (19%) were felt to be the types of land use that might have the greatest potential for compatibility issues with MCAS Cherry Point operations.

**General Relationship.** Approximately half (52%) said that they knew whom to call at MCAS Cherry Point in the event of a concern. Overall, 80% of respondents felt that the relationship between Cherry Point MCAS and the surrounding communities was “great.”

## 2.4 Guiding Principles & Vision

This planning process invited all citizens and interested stakeholders of each community to engage in many different ways with the goal setting and visioning of the land use and compatibility issues for MCAS Cherry Point.

The growth and opportunity of the Region is ultimately expressed through the stated goals of many individuals. Here are the “Guiding Principles” that were heard throughout the CPRJLUS Region:

- Enable Current and Future Military Mission
- Promote and Preserve Economic Vitality
- Create Livability / Quality of Life Enhancements
- Develop Practical Implementation Strategies
- Encourage Regional Collaboration



## *Vision Statement*

The study teams evolved the various discussions, public input, and issue statements into an overarching Vision Statement, representative of where MCAS-Cherry Point needs to be in the future to continue to build on its history of success.

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“WE ENCOURAGE VIABLE/PRAGMATIC SOLUTIONS (POLICIES, STRATEGIES AND REGULATIONS) TO ENABLE THE MISSION OF MCAS CHERRY POINT BY BALANCING THE MISSION WITH REGIONAL ECONOMIC DEVELOPMENT, MEANINGFUL COMMUNITY / STAKEHOLDER / PUBLIC ENGAGEMENT, QUALITY OF LIFE ENHANCEMENTS, AND ENVIRONMENTAL STEWARDSHIP.”

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# We Be People

## Article 1

3

B A C C K G R O U N D





## Chapter 3: Background Information

*A description of the economic impacts and relationships between MCAS-Cherry Point and the surrounding communities.*

### 3.1 Chronology of Events Leading up to CPRJLUS

Although the history of the MCAS-Cherry Point stretches back to the 1940's (Figure 3-1), the current study was initiated in 2014 and completed in 2016. A previous JLUS was conducted in 2002 as a joint effort with a larger study area and more partners. Some of the recommendations from that study were completed. However, one impetus for the current CPRJLUS, besides the age and pace of change being experienced in the surrounding communities, was the need for a study more focused on MCAS-Cherry Point and its outlying facilities.

### 3.2 Economic Impacts of the Installation on the Region

As the MCAS Cherry Point installation is the largest industrial employer east of I-95, the size of the impact on the surrounding region is commensurately large as well.

The latest figures for the MCAS include 13,765 civilian/military personnel at Cherry Point, 2<sup>nd</sup> MAW, Fleet Readiness Center (FRC), Naval Health Center, and other tenants affiliated with the MCAS. Many of the FRC workers, for example, live in the surrounding counties of the study area, particularly Craven (50%) and Carteret (25%). Furthermore, as military and civilian personnel retire, they often choose to do so in one of the nearby counties. Craven County alone was estimated to be home to 5,800 military and civilian retirees.

The sum total of the economic activity generated by the MCAS and its workers, including

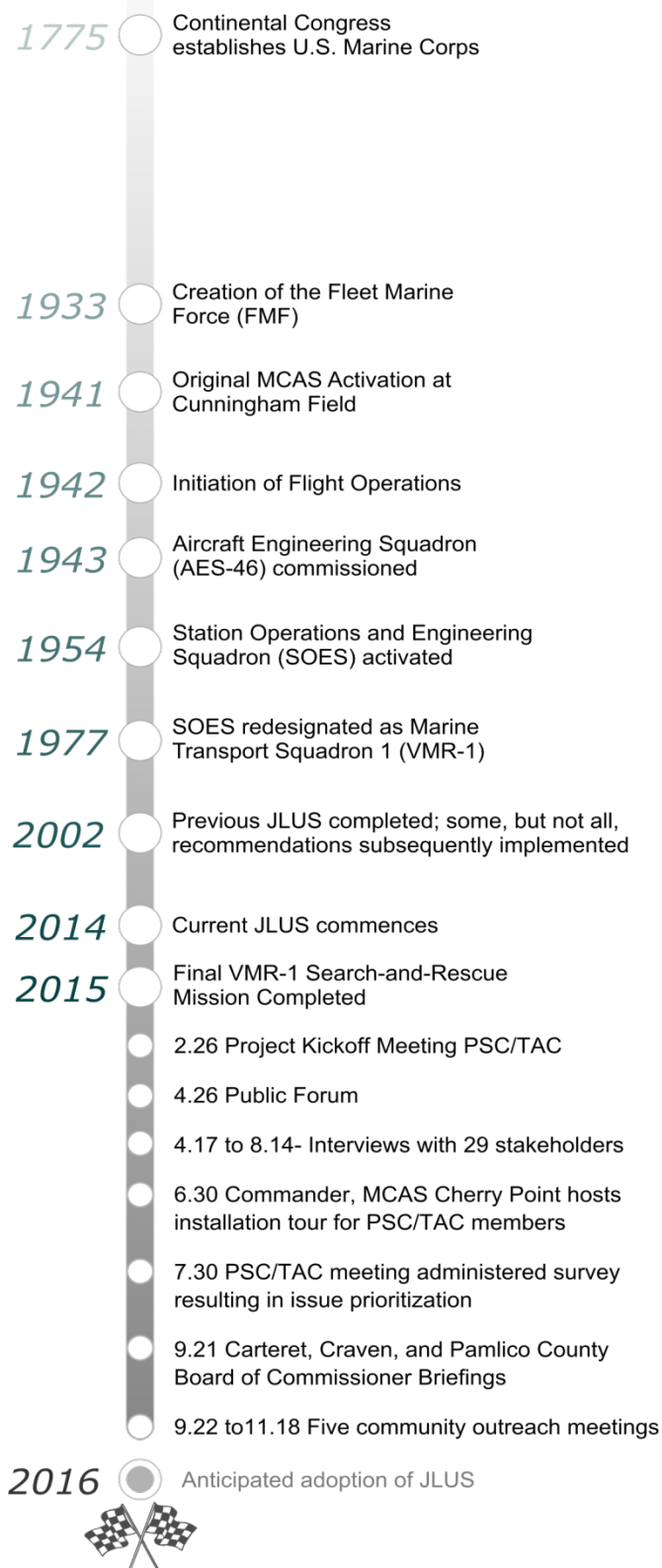


Figure 3-1. Chronology of MCAS-Cherry Point and JLUS



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

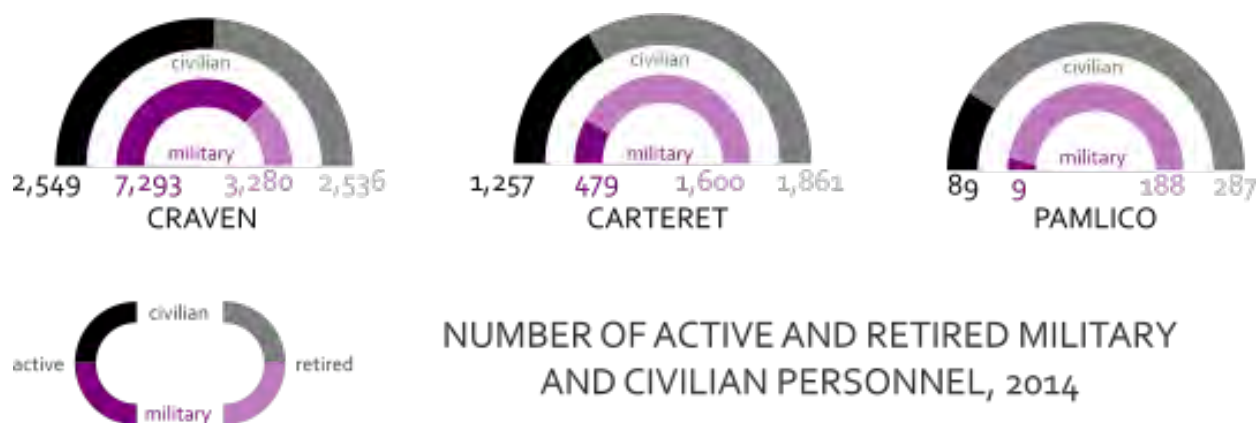


Figure 3-2. Active and Retired Military Personnel, 2014

procurement/construction, education, medical, utilities, and other revenues amounted to just over \$2 billion in 2014. (source: MCAS, Comptroller Business Performance Team, PSC 8005, 2015)

### 3.3 Current Community & Regional Plans/Studies

The following discussion briefly describes the major land use studies conducted by local governments in the CPRJLUS area of influence.

#### *Eastern Carolina Joint Land Use Study 2002*

A Joint Land Use Study is a collaborative study typically conducted by the city, county, federal officials, residents, and the military installation itself to identify compatible land uses and growth management guidelines near a particular installation. The Eastern Carolina Joint Land Use Study (ECJLUS) was completed in November 2002 and involved the Eastern Carolina Council of Governments in conjunction with Craven County, Carteret County, the City of Havelock, the Town of Emerald Isle, the Town of Bogue, and the State of North Carolina.

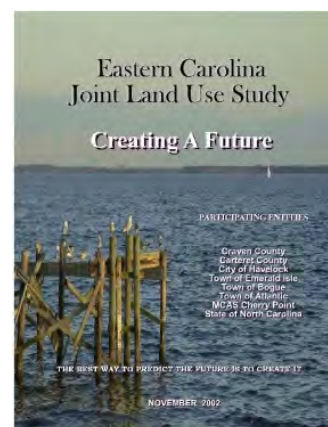
The ECJLUS established five overarching goals and five objectives along with thirty-two recommendations for implementation that address issues of encroachment, noise impact, and existing and future development with potential conflict of land uses.

*Application to the Joint Land Use Study.* The ECJLUS was prepared to recognize and provide

guidance to direct incompatible land uses away from the military facilities and training flightpaths and to encourage more compatible land uses. The ECJLUS represents over a year of research, data gathering, coordination and public outreach that produced valuable recommendations along with positive momentum for implementation.

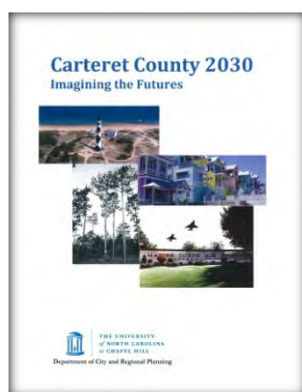
The ECJLUS will serve as the foundation for the preparation of the Chery Point Regional Joint Land Use Study, and will encompass the same geographic area. The CPRJLUS will evaluate the data collected and recommendations

from the ECJLUS to determine what still needs to be addressed and focus on the changes that have occurred within the study area since 2002. Furthermore, the Cherry Point Regional Joint Land Use Study will also evaluate additional issues occurring within the study area such as expanding regional growth, waterway management and access, expansion of the alternative energy sector and height of structures.



## *Carteret County Land Use Plan Update 2005*

The Carteret County Land Use Plan provides information about the County's, vision, demographics, housing, environment, community facilities, and land use. The Land Use Plan serves as an overall "blueprint" for the development of Carteret County that, when implemented, results in the most suitable and appropriate use of the land and protection of the county's natural resources.



*Application to the Joint Land Use Study.* The Carteret County Land Use Plan acknowledges the 2002 ECJLUS and discusses the importance of the economic impact and benefit of the military to the County, as well as the potential for land use conflicts around the

Marine Corps outlying airfield in Bogue. The County Land Use Plan has incorporated specific policies that implement recommendations from the 2002 ECJLUS. Policy 4.7, Natural and Man-made Hazard Areas, addresses the establishment of the Bogue Field Air Installation Compatible Use Zones (AICUZ) Overlay District within the Zoning Ordinance. Policy 4.7 specifically address the following: real estate disclosures for all property within the overlay, establishment of Compatible Use Zones (CUZ-1 and CUZ-2) with implementing requirements included in the Table of Permitted Special Uses in the Zoning Ordinance, limitation of rezoning within CUZ-1 and CUZ-2 for higher residential density, requirements for property owners and developers within the AICUZ to implement compatible land uses, and informational brochures and access to maps for property owners to assist them in evaluating the impact of potential accidents or noise on their property within the Overlay District. Policy 6.10, Local Areas of Concern – Economic Development,

states that the County will, in an effort to protect the existing military presence in Carteret County and its economic impact upon the area, work to implement the recommendations of the Joint Land Use Study.

## *Carteret County 2030-Imagining the Futures (2011)*

The Carteret County 2030 – Imagining the Futures report was prepared for a nine county area that included Carteret County. The report analyzes Carteret County and compares it to other counties around the southeast with similar growth issues associated with transportation and port investments, military installations, and tourism industries. Three planning scenarios were conducted utilizing potential build out scenarios. The effort brought together stakeholders from across the region to create a framework for dealing with pressures on infrastructure, military encroachment, environmental quality, workforce housing, and others.

*Application to the Joint Land Use Study.* Carteret County 2030 – Imagining the Futures report captures a significant amount of data associated with Carteret County along with identifying other coastal communities that have similar issues. The data was used to develop the three planning scenarios that analyzed growth in different ways and its effect on the military installations. The data and the information derived from the planning scenarios can be further analyzed and expanded upon to examine actual land use compatibility within the County associated with future growth areas.

## *Havelock 2030 Comprehensive Plan (2009)*

The City of Havelock Comprehensive Plan provides the framework for land use planning in the city, with the ultimate intention of providing meaningful guidelines for officials to use in making appropriate zoning decisions. The City's Comprehensive Plan includes seven chapters including goals, objectives and policies that were

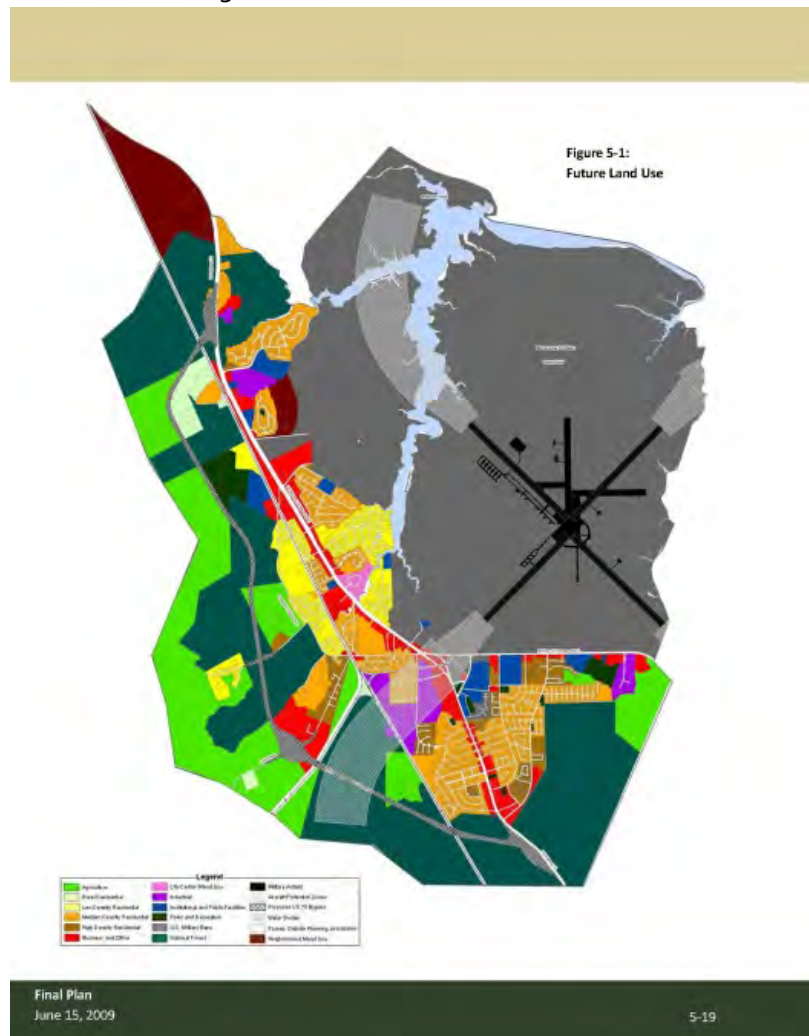
based on public input and developed to guide future development.

*Application to the Joint Land Use Study.* A large portion of the Marine Corps Air Station – Cherry Point installation is located within the incorporated limits of the City of Havelock. Marine Corps Air Station – Cherry Point is the largest employer and occupies the largest amount of land within the City. The 2002 ECJLUS included recommendation specifically related to the City of Havelock with a focus on measures aimed to improve the ability of local plans and ordinances to anticipate and respond to military impacts on the community by preventing the influx of incompatible land uses to impact areas.

The Future Land Use Element of the *City of Havelock Comprehensive Plan* contains policies that are associated with the implementation of the 2002 ECJLUS recommendations for limiting critical encroachment issues created by development pressures within Accident Potential Zones and Air Installation Compatible Use Zones designated for Marine Corps Air Station - Cherry Point. The Future Land Use Element also contains an Objective (Objective 1.4) and policy (Policy 1.4.2) for the coordination of land use decision with Craven County, Carteret County, representatives for Marine Corps Air Station – Cherry Point, the North Carolina Department of Transportation, and neighboring cities. The coordination is focused on matters related to the mission footprint of the base, and potential encroachment issues related to existing development, new development, or potential redevelopment in the area.

## *Town of Emerald Isle Land Use Plan Update (2006)*

The Town of Emerald Isle Land Use Plan provides information about the Town's demographics, housing, economic development, the environment, cultural resources, community facilities, and land use. The Land Use Plan's policies and the future land use map provide guidance for decisions on applicable ordinances and policies such as the zoning ordinance and subdivision regulations. The plan will also be used in the Board of Commissioners' decision-making on the Town's capital and annual operating budget.



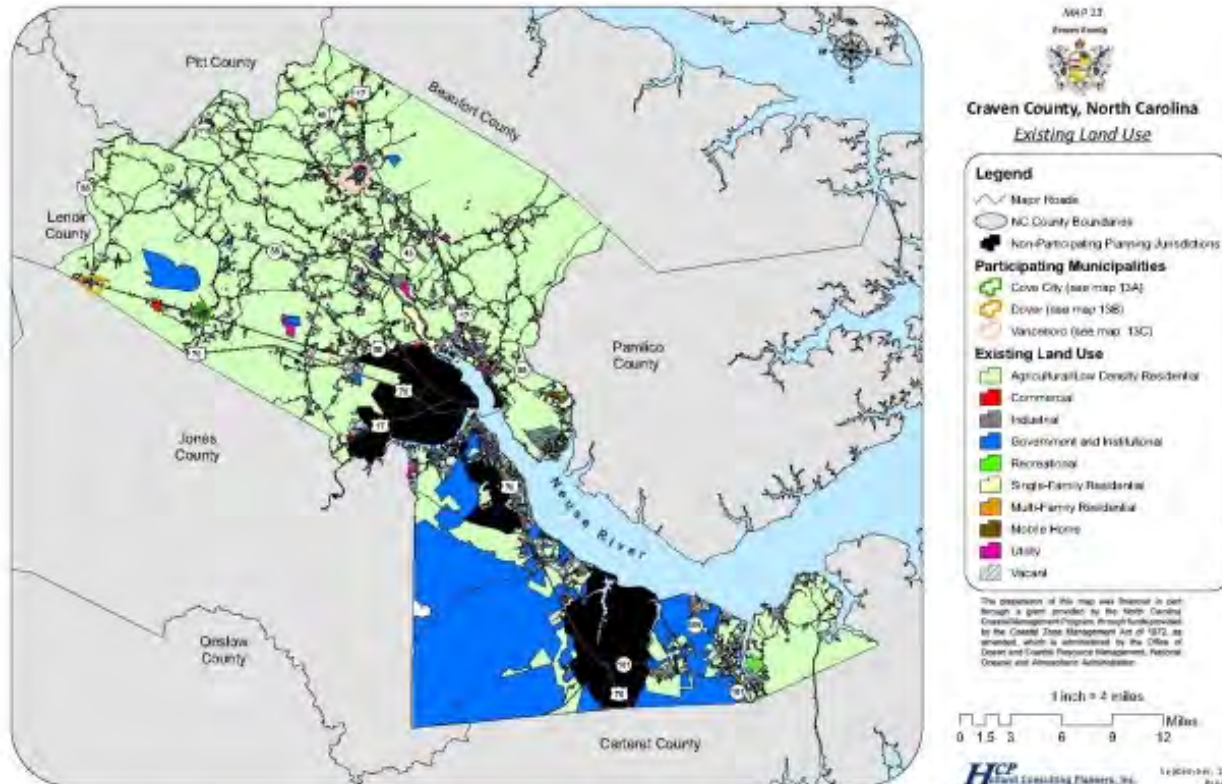


# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

*Application to the Joint Land Use Study.* The Town of Emerald Isle does not have a military installation located within its incorporated area. However, the Town is located within the Accident Potential Zone and Noise Impact Area of Bogue Field. Thereby, the 2002 ECJLUS identified these areas and recommended measures be undertaken to adopt local land use policies that direct incompatible development and

## *Pamlico County Joint Land Use Plan (2004)*

The Pamlico County Joint Land Use Plan provides information about the County's, vision, demographics, housing, environment, community facilities, and land use. Pamlico County's policies are the principles and decision guidelines, or courses of action that the County will use to reach its vision and accomplish its land use and development goals. The Pamlico Joint



redevelopment away from the areas that have accident potential or high noise levels. The Town of Emerald Isle Land Use Plan incorporated specific policies that implement recommendations from the 2002 ECJLUS. Policies 4.2, 4.2.1, 4.2.2 and 4.2.3, Natural and Man-made Hazard Areas, address the establishment of real disclosures for property, not allowing a rezoning to a higher residential density and encouraging property owners and developers to consider compatible land uses and appropriate construction techniques when developing or redeveloping property.

Land Use Plan also contains policies for the Town of Mesic, the Town of Vandemere, the Town of Bayboro, and the Town of Minnesott Beach.

*Application to the Joint Land Use Study.* The 2002 ECJLUS did not specifically mention Pamlico County and the Pamlico County Joint Land Use Plan do not contain any policies or discussions associated with the 2002 ECJLUS. The ECJLUS did discuss military aircraft flights over portions of the Pamlico River and the Town of Minnesott Beach.

## *Craven County Land Use Plan (2009)*

The Craven County Land Use Plan includes community facility demand information, a future

land use plan, specific land use/development goals/policies and tools for managing development. Policy statements contained in the Plan are organized into five general management topics. The intent of the policy statements is to provide an overall policy framework from which specific implementing tools may be established related to managing growth and protecting the county's assets.

*Application to the Joint Land Use Study.* The Marine Corps Air Station – Cherry Point installation is located within Craven County. The Craven County Joint Land Use Plan acknowledges and implements the 2002 ECJLUS through multiple actions and policies in the Plan. Economic Policy 1.0.1, establishes that the Marine Corps Air Station – Cherry Point is the primary economic engine of the local economy and that County actions shall be consistent with preserving and protecting this pivotal major industry.

The Plan contains a section of policies that specifically address Marine Corps Air Station – Cherry Point. The Military/Community Cooperation Policies (p.114 through p.117) provide support of military personnel and include a commitment by Craven County to provide for an enhanced quality of life in the area, including better housing, more and better parks, cleaner coastal waters, better schools, more efficient land use patterns, more attractive development and scenic beauty, protection of important natural resources, and continued economic development. The plan also contains a section for implementing actions with Policies 1.85 and 1.86, providing for implementation and support of military and civilian interest. Furthermore, Craven County has also adopted a Tall Structures Ordinance and an Air Installation Compatibility Use Zone (AICUZ) Ordinance. The Tall Structures Ordinance serves to mitigate conflicts stemming from the development of Tall Structures in relation to military, civilian and commercial aircraft operations. The Air Installation Compatibility Use Zone (AICUZ) Ordinance for

Marine Air Corps Station Cherry Point (MCAS) provides certain use restrictions on the development of property within the MCAS AICUZ footprint.

### 3.4 Current AICUZ/RAICUZ & Station Master Plan

The intent of the CPRJLUS process is to establish and foster a working relationship among military installations and their neighboring communities to act as a team to prevent and / or curtail civilian encroachment associated with continued military operations, potential future mission changes, and regional growth.

Recommendations or potential guidelines are provided that can be implemented by identified stakeholders to promote compatible development and relationships between the military and neighboring communities for the present and future. The Station Master Plan provides a plan for future facility and infrastructure development on the main installation. The AICUZ identifies noise and accident zones adjacent to airfield operations, but the AICUZ scope does not involve detailed analysis of the encroachment issues associated with development in and adjacent to the safety zones. The CPRJLUS is a necessary regional initiative, and in the case of MCAS Cherry Point, this CPRJLUS evaluated the area immediately surrounding the main base, but the bombing ranges and outlying/auxiliary landing fields were also evaluated with regard to existing and future mission requirements, existing and potential encroachments to the military mission and recommended measures to mitigate these encroachments.

**AICUZ.** The purpose of the Air Installations Compatible Use Zones (AICUZ) Program is to promote development patterns, both on and adjacent to the installation, which are compatible with the impacts of noise and safety generated by aircraft operations and to protect the integrity of the military mission and associated training activities. The two components of an AICUZ are the noise environment as expressed as Noise

Zones and safety zones expressed as Accident Potential Zones (APZ) Noise zones are a measure of cumulative noise exposure associated with aircraft operations described in terms of Day Night Sound Level (DNL). Three zones are established with 1- being areas with less than 65 Ldn, 2- between 65 and 70 Ldn and 3- being greater than 75 Ldn. Safety zones have been designated as Accident Potential Zones (APZ) with varying levels of accident potential. They vary as to distance from runways and include the Clear Zone and APZs 1 and 2. Controlling and managing natural and manmade encroachments within the noise and safety zones is a constant challenge to the air installations and can only be effectively accomplished with cooperation of the adjacent property owners and nearby local governments. An AICUZ had been established for MCAS Cherry Point main installation (2001) as well as Bogue Outlying Landing Field (OLF).

**RAICUZ.** Similar to the AICUZ, a Range Air Compatible Use Zone program promotes compatible development adjacent to a bombing range. A formal RAICUZ has been budgeted for MCAS Cherry Point during the 2019-2020 timeframe and no current planning level information can be incorporated into this joint land use study.

**Station Master Plan.** The purpose of an installation master plan is to evaluate current and future mission requirements and to guide future strategic growth, planning, design and construction of the installation facilities and infrastructure. The MCAS Cherry Point Master Plan was prepared in 2014 and provided recommendations on future land use, circulation/parking and air operations. A master plan, including phasing for physical improvements, was developed for military construction projects (MILCON), master plan projects for the operational area, subareas Slocum Road, North Area and the "core" area of the base. The scope of the plan included MCAS Cherry Point proper; ranges and outlying / auxiliary fields were not included.

# We Be People

## Article 1

4

T E C H N I C A L





## Chapter 4: Technical Information

*A description of the study area from a high level, noting differences in the social, demographic, and economic context. Regulatory issues are also identified and summarized.*

### 4.1 Planning Area Profile, Existing and Projected

The sense of place in the CPRJLUS area is important to the study outcomes. The ability of any population to adapt to changes to their environment is partially dependent on their ability to financially withstand those changes, for example. Variations in employment, environmental conditions, and resources are described in the following sections.

This overview of the demographic changes in the CPRJLUS area is primarily derived from the 2000 and 2010 United States Census Bureau and the 2013 American Community Survey (ACS).

#### Population

Population figures for CPRJLUS area (counties and a few notable communities) are presented in Table 4-1.

Overall, the CPRJLUS area has grown. Craven and Carteret County had comparable growth at 11 percent. As a whole, Pamlico County had a small population change between 2000 and 2010. The Town of Bayboro, located along the Bay River in Pamlico County had an astounding population increase of 41 percent. Figure 4-1 displays the population density for the study area in 2000 and 2010. The higher population density is located in the center and northern portion of the study area, including the City of New Bern and the Town of Havelock. Populated areas appear to lie along the major highway corridors of US Highways 17, 24 and 17.

A review of the 2010 Census data reveals a large portion of the population in the study area is in the work force. Working citizens in Carteret and Pamlico Counties represent 85 percent of the total population and 80 percent in Craven County.

	2000 Population	2010 Population	Population Change (2000-2010)
<b>Study Area Total</b>	<b>163,753</b>	<b>183,118</b>	<b>11%</b>
<b>Craven County</b>	91,436	103,505	11%
New Bern	23,128	29,524	21%
Havelock	20,735	22,422	8%
<b>Pamlico County</b>	12,934	13,144	2%
Bayboro	741	1,263	41%
Oriental	875	900	3%
<b>Carteret County</b>	59,383	66,469	11%
Morehead City	7,691	8,661	11%
Newport	3,349	4,150	19%
<b>North Carolina (million)</b>	8.082	9.562	18%

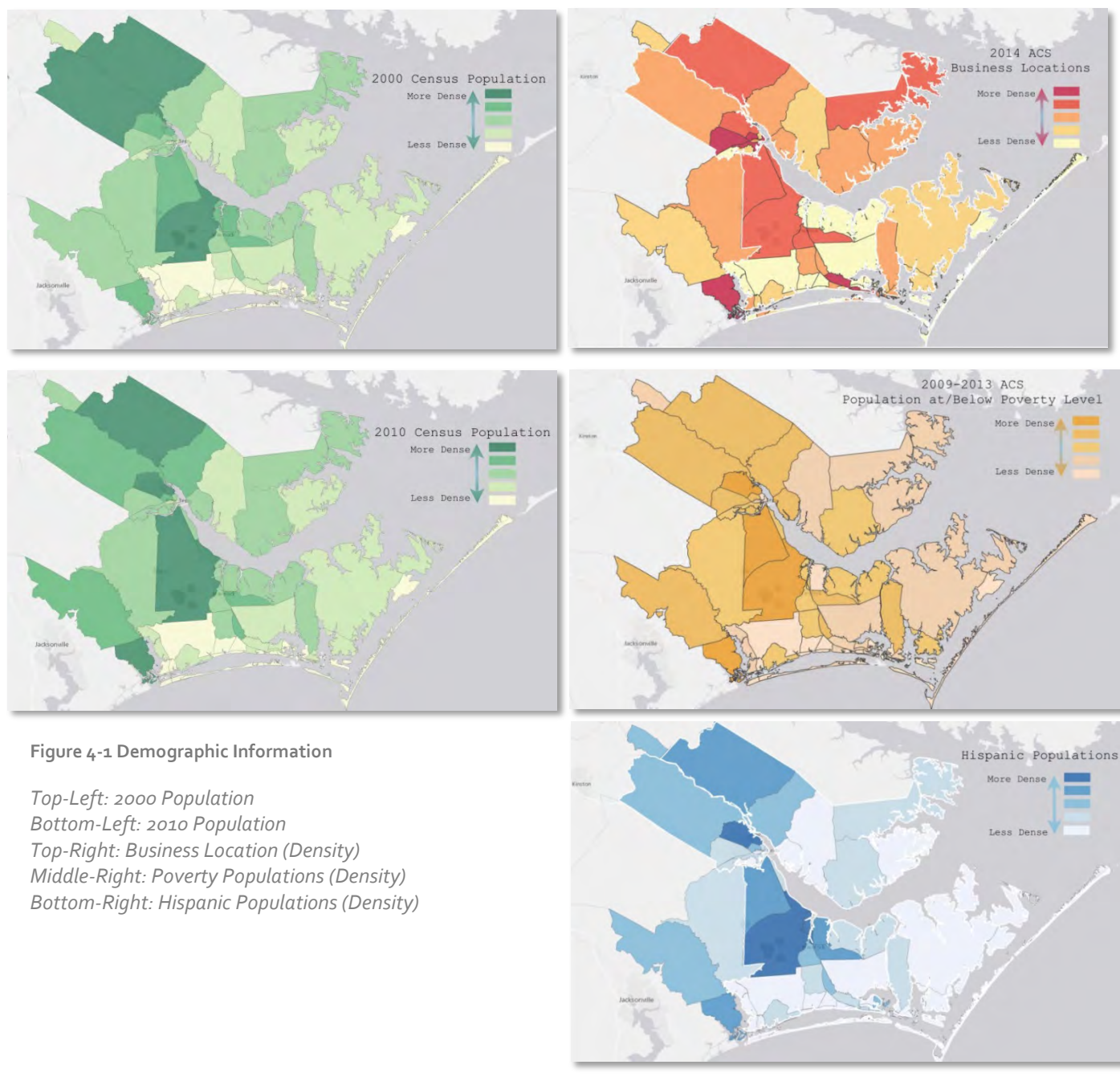
Table 4-1 Population Changes, 2000 - 2010

There are 122,975 total jobs in the CPRJLUS area. Of those employers, 20 percent are retail entities, 19 percent are health and medical offices, 10 percent are food service establishments and four percent are manufacturing. The remaining 47 percent of jobs are split among other categories. Figure 4-1 identifies where the concentrations of jobs are located within the area. Higher densities of businesses lie with the more populated areas of the study including areas near New Bern, Havelock and Morehead City.

A review of the poverty rate for the study area was completed using data from the 2013 ACS. Overall, 16 percent of the people living in the three county study area were living at or below poverty level. Figure 4-1 identifies which areas have a higher population of people living below poverty level. Craven and Carteret Counties both report 23 percent of the population at or below the poverty level, whereas Pamlico County has a slightly lower level (19 percent).



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point



**Figure 4-1 Demographic Information**

*Top-Left: 2000 Population*

*Bottom-Left: 2010 Population*

*Top-Right: Business Location (Density)*

*Middle-Right: Poverty Populations (Density)*

*Bottom-Right: Hispanic Populations (Density)*

## Race

In terms of race, the study area is predominately comprised of people identifying as white, at 77 percent. The largest minority category of race is African American at 17 percent. The next highest race is those that identify as Hispanic at five percent of the total population. The other categories of race identified in the Census data represent less than one percent of the total

population. Of these races, people of American Indian and Alaskan Native descent comprise the largest minority population. In examining those areas with higher concentrations of people identifying as Hispanic or Latino, the correlation with poverty is also apparent.

## 4.2 Existing Development Controls – “Gap Analysis”

The Project Team reviewed zoning codes and related regulations for the counties and municipalities within the Study Area, including building codes, zoning ordinances, conservation ordinances, CAMA land use plans, disclosure statements, subdivision regulations, and other pertinent municipal, county, and state regulations. The purpose of the review of local ordinances and regulations was to determine if existing regulations, or lack thereof, could control, reduce, or increase potential conflicts between land uses, airspace, and the operations of MCAS Cherry Point.

Discussions with the Technical Advisory Committee and stakeholder interviews led to further review for the presence of policies or requirements pertaining to renewable energy, agriculture, extension of water and sewer utilities, standards for exterior lighting (dark sky), and prescribed burning, all of which have implications for maintaining military-compatible land uses and preventing further encroachment upon the military mission. The results of the review of local government ordinances & regulations are provided in Table 4-2, which indicates if a specific ordinance or plan has been adopted. Additional findings are summarized below.

### Carteret County

The Carteret County CAMA Land Use Plan was updated in 2005 and addresses current and future land use issues and policies affecting development near the military installations operated by MCAS Cherry Point. AICUZ requirements for the Bogue Field are included in the county’s zoning ordinance as highlighted in the policy 4.7 of the CAMA Plan.

*Tall Structures and Building Height.* Carteret County adopted a stringent Tall Structures ordinance (Code of Ordinances, Appendix F) in January, 2014 which regulates small-scale wind energy systems (25 kw or less), large-scale

(greater than 25 kw but less than 1,000 kw), and utility-scale ‘wind farms’ with a capacity greater than 1,000 kw. Small-scale systems are considered ‘accessory uses’ and do not require a wind energy permit. The maximum height of large scale wind turbine systems is 199 feet; maximum height for utility-scale systems is 550 feet.

For most structures, maximum building height at roof peak shall not exceed 50 feet, excepting telecommunication towers, steeples, flagpoles, chimneys, water tanks, wind towers or similar structures.

*Disclosure Statements.* Within the Bogue Field AICUZ Overlay District (Appendix C, Zoning Ordinance, Section 1700), disclosure statement forms are required for all property transfers and leases for greater than 90 days. A disclosure statement is also required on final subdivision plats. For building permits, a disclosure statement is required to be signed by the property owner (or agent) prior to the issuance of a building permit for any new or added construction.

*Cluster Development Option.* Appendix B, Subdivision Regulations, Section 4-18 describes the Planned Conservation Development (PCD) option, which provides greater flexibility to plan development around identified conservation areas and permitting shifting of housing density on the site. This tool could be potentially useful in preserving open space in proximity to the AICUZ and other airport/aircraft operational areas.

*Renewable Energy.* While wind energy is addressed in the aforementioned Tall Structures ordinance, Carteret County does not have regulations or other provisions for solar or biomass energy.

*Agricultural Lands Preservation.* Carteret County does not have an Agricultural Development / Farmland Preservation Plan or a Voluntary Agricultural Districts program.

### Town of Bogue

The Town of Bogue amended its zoning ordinance in 2005 to add Section 154.200, AICUZ Overlay District for Marine Corps Auxiliary Landing Field Bogue (MCALF). The overlay district regulations permit agricultural use and prohibit property development within designated MCALF operational clear zones (CZ), and allow a limited range of land uses to development within designated Compatible Use Zone 1 (CUZ-1). However, uses located within the AICUZ Overlay District that existed as a conforming use before the adoption of Sec. 154.200 will be allowed to continue or expand or to be replaced if damaged or destroyed.

*Disclosure Statements.* The 2005 amendment also added Appendix A: AICUZ Disclosure Forms. The Town of Bogue requires disclosure of CUZ-1 and CUZ-2 as well as noise exposure levels on property transfers and leases over 90 days. A disclosure statement is also required on final subdivision plats. Prior to the issuance of a building permit for any new or added construction within the Bogue Field AICUZ Overlay District, a disclosure form is required to be signed by the property owner or his or her agent. Because of the extent of the noise contours, the disclosure requirement covers nearly the entire jurisdictional limits of the Town.

For properties identified as being within the Noise Exposure Level Zones, both the Town of Bogue and Carteret County provide information for voluntary methods to reduce noise levels for existing or proposed development.

### Town of Emerald Isle

The Town has a dedicated page on its [website](#) covering MCALF Bogue and the training exercises held there. The page describes the mission of MCALF Bogue, defines Accident Potential Zones (APZs) and Noise Zones, and provides a map showing the extent of both over the Town. It also provides a procedure for registering noise

complaints, and provides a link to the current MCALF night operations schedule.

*Disclosure Statements.* The Bogue Field AICUZ Overlay District (UDO, Section 3.2.2), contains specific requirements for disclosure. Disclosure is *voluntary* for all property transfers and leases greater than 90 days; however, a disclosure statement is required for subdivision plats, and a disclosure form is required for building permits. Additionally, condominium, townhome, and group home developments must indicate in the declaration of unit ownership, bylaws, restrictions or covenants that the property is located within the Bogue Field AICUZ. The section does not contain any noise abatement or sound attenuation requirements.

*Renewable Energy.* Solar Panels (UDO, Section 4.2.9) and Wind Energy Systems (Section 4.2.10) are restricted to residential use only.

*Exterior Lighting.* Developers must disclose plans for exterior lighting (UDO, Section 2.4.8). Direct exterior lighting is prohibited (Section 6.1.3).

*Tall Structures and Building Height.* Most structures in Emerald Isle are limited to a maximum height of 40 feet. Wireless Communications towers may not exceed 100' in height and cannot be illuminated in any way unless specified as a condition of permit by the FAA.

### Craven County

The Craven County CAMA Land Use Plan was updated in 2009 and addresses current and future land use issues and policies affecting development near MCAS Cherry Point. Craven County does not have a County-wide zoning ordinance; however, Appendix D - Marine Corps Air Station Zoning Ordinance pertains to AICUZ requirements and Appendix F - Coastal Carolina Regional Airport Zoning and Height Control Ordinance protects the regional airport near New Bern. MCAS Cherry Point regularly uses this facility for some training exercises.



Applications for building permits within the AICUZ require proposals for noise abatement. Non-conforming uses within the AICUZ may not be expanded or increased, excepting single-family residential structures, including mobile homes, which may be replaced with a similar structure of larger size.

*Disclosure Statements.* Within the AICUZ, disclosure statement forms are required for all property transfers and leases (no time frame specified for leases). A disclosure statement is required for the approval of subdivision plats as well as for the issuance of any Improvement Permits with the AICUZ. The Craven County Tax Assessor also maintains a disclosure form in the County's geographic information system (GIS) for all parcels within the MCAS Cherry Point AICUZ.

*Tall Structures.* The Tall Structures Ordinance (Appendix H) requires review of permit applications by MCAS Cherry Point and Seymour Johnson AFB dealing with airspace encroachment concerns over military training routes. The ordinance also regulates wind energy facility for noise, shadow flicker, ground clearance and electromagnetic interference standards. Communications towers are restricted to 350 feet; wind turbines are limited to 500 feet.

*Renewable Energy.* Craven County has seen a substantial increase in the number of solar farms created over the last few years, paralleling North Carolina's rise as an industry leader. Presently, solar farms require only issuance of a building permit.

*Agricultural Lands Preservation.* The County adopted an Enhanced Voluntary Agriculture Districts (EVAD) ordinance in 2009, and the Craven County Agricultural Development Plan was adopted in 2013.

## City of Havelock

The City's UDO is comprehensive and includes an AICUZ Overlay district that addresses uses, sound levels, accident zones and other issues.

The City has 'locked in' non-conforming uses within the AICUZ. Non-conforming uses may not be extended or enlarged, the number of dwelling units in a non-conforming use may not be increased, and if a non-conforming use ceases for a continuous six-month period, any subsequent use shall be a permitted use in the overlay district in which it is located.

### *Disclosure Statements*

An AICUZ Waiver of Claim (in lieu of disclosure statements) is required for all new subdivisions within the AICUZ, and the waiver statement is required on all final site plans and subdivision plats before they are recorded. No AICUZ disclosure statement requirements for real estate transfers or leases were found in the UDO.

*Tall Structures.* The AICUZ Overlay District prohibits tall towers in the APZ-1: applications for towers in the remainder of the AICUZ (APZ-2 and noise zones) must provide evidence that all required approvals from regulatory agencies have been given prior to issuance of any permits or approvals. The City's Use Regulations and Standards (UDO, Section 155.0706) contain specific requirements for towers, utility franchises, and wind energy facilities.

*Noise Abatement.* The AICUZ establishes detailed noise mitigation measures for all new residential and non-residential development within the AICUZ.

*Outdoor Lighting.* The City's Design and Performance Standards (UDO, Section 157.08) contain detailed Outdoor Lighting requirements that address ambient light encroachment, mandating that all exterior lighting be adequately shielded from spillover onto adjacent properties through evergreen buffers, timing devices, special fixtures, and other measures. A lighting

plan is required for new developments. Outdoor lighting cannot be mounted higher than 35 feet, and within Accident Potential Zones, the use of cutoff and semi-cutoff high sodium vapor lighting is required.

### *Renewable Energy*

Renewable Energy (solar and wind energy) is addressed in the UDO as a residential use only.

### **Pamlico County**

The County does not have a stand-alone Planning Department. Regional or comprehensive planning is under the auspices of the County Economic Development Office. The Inspections Department administers the Subdivision Ordinance and the CAMA Land Use Plan

*Tall Structures.* The County has a Wind Energy ordinance that was updated in September 2013 to include military installation considerations, including review and comment by MCAS Cherry Point. The County Planning Board reviews applications for Wind Energy Facilities. Applications will be recommended for denial if the proposed facility “would encroach upon or would otherwise have a significant adverse impact on the mission, training, or operations of any major military installation or branch of military in North Carolina and result in a detriment to continued military presence in the State.”

### **Easements**

A conservation easement is a voluntary agreement that allows a landowner to permanently limit the type and amount of development on their property while retaining private ownership. Easements are a commonly-used tool for local governments to secure space for utilities and streets, pipelines, and other essential public infrastructure, including parkland and trails. Conservation easements are important because they are one of very few mechanisms that can be used for controlling development and encroachment on the military mission.

Local governments can support private landowners in utilizing conservation easements by creating funding mechanisms to finance legal and real estate transactions fees for conservation easement projects led by local land trusts. Local governments and Soil and Water Conservation Districts can also hold and monitor conservation easements.

A search of the *North Carolina Natural Heritage Data Explorer* yielded no municipal or county-held easements for strictly conservation purposes.

NC Coastal Land Trust (NCCLT) is one of 25 local and regional land trusts and land conservancies in the state that acquire and maintain easements to protect natural areas. NCCLT, MCAS Cherry Point, City of Havelock, Carteret County, and other federal and state agencies and non-profit organizations have partnered to preserve nearly 6,000 acres around Piney Island Bombing Range (BT-11). Transactions to date include easements to protect local agricultural forestry use, which is compatible with the military mission.

MCAS-Cherry Point, in cooperation with the NC Department of Agricultural and Consumer Services, recently acquired an agricultural conservation easement on a 50-acre parcel in the Town of Bogue.

Marine Corps Installations East has experimented with agricultural conservation easements in the form of fixed term contracts to protect land underneath important military training flight routes. The NC Sentinel Landscapes Partnership, which includes NCDA, FB, NCFSWC and other partners, worked with 18 eastern NC counties (including Carteret, Craven, and Pamlico) during 2012-2014 and held workshops for farm and forestland owners to consider term easements to protect areas underneath Special Use Airspace R5306A and USMC Training Route VR-1046.

Conservation easements can be a useful and cost-effective tool to protect these areas, particularly along the ‘wildland-urban interface’ where growth is occurring along the boundaries of state-owned and federally-owned lands. This will become increasingly important as MCAS,

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

Weyerhaeuser, Open Grounds Farms, NCWRC, NCFS, and other relevant CPRJLUS stakeholders discuss and explore mutual objectives for land compatibility.

## Moratoriums

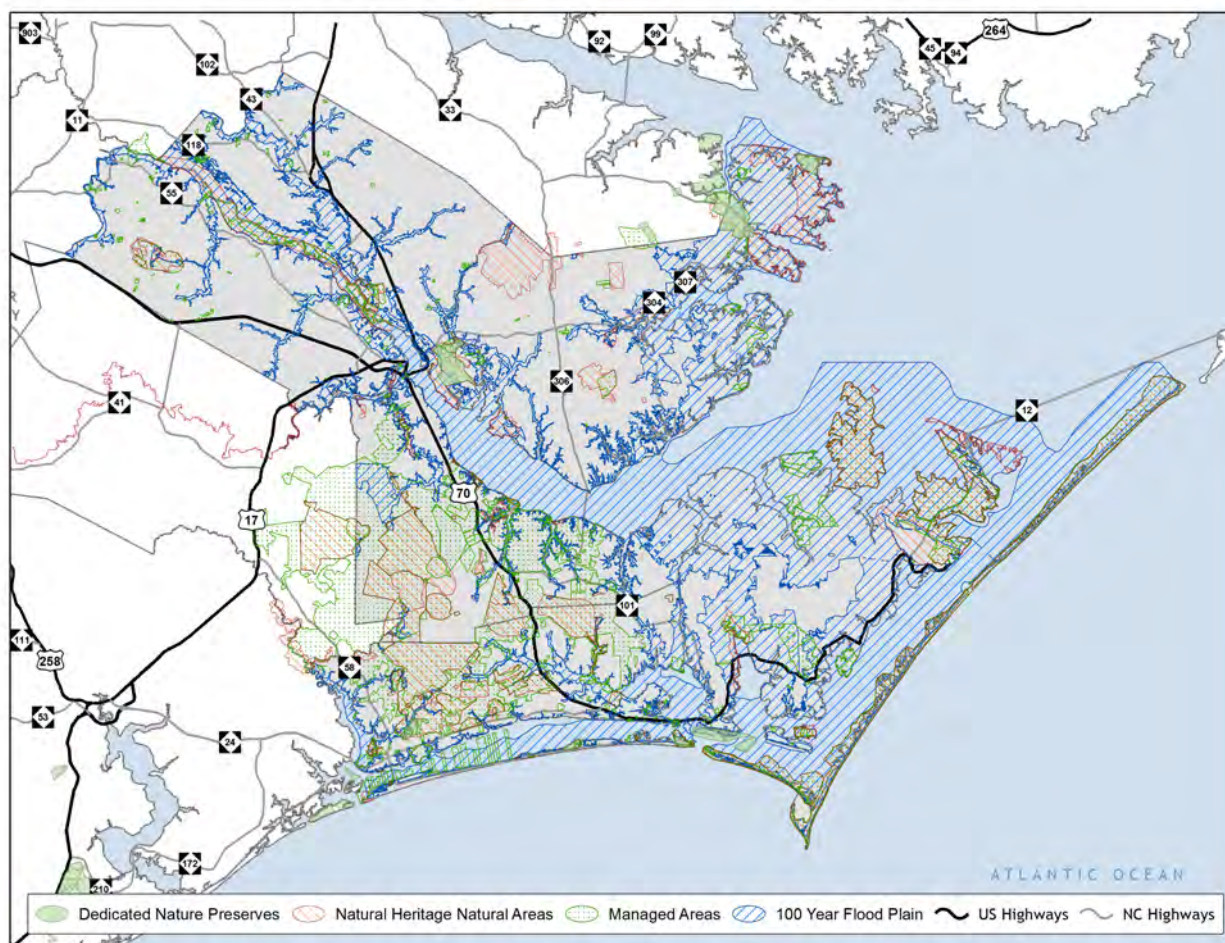
Moratoriums are important to military mission because they provide a temporary hold on development. However, there are no known moratoria currently in place in the region.

## Conservation/ Preservation

Available data on environmental resources from federal, state and local agencies was collected, mapped and analyzed in the context of mission compatibility. The surrounding community's rich environment created an extensive list of federal state, and locally-managed lands. Federally owned and managed lands include the Croatan National Forest, Cape Lookout National Seashore, and Cedar Island National Wildlife

Refuge. The multiple Game Lands in the study area are overseen by the North Carolina Wildlife Resources Commission and provide recreational opportunities through hunting, fishing, bird-watching and other programs. Not all Game Lands are owned by the State. Some game lands are privately held but made open to the public through the program.

Privately owned environmental resources in the study area include historic properties, farmland or woodlands within wetland or floodplain boundaries and private holdings within the Croatan National Forest. Weyerhaeuser and Open Grounds Farm are the largest private landowners in the region, with hundreds of thousands of acres in farmland and working forests. The value of these resources is not lessened by their ownership. However, private holdings are subject to more development pressure than a publicly held resource. As the





# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

population in the region grows, development pressures on these properties will increase. Growth is also causing increasing conflicts along the wildland/urban interface, where complaints about prescribed burning on federal, state, and privately-held forestland is an issue of concern for land managers and property owners.

A review of municipal documentation was conducted to determine if ordinances for open space preservation and/or working lands conservation were present. Craven and Pamlico County have adopted ordinances for the creation of Enhanced Voluntary Agricultural Districts as well as an Agricultural Development & Farmland Preservation Plan. The presence of conservation / preservation ordinances or programs is reported in Table 4-2.

## Ordinance Comparison Matrix

See the following Table 4-2 for a synopsis of Plans, Ordinances and Regulations for each jurisdiction within the three-county Region.

Project Milestone	Tentative Completion Date	Actual Date
<b>Task #1 - Project Setup</b>	2/20/15	2/20/15
Notice to Proceed	2/20/15	2/20/15
Submit Project Work Plan	2/20/15	2/20/15
<b>Client Kickoff Meeting/PSC/ITAC</b>	3/06/15	
Submit Data Needs Request	3/27/15	
Obtain Data from Client	3/27/15	
<b>Task #2 - Data Inventory and Mapping</b>	3/27/15	
Review Existing Plans and Identify Study Areas	4/03/15	
Demographics Trends, Population Growth & Environment	4/03/15	
Initiate Project Website (CityZen)	4/10/15	
Review of Existing and Future Military Ops	4/15/15	
Review of Zoning Code and Regulations	4/15/15	
Review of Public Infrastructure	4/23/15	
<b>Public Interviews (up to 8, one-day event)</b>	5/01/15	
<b>Project Symposium/Open House</b>	5/01/15	
<b>Future Land Use &amp; Military Conflicts</b>	5/01/15	
<b>Future Work Session</b>	5/01/15	
<b>Final Land Uses</b>	5/01/15	



*Participants at a public outreach event*



# Regional Land Use Study Marine Corps Air Station Cherry Point

## Carteret County & Municipalities – Plans & Ordinances

	Carteret County	Atlantic Beach	Beaufort	Bogue	Cape Carteret	Cedar Point	Emerald Isle	Indian Beach	Morehead City	Newport	Peletier	Pine Knoll Shores
Comprehensive Land Use Plan	●	●	●	●	●	●	●	●	●	●	●	●
Unified Development Ordinance		●	●				●		●			
Zoning	● <sup>1</sup>			●	●	●		●		●	●	●
Subdivision	● <sup>2</sup>							●		●		●
AICUZ Overlay	●			●			●					
Tall Structures	●								●	●		
Airport Height Regulations	●		●									
Disclosure Statement	●	●	●	●			●					
Cluster Development Option/PUD	● <sup>3</sup>	●	●				●		●	●		
Renewable Energy (Wind or Solar)	● <sup>4</sup>						●		●	● <sup>5</sup>		●
Parks & Open Space Plan		●										
Transportation Plan	●	●	●	●	●	●	●	●	●	●	●	●
Utility Extension Policy	●	●	●									
Voluntary Ag. District Ordinance												
Permitting Authority	●	●	●				● <sup>6</sup>		●	●		●

TABLE 4-2. Summary of Local Government Plans, Ordinances & Regulations

1. Partial zoning of western and central areas outside zoning jurisdictions of municipalities; the "Down East" region is covered by the Down East Conservation Ordinance (Appendix E, Code of Ordinances). Added regulation of building setbacks County-wide in May 2015.
2. Code of Ordinances, Appendix B. Where applicable the AICUZ Disclosure Statement applies to residential and non-residential subdivisions
3. Planned Conservation Development (PCD) Option.
4. Solar and/or biomass energy are not addressed.
5. Both wind energy facilities and solar farms require approval of a special use permit
6. Emerald Isle issues all permits locally; however, building permit applications are reviewed and inspections approved by Carteret County.



# Regional Land Use Study Marine Corps Air Station Cherry Point

Craven County & Municipalities – Plans & Ordinances									
	Craven County	Havelock	New Bern	Trent Woods	River Bend	Bridgeton	Vanceboro	Cove City	Dover
Comprehensive Land Use Plan	●	●	●	●	●	●	●	●	●
Unified Development Ordinance		●	●						
Zoning				●	●	●	●		●
Subdivision	●			●	●	●			
AICUZ Overlay	●	●							
Tall Structures	●	●		●	●				
Airport Height Regulations	●	●							
Disclosure Statement	●	●							
Cluster Development Option/PUD	●	●	●	●	●				
Renewable Energy (Wind or Solar)	● <sup>1,2</sup>								
Parks & Open Space Plan	●	●	●						
Transportation Plan	●	●	●	●	●	●			
Utility Extension Policy	●	●	●		●	●		●	●
Voluntary Ag. District Ordinance	● <sup>3</sup>								
Permitting Authority	●	●	●			●			

TABLE 4-2. Summary of Local Government Plans, Ordinances & Regulations (*continued*)

1. Wind energy requirements are addressed in the Tall Structures Ordinance, Appendix H).
2. Solar arrays (solar farms) require issuance of a building permit.
3. Includes Enhanced Voluntary Agricultural District (EVAD); adopted January 2009.

# Regional Land Use Study Marine Corps Air Station Cherry Point

Pamlico County & Municipalities – Plans & Ordinances										
	Pamlico County	Alliance	Arapahoe	Bayboro	Grantsboro	Mesic	Minnesott Beach	Oriental	Stonewall	Vandemere
Comprehensive Land Use Plan	●	●	●	●	●	●	●	● <sup>1</sup>	●	●
Unified Development Ordinance							●	● <sup>2</sup>		
Zoning				●		●				●
Subdivision	●	●	●	●	●	●			●	●
AICUZ Overlay										
Tall Structures	●							● <sup>3</sup>		
Airport Height Regulations										
Disclosure Statement										
Cluster Development Option/PUD	●			●			● <sup>4</sup>	●		●
Renewable Energy (Wind or Solar)										
Parks & Open Space Plan								●		●
Transportation Plan	●	●	●	●	●	●	●	●	●	●
Utility Extension Policy							●			
Voluntary Ag. District Ordinance	● <sup>5</sup>									
Permitting Authority	●									

TABLE 4-2. Summary of Local Government Plans, Ordinances & Regulations (*continued*)

1. Updated its own CAMA Land Use Plan in 2004; also adopted a Vision Statement in 2009 and Comprehensive Plan in 2012.
2. Growth Management Ordinance, adopted in 1999.
3. Tall Towers require Special Use Permit (GMO, Section 82).
4. Applies only to the PUD Overlay District as shown on the Official Zoning Map.
5. Includes Enhanced Voluntary Agricultural District (EVAD); adopted August 2009.

### 4.3 Military Operations & Impacts on Community

#### Emerging Military Missions

According to the U.S. Marine Corps East Coast F-35 Basing EIS, the impending transition to 128 F-35B aircraft will require the full use of the current station facilities and infrastructure. Proposed aircraft operations will decrease by 12,046 from the current baseline. An additional 1,194 military personnel and 2,323 dependents are anticipated to be located to the study area as a result of this transition. However, as the EIS and the Station Master Plan indicate, current and planned facilities and infrastructure will accommodate these operational and personnel changes.



Source: photo Associated Press

#### Environmental & Safety Impacts

**Noise (aircraft, artillery, other).** Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. The term DNL is used to represent the Day-Night Average Sound Level generated by all aviation-related operations during a 24-hour period. The noise associated with MCAS operations has long been an accepted part of life in the Cherry Point region ("Pardon our noise – it's the sound of freedom."), but aircraft operations at MCAS Cherry Point and MCALF Bogue continue to generate concerns about noise from local property owners and visitors to the area.

The Marines conduct operations using multiple types of aircraft, including the AV-8B Harrier, EA-

6B Prowler, F/A-18 Hornet, KC-130 Hercules, and other aircraft and helicopters transiting from Navy amphibious ships docked at Morehead City and from other Navy and Marine Corps



installations. The F-35 Joint Strike Fighter is a new addition to MCAS Cherry Point and its presence will expand in the future. All of these craft generate noise within the region.

The geographic extent of noise zones in the CPRJLUS region will increase slightly as the MCAS reaches full operational capacity for basing the F-35 Joint Strike Fighter. According to the Final Environmental Impact Statement (EIS) for the F-35B East Coast Basing, there will be an approximate increase of 4,000 acres of areas exposed to 65 decibels or greater (Noise Zones 2 and 3).

The 2001 AICUZ Update for MCAS Cherry Point provides land use compatibility guidance for the greater than 55 dB DNL noise zones. Below 65 dB DNL, all types of land use are considered compatible, with some exceptions or conditions that are specified in the DoD AICUZ Program guidance. Land uses changes within the F-35 noise zones are not anticipated.

A number of noise abatement procedures have been implemented at MCAS Cherry Point and MCALF Bogue Field to lessen the impact of noise on the surrounding community. For example, pilots are instructed to avoid overflights of population centers and other noise sensitive areas. In addition, specific noise producing

events such as high power run-ups, are normally restricted during night-time hours and on weekends.

The 2002 Eastern Carolina JLUS comprehensively addressed noise issues, military training and operational considerations, avoidance of aircraft noise over civilian areas, citizen concerns, sound insulation objectives, noise attenuation methods, and recommended building requirements.

The sound attenuation recommendations in the 2002 JLUS were derived from Wyle Acoustics Group's *New Construction Acoustical Design Guide for MCAS Cherry Point and MCALF Bogue*. This report is one of a series of guides prepared for military installations and communities over the last two decades, including Wayne County, NC (home of Seymour Johnson AFB) and High Point, NC. Wyle also produced a local brochure for homeowners, planning departments, and design professionals interested in sound insulation in residences.



A guide prepared for the Eastern Carolina JLUS is provided in Appendix 10 of OEA's *Practical Guide to Compatible Civilian Development Near Military Installations* as the template for military communities for addressing noise attenuation.

The City of Havelock's Code has incorporated the 2002 ECJLUS recommendations in its Code of Ordinances. Craven County has specific noise level reduction requirements as conditions for development within the AICUZ. At present, Carteret County, Town of Bogue, and Town of

Emerald Isle do not have mandatory requirements for noise level reduction within the AICUZ, but support voluntary measures and provide technical resources to builders.



Traditional mobile homes cannot be readily attenuated for noise level reduction, thus can pose nuisance and long term hearing concerns for those living in them. Modular homes could potentially be an affordable solution as eventual replacement structures. Counties and municipalities in the region should consider market-based incentives to assist property owners in replacing mobile homes.

Recommended strategies and measures to address these findings are provided in Chapter 6, Recommendations for Action and Implementation.

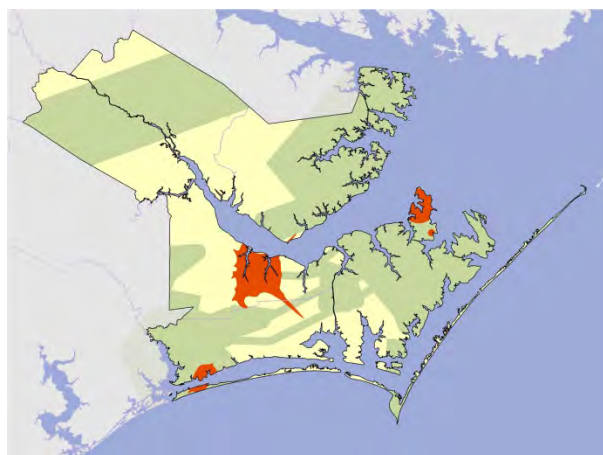
**Flight Tracks/Paths.** The JLUS region is crisscrossed by military flight paths and training routes that are utilized by the Marine Corps and other military services from North Carolina installations and beyond.

Specific flight routes are shown in Figure 4-2, a composite of the MCAS Cherry Point Mission Footprint (see Appendices). The MMF report identifies a forty nautical mile radius where wind turbines are incompatible encompassing all of Carteret, Craven, Jones, Onslow and Pamlico counties as well as portions of Lenoir, Pitt, Beaufort and Hyde counties.

Tall structures, such as telecommunications towers and commercial-scale wind turbines, light



pollution from bright lights shining upward, and medium-to-high density residential development are land uses that are incompatible with the military mission and thus have the most immediate and adverse impacts on military flight paths and training routes.



*Overlapping flight paths (in green)*

**Aircraft Accident Potential.** The aircraft accident potential zones (APZs) associated with MCAS Cherry Point and MCALF Bogue were studied to document the discrepancies between the compatibility of land uses desired by the MCAS and what is currently permitted by surrounding

communities. The four Accident Potential Zones associated with MCAS Cherry Point are illustrated in the figure below.

The Appendices also contain several supplementary tables and maps that detail the APZs and related information:

- Table 4-3 compares land uses permitted by Carteret County within the MCALF Bogue APZ (Figures 4-3 and 4-4).
- The MCALF Bogue APZ covered by the Town of Emerald Isle is shown in Figure 4-5. APZs designated as Areas A, B and C are located within Craven County's jurisdiction.
- Table 4-4 compares land uses suggested by Cherry Point with those currently permitted by Craven County.
- Area D is almost entirely under the City of Havelock's jurisdiction (Figure 4-6).
- Table 4-5 compares land uses suggested by Cherry Point with those currently permitted by the City of Havelock

The Department of the Navy AICUZ Program provides guidance to military installations and communities regarding compatible land uses within Accident Potential Zones. Locally, this is reflected in the MCAS-Cherry Point AICUZ Update.

**Natural Habitat & Conservation.** The federal government, through multiple federal agencies, is the largest single land owner in the study area with over 200,000 acres. These land holdings create a significant and valuable buffer for MCAS and its air training operations. The Croatan National Forest (160,000 acres) Cedar Island National Wildlife Refuge (15,500 acres) and Cape Lookout National Seashore (28,000 acres) are

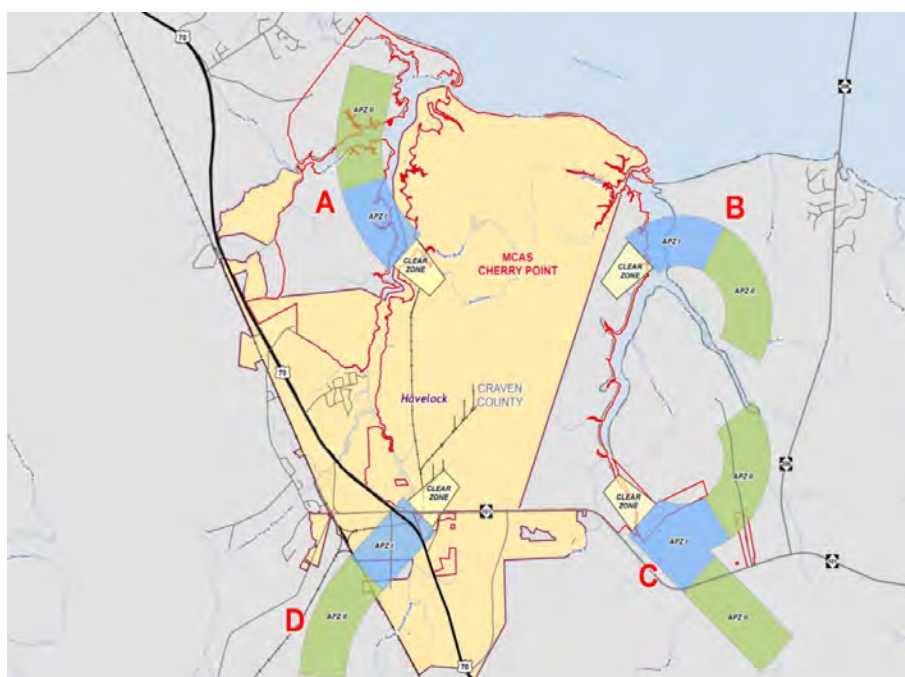


Figure 4-2. Accident Potential Zones, MCAS-Cherry Point

all focused on protecting and maintaining natural, undeveloped landscapes and habitats.



### *Encroachment Management Program.*

Encroachment Management Program. MCAS Cherry Point utilizes a coordinated approach toward managing and controlling land encroachments which threaten the military mission. Guiding principles for these actions are provided by Marine Corps Orders on encroachment control, Station specific planning documents, and DOD level encroachment management support programs. Two primary examples include the MCAS Cherry Point Encroachment Control Plan (ECP) and the encroachment partnering Department of Defense (DOD) Readiness and Environmental Protection Integration (REPI) Program.

Encroachment Control Plan (ECP)-The MCAS Cherry Point ECP is a plan intended to preserve the station's ability to conduct training and operations currently and in the future. As such, the ECP identifies encroachment management objectives and related management actions. Objectives identified the current ECP include:

1. Continue purposeful and proactive management with local communities to prevent, repair, and mitigate encroachment concerns associated with land Use and noise.
2. Remain vigilant in monitoring potential developments affecting airspace to prevent, repair, and mitigate encroachment issues relating to airspace use.

3. Continue to consider options to secure the perimeter of MCAS Cherry Point and its ranges.
4. Engage with other stakeholders (including higher headquarters) as appropriate to monitor and respond to encroachment issues related to natural factors and climate effects.
5. Engage with other water availability stakeholders to remain apprised of and anticipate water availability challenges in the region.

Each of these objectives has a number of associated management actions (MA) targeted to the reduction of encroachments to the military mission.

### *Readiness and Environmental Protection Integration (REPI) Program.*

The DOD REPI Program recognizes that MCAS-Cherry Point is a critical asset for its combined training and operational capabilities and is the largest air station in the Marine Corps. MCAS-Cherry Point supports carrier landing practice, unmanned aerial systems, and ground maneuver training. Its range complex includes Piney Island Bombing Range, whose land and water ranges provide electronic and special warfare training. There are no other water-based ranges in the United States so close to nearby stationed aircraft along with ground-based units within flight range to off-shore operating areas. The Program identifies local partnering efforts aim to stem encroaching development and conserve 25,000 acres around the Cherry Point Range Complex. Acquiring perpetual easements remains the mainstay of REPI, however other tools are evolving. Key partners in the REPI include:

- Carteret County
- City of Havelock
- The Conservation Fund
- National Oceanic and Atmospheric Administration
- The Nature Conservancy
- North Carolina Agricultural Development and Farmland Preservation Trust

- North Carolina Attorney General Ecosystem Enhancement Grant
- North Carolina Clean Water Management Trust Fund
- North Carolina Coastal Land Trust
- State of North Carolina
- U.S. Fish and Wildlife Service

## 4.4 Civilian Development Impacts on Mission Accomplishment

### Incompatible Development under Existing Controls

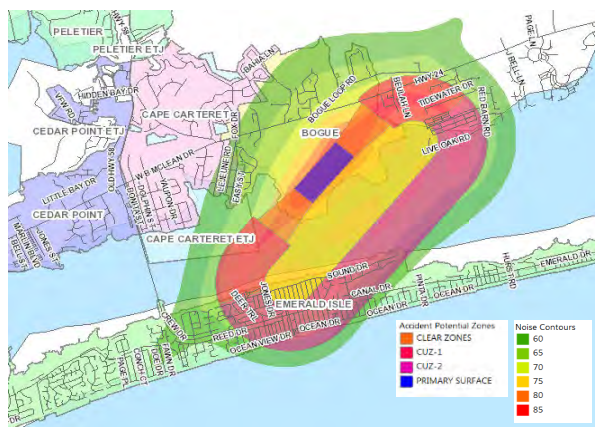
Substantial encroachment problems remain in the MCAS Cherry Point region. MCAS-Cherry Point's major operational problems related to compatible land use involve Bogue Field. MCALF Bogue is partially surrounded by residential housing, and this encroachment has largely restricted training after 11:00 PM. While the public has become accustomed to this, Bogue Field is a 24-hour, seven-days-a-week training area. Its mission is integral to the capability of the Marine Expeditionary Forces stationed in North Carolina. It is also the only training site on the east coast for aircraft to practice LHD/LHA (amphibious assault ship) landings. There is also increased activity involving the Marine Corps' special operations forces, the Raiders.

Incompatible land uses, especially residential, continue to be developed within the Accident Potential Zone (APZ) of MCALF Bogue and in the vicinity of MCOLF Atlantic. The challenge for the MCAS Cherry Point region, specifically within the APZs, is to retain residential density at existing levels through the use of existing voluntary and regulatory tools. Long term, the counties and municipalities of the study area will need to develop new land use and management techniques and establish incentive and acquisition programs to lower residential densities over time.

The MCAS Cherry Point AICUZ Update recommends no single-family residential within

APZ-1, and no manufactured homes within APZ-2.

The area within the MCALF Bogue APZs is nearly completely developed. In Carteret County, the MCALF Bogue APZ-1 is mostly zoned for residential uses with the exception of some commercially-zoned parcels along NC-24. There are an estimated 459 homes located within APZ-1 and almost 64% (292) are mobile homes and recreational vehicles. The existing density within



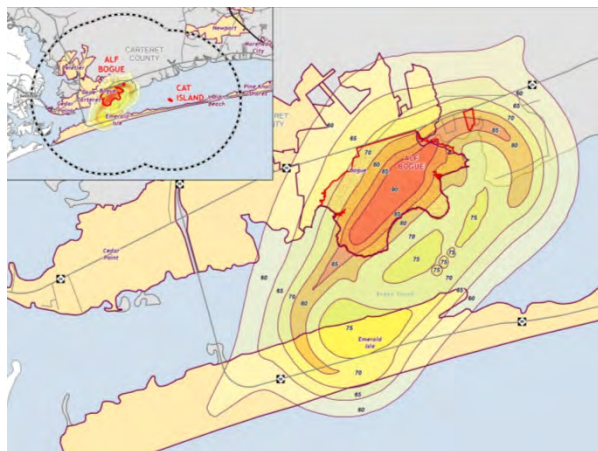
APZ-1 is 2.9 dwelling units/acre.

Carteret's APZ-2 area is entirely residential. Of the estimated 344 homes located within APZ-2, nearly 95% (approximately 323) are mobile homes.

The Town of Emerald Isle is affected primarily by the APZ-2 of MCALF Bogue and associated Noise Contours (refer to Figure 4-7 of the Appendices). There are an estimated 1,194 residential units within the APZ-2, with mobile homes comprising approximately 47% (560 units) of the total.



Approximately 186 acres are zoned for mobile homes in the APZ-2 within noise zones of 70 DNL and above.



The Department of the Navy AICUZ Program finds mobile homes to be incompatible within noise contours of 65 DNL and above, and recommends that they not be permitted within these areas.

The existing residential density within APZ-2 is 2.07 dwelling units/acre. The MCAS Cherry Point AICUZ Update recommends a maximum density of 2 dwelling units per acre within the APZ-2.

The Surfside Realty tract (29.7 acres) is the largest undeveloped parcel within the APZ-2. Potential buildout under current scenario (Residential Multi-family zoning) is approximately 211 units.

The APZs associated with MCAS Cherry Point, particular those under the jurisdiction of Craven County, are surrounded by mostly forested parcels greater than 10 acres.

The APZ under the City of Havelock's jurisdiction includes an APZ-1 in a populated area and a commercial strip along US-70. The potential exists for new residential development on an 81-acre parcel presently in agricultural use that is split-zoned R-20A and LI (Light Industrial). Approximately 80 percent of the parcel lies within the APZ-1.

Much of the remaining APZ-1 area is already developed, but most of the available land is zoned for Light Industrial uses, which is a compatible use within the APZ-1. There are 217 existing residential lots within the APZ-1.

### Other Issues

**Smoke from prescribed burning.** Controlled burns are necessary to maintaining the longleaf pine and pocosin ecosystems of the region, improve habitat quality, and reduce the risk of wildfires. Nearly the entire JLUS Study Area is designated as a 'Smoke Awareness Area' by the NC Wildlife Resources Commission. Nonetheless, the localized impacts on air quality and negative perceptions about this practice are a source of controversy and problematic for managers of the Croatan National Forest and other public and privately-held forest lands. The MCAS, US Forest Service, US Fish and Wildlife Service, NC Forest Service, and the NC Wildlife Resources Commission jointly plan and coordinate prescribed burning activities on publicly-held lands. On privately-held land, prescribed burning is regulated by the NC Forest Service.

These agencies and others participate in the NC Prescribed Fire Council, which aims to foster cooperation among all parties in North Carolina with an interest or stake in prescribed fire. The Council also promotes public education regarding the benefits of controlled burning, best management practices and air quality impacts from prescribed fires.

**Light pollution.** Light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations. Light pollution is a major encroachment issue that threatens the military's training capability. Night testing and training are essential to the military training missions of MCAS Cherry Point, MCALF Bogue, and MCOLF Atlantic. Pilots conduct realistic night flight scenarios including LHD landing practice, night



## Regional Land Use Study Marine Corps Air Station Cherry Point

precision runway approaches and landings, and low-visibility operational testing.

The following figures illustrate the extent of light pollution in the MCAS Cherry Point region, and

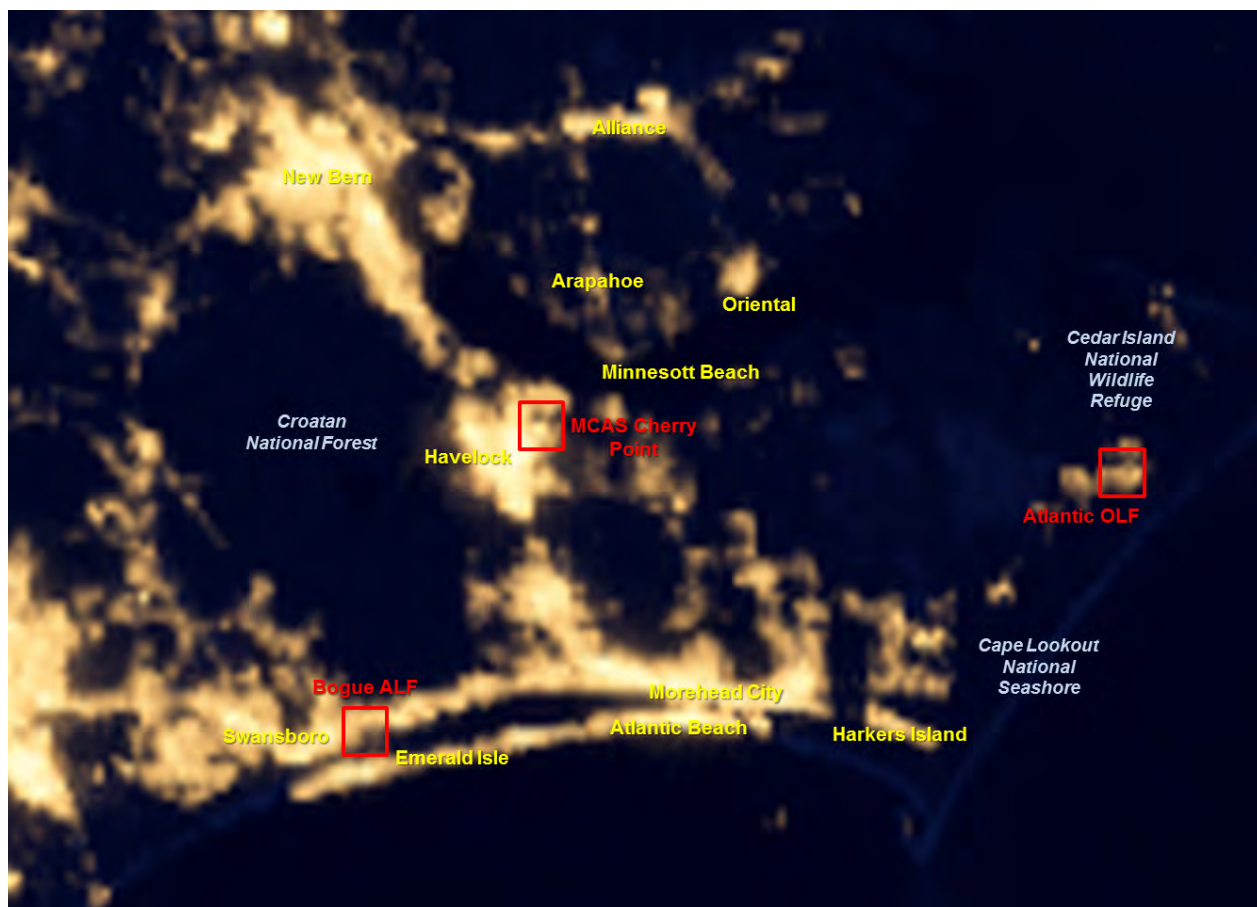


Figure4-3. Night-Sky View of the MCAS-Cherry Point Region

Protecting the night sky from ambient light pollution has been a priority encroachment concern for all North Carolina military installations, beginning with the 2008 JLUS Update for the Fort Bragg Region, which included a Light Pollution Study. The North Carolina Sentinel Landscapes Partnership, a collaborative effort between the US Marine Corps and the NC Department of Agriculture, states its three tenets of compatibility as “keeping land in forestry and agriculture, limiting tall structures, and preventing upward shining lights.” Presently, the Northeastern North Carolina Regional Joint Land Use Study will factor the protection of dark skies in its efforts to preserve key military flight paths from Seymour Johnson AFB to the Dare County Bombing Range, ranging over several counties.

the contrast between developed urban nodes and corridors and the vast forests, game lands, and agricultural areas that are ideal for training.

Future growth and development, particularly along NC Highway 24, NC Highway 58, and US-70 in the vicinity of MCAS Cherry Point, MCALF Bogue, and MCOLF Atlantic, could pose adverse impacts from light pollution from over-lighting and unshielded lighting. If continued without mitigation measures in place, this could curtail future night time training and readiness activities at these installations.

Fortunately, light pollution is one factor that can be readily controlled through a combination of regulatory measures and awareness of new lighting technology that greatly reduces light

pollution. Moreover, dark sky-friendly lighting is widely available and economical.

Exhibit 4.1-B (Chapter 7) provides a model lighting ordinance based on a template provided by the International Dark Sky Association, is a prescriptive-based code that regulates the installation of new lighting systems or the replacement of lighting fixtures for non-residential uses and common residential area. The model ordinance denotes four 'Lighting Zones' where different standards apply based on the development intensity of the area. For the Cherry Point region, much of the area would fall under LZ-0 or LZ-1. Lighting Zones 2 and 3 would apply to suburban areas and nodes of higher-intensity commercial uses, respectively.

Recommended strategies and measures to address light pollution are provided in Chapter 6, Recommendations for Action and Implementation.

### Mitigation

The MCAS-Cherry Point Region has been generally successful in its collaboration with the Marine Corps in mitigating the impacts of military operations on surrounding communities. In response, the region has adopted most of the recommendations from the 2002 Eastern Carolina Joint Land Use Study. Partnership and collaboration with the installation continue to



(source:

<http://ptrc.maps.arcgis.com/apps/webappviewer/index.html?id=aco48ea482944fd1b733a902497897f8>)

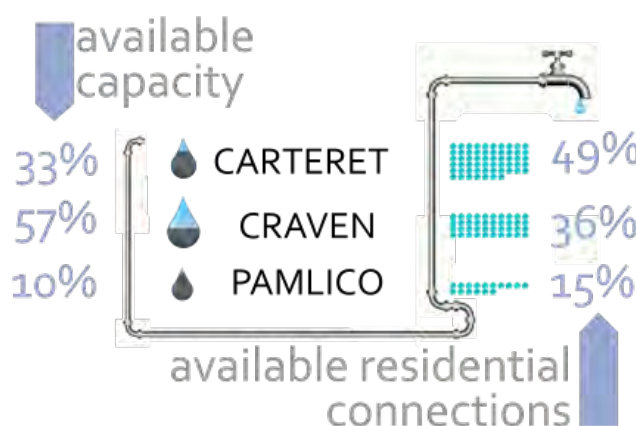
address issues that pose significant challenges to the sustainability of MCAS Cherry Point. Mitigation measures include:

- Establishment of AICUZ Overlay Districts by Carteret County, Craven County, City of Havelock, Town of Bogue, and Town of Emerald Isle.
- Carteret and Craven County, City of Havelock, Town of Bogue; and Town of Emerald Isle have adopted requirements for disclosure of safety and noise hazards prior to land transactions and the development or sale of property.
- Carteret and Craven display APZs and Noise Contours on their GIS websites.
- Town of Emerald Isle uses their website to notify potential purchasers of the presence of Bogue Field and to keep residents informed about current nighttime operations.
- City of Havelock has adopted noise attenuation requirements for future development in high noise areas, and Craven County requires new developments to propose attenuation measures. Carteret County, Bogue, and Emerald Isle provide information to assist developers in voluntarily providing noise abatement measures.
- City of Havelock requires the use of cutoff and semi-cutoff high sodium vapor lighting in the Accident Potential Zones.
- Carteret, Craven, and Pamlico counties have adopted tall structure ordinances.
- Carteret, Craven, and City of Havelock have participated in the acquisition of properties deemed critical to the MCAS mission.
- Collaboration between the MCAS Community Plans and Liaison Office and surrounding communities is exemplary.
- MCAS Cherry Point largely restricts flight training after 11:00 PM and on weekends.
- MCAS Cherry Point is re-examining its policies and procedures regarding low-altitude flyovers

### Utilities

Existing and planned water and sewer infrastructure was identified and evaluated in

the general vicinity of the Oak Grove, Bogue, Cherry Point, Atlantic, BT-9 and BT-11 sites owned and operated by the United States Marine Corps Air Station/Cherry Point. An overview analysis was prepared for 15 water systems and 10 sewer systems in affected areas of Carteret, Craven and Pamlico Counties. This information was gleaned from NC local water supply plans, NPDES wastewater permits, and phone and email conversations with utility owners.



**Water Treatment Capacity.** Sixteen water systems are owned and operated in the study area – seven in Carteret County, seven in Craven County and two in Pamlico County. For the study area, the total permitted water treatment plant capacity is approximately 38.932 MGD and total remaining available water treatment plant capacity is 12.129 MGD. Based on total permitted water treatment capacity in the study area of 38.932 MGD, about 12.129 MGD, or 31%, is available for future development. Therefore, the total number of available equivalent residential dwelling units in the study area is estimated to be 107,583 units.

**Wastewater Treatment Capacity.** Ten wastewater treatment systems are owned and operated in the region – three in Carteret County, six in Craven County, and one in Pamlico County. For the study area, the total permitted wastewater treatment plant capacity is approximately 19.63 MGD and total remaining

available wastewater treatment plant capacity for future development is 7.07 MGD. The total number of available equivalent residential connections in the study area is estimated to be 49,100 at the current permitted wastewater treatment capacity. Based on total permitted wastewater treatment capacity of 19.63 MGD in the study area, about 36% is available for future development.

In conclusion, whereas a few of the water and wastewater systems in the Region have minor capacity deficiencies, all of the system owners are undertaking planning, design, and construction activities to address identified deficiencies. The complete water / wastewater overview analysis can be viewed in the Appendices (Exhibit 4.2).

## Transportation (Highways & Airports)

The study area is influenced by a several significant highways and important airport facilities. Together, these public facilities provide travel needs for goods and services for its citizens, visitors and the military mission alike.



**Public Airports.** Coastal Carolina Regional Airport in New Bern (airport code EWN) provides commercial and general aviation services. Commercial flights are served by Delta Airlines and American Airlines with frequent, well-timed flights to hub airports that connect to even more destinations worldwide.

There are a few other public/private general aviation airports in study area including Pamlico Airport (7NCO) and Michael J. Smith Field Airport (KMRH) in Carteret County.



*NCDOT State Transportation Improvement Program (STIP).* Six NCDOT STIP projects listed on the 2015-2025 STIP are both relevant to this study and located within the JLUS Study Area. A short listing of these STIP projects is provided below.

- Widen SR 1176 (Bridges Street Extension) from SR 1738 (Bridges Street) to SR 1147 (McCabe Road) (R-5727).
- Widen and improve US 70 (Arendell Street) from Morehead City to the Beaufort Causeway, including improvements to be done to the Newport River Bridge (U-5740).
- Widen Gallant's Channel Bridge to four lanes at Radio Island to US 70 north of Beaufort near SR 1429 (Olga Road). This is a multi-lane project, with part of it on a new location (R-3307).
- Construct a multi-lane roadway on a new location for US 70 (Havelock Bypass) north of Pine Grove to north of the Carteret County Line (R-1015).
- Upgrade US 70 from roadway to freeway/expressway from the Neuse River Bridge to Grantham Road (U-5713).
- Construct multi-use trail on local roadway US 17 Bus (Martin Luther King Jr. Boulevard) from NC 55 to Trent Creek Road (EB-5727).

*Carteret County Comprehensive Transportation Plan (CTP).* The North Carolina Department of Transportation (NCDOT) and Carteret County initiated a study in February 2010 with the intent of cooperatively developing a long-range multi-modal transportation plan. Entitled the Carteret County Comprehensive Transportation Plan (CTP), this document covers multi-modal transportation needs through the year 2040. The report documents recommendations for improvements to be made throughout the county, basing its findings on an analysis of the transportation system, environmental screenings and public input. Modes of transportation evaluated include: highway, public transportation and rail, bicycle, and pedestrian.



# We Be People

## Article I

51

C O M P A T I B I L I T Y & L A N D S U I T A B I L I T Y



## Chapter 5: Compatibility and Land Suitability Analysis

*Natural and man-made elements and activities that have the potential to impact encroachment issues for the military mission.*

### 5.1 Compatibility Analysis

#### Compatibility Factors

Compatibility, with respect to military readiness, can be defined as the balance between the goals and needs of the community and the mission requirements of the military. Fourteen compatibility factors were identified and analyzed in order to assess MCAS Cherry Point's impact on the local community as well as the community's impact on MCAS operations.

Accident Potential Zones	Infrastructure Capacity
Air Space (Tall Structures)	Land Use
Natural Resources	Light Pollution
Coordination and Communication	Maritime Access
Cultural Resources	Noise
Electromagnetic Interference	Renewable Energy Development
Farmland and Forests	Smoke (from Prescribed Burning)

Table 5-1. Compatibility Factors

Initially based on the findings and recommendations of the 2002 JLUS, each factor was also informed by available data and pertinent documents, reports, and studies; input from TAC and PSC members and key stakeholders, including local government staff, and input received during public meetings. These factors represent the primary land use compatibility challenges used to assess impacts from the

perspective of both the surrounding community and the MCAS.

Encroachment "runs both ways" and it takes many forms. For the military, encroachment pertains to any and all activities, both inside and outside of installation boundaries, maritime and terrestrial, which threaten to adversely impact mission training and capability. For the civilian community, encroachment can affect quality of life from noise and smoke. Land use controls that can help sustain mission capability can also be seen as encroaching on the rights of property owners, affecting property values and leading to a potential loss of income from development.

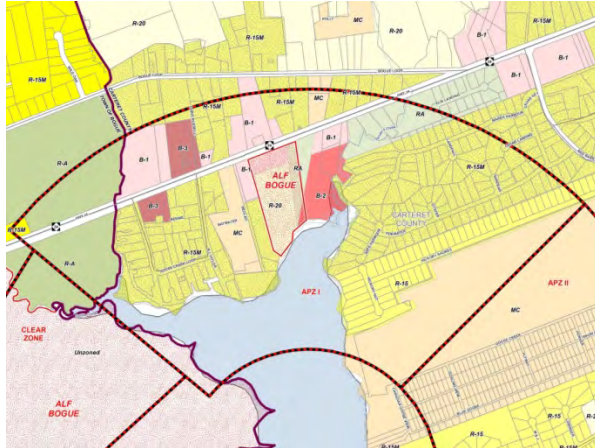


#### Compatibility Mapping

The following Appendix Figures map zoning, APZs and other elements related to the discussion of incompatible land uses:

- Figure 4-3: MCALF Bogue APZs and Carteret County/Town of Bogue Zoning
- Figure 4-4: (zoom-in of Figure 4-4)
- Figure 4-5: MCALF Bogue APZs and Town of Emerald Isle Zoning
- Figure 4-6: MCAS Cherry Point APZ (Area D) and City of Havelock Zoning
- Figure 4-7: MCALF Bogue Noise Contours
- Figure 4-8: MCAS Cherry Point APZs

## Marine Corps Air Station Cherry Point



The key findings from the Compatibility Analysis are summarized below. Nine factors that are the basis for the major regulatory and policy recommendations of this study are listed in order of priority as determined by the Policy Steering Committee and the Technical Advisory Committee.

These factors are central to mitigating encroachment, improving compatibility with the military mission, and providing for continued economic development and prosperity of the region.

*Air Space (Tall Structures).* Wind turbines present a host of compatibility issues for military aviators. Their height poses flight path hazards and may create line of sight obstructions as well as glare and glint. Oscillation, caused by the rotation of turbine blades and electromagnetic interference, can cause disruption to electronic instrumentation, radio communications, and radar systems.

The MCAS Cherry Point Mission Footprint report identifies a 40-nautical mile radius where wind turbines are incompatible. The incompatible area encompasses the entire JLUS study area. Existing regulations of the counties and municipalities of the JLUS Study Area have curtailed development of commercial-scale wind turbines; nonetheless, the region's wind resources will continue to attract interest from developers. Regional economic development officials have expressed interest in exploring

successful wind turbine mitigation strategies from other states.

***Infrastructure Capacity.*** Maintaining sufficient capacity of water/sewer infrastructure is vital for sustaining the military mission and accommodating new growth and economic development. A comprehensive regional water and wastewater plan is needed to address current capacity and to develop a regional strategy to accommodate future residential, commercial and industrial growth. The plan should correlate with the growth and development model included in the JLUS study, and developed in coordination with local and regional economic development strategies.



*Communication and Coordination.* Presently, communication and coordination between MCAS Cherry Point and its surrounding communities are excellent, especially among the JLUS partners. There is consistent dialogue between local government planning staff and the MCAS Community Plans and Liaison Office on land compatibility issues. The installation maintains strong relationships with its state and federal partners, particularly with regard to management of federal lands of the Croatan National Forest and Cedar Island NWR.

However, the current strength of communication and collaboration is founded largely upon longstanding personal relationships. None of the counties or municipalities in the JLUS Region has existing written policies or procedures in place to ensure compliance with State statutes requiring notification of land use changes within a five-mile



## Regional Joint Land Use Study Marine Corps Air Station Cherry Point

radius of military installations. Measures to institutionalize the current high levels of communication and collaboration include the creation of Military Influence Overlay Districts, adoption of a memorandum of agreement to establish a process of timely and consistent notification and cooperation between local governments of the region, the parties on projects, policies, and activities, and ensuring regional consistency among local ordinances that can impact military readiness, including height restrictions, exterior lighting standards, and noise regulations.



**Light Pollution.** Light pollution is a major encroachment issue that threatens the military's training capability. 'Dark Skies' are essential to the military testing and night training missions of MCAS Cherry Point, MCALF Bogue, and MCOLF Atlantic, and light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations.

The mitigation of light pollution is of significance statewide. Along with mitigating tall structures and incompatible residential development in key flight paths and approach zones, it is one of the 'three pillars' of maintaining military readiness for all of North Carolina's defense installations and preserving the state's second largest economic sector.

Fortunately, light pollution is one factor that can be readily controlled through a combination of

regulatory measures and awareness of new lighting technology. Moreover, dark sky-friendly lighting is widely available and economical.

**Land Use.** The analysis of land use focused on land uses within the Accident Potential Zones (APZ) associated with MCAS Cherry Point and MCALF Bogue. It analyzed the discrepancies between the compatibility of land uses desired by the MCAS and what is currently permitted by surrounding communities. Incompatible land uses, especially residential, continue to be developed in the Bogue Field and Cherry Point APZs and in proximity to MCOLF Atlantic. Unless curtailed, this could be a negative factor in a future BRAC evaluation. Through local regulatory action, primarily zoning amendments, residential densities within APZs for MCALF Bogue and MCAS Cherry Point can be held at existing levels. Other voluntary and regulatory land use management tools and techniques, along with incentive and acquisition programs, can be employed within APZs to lower residential densities over time.



Another land use priority is to ensure that new development preserves the unique character and cultural heritage of the Down East region. New development must also be compatible with military operations at MCOLF Atlantic. A Down East Area Plan could promote the retention and enhancement of the thirteen fishing communities, and help support commercial fishing and the marine trades, boating, hunting and other place-based enterprises.



**Noise.** Aircraft operations at MCAS Cherry Point, MCALF Bogue, and MCOLF Atlantic continue to generate concerns about noise from local property owners. Noise abatement procedures have been implemented at MCAS Cherry Point and MCALF Bogue Field to lessen the impact of noise on the surrounding community.

**Maritime Access.** The competition for the use of waters in the Pamlico Sound area in proximity to the Piney Island Bombing Range can place limitations on range operations and training. Restriction to access to these waters is a contentious issue for local boaters and fisherman. While the military views restrictions to water access around bombing targets as vital to ensuring that training goals are achieved, commercial fisherman may view this as an economic impediment. Broader dialogue among all parties could open avenues of communication and increase awareness of the unique and critical mission of these facilities.



**Renewable Energy Development - Solar.** North Carolina is a leader in the solar industry with the second highest volume (per megawatt) of installation in the nation in 2014. Solar energy, as an industry, has created significant growth in construction and manufacturing sectors and represents more than \$2 billion investment in North Carolina. To date, only Craven County has seen the installation of utility-scale projects, or 'solar farms'. Solar resource maps (Figure 5-1; refer to Appendix) illustrate similar resources in Carteret, Craven and Pamlico counties. Increased hurricane risk and the presence of fewer substations may explain why development has

been slower in Pamlico and Carteret, but both counties should expect interest from the industry in the future.

**Renewable Energy Development – Wind.** North Carolina's developable wind resource exists in the coastal plains and along the mountain ridges of the west (See Figure 5-2, Appendices). Carteret County has the best coastal resource in the State, with developable resources also present in Craven and Pamlico counties. The quality of this resource coupled with the rural landscape and access to transmission is attractive to the development industry and has led to the proposal of wind energy projects in the region. To date, none of the proposed utility-scale projects have been constructed. Interest in developing this resource is likely to continue as wind turbine technology advances and the demand for renewable energy increases.

**Renewable Energy Development – Biomass.** Biomass is the conversion of organic matter such as animal waste, crop waste, or wood into electricity. Animal production is not large enough in the study area to support a biomass facility. However, the volume of managed timber in the region may provide enough resource to be appealing to future development.

There is one active biomass project in the study area. Craven County Wood Energy operates a 50-megawatt biomass-fueled power generating facility near New Bern. According to a 2012 study for the North Carolina Sentinel Landscapes Partnership by NC State University Extension Forestry, there is sufficient, sustainable biomass volume within a 50-mile radius of the facility to provide additional 25 megawatts of operating capacity.

Encouraging the continuation of managed timber is a compatible land use to mission and training operations.

The regulation of renewable energy projects differs among resources. Solar, wind and biomass projects can be handled at the local level through ordinances and zoning controls. Wind projects require a state permit, but there is no

## Regional Joint Land Use Study Marine Corps Air Station Cherry Point

statewide permit for solar or biomass outside of compliance within NCDEQ Stormwater Plans, Soil & Erosion Control Permits and CAMA permits, where applicable. At the federal level, the Department of Defense Siting Clearinghouse reviews all proposed energy projects to determine impacts on military test, training and operations missions.

**Natural and Cultural Resources.** The identification of environmental resources as natural buffers and conservation opportunities is a valuable method for reducing future conflict between MCAS and the surrounding communities.

Historic resources in the study area, including National Register Historic Districts in New Bern, Beaufort and Oriental, are some of the most significant and well known in the State and drivers of the local tourism economy. The majority of these properties are privately owned, but changes to them may be regulated by the North Carolina State Historic Preservation Office or a Local Historic District Commission. Increased air training operations in proximity to these resources, particularly historic districts, have the potential to negatively impact the resource and should be avoided by MCAS where possible.

The protection of rural landscapes, in the form of rural historic districts, is a relatively new approach in historic preservation that has increased in North Carolina over the last decade. The purpose of these districts is to identify and protect rural landscapes and has grown in popularity as the State's rural nature has rapidly changed into urban and suburban development. There are many areas in the study area that may be eligible for a rural historic district designation, particularly in agriculture and fishing. The establishment of these districts may be a future conservation opportunity that highlights an area's history. However, consultation with the North Carolina Historic Preservation Office should occur to determine the compatibility of these districts on MCAS training operations.

The continued protection of environmental resources in the region is important to maintaining the mission and operational ability of MCAS as well as the regional economy. The natural buffers created by these resources should be protected and maintained through continued coordination with federal, state and local agencies. Future conservation opportunities should be focused on maintaining federal ownership and following trends in private development on or near environmental resources that may be in conflict with the mission. Conservation opportunities that both protect the mission and increase tourism or access to recreational activities should be given the highest priority as they are mutually beneficial to the installation and the regional community.



**“Newcomers to the area don’t understand.... they didn’t grow up with the installation like a lot of us did”**

## 5.2 Land Suitability Analysis - Regional Development & Growth

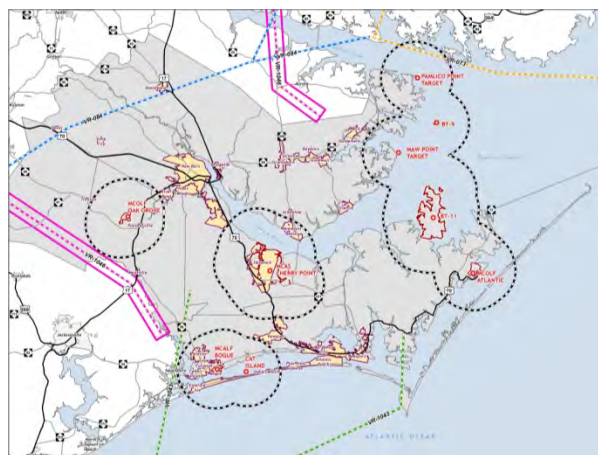
This section provides a comprehensive inventory and assessment of existing conditions and features important to the MCAS Cherry Point Regional Joint Land Use Study. The land suitability analysis augments the Compatibility Analysis by effectively evaluating the study area’s potential for new development. The magnitude of this information and the inter-dependencies demonstrated between military and civilian interests reinforces the needs for safeguarding MCAS Cherry Point as an asset to the US military and an engine for continued economic growth and development in the surrounding region.

Current plans, policies and ordinances for local governments; expanding utility service areas; the military mission footprint for MCAS Cherry Point; and development pressures to continue building in “growth hotspots” throughout the Region will keep land use compatibility and the balance between competing interests important for future years. Identifying potential conflict areas, and enumerating their impacts, should inform recommendations for the joint land use study and help stakeholders prioritize their implementation.

### *Suitability Analysis*

Future year growth and development in the three-county region (Carteret, Craven and Pamlico Counties) were studied to determine if, when or where conditions might occur that create (or make worse) conflicts between military operations and nearby development types, locations, patterns or intensities. Conditions were evaluated for a “community plans” scenario, which represents how the Region might develop if local government plans, policies and ordinances are followed closely.

The magnitude, timing and location of future growth in the Region were measured and evaluated using *CommunityViz*.™ The GIS-based software provides a framework for studying the impacts of physical development or policy decisions using localized data and a series of user-defined parameters. Data provided by local governments, Woods & Poole and MCAS Cherry Point, as well as scripts created specifically for development conditions in the three-county region, increase confidence in the modeled results.



This section summarizes the future year analysis for the three-county region. It is organized around six general headings: highly-constrained areas for development, future development potential, development attractors, anticipated growth, growth allocation and important considerations for moving forward.

Some land in the Region will likely never develop because of physical conditions on the site, land



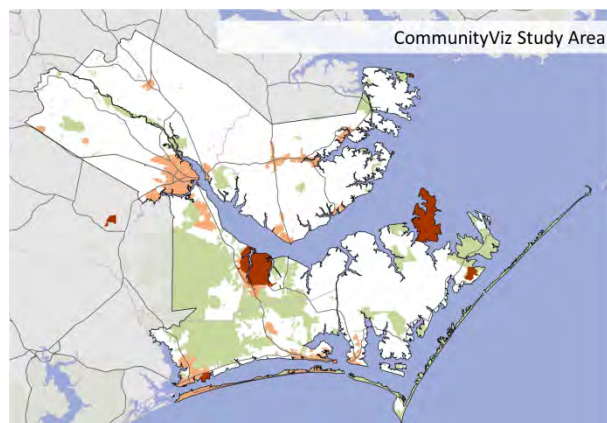
# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

ownership or the existence of federal, state or local policies that prohibit development. These areas — referred to as highly-constrained areas for development — were removed from the CommunityViz model to more accurately estimate buildable area in the region.

Features in the Region used to represent highly-constrained areas for development include the following.

- floodplains
- aircraft protection zones
- federal- or state-owned land
- major water bodies
- federal, state or local conservation land
- stream buffer areas
- MCOLF Atlantic Amphibious Operations Protection Area

***Approximately 30% of the Region is not expected to develop because of the presence of one or more features listed above.*** A map depicting areas highly-constrained for development is provided below as well as in the appendix.



***Future Development Potential.*** Future development potential in the Region is influenced by two factors: 1) allowable uses and maximum intensities summarized in local government plans, policies and ordinances and 2) development status observed in the region. Together, these factors control the location, type, pattern and intensity of development

(referred to as the region's "development supply") for accommodating future growth.

Development status categories used for the MCAS Cherry Point Regional JLUS include: permanent open space, developed, undeveloped, redevelopment potential and agriculture. Values were assigned in the Region using 2014 aerial photography, property appraiser data, and topic-specific GIS data sets (e.g., existing land use, farmland or vacant land inventories).

Existing development in the Region represents nearly 12% of the land area. Over two-thirds (69%) is agriculture or undeveloped, which means some of these areas could become new neighborhoods, shopping centers, industrial parks, etc. over time in accordance with local government plans, policies or ordinances. Permanent open space represents approximately 16% of the region. A small amount of land (3%) is identified for future redevelopment.

**16%** permanent open space



**3%** future redevelopment

**12%** developed



**69%** agriculture or undeveloped

**2%** military lands





## Regional Joint Land Use Study Marine Corps Air Station Cherry Point

A map depicting development status assignments for the Region is provided below.

**Place Types.** The MCAS-Cherry Point Regional JLUS introduces the concept of place types to the region, which generalize various development categories used by local governments to describe, measure, and evaluate the built environment. Fourteen place type categories capture the different land uses, development patterns and building intensities observed in the region.

Values were assigned in the three-county Region using 2014 aerial photography, future land use and zoning information, and property appraiser data. A brief description of each place type category is provided in the following paragraphs.

**Parks and Open Space** – Parks and open space include active and passive land dedicated for conservation. These areas are typically undisturbed or undeveloped and have been protected from development by local, state and federal agencies or by public, private and nonprofit organizations.

**Rural Living** – Rural living areas are characterized by large lots, abundant open space, pastoral views and a high degree of separation between buildings. Residential homes and hobby farms are scattered throughout the countryside and often integrated into the natural landscape. The lot size and separation between buildings decreases approaching areas with greater development densities. Buildings at the edge of most rural areas are generally oriented toward

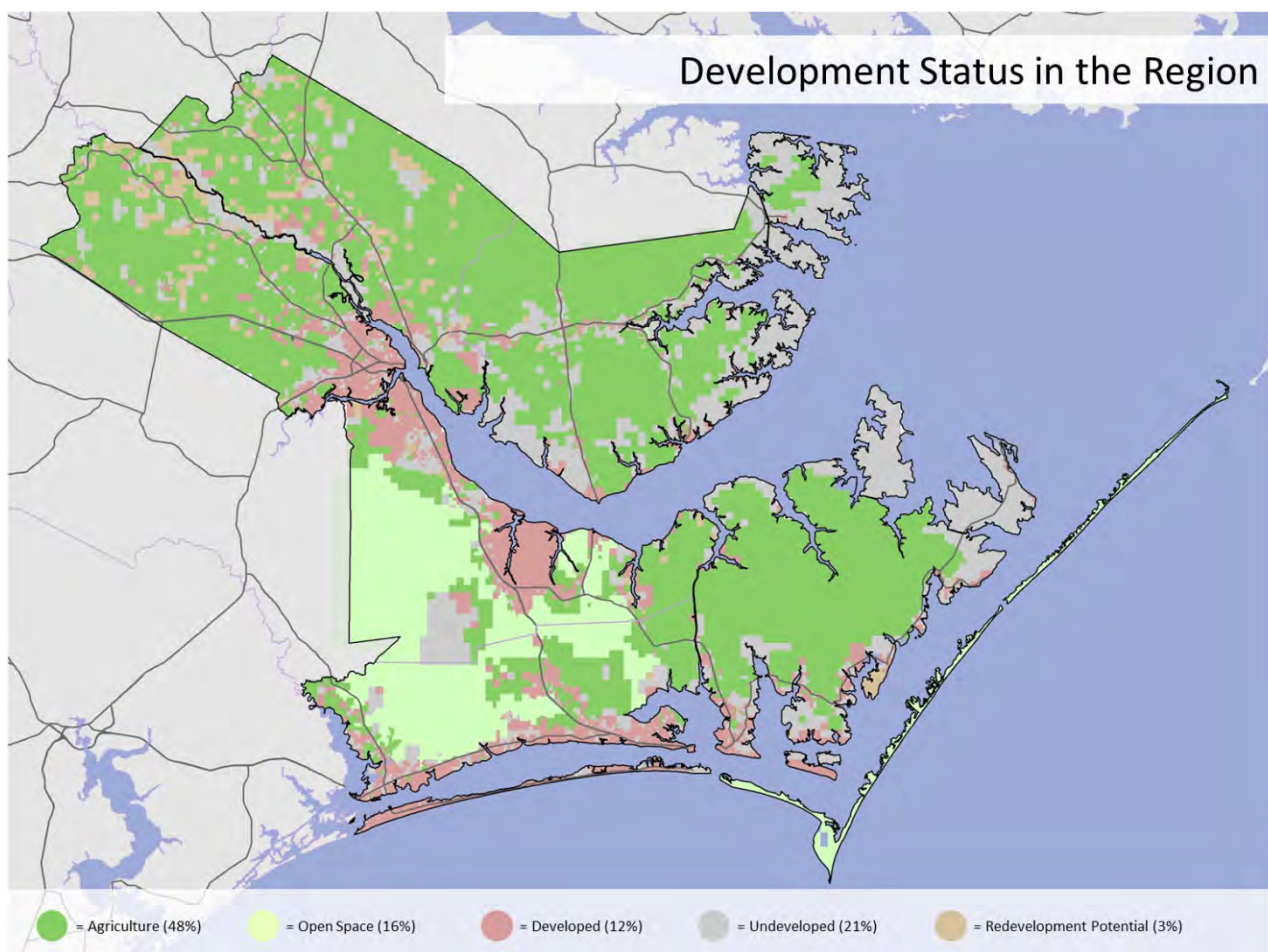


Figure 5-4. Development Status

highways and have direct access to the adjacent highway through a private driveway.

Working Farm – Working farms are actively being used for agriculture or forestry activities, including cultivated farmland, timber harvest, livestock or woodlands.

Large-Lot Residential Neighborhood – Large-lot residential neighborhoods are generally formed as subdivisions and consist almost entirely of single-family detached homes. Buildings are oriented interior to the site and are typically buffered from surrounding development by transitional uses, topography or vegetative areas. Many neighborhoods ‘borrow’ open space from adjacent rural or natural settings. Blocks are typically large and streets are rural or suburban in character.

Small-Lot Residential Neighborhood – Small-lot, residential neighborhoods are generally formed as subdivisions or communities, with a relatively uniform housing type and density throughout. They are often found in close proximity to commercial and suburban office centers, and provide the rooftops necessary to support the centers. Homes are oriented interior to the neighborhood and are typically buffered from surrounding development by transitional uses or landscaped areas.

Multifamily Residential Neighborhood – Multifamily residential neighborhoods are generally formed as complexes or communities, with a relatively uniform housing type and density throughout. They may contain one of the following housing types: condominiums, townhomes, senior housing or apartments.

Multifamily suburban neighborhoods are found in close proximity to suburban commercial and office centers, and provide the rooftops necessary to support various suburban commercial and office uses within the centers. Buildings are oriented interior to the site and are typically buffered from surrounding development by transitional uses or landscaped areas. Large parking lots and low street connectivity are common in multifamily suburban neighborhoods.

Suburban Commercial Center – Suburban commercial centers serve the daily needs of surrounding residential neighborhoods. They typically locate near high-volume roads and key intersections, and are designed to be accessible by automobile. Buildings are set back from the road behind large surface parking lots, with little or no connectivity between adjacent businesses. Common types of suburban centers in the Region include multi-tenant strip centers, big box stores and shopping malls.

Suburban Office Center – Suburban office centers include both large-scale isolated buildings with numerous employees as well as areas containing multiple businesses that support and serve one another. They are typically buffered from surrounding development by transitional uses or landscaped areas and are often located in close proximity to major highways or thoroughfares.

Industrial Center – Industrial centers generally support manufacturing and production uses, including warehousing, light manufacturing, medical research and assembly operations. These areas are found in close proximity to major transportation corridors (i.e., highway or rail) and are generally buffered from surrounding development by transitional uses or landscaped areas that shield the view of structures, loading docks or outdoor storage from adjacent properties.

Mixed-Use Neighborhood – A mixed-use neighborhood offers residents the ability to live, shop, work and play in one community. These neighborhoods include a mixture of housing types and residential densities integrated with goods and services in a walkable community that residents visit on a daily basis. The design and scale of the development encourages active living through a comprehensive and interconnected network of walkable streets.

Mixed-Use Center – Mixed-use centers serve broader economic, entertainment and community activities as compared to mixed-use neighborhoods. Uses and buildings are located on small blocks with streets designed to



encourage pedestrian activity. Buildings in the core of the mixed-use center may stand three or more stories. Residential units or office space may be found above storefronts. Parking is satisfied using on-street parking, structured parking and shared rear lot parking strategies.

A large-scale mixed use center may be surrounded by one or more mixed-use neighborhoods.

**Town Center** – Town centers are locally-serving areas of economic, entertainment and community activity. Uses and buildings are located on small blocks with streets designed to encourage pedestrian activity. Buildings typically stand two or more stories in height with residential units above storefronts.

Town centers represent the traditional downtown or courthouse area of historic towns and communities found throughout the region.

**Military Land Holdings** – Military land holdings include military bases, bombing ranges, etc. in the Region formally owned and operated by the United States Military or their designee.

**Special District** – Special districts include airports, schools, utilities, government buildings, institutional/health care facilities, education campuses, etc. that are unique in the Region and often defined by their own sets of planning and design standards.

***General Development Controls.*** General development controls were tied to place types and varied by city, town or county (representing all 31 communities in the region). Unique values reflected small differences in characteristics or expectations for each place type specific to each jurisdiction's plans, policies or ordinances.

Data values recorded for each place type included: site efficiency (amount of land set aside for on-site infrastructure), density, intensity, and percent of development by general category (single family, multifamily, retail, office or industrial).



***Development Attractors.*** The Cherry Point MCAS Regional JLUS evaluated development attractors unique to the Region to identify 1) locations attractive for future growth and 2) locations important for preserving military operations. Physical features in and immediately surrounding the Region were layered over grid cells in CommunityViz, and calculations performed to determine either percent overlap or proximity of features to individual grid cells. A normalized scale (between 0 and 100) was used to rank the grid cells from least to most attractive for future development. Factors in the study

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

could have a positive or negative correlation to development attractor scores.

Factors assumed to attract future development to specific areas of the Region include:

- Presence in an existing or emerging growth area (municipal limits)
- Proximity to existing or planned commercial centers
- Presence in existing or planned sewer service areas
- Presence in existing or planned water service areas
- Proximity to major roads
- Proximity to major intersections
- Proximity to interchanges

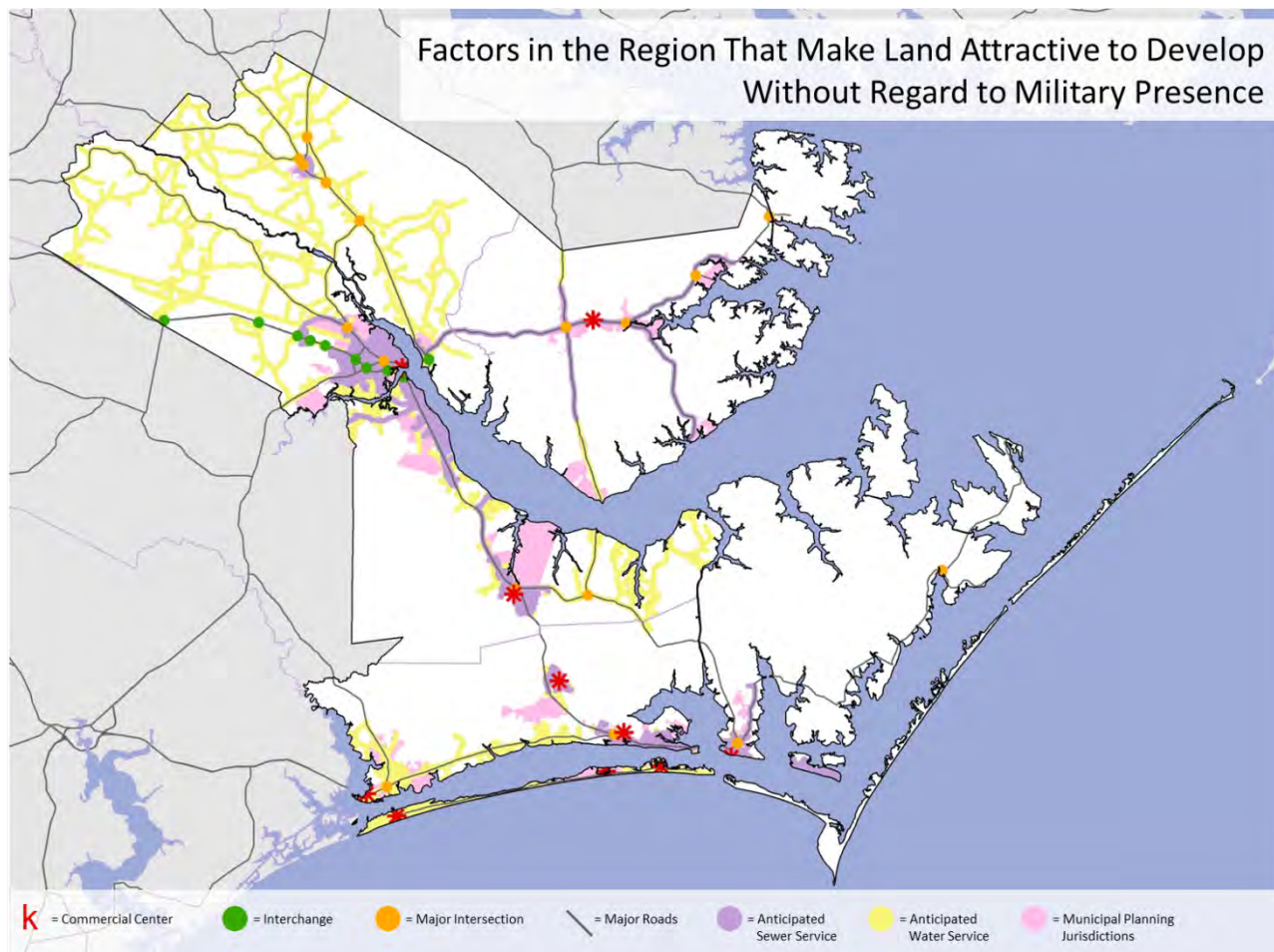
A map highlighting the attractiveness of land for

**Military Mission Footprint Factors.** Several factors important to preserving the military mission footprint for MCAS Cherry Point and ALF Bogue were evaluated separate from the general development attractors to identify areas of concern for the joint land use study.

The military mission footprint factors include:

- Aircraft protection zones
- Noise zones
- Restricted areas for BT-9 and BT-11
- Unmanned aircraft systems corridors
- Helicopter training routes
- Restricted airspace, R-5306A and R-5306C
- GBSAA surveillance area, wind turbine incompatibility area

A map highlighting the extents of factors important to the military mission footprint for



future development in the Region is provided below.

MCAS Cherry Point and ALF Bogue is provided below. A map highlighting the attractiveness of

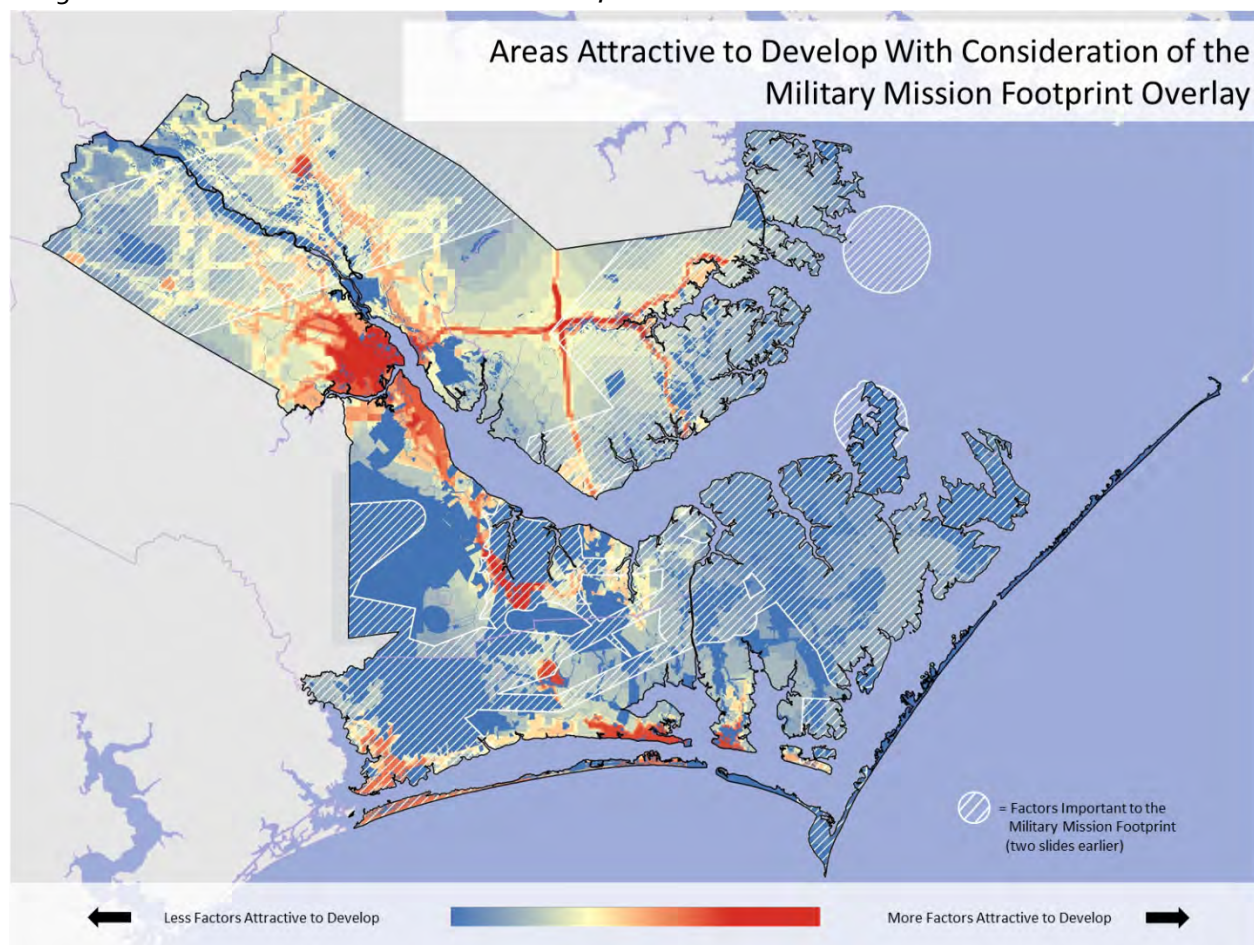


## Regional Joint Land Use Study Marine Corps Air Station Cherry Point

land for future development in the Region with consideration of the military mission footprint factors included is provided below.

**Growth Summary.** County-level control totals for a fifteen-year planning horizon were developed using information from the US Census Bureau,

occur using a supply-and-demand approach and a series of probability-based scripts internal to the software. Information from previous steps in the modeling process (future development potential and development attractors) was used in the wizard for completing the allocation process.



American Community Survey, Five Year Estimates, 2009-2013 and Woods and Poole Total Employment Statistics, 2010-2050 (county-level forecasts). Data was summarized for five development categories: single-family residential, multifamily residential, commercial, office and industrial. A table summarizing county-level growth totals assumed for the Region is provided on page 4-1.

Growth assumed for the Region between 2015 and 2030 was allocated to land using the “allocation tool wizard” in CommunityViz. The tool helped determine where growth might likely

A map highlighting future growth areas in the Region (new growth potential between 2015 and 2030) is provided on the next page.

The study of future year growth and development in the three-county region (Carteret, Craven and Pamlico Counties) confirms that conditions might occur that create (or make worse) conflicts between military operations and nearby development types, locations, patterns or intensities. Identifying potential conflict areas, and enumerating their impacts, should inform recommendations for the joint land use study and

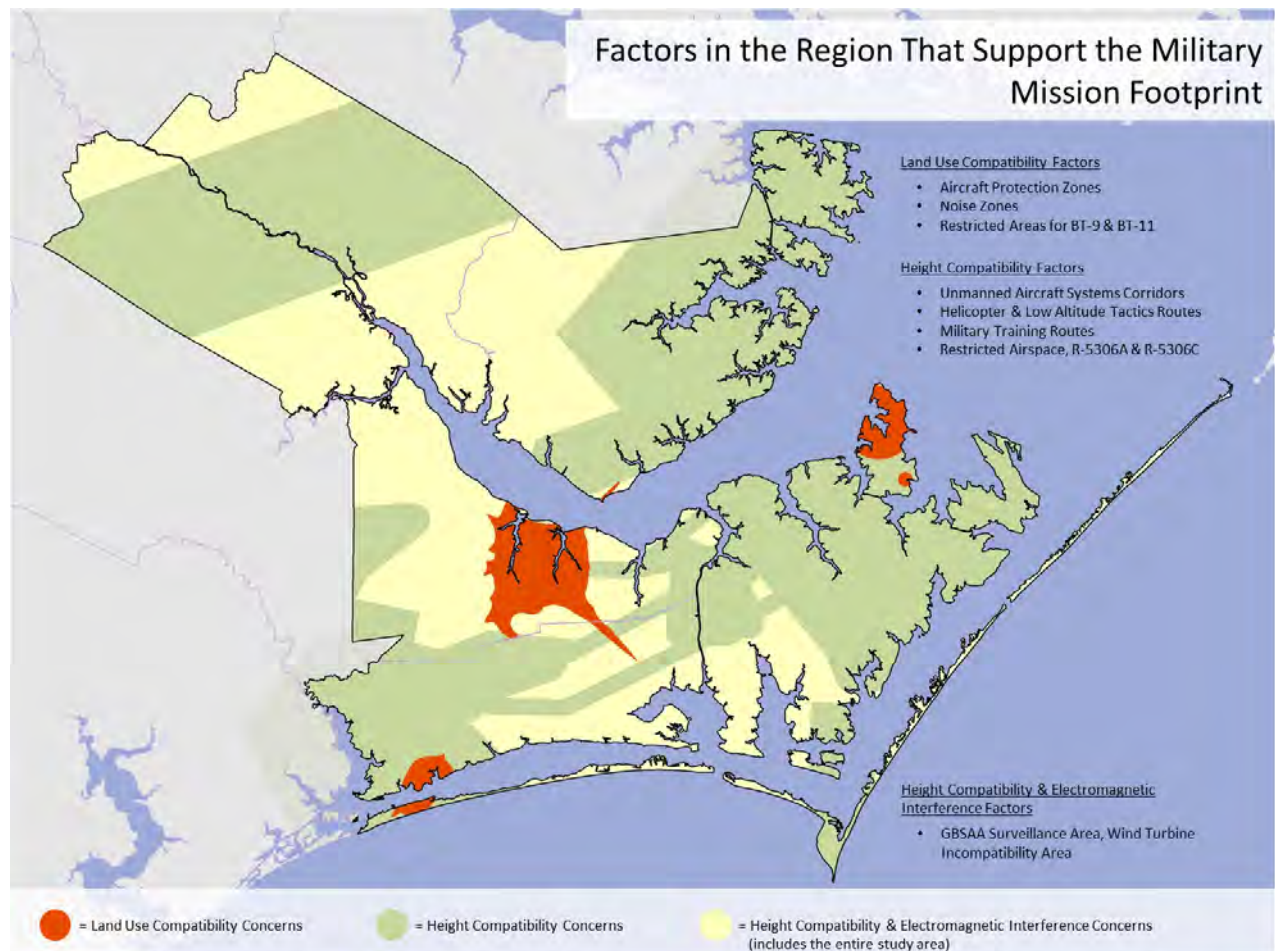
# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

help stakeholders prioritize their implementation.

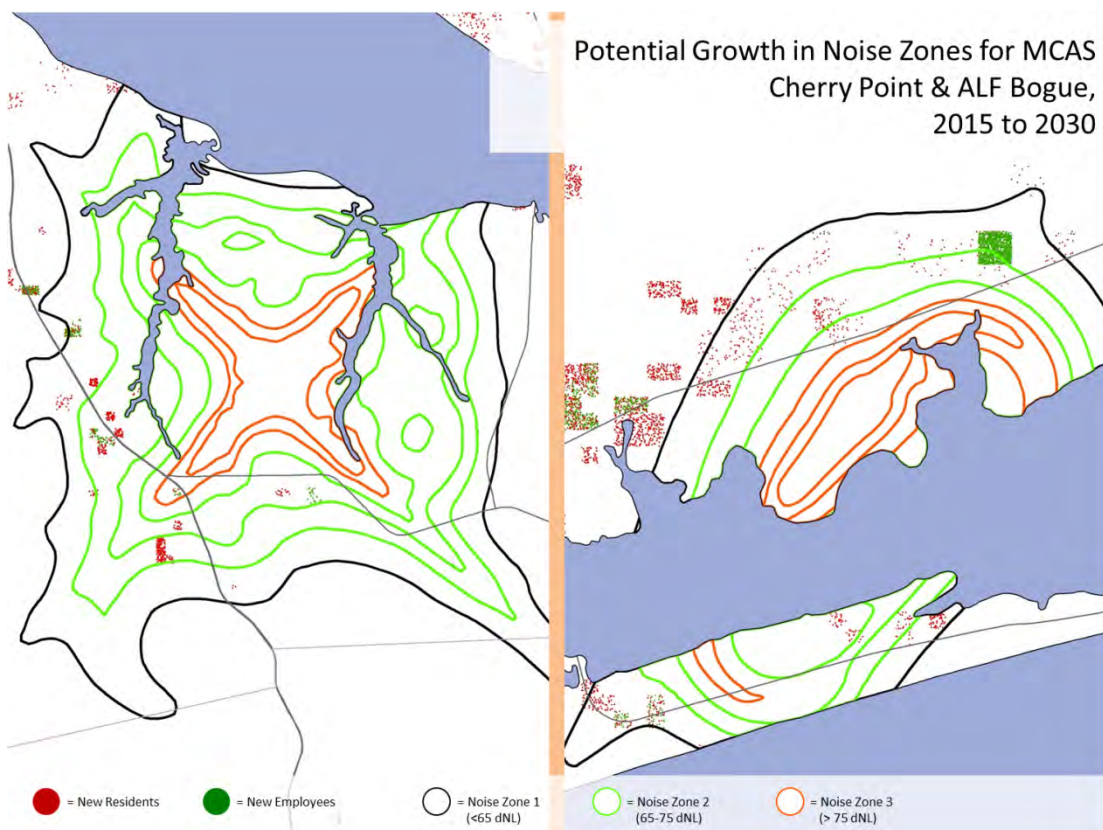
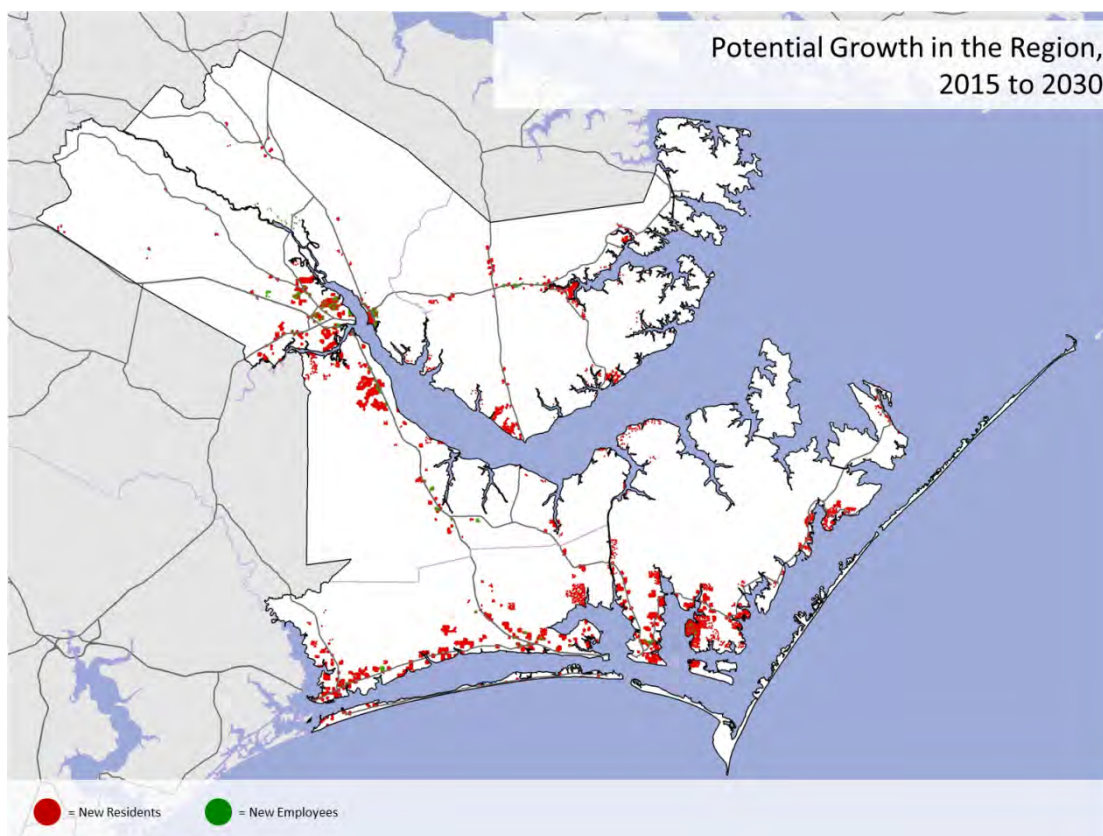
General areas of concern highlighted in the future development potential study include:

- Potential conflicts (land use compatibility and height compatibility) between future development and aircraft operations inside the designated noise zones for MCAS Cherry Point and ALF Bogue.
- Potential conflicts (height compatibility) between future development and aircraft operations in designated flight corridors for MCAS Cherry Point and ALF Bogue.

The *CommunityViz* data used for the future development analysis will be made available to local governments. They can use this information for modifying their own plans, policies and ordinances consistent with the JLUS recommendations, or for monitoring conditions in future years to track the success of implementation measures.







## State Legislation Permitting or Impeding Use of Development Controls

State legislation deeply influences the level of control that local governments exercise in their planning jurisdictions. North Carolina is (generally) a "Dillon's Rule" state; legislative authority given to local governments is expressly provided in the North Carolina General Statutes. If this authority is not spelled out in the N.C.G.S., then historic case law suggests that local legislation passed outside of that authority is likely to be reversed in court. The following is summary of some of the actions that North Carolina has taken to insert or modify language into the N.C.G.S. that are particularly relevant to the MCAS-Cherry Point and surrounding communities.

***The Military Lands Protection Act, N.C.G.S. 143-151.70 et seq.*** The Military Lands Protection Act was enacted in 2013 to preserve, maintain, and sustain land uses compatible with military activities at major installations:

*"North Carolina has a vested economic interest in preserving, maintaining, and sustaining land uses that are compatible with military activities at major installations. Development located proximate to military installations has been identified as a critical issue impacting the long-term viability of the military in this State. Additional concerns associated with development include loss of access to air space and coastal and marine areas and radio frequency encroachment. The construction of tall buildings or structures in areas surrounding major military installations is of utmost concern to the State as those buildings and structures may interfere with or impede the military's ability to carry out activities that are vital to its function and future presence in North Carolina." N.C.G.S. 143-151.72*

No county or city may authorize the construction of and no person may construct a tall building or structure (200 feet or more) in any area surrounding a major military installation in this State, unless the county or city is in receipt of either a letter of endorsement issued to the person by the Building Code Council pursuant to

N.C.G.S. 143-151.75 or proof of the Council's failure to act within the time allowed pursuant to N.C.G.S. 143-151.75.

**NOTE:** The law exempts wind turbines from this review process. (Wind turbines must go through the DENR permit process.)

***Notify Military of Land Use Changes, N.C.G.S. 153A-323(b).*** This statute provides that if the adoption or modification of an ordinance would cause changes to the zoning map or would affect the use of land within five miles of a military base, the board of commissioners must provide written notice to the military station commander. If the military provides comments regarding the compatibility with its operations, the board must consider these comments before making a final determination on the ordinance.

***Permitting of Wind Energy Facilities.*** Commonly referred to as House Bill 484, Session Law 2013-51 established a permitting program, to be implemented by the Department of Environmental Quality (formerly the Department of Environment and Natural Resources), for the siting and operation of wind energy facilities in the state. The permit process is designed to ensure that military, natural and cultural resource interests are considered prior to permits being issued for wind turbines. House Bill 484 requires notice to military installations and theoretically, will ensure no turbines are erected in military flight patterns. The permitting process, however, has not yet been utilized.

***The Coastal Area Management Act (CAMA) of 1974, N.C.G.S. 113A-100 et seq.*** The Coastal Area Management Act (CAMA) of 1974 applies to twenty designated coastal counties and governs "development" within any designated Area of Environmental Concern. Areas of Environmental Concern are broadly defined and include all public trust waters and adjacent lands. Except for Jones County, all the areas within the JLUS region are governed by CAMA and the implementing rules of the Coastal Resources Commission (CRC). The CRC's rules have undergone notable changes since the last regional JLUS in 2002.



Significant for the JLUS regional participants, CAMA requires each of the 20 coastal counties to have a local land use plan under guidelines established by the CRC. In the JLUS region, this includes Carteret, Craven, and Pamlico counties. It is optional for individual municipalities to adopt their own plans. The CRC is proposing extensive amendments to the CAMA Land Use Planning Program expected to reduce the regulatory burden on local governments. These amendments will increase flexibility for plan content and format, reduce the analysis required, shorten timelines for state review and certification of plans and updates, and clarify that plan updates and amendments are voluntary. If approved, the new rules will be effective January 1, 2016.

Once a land use plan is certified, the Division of Coastal Management (DCM) uses the plan in making CAMA permit decisions. Proposed projects and activities must follow the policies of a local land use plan, or DCM cannot permit a project to go forward.

### Local Efforts/Land Conservation/ Preservation Programs

One of the simplest ways to mitigate encroachment is through conservation and preservation of parcels adjacent to military installations. Acquiring such lands or placing perpetual conservation easements upon them has the added benefit of being a permanent long-term solution to the encroachment issue. Key initiatives include:

**Military Training Route Market Based Conservation Initiative.** This is an effort to sustain family farms and forests by protecting agricultural land use underlying military flight paths; lead by N.C. Foundation for Soil and Water Conservation, Inc.

[http://cnr.ncsu.edu/research/military\\_projects Spotlight.php](http://cnr.ncsu.edu/research/military_projects Spotlight.php)

**Southeast Regional Partnership for Planning and Sustainability (SERPPAS).** This is a regional association of agricultural, environmental, and military interests covering North Carolina, South

Carolina, Georgia, Alabama, Florida, and Mississippi. SERPPAS works to mitigate the ongoing loss of agricultural land, important wildlife habitats, and working landscapes such as farms, forests, and fisheries in order to avoid or reverse increased encroachment on military installations. <http://serppas.org/About.aspx>

**Onslow Bight Conservation Forum (OBCF).** The Onslow Bight Forum is a coalition of organizations with interest in conserving the natural resources of eastern North Carolina through land acquisition, conservation easements, sound land management practices, and education. Organizations began meeting in September 2001, and signed a Memorandum of Understanding (MOU) in March 2003. The following organizations are signatories to the MOU:

- NC Department of Environment and Natural Resources (Now NC Dept. of Environmental Quality)
- NC Wildlife Resources Commission
- NC Chapter of The Nature Conservancy
- NC Department of Transportation
- NC Coastal Federation
- NC Coastal Land Trust
- US MCB Camp Lejeune
- US Fish and Wildlife Service
- US MCAS Cherry Point
- USDA Forest Service
- Endangered Species Coalition
- Natural Resource Conservation Service

The purpose of the OBCF is to provide for open discussion among the participants concerning the long-term conservation and enhancement of biological diversity and ecosystem sustainability throughout the Onslow Bight Landscape compatible with the land use, conservation and management objectives of the participating organizations and agencies. One of the seven stated goals of the OBCF is to "promote the sustainability of the military mission in the Onslow Bight Landscape by preserving land uses suitable to military training on existing military lands, and promoting land uses compatible with military training on those lands that surround

existing military lands.” The forum meets at least three times per year at various locations to share information and leverage efforts across a regional area.

**N.C. Coastal Land Trust.** This is a non-profit accredited land trust conserving lands with scenic, recreational, historic and/or ecological value in eastern North Carolina. Funds are available for public/private partnerships and have already been used to successfully preserve encroachment buffers. [www.coastallandtrust.org](http://www.coastallandtrust.org)

Examples of prior applications undertaken by the N.C. Coastal Land Trust, the City of Havelock, and the Department of Defense Readiness and Environmental Protection Initiative to buffer military installations and training ranges along the coast of N.C. include:

- 298 acres preserved through the Magnolia Farm Preserve to support U.S. Navy and U.S. Marine Corps training; \$3.4 million investment by State, federal, and private sources
- 46 acres preserved to avoid encroachment on MCAS Cherry Point through the Lewis Farm initiative; \$520,000 investment by U.S. Navy and City of Havelock
- Since 2005, the N.C. Coastal Land Trust was worked with MCAS-Cherry Point to conserve over 7,900 acres around MCAS Cherry Point, Piney Island Bombing Range, and Auxiliary Landing Field at Bogue, and along flight training routes

#### **Other Funding Sources**

- Clean Water Management Trust Fund - Specifically authorized (and mandated in recent budgets) to provide buffers around military bases or for State matching funds for the Readiness and Environmental Protection Initiative, a federal funding initiative that provides funds for military buffers.
- Agricultural Development and Farmland Preservation Trust Fund - Supporting the purchase of agricultural conservation easements on farm, forest, and horticulture lands.

- North Carolina Parks and Recreation Trust Fund - Matching grants to local governments for public parks and recreational projects.
- North American Wetlands Conservation Fund - Federal grant program through U.S. Fish and Wildlife Service.
- Land and Water Conservation Fund - Federal grant program through the National Park Service.
- Harold H. Bate Foundation - Local grant funds available for public/private partnerships in Craven, Pamlico and Jones counties.

# We Be People

## Article 1

6

R E C O M M E N D A T I O N S



## Chapter 6: Recommendations

These recommendations are the product of a consensus among stakeholders and provide a practical, coordinated approach to continued regional planning for military / civilian land compatibility.

This section identifies and organizes the recommended actions (strategies) developed and compiled from independent research by the consultant team, Policy Steering Committee and Technical Advisory Committee meetings, discussions with staff from local jurisdictions, representatives of MCAS Cherry Point and stakeholder interviews. Stakeholders consisted of the general public, local elected officials, state and federal agencies, local non-profit group, and advocacy organizations, and business owners and organizations such as Chambers of Commerce and Allies for Cherry Point's Tomorrow. Comments from the general public were gathered during numerous 'open house' event and 'road shows' advertised through social media.

### 6.1 Community Facilities, Infrastructure, and Services

Whereas a detailed review of the physical adequacy of region-wide community facilities was outside the scope of this project, interviews with stakeholders revealed that educational, recreational, and cultural facilities surrounding MCAS Cherry Point are considered a valuable asset to the moral and welfare of the marines and their families. In fact, as one of the interviewees pointed out, land and water-based recreation opportunities (among others) have made MCAS Cherry Point one of the most desirable assignments in the marine installation inventory. It was also observed that most of the local

governments in the study have capital improvement elements in their annual budget process, providing an excellent tool for planning, design, construction, and maintenance of these facilities. Also, MCAS Cherry Point has recently developed a comprehensive Station Master Plan that provides for installation facilities to support the emerging F-35B mission and promote the moral and welfare of the marines and families.

#### *Update the Station Master Plan Frequently.*

MCAS Cherry Point should implement the recommendations of the Station Master Plan, which should be reviewed and updated every five years. Local governments should recognize the positive impact that area recreational and cultural amenities have on MCAS Cherry Point and continue to support the maintenance and construction of such facilities in their annual budgets and capital improvements programs.

***Regional Water and Wastewater Plan.*** Support the development of a regional water and wastewater analysis and plan to evaluate the impact of future residential, commercial and industrial growth. The plan should incorporate recommendations of regional economic development strategy and identify improvements necessary to accommodate growth to include estimates of costs, funding sources and a completion timetable.

An overview analysis of the study area water and wastewater facilities was conducted. Based on interviews with Cherry Point Facilities personnel and review of the F-35B basing Environmental Impact Statement and the Station Master Plan it was determined that that existing and future water and wastewater facilities on Cherry Point and outlying/auxiliary fields will be adequate to support the emerging mission and beyond. Although the Station Master Plan identified the installation water system as "marginally" adequate, programmed improvements will



resolve this noted deficiency. For the balance of the study area, the overview analysis for residential development cited short term, temporary deficiencies in several water systems; however, planning, design and construction activities are underway to resolve these deficiencies. It should be noted that the overview analysis did not incorporate an evaluation of the systems to support *commercial and industrial* development – vital for the regional economic station and to support revenue generation in support local government fiscal requirements. The regional growth model did identify areas in region that are suitable for such development—but whether facilities exist or are planned to support the demands of commercial and industrial land uses is not clearly known.

### *Regional Economic Development Strategy.*

Support the development of a regional economic development strategy that provides a vision, strategy framework, goals and recommendations for education and workforce development, attracting and retaining business and investment, entrepreneurship/innovation, infrastructure and quality of life improvements to support commercial and industrial growth in the CPRJLUS Region.

### *Intergovernmental Planning Coordination*

The level of coordination and cooperation among the study area partners, particularly between the MCAS Cherry Point Community Liaison Office and the local governments has been exemplary. This coordination has directly contributed to the successful completion of many of the recommendations outlined in the 2002 JLUS. However, these coordination activities are primarily based on the good will and professionalism of the participants. Lacking are the organizational protocols necessary to

continue seamlessly should breakdowns in personnel occur.

### *Establish Military Influence Planning Districts.*

Local governments within the Cherry Point CPRJLUS Region should establish 'military influence planning districts' to coordinate communications with the military installation and to align noise/lighting/disclosure requirements with economic development goals. Local governments also should codify procedures for compliance with NCGS 153A-323b. These actions would: (1) ensure that the high level of communication and collaboration among the CPRJLUS partners remains in perpetuity; and (2) ensure consistency of compliance among all local governments of the Region.

*Installation-Specific Recommendations.* The following are ten specific operational strategies that MCAS Cherry Point can undertake now to create opportunities for coordination and collaboration with local, state, and federal government partners.

### *Conduct Regional Workshop on Wind Energy and Military Compatibility.*

MCAS Cherry Point should facilitate a one-day workshop between representatives from the Department of Defense to discuss wind turbine mitigation measures pertaining to the UAS Operations/GBSAA Wind Turbine Incompatibility Map (see p.8, Marine Corps Air - Station Cherry Point and Ranges Military Mission Footprint). The workshop could provide more data on specific aspects of incompatibility in the Cherry Point Region (i.e. radar, physical obstruction, electromagnetic interference, other) and illustrate case studies of successful mitigation strategies from other states.

### *Comprehensive Regional Water/Wastewater Plan.*

The MCAS Cherry Point should partner with Carteret, Craven and Pamlico counties to develop a comprehensive regional water and wastewater plan to address residential capacity observations and to develop a regional strategy to accommodate future residential, commercial and

industrial growth. This plan should correlate with the growth and development model included in this CPRJLUS study. Robust coordination with local economic development strategies, either adopted or in progress within the Region, is also recommended.

***Establish an Expanded Notification Process.*** Adopt a Memorandum of Agreement to establish a process to ensure timely and consistent notification and cooperation between the parties on projects, policies, and activities.

***Expand Coordination Points.*** Actively participate in the Allies for Cherry Point's Tomorrow (ACT) Planning Committee upon deactivation of the Cherry Point MCAS Regional CPRJLUS Technical Advisory Committee.

***Improve the Awareness of the Established Noise Protocol.*** Protocols are in place to notify the general public of impactful aircraft and ground activity at MCAS Cherry Point, Bogue Field, Atlantic Field, BT-9 and BT-11. However, as verbalized at community outreach meetings, the citizens are not aware of the published noise abatement/avoidance protocol for the use of Atlantic Field. The public should be made aware of these restrictions, via the local media outlets as well as Carteret County website and the MCAS Cherry Point website. These notices should be preceded by a community outreach meeting in Atlantic to fully disclose the restrictions and protocol for reporting a violation. Citizens should be made aware that perceived violations of these restrictions should be directed to the Public Affairs Office at MCAS Cherry Point and to the Carteret County Planning and Inspections Department.

***Expand Awareness of Water-Based Encroachment Limits.*** Identify and convene stakeholders to discuss restrictions to and management of access to the waters surrounding BT-9, BT-11, MAW Point Target, and Pamlico Point Target. Improve information and distribution to the boating and commercial/recreational fishing communities.

***Support Compatible Renewable Energy Practices and Projects.*** Promote renewable energy development that is compatible with military operations through increased collaboration and coordination with existing initiatives, including Food and Fuel for the Forces and programs of the NC Military Business Center and NC East Alliance. This support should include planning and development of infrastructure for biomass production.

***Create Opportunities for More Frequent and More Regular Land Development Coordination.*** Convene summit of MCAS, Weyerhaeuser, NCWRC, NCFS, and other relevant CPRJLUS stakeholders to explore and discuss mutual objectives for land compatibility and future development and/or disposition of lands.

***Coordinate Future Land Sales and Exchanges.*** Convene summit of Croatan National Forest managers and other relevant stakeholders and explore establishment of protocol to coordinate future land sales and exchanges.

***Increase Awareness of Prescribed Burning Best Practices.*** Collaborate with NC Prescribed Fire Council to convene stakeholders and explore strategies to increase public awareness of the necessity of prescribed burning.

## 6.2 General Policy Recommendations

The foundation of the MCAS Cherry Point CPRJLUS is a community-driven, cooperative, strategic planning process among the MCAS, Carteret, Craven, and Pamlico County, and the surrounding communities of Havelock, Emerald Isle, and Bogue. As such, the project represents a true collaborative planning effort. The 46 recommendations in this section are the product of a consensus among stakeholders, and provide a practical, coordinated approach to continued regional planning for military/civilian land compatibility.

Each of the recommendations incorporate one or more actions that can be implemented to promote compatible land use, prevent further encroachments upon the military mission, mitigate existing incompatibility, and facilitate

compatible economic development. The recommended strategies function as tools to aid the community in their goal of ensuring the continued sustainability of the military mission at MCAS Cherry Point. Collectively, these strategies represent an assertive and coordinated approach that will demonstrate the region's commitment to that goal. Furthermore, implementation of these actions will prove the region's commitment in advance of the anticipated convening of the next Base Realignment and Closure Commission (BRAC).

The key to the implementation of the strategies is the establishment of the continued efforts of the CPRJLUS Technical Advisory Committee to oversee the CPRJLUS execution. Through this committee, local jurisdictions, MCAS Cherry Point, and other interested parties can continue their initial work together to establish procedures, recommend or refine specific actions for member agencies, and make adjustments to strategies over time to ensure the CPRJLUS continues to resolve key compatibility issues through realistic strategies and implementation.

Concurrent with the efforts of the TAC, each jurisdiction within the MCAS Cherry Point region should establish their own course of action to execute strategies unique to them through the ongoing collaboration of planners, leadership, and the public. Each jurisdiction may revise and refine these recommendations for their unique circumstances and use for tracking implementation actions and progress.

The strategies described in the Recommendations Matrix (Table 6-1 on the following pages) were designed to address the issues identified during this CPRJLUS Update. The purpose of each strategy is to: (1) avoid future actions that would cause new or additional incompatibilities or exacerbate an existing incompatible use or activity; (2) mitigate or eliminate an existing compatibility conflict or reduce its adverse impacts; and (3) provide a framework for continued regional collaboration on MCAS sustainability.

The Recommendations Matrix is presented in a table format that provides the strategy and details on implementation. Underneath each Factor are the corresponding Issues as brought forward and prioritized by the Policy Steering Committee and the Technical Advisory Committee. The headers of each row are described in the following paragraphs.

*Geographic Area* – the specific locale or political entity that will be directly impacted by the recommended strategy.

*Recommended Strategy* - the recommendation developed through consultation and discussions with the Policy Steering Committee and Technical Advisory Committee.

*Time Frame* – a projected year by which to begin or complete a specific action. Year 2016 should be regarded as an 'immediate' action, and Years 2017-18 as 'near term' action. Strategies beyond the next two years are considered 'long-term' actions or referenced in the study as future considerations for implementation.

*Cost* – 'Not Applicable' (N/A) indicates that an action can be accomplished through ongoing government operations and routine administrative expenditures. These would include adoption of ordinances, revisions, or convening with stakeholders. 'To Be Determined' (TBD) indicates the action may require additional professional and technical expertise and consultation services; possible expenditures for new programming and agency staff to implement; or new capital investments.

*Responsible Parties* - the remaining eight columns correspond to each of the participants in the Cherry Point MCAS Regional JLUS. An 'Other' column is included to capture other local, regional, state, or federal agencies or organizations that should be involved in strategy implementation. The symbol (■) indicates the party must initiate a recommended action or take a leadership role in its implementation. The (□) symbol indicates a party that should have a participatory or advisory role in the strategy or



otherwise monitor the action for potential impact or future consideration.

Additional notes on the recommendations are as follows.

***Non-conforming Uses.*** Several actions recommended for two CPRJLUS Update priority issues (1) density within APZs; and (2) mobile homes located within APZs would, if implemented, create substantial areas of nonconforming land uses within the APZs or AICUZs of MCAS Cherry Point and MCALF Bogue, affecting Carteret County, Town of Emerald Isle, and City of Havelock. While these jurisdictions currently address non-conforming land uses within their respective ordinances, they may wish to consider text amendments to specifically address (1) the replacement of a nonconforming use with another nonconforming use, and (2) the non-conformities associated with manufactured homes. The Appendix includes sample language from the Town of Midland, NC.

***Development Approval Authority.*** Not all municipalities within the CPRJLUS area have development permitting and approval authority.

***Other Responsible Partners.*** Several of the recommendations in Table 6-1 designate 'Other Partners' among the responsible parties for initiating an action or implementing a strategy. The list of 'other partners' is not intended to be all-inclusive. Local knowledge is best when determining potential partners or the appropriate networks to engage for implementing a given strategy.

The CPRJLUS Recommendations for Action and Implementation are presented on the following pages. These are listed in order of issue priority (excepting the issue of 'Analysis of Natural Buffers and Conservation Opportunities,' which was not ranked) as determined by the Policy Advisory Committee and the Technical Advisory Committee.

**Table 6-1: Recommendation Matrix**

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 1</b>	<b>Strengthen Tall Structure and Wind Turbine Regulations.</b> Wind energy development has been a controversial issue in the region. While significant wind resources exist for potential development, a January 2015 military report identifies a 40-nautical mile radius where wind turbines are incompatible. The incompatible area encompasses the entire CPRJLUS region. Wind turbines present a host of compatibility issues for military aviators. Their height poses flight path hazards and may create line of sight obstructions as well as glare and glint. Oscillation, caused by the rotation of turbine blades and electromagnetic interference, can cause disruption to electronic instrumentation, radio communications, and radar systems.										
<b>Compatibility Factors: Air Space, Electromagnetic Interference; Land Suitability Factor: Height</b>											
<b>1.1</b>	Strengthen Tall Structure ordinances by creating uniform standards throughout the region.  Other Partners: All municipalities in the three-county study area; Eastern Carolina Council/Consultant	2017	N/A	■	■	■	□	□	□	□	■
<b>1.2</b>	Amend Tall Structures Ordinance for regional conformity for wind turbine development standards based on the Carteret County ordinance.  Other Partners: All municipalities in these counties; Eastern Carolina Council/Consultant	2017	N/A	□	■	■	□	□	□	□	■
<b>1.3</b>	Amend Tall Structure Ordinances to include references to the NC Session Law 2013-51 (Wind Energy Facilities Permitting Program) and 2014-79 (Military Lands Protection Act).	2017	N/A	■	■	■	■	□	□	□	

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
1.4	<p>Conduct Regional Workshop on Wind Energy and Military Compatibility. Invite representatives from Department of Defense to discuss wind turbine mitigation measures pertaining to the UAS Operations/GBSAA Wind Turbine Incompatibility Map. Not only is the GBSAA and control of UAS an issue. The overall ability to control air traffic in general is at risk from this potential encroachment, specifically in Special Use Airspace and in the traffic patterns of MCAS Cherry Point and its associated Auxiliary and Outlying Airfields. The workshop could provide more data on specific aspects of incompatibility in the Cherry Point region (i.e. radar, physical obstruction, electromagnetic interference, other) and illustrate case studies of successful mitigation strategies from other states.</p> <p>Other partners: Marine Corps Air Station East (MCIE), NC Department of Commerce; NC Department of Military &amp; Veterans Affairs; North Carolina Sustainable Energy Association; Weyerhaeuser</p>	2018	TBD	■	■	■	■	■	■	■	■



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 2</b>	<b>Conduct Infrastructure Capacity Analysis.</b> This was one of several important topics related to MCAS sustainability that emerged during stakeholder interviews. While a comprehensive analysis is beyond the scope of this regional joint land use study, it should carry forward as a recommendation for action. A proposed Scope of Work will be provided.										
<b>Compatibility Factor: Infrastructure Capacity; Land Suitability Factor: Development</b>											
2.1	Develop a comprehensive regional water and wastewater plan to address identified residential capacity observations and to develop a regional strategy to accommodate future residential, commercial and industrial growth. This plan should correlate with the growth and development model included in the CPRJLUS as well as a complete and thorough coordination with local economic development strategies adopted or in progress within the region. A sample request for proposal for a study of this type is provided in the Appendices (Exhibit 6-2).  Other Partners: County and municipal public utility departments; MCAS Cherry Point facilities; local and regional economic development and planning organizations	2017	\$200K	■	■	■	□	□	□	■	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
Issue Priority: 3	Establish ‘military influence planning districts’ to coordinate communications with the military installation and to align noise/lighting/disclosure requirements with economic development goals. Local governments with the Cherry Point Regional JLUS Region should codify procedures for compliance with NCGS 153A-323b. These actions would: (1) ensure that the high level of communication and collaboration among the CPRJLUS partners remains in perpetuity; and (2) ensure consistency of compliance among all local governments of the region. The following recommendations can be formulated and implemented by local governments within the region in the short term.										
Compatibility Factor: Communication and Coordination											
3.1	All local governments with territorial authority within the area of a 5-mile radius of military installations should incorporate the notification requirement of NCGS 153A-323b into administrative procedures and permit application submittal requirements.  Other partners: All municipalities within 5-mile radius of military installations.	2016	N/A	■	■	■	■	■	■	□	■
3.2	Local governments with territorial authority within a 5-mile radius of Coastal Carolina Regional Airport (CCRA) and Michael J. Smith Airport (MJS) should work with airport officials to formulate voluntary notification procedures for proposed land uses changes similar to those prescribed in NCGS 153A-323b.  Other Partners: City of New Bern; Town of Trent Woods; Town of River Bend; Town of Bridgeton (CCRA); Town of Morehead City; Town of Beaufort; Town of Atlantic Beach (MJS); NC Military Affairs Commission; NC General Assembly	2016	N/A	■	■					□	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
3.3	Local governments with territorial authority within a 5-mile radius of the Port of Morehead City (MHC) should provide voluntary notification procedures for proposed land uses changes similar to those prescribed in NCGS 153A-323b.  Other Partners: Town of Morehead City; Town of Beaufort; Town of Atlantic Beach; Town of Pine Knoll Shores; NC Military Affairs Commission	2016	N/A	■						□	■
3.4	Municipalities in Craven and Carteret Counties should ensure their land use ordinance provisions are consistent with their respective counties relative to Tall Structures and Airport Overlay Standards.  Other Partners: All municipalities in these counties.	2016	N/A	□	□	□	■	■	■	□	■
3.5	Amend County and Municipal Land Use Plans to create Military Influence Overlay Districts (MIOD). MIODs would consist of all areas within a 5-mile radius of a military installation, facility, or training site. MIODs could include the Port of Morehead City and regional airports. Primary compatibility factors for the MIODs should include communication and coordination regarding safety, noise, vertical obstructions, infrastructure extensions, residential density, lighting, and disclosure requirements.  Other partners: All municipalities within 5-mile radius of military installations; NCDOT; Croatan National Forest; Cedar Island NWR	2017	N/A	■	■	■	■	■	■	□	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
3.6	<p>Adopt Memorandum of Agreement to establish a process to ensure timely and consistent notification and cooperation between the parties on projects, policies, and activities. Upon adoption by all parties, reconstitute the Cherry Point MCAS Regional JLUS Technical Advisory Committee into the Allies for Cherry Point's Tomorrow (ACT) Planning Committee.</p> <p>Other partners: All municipalities within 5-mile radius of military installations.</p>	2017	N/A	■	■	■	■	■	■	□	■
3.7	<p>Conduct comprehensive regional survey of public attitudes toward the military presence in North Carolina.</p> <p>Other partners: Eastern Carolina Council/Consultant; NC Military Affairs Commission; Department of Commerce; Allies for Cherry Point's Tomorrow (ACT)</p>	2020	TBD	■	■	■	■	■	■	□	■



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 4</b>	<b>Adopt ‘Dark Sky’ ordinances to help prevent ambient light encroachment.</b> The military needs dark skies for effective nighttime operations and flight training. Night testing and training is an essential to the military missions of MCAS Cherry Point, MCALF Bogue, and MCOLF Atlantic. Pilots conduct realistic night flight scenarios including LHD landing practice, night precision runway approaches and landings, and low-visibility operational testing. Light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations.										
<b>Compatibility Factor: Light Pollution</b>											
4.1	Evaluate and compare existing City of Havelock (and others within the region) outdoor lighting standards with dark sky lighting ordinances from other North Carolina municipalities. Determine if local measures meet International Dark Sky Association guidelines, and if so, consider as a template for region-wide standards.	2016	N/A	■	■	■	■	■	■	□	■
4.2	Adopt Dark Sky Lighting Ordinance that minimizes urban sky glow and potential for light trespass onto adjacent properties. Specific development standards should be incorporated into zoning ordinances and building codes of each jurisdiction including areas adjacent to installation boundaries. The ordinance should also include regulation of LED billboards in important flight paths and approach departure corridors.	2018	N/A	■	■	■	■	■	■	□	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
4.3	<p>Invite private sector participation in workshops and seminars for local contractors, developers, and local government building inspectors and planning officials to provide technical information on the installation, use, and maintenance of dark sky-approved lighting systems.</p> <p>Other partners: NC Military Business Center; NC League of Municipalities</p>	2016	N/A	■	■	■	■	■	■	□	■
4.4	<p>Work closely with NCDOT, public utilities, and private utility providers to ensure the installation of dark sky-approved lighting along US-70, especially at the planned Havelock Bypass.</p> <p>Other partners: US 70 Commission; Duke Energy Progress; Carteret-Craven Electric Cooperative; Tideland EMC; NCDOT Division 2</p>	2020	TBD	■	■		■			□	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 5</b>	<b>Address density/development concerns around MCALF Bogue, MCAS Cherry Point, and MCOLF Atlantic.</b> Incompatible land uses, especially residential, continue to be developed in the Bogue Field AICUZ and in the vicinity of MCOLF Atlantic. Unless curtailed, this could be a negative factor in a future BRAC evaluation. Within APZs for MCALF Bogue and MCAS Cherry Point, retain residential density at existing levels. Use existing voluntary and regulatory tools, develop new land use and management techniques, and establish incentive and acquisition programs to lower residential densities over time.										
Compatibility Factors: Accident Potential Zones, Land Use; Land Suitability Factor: Development											
5.1	Carteret: Retain existing density within APZ-1 at 2.9 du/ac; APZ-2 at 1.7 du/ac. Emerald Isle: Retain existing density within APZ-1 at 0.26 du/ac; APZ-2 at 2.1 du/ac. (Vacant, platted lots exempt; redevelopment of existing residential structures exempt).	2018	N/A	■	□			■	□	□	
5.2	Within APZ-1 and APZ-2, increase minimum percentage of open space required in PUDs (Emerald Isle) and Planned Conservation Development (PCD) and the Planned Unit Development Overlay (Carteret County).	2018	N/A	■	■		■	■			
5.3	Evaluate existing vacant parcels and county/municipal-owned land and explore potential land swaps with interested private landowners/developers.	2019	TBD	■				■	■	□	□
5.4	Evaluate residentially-zoned parcels along NC-24 for potential rezoning to non-residential uses compatible in APZ-1.	2018	N/A	■					■	□	

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
5.5	Increase minimum lot size in R2/MH districts within APZ-2 from 12,500 to 20,000 SF. Incentivize and encourage re-combination of existing lots into larger lots through inducement payments (reimbursements) for fees, permits, plan review, and the like.	2018	N/A					■			
5.6	Consider agreement to extend Havelock ETJ into vicinity of proposed US-70 Bypass within Township 6 to ensure new development resulting from its completion is compatible with military operations.	2016	N/A		■		■			□	
5.7	Facilitate the rezoning of the R20-A-zoned portion of the Cannady tract to LI (Light Industrial).	2017	N/A		□		■				
5.8	Explore potential for establishing a Transfer of Development Rights Program (TDR) to reduce densities and incompatible uses within the AICUZ.	2020	TBD	■	■	□	■	■	■	□	



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 6</b>	<b>Low Altitude Flight Avoidance Protocol.</b> Discussion at the Atlantic community road show pointed to a need to coordinate with all users of Atlantic advising that 1,500’ floor is not to be violated. Concerns were expressed by USFWS during stakeholder interviews about low flyovers in the Cedar Island NWR during nesting season. Protocol describes notification chain, responsibilities and consequences, establishes a local POC.										
<b>Compatibility Factor: Noise; Land Suitability Factor: Noise</b>											
6.1	Protocols are in place to notify the general public of impactful aircraft and ground activity at MCAS Cherry Point, Bogue Field, Atlantic Field, BT-9 and BT-11. However, as verbalized in a community outreach meeting, the citizens are not aware of the published noise abatement/avoidance protocol for the use of Atlantic Field. The public should be made aware of these restrictions via local media outlets and Carteret County’s and MCAS Cherry Point websites. These notices should be preceded by a community outreach meeting in Atlantic to fully disclose the restrictions and protocol for reporting a violation. Citizens should be made aware that perceived violations of these restrictions should be directed to Air Operations-MCAS Cherry Point. MCAS – Cherry Point should periodically notify the Carteret County Planning & Inspections Dept. of complaints and follow-on actions.  Other Partners: Cherry Point Operations; Cherry Point Public Affairs; Cherry Point Community Plans & Liaison Office; Carteret County Planning & Inspections; Down East neighborhood organizations	2016	N/A	■	■	□	■	■	■	■	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 7</b>	<b>Facilitate Dialogue With Stakeholders Regarding Water Access to the Areas Surrounding BT-9 and BT-11.</b> The competition for the use of waters in the Pamlico Sound area in the vicinity of the Piney Island Bombing Range can place limitations on range operations and training. Restriction to access to these waters is a contentious issue for local boaters and fisherman. Broader dialogue among all parties could open avenues of communication and increase awareness of the unique and critical mission of these facilities.										
<b>Compatibility Factor: Maritime Access; Land Suitability Factor: Development</b>											
<b>7.1</b>	Brief stakeholders concerning restrictions to and management of access to the waters surrounding BT-9 and BT-11.  Other Partners: NC Division of Marine Fisheries; NC Wildlife Resources Commission; US Army Corps of Engineers	2016	N/A	■	□	■	□	□	□	■	□
<b>7.2</b>	Improve information and distribution to the boating and commercial/recreational fishing communities.  Other Partners: NC Division of Marine Fisheries; NC Wildlife Resources Commission; Coast Guard Auxiliary; US Power Squadron; local marinas	2016	TBD	■	■	■	□	■	■	□	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 8</b>	<b>Ensure new development preserves the unique character and cultural heritage of the Down East region</b> , and is compatible with military operations at MCOLF Atlantic. Promote the retention and enhancement of the thirteen fishing communities, and enhance opportunities to support commercial fishing and the marine trades, boating, hunting and other place-based enterprises.										
<b>Compatibility Factor: Land Use; Land Suitability Factor: Development</b>											
8.1	Prepare a small area plan for the Down East region detailing the unique characteristics and means of protecting and enhancing Down East waterfront communities.  Other partners: Down East Council and other Down East advocacy groups, Cherry Point Operations; Cherry Point Public Affairs; Cherry Point Community Plans & Liaison Office	2017	N/A	■							
8.2	With benefit of the small area plans the County may craft conditional zoning (legislative) component in the Down East Conservation Ordinance (DECO) to fit the unique characteristics of the Down East waterfront villages; enabling retention and establishment of place-based traditional Down East enterprises (i.e., boat builders, decoy carvers, outfitters and hunting guides, fish houses, and supportive services, aquaculture, and marine trades). Aspects of the County’s Conditional Use Districts Ordinance (Sec. 3200) may be transferable.	2018	N/A	■							

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
8.3	Amend the Planned Conservation Development Option in the subdivision regulations to allow use of open space in cultivation and natural areas as well as the current provisions for golf courses, tennis clubs, playgrounds and other active recreation facilities.	2018	N/A	■							



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 9</b>	<b>Regulate mobile homes in the AICUZ and develop incentive programs for existing mobile home owners.</b> Sound attenuation is not a viable option for mobile homes since their design and construction are not adaptable to effective noise reduction. The continued placement of mobile homes within the AICUZ is not compatible with community efforts at sustaining MCAS Cherry Point and its associated facilities.										
<b>Compatibility Factors: Noise, Land Use; Land Suitability Factors: APZ, Noise</b>											
<b>9.1</b>	<p>Within Carteret County APZ-1 and APZ-2, rezone R15M to R15. Within the Emerald Isle APZ-2, rezone MH1 to R2. Within the Havelock AICUZ, eliminate the exemption for mobile homes. Ensure respective non-conformity clauses allow for the replacement of existing mobile homes.</p> <p>Incentivize and encourage transition to noise-compliant manufactured homes. Develop program for inducement payments (reimbursements) for fees, permits, plan review, and the like. Seek funding for grants to assist AICUZ mobile home owners in the removal or replacement of non-conforming structures.</p> <p>Other partners: Eastern Carolina Council/Consultant; Home Builders Associations; Economic Development Councils; Chambers of Commerce</p>	2017	N/A	■	□	□	■	■	□		□

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
9.2	<p>Inventory existing vacant parcels located outside the AICUZ where mobile homes are permitted. Explore potential parcel exchanges and offer incentives to interested private landowners/developers for re-location or conversion to noise-compliant structure.</p> <p>Other partners: Eastern Carolina Council/Consultant</p>	2019	TBD	■	□		■	■		□	□

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 10</b>	<b>Aircraft operations at MCAS Cherry Point and MCALF Bogue continue to generate concerns about noise from local property owners.</b> According to the Final EIS for the F-35B Joint Strike Fighter, there will be an approximate increase of 6,700 acres of areas exposed to 65 decibels or greater (Noise Zones 2 and 3). City of Havelock's noise regulations incorporate the recommendations of the 2002 JLUS and are cited by the DoD Office of Economic Adjustment as the exemplar for military communities.										
<b>Compatibility Factor: Noise; Land Suitability Factors: APZ, Noise</b>											
<b>10.1</b>	Conduct local workshop with City of Havelock Planning and Inspections to ascertain requirements for enforcing minimum noise level reduction requirements. Topics may include (but not limited to) human resources and training requirements, equipment needs, compliance issues, and communication and coordination with development community regarding recommended materials, availability, and cost.  Other partners: Eastern Carolina Council/Consultant	2016	N/A	□	□		■	□	□	□	□
<b>10.2</b>	Amend AICUZ Overlay District Ordinances to incorporate building design standards for minimum noise level reduction based on the City of Havelock Code of Ordinances Section 154.07(D)(11) through (13).  Other partners: Eastern Carolina Council/Consultant	2016	N/A	■	■		□	■	□	□	□

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
10.3	<p>Promote the 2002 New Construction Acoustical Design Guide and brochure to educate local builders on sound insulation and noise level reduction methods. Work with local homebuilders and other organizations to ensure that builders and relevant skilled trades are familiar with the noise attenuation measures, how to incorporate them in a cost-effective manner and how to market them as a benefit to economically sustainable development in the Cherry Point region. Seek funding from the NC Military Affairs Commission and other sources to fund the promotional campaign.</p> <p>Other partners: Eastern Carolina Council/Consultant; NC Military Affairs Commission</p>	On-going	TBD	■	■	■	■	■	■	□	■



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 11</b>	<b>Renewable Energy Development – Policies and Regulations.</b> The conversion of renewable resources such as wind, solar and biomass, into electricity, is a fast-growing sector in North Carolina’s economy and a growing part of the State’s energy mix. Access to renewable energy, including the ability to install these projects on military bases, is also a goal of the Department of Defense.										
<b>Compatibility Factor: Renewable Energy</b>											
<b>11.1</b>	Promote renewable energy development that is compatible with military operations. Collaborate and coordinate with existing initiatives including Food and Fuel for the Forces and programs of the NC Military Business Center and NC East Alliance. These include planning and development of infrastructure for biomass production.	2017	N/A	■	■	■	□	□	□	■	■
<b>11.2</b>	Adopt Solar Energy Development Ordinance using the Wayne County <i>Ordinance Regulating the Operation and Maintenance of Solar Energy Facilities</i> (see Appendices-Exhibit 5.1) as a template. For modifications due to local conditions, as a reference, use the <i>Template Ordinance for Solar Energy Development in North Carolina</i> developed by the North Carolina Sustainable Energy Association and the North Carolina Clean Energy Technology Center ( <a href="https://nccleantech.ncsu.edu/wp-content/uploads/NC-Template-Solar-Ordinance.pdf">https://nccleantech.ncsu.edu/wp-content/uploads/NC-Template-Solar-Ordinance.pdf</a> ).	2017	N/A	■	■	■	□	□	□	□	

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
<b>Issue Priority: 12</b>	<b>Economic Development.</b> Sustaining MCAS Cherry Point should result in provide surrounding communities with economic benefits and jobs.										
<b>Compatibility Factors: Land Use, Natural Resources, Farmland &amp; Forests, Infrastructure Capacity; Land Suitability Factor: Development</b>											
<b>12.1</b>	Partner with NC East Alliance, Chambers of Commerce, NC Military Business Center, consultant(s), and other appropriate partners to promote development of the Value-Added Agriculture and Marine Trades economic clusters.	Ongoing	TBD	■	□	■		■			■
<b>12.2</b>	Develop Plan for Agricultural Development & Farmland Preservation in Carteret County.  Other Partners: Cooperative Extension; Soil & Water Conservation District; NC Forest Service; Economic Development Councils	2017	TBD	■				□	□	□	■
<b>12.3</b>	Develop unified Economic Development Strategy to provide uniform development standards and coordinate joint economic development strategies with municipalities and rural communities.  Other Partners: All municipalities and unincorporated rural communities within Pamlico County	2016	TBD			■					■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
12.4	<p>As a follow up to the Comprehensive Economic Development Strategy (CEDS) prepared by East Carolina Council in 2012, develop an economic development strategy for the CPRJLUS planning area. This planning initiative should include an updated assessment of the regional economy including a demographic and economic overview (including regional economic impact of MCAS Cherry Point) and evaluation of the region's industry clusters. The regional economic development strategy should provide a vision, strategy framework, goals and strategies (education and workforce development, attracting and retaining business and investment, entrepreneurship/innovation, infrastructure and quality of life improvements) and provide five-year implementation plan, a one-year action plan and performance measures.</p> <p>Other Partners: Eastern Carolina Council/Consultant; MCAS Cherry Point; local economic development organizations; chambers of commerce</p>	2017	\$100K	■	■	■	□	□	□	□	■
12.5	Convene summit of relevant stakeholders (Weyerhaeuser, Onslow Bight Conservation Forum signatories, and others) to explore and discuss mutual objectives for land compatibility and future development and/or disposition of lands.	2016	N/A	■	■	■				■	■

# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
12.6	<p>Convene summit of Allies for Cherry Point's Tomorrow, Port of Morehead City, MCAS, and other stakeholders to (1) Discuss region's role in NC Food Manufacturing Initiative and (2) Collaborate and coordinate with existing initiatives including Food and Fuel for the Forces and programs of the NC Military Business Center to bring more locally-grown food products into mainstream retail and institutional food service supply chains.</p> <p>Other Partners: NC East Alliance; Center for Environmental Farming Systems; County Cooperative Extension; Soil &amp; Water Conservation Districts; County Economic Development Councils</p>	2018	N/A	■	■	■	□	□	□	□	■



# Regional Joint Land Use Study Marine Corps Air Station Cherry Point

PSC/TAC Issue Priority and Recommendation No.	Recommended Strategy	Timeframe	Cost	Carteret County	Craven County	Pamlico County	City of Havelock	Town of Emerald Isle	Town of Bogue	MCAS Cherry Point	Other
Issue Priority: NR	<b>Analysis of Natural Buffers and Conservation Opportunities.</b> The identification of environmental resources as natural buffers and conservation opportunities is a valuable method for reducing future conflict between MCAS and the surrounding communities. <i>Note: This issue was not ranked (NR) by the Policy Steering Committee/Technical Advisory Committee.</i>										
<b>Compatibility Factors: Natural Resources, Farmland &amp; Forests, Cultural Resources, Smoke from Prescribed Burning</b>											
NR.1	Convene summit of Croatan National Forest managers and other relevant stakeholders and explore establishment of protocol to coordinate future land sales and exchanges.	2018	N/A	■	■	■	■	□	■	■	■
NR.2	Convene discussion with State Historic Preservation Office and other relevant stakeholders on protecting rural landscapes of cultural and historical significance.  Other Partners: NC Sentinel Landscapes Partnership	2018	N/A	■	■	■					■
NR.3	Collaborate with NC Prescribed Fire Council to convene stakeholders and explore strategies to increase public awareness of the necessity of prescribed burning.	2018	N/A	■	■	■	□	□	■	■	■



# We Be People

## Article 1

7

I M P L E M E N T A T I O N



## Chapter 7: Practitioner's Guide

In order to move forward with the recommendations contained in this Study, Chapter 7 provides a set of specific guidance documents for use by local governments and other partners.

### 7.1 Overview

This section is intended to work as a stand-alone guide to assist local government staff and elected officials in the implementation of the three major recommendations contained in the MCAS Cherry Point Regional JLUS: (1) Strengthen Tall Structure and Wind Turbine Regulations; (2) Adoption of 'Dark Sky' ordinances to help prevent ambient light encroachment, and (3) Establish Military Influence Overlay Districts (MIODs) to coordinate communications with military installations. It will also inform citizens of the region on these key issues pertaining to the long-term sustainment of the MCAS. The document will provide background information and describe a general approach toward addressing these issues by local governments, non-profit organizations and partnerships, and the business community.

In addition, a website containing these fact sheets as well as additional resources has been established at: <http://cherrypointjlus.com>. This website creates a dynamic space for reference materials, fact sheets, and guidance that includes technical support to practitioners, decision-makers, and local staff / agencies responsible for creating positive change in the MCAS Cherry Point and surrounding communities.

For the practitioner, most likely staff of local governments within the Region, this Guide will provide documentation in the form of case studies, model ordinances, and examples of adopted plans and ordinances from other communities to initiate a process for implementing specific recommendations. Where applicable, suggested amendments to existing

ordinances are provided. In addition to Exhibits referenced herein, along with other Appendices, Figures, and Tables provided in the Technical Report, this Guide contains hyperlinks to the various reports, studies, and data from a broad range of sources used in the preparation of the Report recommendations.

The goal of this Practitioner's Guide is to:

- Provide a framework for discussion of issues surrounding the CPRJLUS recommendations with citizens, interest groups, elected officials and their appointed advisory boards.
- Provide ample data for the preparation of new ordinances, amendments to existing ordinances, plans and programs identified in the Recommendations Matrix of this report (Table 6-1).
- Provide a document that can be utilized by staff on a continuing basis and serve as a source of 'institutional knowledge' that will persist through normal and expected staff turnover, changes in appointed and elected boards, and rotation of MCAS personnel.

**Format.** The main sections of this Guide address the three Issue Priorities indicated above. Each Recommended Strategy (*refer to Issue Priority and Recommendations, Table 6-1*) will contain a brief background or summary paragraph, which will refer to pertinent Exhibits that will provide additional, supporting information. A suggested Approach to Implementation will be provided as starting point for action at the staff level. 'Other Resources' will refer to additional studies and reports used in the development of CPRJLUS recommendations; as noted, these resources can be sourced on the website address cited above. A "fact sheet" is also provided for each of the three priority issues as a quick reference guide, as noted previously.

**Disclaimer.** This document is a guide, and is not intended to provide 'review-and-adoption-ready' language for the preparation of text amendments or new ordinances for review by planning boards, technical review committees or governing boards.

Go to <http://cherrypointjlus.com> to get more information



# TALL STRUCTURES

## Context

Depending on their location, cellular telephone towers, wind turbines, and buildings taller than three stories in height can pose a variety of potential concerns related to the operations of a military training facility.

These concerns include direct space conflicts with aircraft flight paths, interruption of sight lines, and (often) electromagnetic interference with radar and messaging systems.

Proper siting and design can frequently mitigate all or a portion of the potential threats posed by tall structures.



## Mitigation & Avoidance Concepts

- Proper siting of new construction
- Revise land use map and zoning ordinances to ensure future avoidance of new construction in critical areas
- Orientation to airfields and radar installations
- Relocation of existing towers
- Create uniform ordinances across the Region that address height and siting requirements
- Additional military radar towers to fill in for lost coverage
- Alter training and operations to account for loss of coverage and false imaging
- Co-Location / Consolidation of cellular services to reduce the number of towers

## INJLUSREPORT...

Page 2-6 | Organization

Page 3-6 | Background Information

Page 6-6 | Implementation

22%

of people surveyed thought that tall structures posed the biggest compatibility issue for MCAS -

Cherry Point



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7-2 | Page **MCAS** CHERRY POINT

find out more:



[www.CherryPointJLUS.com](http://www.CherryPointJLUS.com) Practitioner's Guide



252.971.1121





# DARK SKIES

## Context

Night testing and training is an essential to military missions. Pilots conduct realistic night flying scenarios including landing practice; night precision runway approaches and landings; and low-visibility, operational testing. Light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations. Continuing development and associated increases in light levels at night pose a serious, but avoidable, threat to the readiness of our military as well as to natural beauty of the coast and the important tourism industry.



## Mitigation & Avoidance Concepts

- Adopt regulations to prevent excess outdoor lighting and control upward glare
- Replace existing lighting fixtures with widely-available and economical 'dark sky friendly' lighting fixtures approved by IDA / IES (International Dark Sky Association/Illuminating Engineering Society)
- Use timing devices/cut-off switches to extinguish outdoor lighting when it isn't needed (after business hours, etc.)
- Increase public awareness of the benefits of dark skies for the military and the Region's economy and environment

## INJLUSREPORT

Page 4-13 | Technical Information

Page 5-3 | Compatibility and Land Suitability Analysis

Page 6-13 | Recommendations



**Animals and plants live by a rhythm based on a 24 hour cycle. Wildlife and fish can become disoriented by too much artificial light at night, interfering with migration, mating, foraging for food, and sleep.**



**GO TO [WWW.CERRYPOINTJLUS.COM](http://WWW.CERRYPOINTJLUS.COM) TO GET MORE INFORMATION**







# MILITARY INFLUENCE PLANNING DISTRICTS



## Context

“Military Influence Planning Districts” (MIODs) coordinate communications with the military installation and align noise/lighting/disclosure requirements with local economic development goals. While the participating governments of the MCAS Cherry Point Regional JLUS are aware of North Carolina’s statutory notification requirements, other municipalities within the Region often are not aware. Furthermore, none of the counties or municipalities in the JLUS Study Area has existing written policies or procedures in place to ensure compliance with the state statute.

## Mitigation & Avoidance Concepts

- Municipalities within a five-mile radius of the Coastal Carolina Regional and the Michael J. Smith Airports, and the Port of Morehead City, should voluntarily incorporate the notification requirements of NCGS 153-323b, and amend land use plans to create MIODs to comply with NCGS 153A-323b.
- Municipalities and counties should adopt Memoranda of Agreement to establish a process to ensure timely and consistent notification and cooperation between the parties on projects, policies, and activities.
- Reconstitute the Cherry Point MCAS Regional JLUS Technical Advisory Committee into the Allies for Cherry Point’s Tomorrow (ACT) Planning Committee.

## INJLUSREPORT

Page 5-2 | Compatibility and Land Suitability Analysis

Page 6-2 | Recommendations

Page 6-8 and 6-10 | Recommendations



**Marine aircraft frequently shuttle between Navy ships docked at the Port of Morehead City and MCALF Bogue. MCALF Bogue is the only East Coast location for Marine and U.S. Navy aircraft to practice carrier and LHD landings.**

**GO TO [WWW.CHERRYPOINTJLUS.COM](http://WWW.CHERRYPOINTJLUS.COM) TO GET MORE INFORMATION**







## Tall Structures

### GOAL: Strengthen Tall Structure and Wind Turbine Regulations.

Wind energy development has been a controversial issue in the Region. While significant wind resources exist for potential development, the January 2015 *Marine Corps Air Station Cherry Point and Ranges Military Mission Footprint* report identifies a 40-nautical mile radius where wind turbines are incompatible (Figure 7-1). The incompatible area encompasses the entire CPRJLUS Region. Wind turbines present a host of compatibility issues for military aviators. Their height poses flight path hazards and may create line of sight obstructions as well as glare and glint. Oscillation, caused by the rotation of turbine blades and electromagnetic interference, can cause disruption to electronic instrumentation, radio communications, and radar systems.

The following is a set of recommendations designed to avoid or mitigate the negative consequences of tall structures to MCAS Cherry Point operations.

**Recommendation 1.1:** *Strengthen Tall Structure ordinances by creating uniform standards throughout the Region.*

**Recommendation 1.2:** *Amend Tall Structures Ordinance for regional conformity for wind turbine development standards based on the Carteret County ordinance.*

The encroachment of tall structures into military air space, flight paths, and approach zones is a critical issue of military/civilian land use compatibility and has long been a priority encroachment concern for all North Carolina military installations.

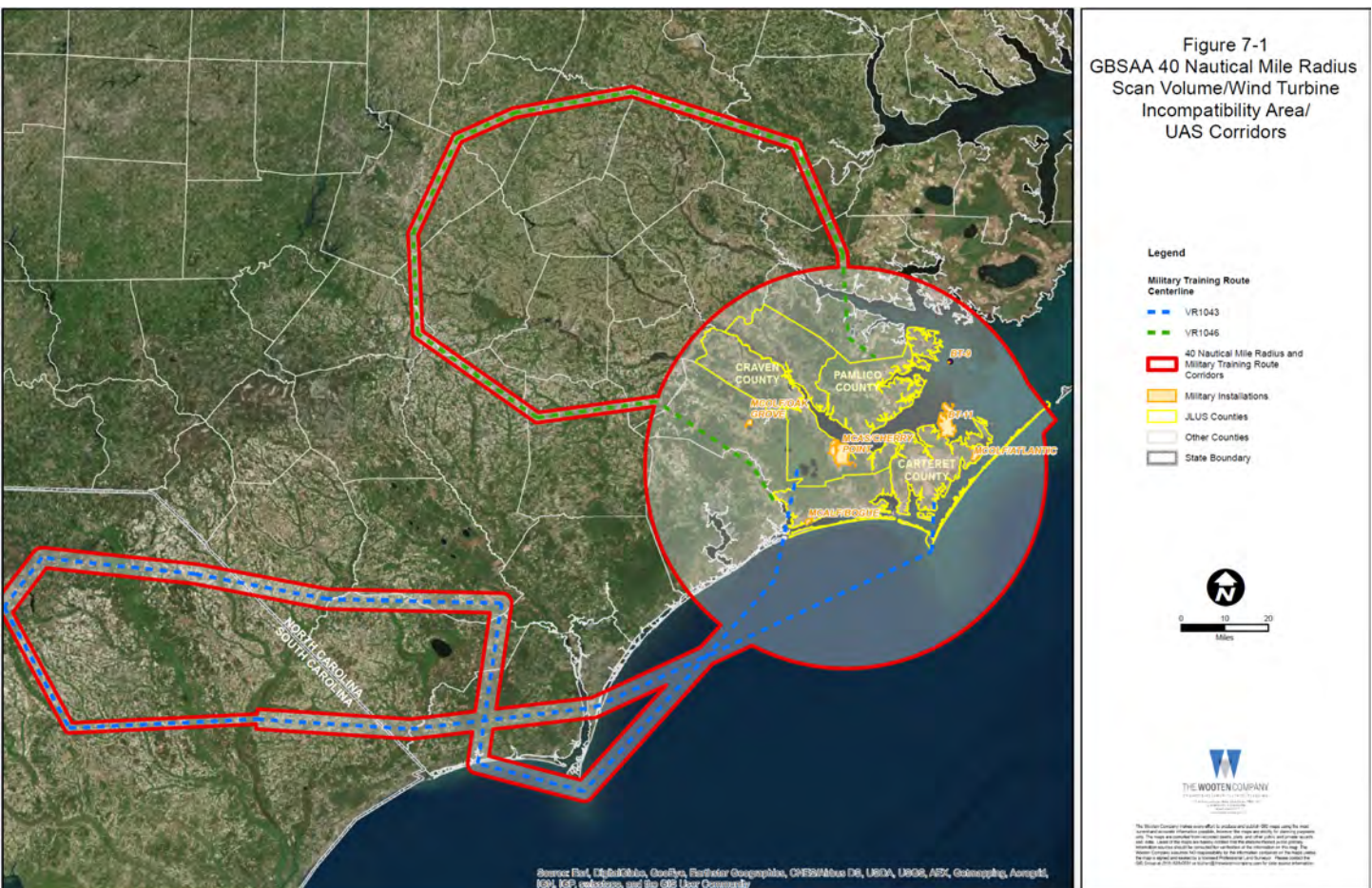


Figure 7-1. Military Review Requirements

Carteret, Craven, and Pamlico County have adopted tall structures or wind energy ordinances to regulate the development of small, large and utility scale wind projects in their respective communities. The Carteret County Tall Structure Ordinance (refer to Appendices, Exhibit 7-1 for the complete ordinance) is the most stringent in the Region and provides the most concrete guidance on tangible criteria like setbacks, noise, and shadow flicker. The contents of these ordinances vary widely.

*Approach to Implementation.* Craven and Pamlico County may amend their respective ordinances to reduce their maximum height for utility-scale wind turbines from 500' to 275' to conform with Carteret County's requirement. They may also amend their respective ordinances to match the setback requirements and noise control levels of the Carteret ordinance.

***Recommendation 1.3: Amend Tall Structure Ordinances to include references to the NC Session Law 2013-51 (Wind Energy Facilities Permitting Program) and 2014-79 (Military Lands Protection Act).***

All three County ordinances require review and comment by MCAS Cherry Point on all wind energy applications. While the desire for input from MCAS is understandable, it is in conflict with the protocol established in the 2011 Ike Skelton Defense Authorization Act, which requires that all comments on proposed energy projects must come through the [DoD Siting Clearinghouse](#).

All energy projects are formally reviewed by the Clearinghouse as part of the Federal Aviation Administration (FAA) review. Developers are encouraged to contact the Clearinghouse for informal review early in the development process to identify areas of incompatibility with the military mission and determine if appropriate mitigation measures are available. The 2011 act requires local base commanders and/or their designated personnel to participate in this process. The MCAS Cherry Point CPLO (Community Planning & Liaison Office) serves as the commander's designee for this review.

*Approach to Implementation.* Amending these ordinances to require applicants to show that they have successfully completed DoD review through the Siting Clearinghouse may be a more effective way to address this concern without putting local commanders in a position where a local entity is asking them to disrupt DoD protocol. The Town of Newport Code, Appendix A, Article 9-6.1(b) provides sample language for requiring proof that review has been completed (see Exhibit 1.3-A). Sample amendments are provided for the Carteret County Tall Structure Ordinance (Exhibit 1.2-A), the Craven County Tall Structure Ordinance (Exhibit 1.2-B) and the Pamlico County Tall Structure Ordinances (Exhibit 1.2-C).

***Recommendation 1.4: Conduct Regional Workshop on Wind Energy and Military Compatibility. Invite representatives from Department of Defense to discuss wind turbine mitigation measures pertaining to the UAS Operations/GBSAA Wind Turbine Incompatibility Map. The workshop could provide more data on specific aspects of incompatibility in the Cherry Point region (i.e. radar, physical obstruction, electromagnetic interference, other) and illustrate case studies of successful mitigation strategies from other states.***

The Wind Turbine Incompatibility Map referenced above depicts the entire CPRJLUS region as incompatible for wind energy development, and local ordinances have been effective at discouraging development of the wind resource in the Study Area. To date, no utility-scale projects have been constructed. However, the quality of the coastal plain's wind resources is the best in North Carolina, if not the Southeast (see Figure 5-2). Coupled with the rural landscape and access to transmission, this resource continues to be attractive to the wind energy industry. Interest in developing this resource is likely to continue as wind turbine technology advances and the demand for renewable energy increases.

The proposed development of renewable energy projects has been a contentious issue in the study area for nearly a decade. Regulation of these projects is worthy of further study with stakeholders from the military, local government, developers and landowners at the table. The impacts of proposed renewable



energy projects are not universal; they are mission specific. Physical obstructions, radar interference and glare are potential impacts to mission compatibility from proposed renewable energy projects, and they are all impacts that have been successfully mitigated through careful stakeholder coordination.

**Approach to Implementation.** In addition to all parties of the MCAS Cherry Point Regional CPRJLUS, other partners should be convened, including the NC Department of Commerce, NC Department of Military & Veterans Affairs, the North Carolina Sustainable Energy Association, renewable energy developers, and major landowners (Weyerhaeuser, Open Ground Farms). MCAS Cherry Point and Marine Corps Installations East can provide examples of similar 'wind working groups' that have been convened to address wind energy/military mission compatibility on a regional scale, and recommend additional entities that can provide expertise.

**More Resources.** An additional resource is the 2008 North Carolina Wind Working Group's *Model Wind*

*Ordinance for Wind Energy Facilities in North Carolina.* This document provides guidance to local governments on minimum setbacks, appropriate standards for noise and shadow flicker as well as decommissioning standards. The model ordinance, included in the Appendices (*refer to Exhibit 7-2 in the Appendices*), has been the foundation for many wind ordinances in the State and is a good place to start for communities interested in establishing or updating their ordinances.

The [Texas A&M Institute of Renewable Natural Resources](#) has conducted extensive research on wind energy and military airspace in the Lone Star State (*refer to Exhibit 1.4-A in the Appendices*). Kern County, CA, home of Edwards AFB, promotes growth in both the aerospace/defense and renewable energy sectors as part of their [overall economic development strategy](#). As part of a statewide effort beginning in 2006, the County has developed a GIS-based Red-Yellow-Green mapping tool to protect mission-critical areas and provide a communication tool for developers and land use decision makers. A RYG (Red-Yellow-Green)

Strategy Map is part of its [zoning ordinance](#), [reproduce](#) [d as Figure 7-2.](#)

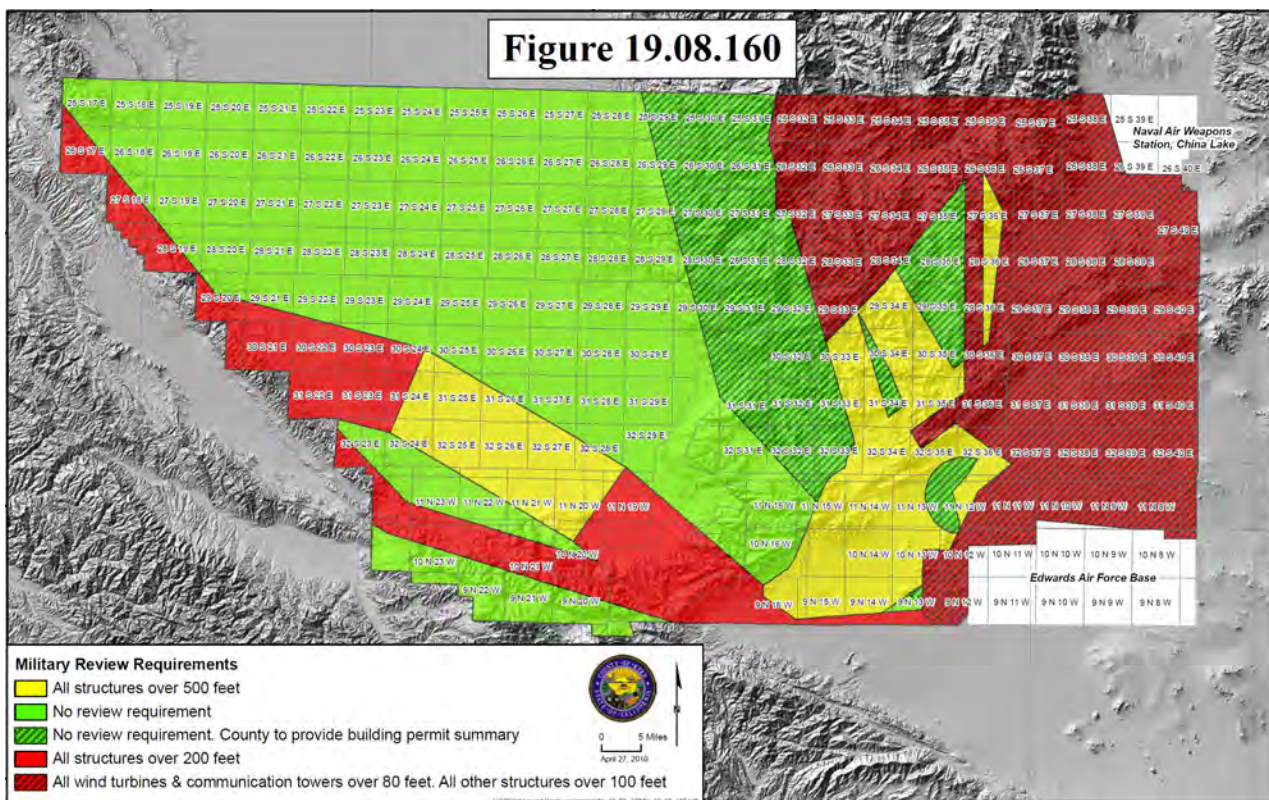


Figure 7-2. Strategy Map (Kern County, CA)

## Dark Sky Initiatives

### **GOAL: Adopt 'Dark Sky' Ordinances to Help Prevent Ambient Light Encroachment.**

The military needs dark skies for effective nighttime operations and flight training. Night testing and training is an essential to the military missions of MCAS Cherry Point, MCALF Bogue, and MCOLF Atlantic. Pilots conduct realistic night flight scenarios including LHD landing practice, night precision runway approaches and landings, and low-visibility operational testing. Light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations.

Protecting the night sky from ambient light pollution has been a priority encroachment concern for all North Carolina military installations, beginning with the 2008 JLUS Update for the Fort Bragg Region, which included a [Light Pollution Study](#). The North Carolina Sentinel Landscapes Partnership, a collaborative effort between the US Marine Corps and the NC Department of Agriculture, states its three tenets of compatibility as "keeping land in forestry and agriculture, limiting tall structures, and preventing upward shining lights." Presently, the Northeastern North Carolina Regional Joint Land Use Study will factor the protection of dark skies in its efforts to preserve key military flight paths from Seymour Johnson AFB to the Dare County Bombing Range, ranging over several counties.

Future growth and development along the major highways of the region could pose adverse impacts from light pollution from over-lighting and unshielded lighting. If continued without mitigation measures in place, this could curtail future night time training and readiness activities at these installations.

***Recommendation 4.1: Evaluate and compare existing City of Havelock (and others within the region) outdoor lighting standards with dark sky lighting ordinances from other North Carolina municipalities. Determine if local measures meet International Dark Sky Association guidelines, and if so, consider as a template for region-wide standards.***

Regulations that minimize interference with nighttime training environments do not require the strict

prohibition of exterior lighting or the complete replacement of existing lighting fixtures. Instead, regulations focus on the installation of less intrusive lighting applications either for new development or as part of the routine maintenance and replacement of public utilities. For example, the City of Havelock's outdoor lighting regulations require submittal of a lighting plan for all new developments (subdivision plats, site plans, plot plans), measures to prevent light spillover to adjoining properties, and timer devices to shut off or reduce light levels after normal business hours (*refer to Exhibit 4.1-A in the Appendices*). Furthermore, the requirements of Section 157.08 state that "all exterior lighting shall not interfere with aircraft."

***Approach to Implementation.*** The City of Havelock's Outdoor Lighting requirements can be a helpful starting point in developing consistent, region-wide standards. These standards should be compared to the IDSA Model Ordinance and User's Guide (*refer to Exhibit 4.1-B in the Appendices*) for Lighting Controls (p. 9), which requires outdoor lighting to have lighting controls that prohibit operation when sufficient daylight is available, and to include the capability, either through circuiting, dimming or alternating sources, to be able to reduce lighting without necessarily turning all lighting off.

***Recommendation 4.2: Adopt Dark Sky Lighting Ordinance that minimizes urban sky glow and potential for light trespass onto adjacent properties. Specific development standards should be incorporated into zoning ordinances and building codes of each jurisdiction including areas adjacent to installation boundaries. The ordinance should also include regulation of LED billboards in important flight paths and approach departure corridors.***

In addition to being a major encroachment issue that threatens the military's training capability, a growing body of evidence links light pollution directly to measurable negative impacts including increased consumption of energy, disruption of ecosystems and wildlife, harmful effects on human health, and questionable impacts on crime and safety. Outdoor lighting ordinances have been adopted by local governments throughout the country and are a proven



tool for ensuring that communities implement safe and efficient outdoor lighting.

**Approach to Implementation.** A model lighting ordinance, based on a template provided by the International Dark Sky Association, has been developed. This model is a prescriptive-based code that regulates the installation of new lighting systems or the replacement of lighting fixtures for non-residential uses and common residential area. The model ordinance denotes four 'Lighting Zones' where different standards apply based on the development intensity of the area. For the Cherry Point region, much of the area would fall under LZ-0 or LZ-1. Lighting Zones 2 and 3 would apply to suburban areas and nodes of higher-intensity commercial uses, respectively.

Lighting ordinances from City of Asheville (Exhibit 4.1-C) and the City of Raleigh (4.1-D) are also provided as exemplars of North Carolina ordinances that have been cited for their dark sky compatibility. The City of Raleigh's *Lighting Ordinance Guide* (Exhibit 4.1-E) is a user-friendly manual with explanations and illustrations related to their outdoor lighting requirements.

**Recommendation 4.3:** *Invite private sector participation in workshops and seminars for local contractors, developers, and local government building inspectors and planning officials to provide technical information on the installation, use, and maintenance of dark sky-approved lighting systems.*

Dark Sky-friendly outdoor lighting is widely available and economical. Most lighting contractors, installers, and retail outlets such as home improvement stores are familiar with dark sky requirements.

**Approach to Implementation.** The [NC Military Business Center](#) and trade organizations such as the [Carolinas Associated General Contractors](#) can provide information on firms experienced in outdoor lighting, particularly companies that have worked with the military. The [NC League of Municipalities](#) has relationships with consulting firms and endorsed vendors who can provide assistance to its members.

**Recommendation 4.4:** *Work closely with NCDOT, public utilities, and private utility providers to ensure the installation of dark sky-approved lighting along US-70, especially at the planned Havelock Bypass.*

Lighting within public road rights-of-way would not be regulated by local ordinance.

**Approach to Implementation.** The [US70 Corridor Commission](#) would be an appropriate convener of local utilities providers Duke Energy Progress; Carteret-Craven Electric Cooperative; and Tideland EMC, as well as NCDOT Division 2 officials and the Department's military affairs awareness coordinator to discuss actions for implementing this recommendation.

**More Resources.** The [International Dark Sky Association](#) website contains a wealth of related resources. The [NASA Blue Marble Navigator](#) works with Google Maps to provide the viewer a searchable map to show light pollution anywhere on earth. A contemporary lighting ordinance from the Town of Wake Forest, NC i provides example language for general design standards, measurement techniques, and compliance (see Exhibit 4.1-F).

## Military Influence Overlay Districts (MIODs)

**GOAL:** Establish 'military influence planning districts' to coordinate communications with the military installation and to align noise/lighting/disclosure requirements with economic development goals.

Local governments with the Cherry Point CPRJLUS region should codify procedures for compliance with NCGS 153A-323b. These actions would: (1) ensure that the high level of communication and collaboration among the CPRJLUS partners remains in perpetuity; and (2) ensure consistency of compliance among all local governments of the region. The following recommendations can be formulated and implemented by local governments within the region in the short term.<sup>1</sup>

**Recommendation 3.1:** *All local governments with territorial authority within the area of a 5-mile radius*

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<sup>1</sup> Note: Recommendation 3.7 from the implementation table in Chapter 6 of the CPRJLUS report is to "Conduct comprehensive regional survey of public attitudes toward the military presence in North Carolina," and is a long-term (2020) action requiring involvement and leadership from the State agencies (Commerce, Military & Veterans Affairs). Since it is not directly related to this Issue Priority it is not included in this *Practitioner's Guide*.

*of military installations should incorporate the notification requirement of NCGS 153A-323b into administrative procedures and permit application submittal requirements.*

The State of North Carolina has declared its support for military installations and the need to ensure compatibility with surrounding land uses through actions such as Governor McCrory's Executive Order #34, which mandates state agency coordination and notification of State activities affecting compatibility, and Session Law 2013-59 (NCGS 153A-323b), which requires local governments within a five-mile radius of military installations to notify those installations of land use changes (*refer to Exhibit 3.1-A in the Appendices*).

The local government staffs of the counties and municipalities participating in the MCAS Cherry Point Regional JLUS are fully aware of the notification requirements of NCGS 153A-323b. However, based on a survey of local planning directors, there appears to be a general lack of awareness among staff of other municipalities within the region. Several responders stated that the requirement was not applicable to their jurisdiction. None of the counties or municipalities in the CPRJLUS area has existing written policies or procedures in place to ensure compliance with the statute.

**Approach to Implementation.** Suggested language for inclusion in municipal ordinances reads as follows:

*Notification of Military Installation Required. "An application for any permit under the UDO requiring notification to a military installation in accordance with NCGS 153-323b shall be forwarded to the Commanding Officer, Marine Corps Air Station Cherry Point, in order to provide for review and comment concerning any possible impacts on the operations and mission of Marine Corps Air Station Cherry Point. No application submitted hereunder shall be deemed completed until such time as said review is completed and such comments are received."*

As examples, the City of Havelock could amend its UDO, Section 153.11(D) – Permit Application and Issuance: Processing, to include this requirement (*refer to Exhibit 3.1-B in the Appendices*). The Town of Emerald Isle could revise the UDO (specifically Table

2.1 – Summary Procedures Table) to include a 'MCAS Cherry Point' column to denote those activities covered by the NCGS 153A-323b. Additionally, the Town could amend the UDO to add a new Section 2.3.4(5) to include the notification requirement (*refer to Exhibit 3.1-C in the Appendices*). Carteret County could amend Appendix C of the Code of Ordinances (Zoning Ordinance) by adding a new section 1307.4 under Notice Requirements (*refer to Exhibit 3.1-D in the Appendices*). The County may also amend Appendix B, Subdivision Regulations, Section 3-5, Major Subdivisions, and add language specifying the Commanding Officer of MCAS Cherry Point as an agency to be given an opportunity to make recommendations regarding a major subdivision plat before the plat is approved (*refer to Exhibit 3.1-E in the Appendices*).

Craven County may implement Recommendation 3.1 by amending its official Zoning Map as referenced in its Marine Corps Air Station Zoning Ordinance (Appendix D, Part I, Section D-I\_1.2 – Jurisdiction) to include the area of the County located five miles or less from the perimeter boundary of the Installation (see Figure 7-3 on the next page).

**Recommendation 3.2:** *Local governments with territorial authority within a five-mile radius of Coastal Carolina Regional Airport (CCRA) and Michael J. Smith Airport (MJS) should work with airport officials to formulate voluntary notification procedures for proposed land uses changes similar to those prescribed in NCGS 153A-323b.*

**Recommendation 3.3:** *Local governments with territorial authority within a five-mile radius of the Port of Morehead City (MHC) should provide voluntary notification procedures for proposed land uses changes similar to those prescribed in NCGS 153A-323b.*

These recommendations would effectively expand the Five-Mile Notification Requirement to include the two major civilian airports and the Port of Morehead City, all facilities that are integral to training and operations at MCAS Cherry Point. Throughout the year, these facilities essentially function as extensions of the Installation. Changes in land use in the vicinity of these



facilities could also adversely impact the military mission.

MCAS Cherry Point engages frequently with these airports to conduct 'touch and go' operations and other training functions. The State Port at Morehead City is a key strategic facility integral to the operations of North Carolina's Marine Corps installations. It is the port of embarkation and debarkation for the Second Marine Expeditionary Force based at Camp Lejeune, and Navy amphibious vessels (the 'Gator Navy') are a common sight at the port. These ships, including amphibious assault vessels (LHA/LHD) and amphibious transport dock vessels (LPD) serve as platforms for helicopters, Harriers, and the Osprey tilt rotor aircraft. Future capability for the LHA-class vessels will include the F-35 Joint Strike Fighter. Marine aircraft frequently shuttle between Navy ships docked at the Port and MCALF Bogue. The Marine Wing Support Squadron 271 is responsible for off-loading host aircraft when Navy

vessels are docked, and MCALF Bogue is the only East Coast location for some types of LHD training.

**Approach to Implementation.** Local jurisdictions within the 'expanded' Military Influence Overlay Districts are not bound by the requirements of NCGS 153-323b. However, these municipalities could, through a memorandum of agreement, voluntarily notify the Installation of proposed changes. Expanding the notification areas would provide an additional benefit of helping prevent incompatible land uses underneath low-level flight routes in the region. The expanded notification areas would include Town of Atlantic Beach, Town of Beaufort, Town of Bridgeton, Town of Morehead City, City of New Bern, Town of Pine Knoll Shores, Town of River Bend, and Town of Trent Woods.

**Recommendation 3.4:** *Municipalities in Craven and Carteret Counties should ensure their land use ordinance provisions are consistent with their respective counties relative to Tall Structures and*

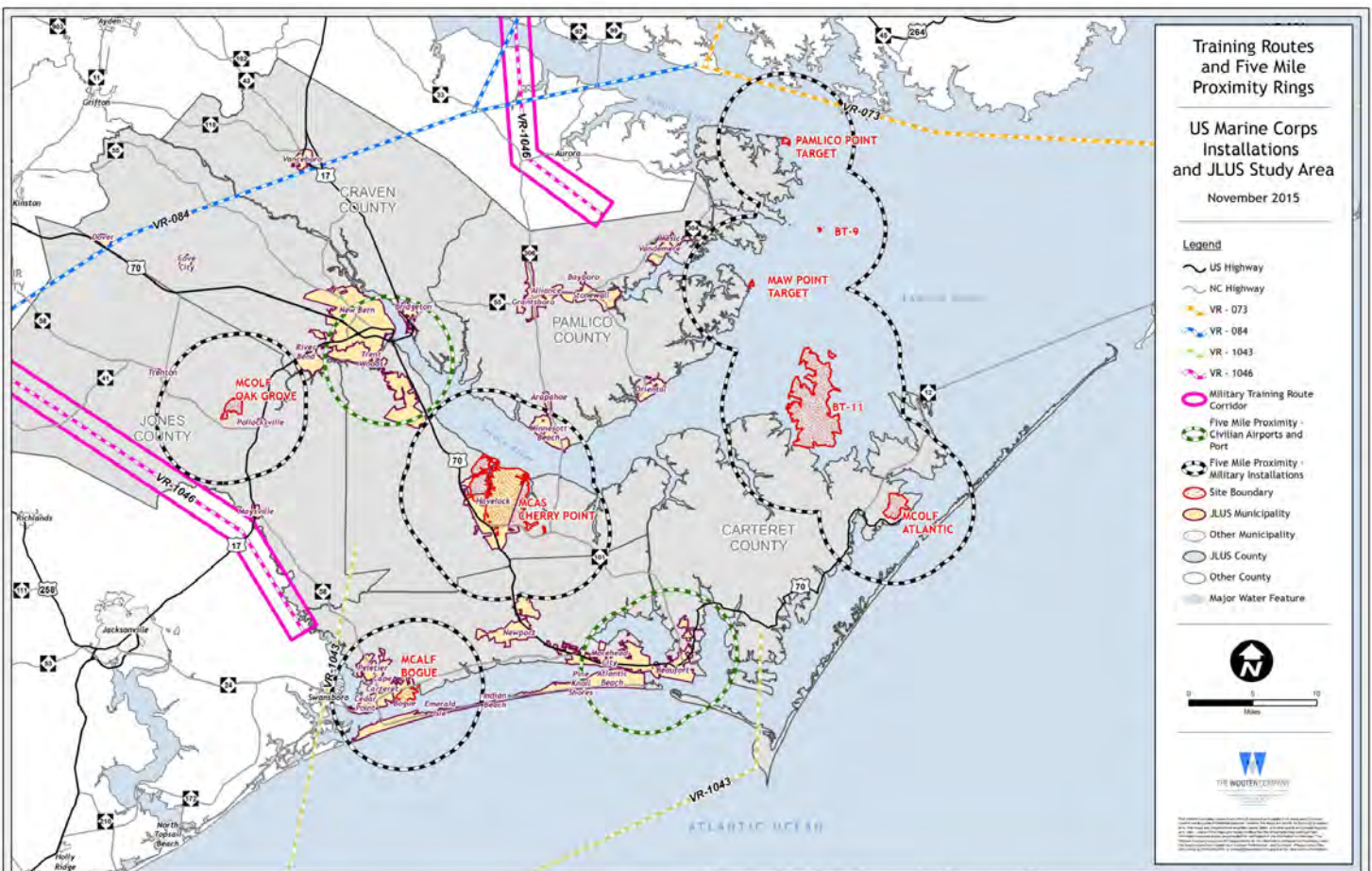


Figure 3-3 Expanded MIOD Areas (green dashed circles).

## *Airport Overlay Standards.*

The Towns of Morehead City and Newport are the two jurisdictions regulating Tall Structures in addition to Carteret County. While Newport's Tall Structures ordinance was discussed in Issue Priority 1, the Town of Morehead City's requirements permit a maximum tower height of 500' in some zoning districts. The Town of Beaufort, home of the Michael J. Smith Airport, has Airport Regulations in the form of overlay districts (Land Development Ordinance, Section 10): the Airport Environmental District (A-ED) and Airport Runway Exclusion District (A-RE), in addition to Carteret County (Zoning Ordinance, Appendix D).

In Craven County, the Town of Trent Woods and the Town of River Bend have Tall Structure Regulations in addition to the County's requirements. Trent Woods specifically excludes 'cell towers, windmills, and solar farms' in the Utility Service Equipment provision of its Permitted Use Table (Zoning Ordinance, Attachment A). In River Bend, District Use Regulations (Zoning Ordinance, Section 15.02.124), 'Public Utility' and 'Utility Tanks, Pumps, Electrical Substations and Related Services' are permitted only as a 'SE – Special Exception Use' requiring approval of the Board of Adjustment after a recommendation from the Planning Board. Craven County's airport height regulations are contained in Code of Ordinances, Appendix F, Coastal Carolina Regional Airport and Zoning Height Control Ordinance. City of Havelock, home to MCAS Cherry Point, provides explicit language in its AICUZ Overlay District requirements (Section 154.07(E)), stating that "no structure may be constructed or altered in a manner or at a height that constitutes a safety hazard to aerial navigation as determined by the Federal Aviation Administration (FAA)."

**Approach to Implementation.** Using a similar approach as described the previous Tall Structures discussion, County and Municipal staff should confer on discrepancies between local and county standards. For Airport Height Regulations, this conference should take place between Craven County and City of Havelock, and Carteret County and Town of Beaufort, respectively.

**Recommendation 3.5: Amend County and Municipal Land Use Plans to create Military Influence Overlay Districts (MIOD).** *MIODs would consist of all areas*

*within a 5-mile radius of a military installation, facility, or training site. MIODs could include the Port of Morehead City and regional airports. Primary compatibility factors for the MIODs should include communication and coordination regarding safety, noise, vertical obstructions, infrastructure extensions, residential density, lighting, and disclosure requirements.*

Military Influence Overlay Districts (MIOD) have been recommended by the Office of Economic Adjustment as an effective tool for addressing a variety of compatibility issues. For communities within the Cherry Point CPRJLUS Region, the MIOD could provide an organizational framework to ensure compliance with notification requirements. Furthermore, it could enhance coordination and communications with the installation and aid jurisdictions in aligning requirements for compatibility measures with economic development goals.

**Approach to Implementation.** Overlay Districts are a commonly-used tool of local governments to confer additional requirements or standards within a designated area. In North Carolina, Harnett County has adopted a Military Corridor Overlay District to ensure the compatibility between air and exercise operations associated with Fort Bragg and land uses on properties within five miles of its boundary. A draft template for the MIOD is provided in the Appendices (*refer to Exhibit 3.5-A in the Appendices*).

**Recommendation 3.6: Adopt Memorandum of Agreement to establish a process to ensure timely and consistent notification and cooperation between the parties on projects, policies, and activities.** *Upon adoption by all parties, reconstitute the Cherry Point MCAS Regional JLUS Technical Advisory Committee into the Allies for Cherry Point's Tomorrow (ACT) Planning Committee.*

Another measure to ensure compliance with NCGS 153-323b and strengthen regional coordination would be for the MCAS and all jurisdictions within the respective five-mile notification areas to adopt a Memorandum of Agreement (MOA). A MOA or cooperative agreement is a document written between parties to cooperatively work together on an agreed upon project or meet an agreed upon objective. The purpose of an MOA is to

have a written understanding of the agreement between parties. The MOA can also be a legal document that is binding and hold the parties responsible to their commitment or just a partnership agreement. The MCAS Cherry Point Regional JLUS MOA would describe the specific responsibilities of the jurisdictions and provide a framework for ongoing collaboration on regional issues affecting compatible land uses. Exhibit 3.6-A provides a template for a regional MOA.

**Approach to Implementation.** The MCAS and all jurisdictions within the five-mile notification area would review and adopt the MOA.

**More Resources.** For an in-depth analysis of Military Influence Overlay Districts and other land use management techniques, including case studies from other military installations, refer to the Appendices, Exhibit 7-3 for an excerpt from *The Toolkit: Section C - Compatible Land Use Planning*. Adapted from the Office of Economic Adjustment's *Practical Guide to Compatible Civilian Development Near Military Installations*.

The Scott Air Force Base/Mid-America St. Louis Airport Joint Land Use Study contains a template for a Memorandum of Understanding (see Appendices, Exhibit 7-4). The US Army Corps of Engineers' [\*Natural Resources Management Gateway\*](#) site provides an extensive list of MOAs/MOUs and a variety of templates. The Appendices also include a Memorandum of Understanding from the Capital Area MPO (CAMPO) for the multi-jurisdictional agreement to review land use proposals along the US Highway 1 corridor (refer to Exhibit 7-5 in the Appendices).