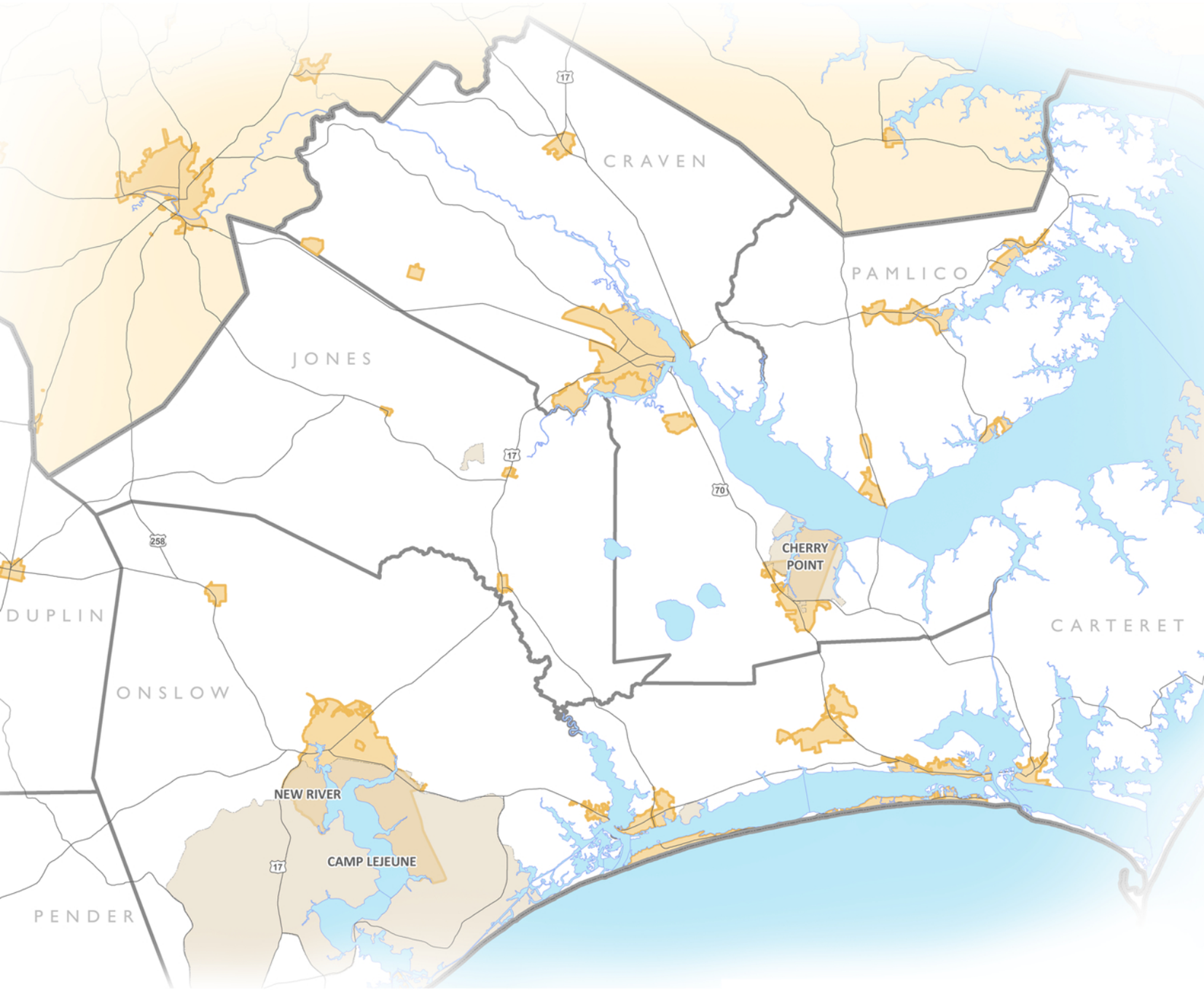


NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Submitted to:

North Carolina Eastern Region's

Military Growth Task Force

www.nceastmgtf.org

Developed by:

Marstel-Day, LLC

In Partnership with:

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

EXECUTIVE SUMMARY

Background

Military growth communities across the nation are taking steps to address the impacts of a rapid influx of service members and their families. Some of this growth is attributable to the decisions of the 2005 Base Realignment and Closure Commission, while some results from the Army's "Grow the Army" (GTA) and the Marine Corps' "Grow the Force" (GTF) initiatives. These latter initiatives are the result of warfighting realities in Afghanistan and Iraq that require the deployment of ground forces beyond levels that the two services could sustain with their pre-war force structure.

Between the years 2006 and 2011, the Marine Corps will add 11,477 jobs at its eastern NC installations. These service members will bring with them an estimated 13,500 dependents. The combined totals of these two population groups are referred to as the "direct impact" growth. Using commonly accepted population projection practices, this study concludes that the direct impact growth will induce the influx of an approximately 15,000 new residents that arrive to reinforce the regional service industry in response to the increased military population and activity. This growth of approximately 40,000 new residents represents a 160% increase in the normal regional population growth of 25,157 in the same period, as forecast by the NC State Demographer before the announcement of GTF impacts.

Installation	Active Duty	Dependents	Total
Marine Corps Base, Camp Lejeune	8,581	10,093	18,674
Marine Corps Air Station, New River	1,411	1,660	3,071
Marine Corps Air Station, Cherry Point	1,485	1,746	3,231
Induced Growth (Est. / Service Industry)	//	//	15,110
Total	**11,477**	**13,499**	**40,086**

Marine Corps "Grow The Force" Population Increases Eastern North Carolina Installations

	1-Jan-07	1-Jul-07	1-Jan-08	1-Jul-08	1-Jan-09	1-Jul-09	1-Jan-10	1-Jul-10	1-Jan-11	1-Jul-11	31-Dec-11	Number	AAG %
												Study Period Growth	
Carteret	63,360	63,294	63,551	63,807	64,118	64,428	64,685	64,942	65,173	65,404	65,636	**2,276**	**0.71%**
Craven	96,353	96,406	96,873	97,339	97,776	98,212	98,589	98,965	99,333	99,700	100,068	**3,715**	**0.76%**
Duplin	52,851	53,133	53,439	53,745	54,052	54,359	54,651	54,943	55,253	55,563	55,873	**3,022**	**1.12%**
Jones	10,277	10,315	10,343	10,370	10,391	10,411	10,408	10,404	10,403	10,402	10,401	**124**	**0.24%**
Onslow	167,918	169,302	170,296	171,289	172,375	173,460	174,207	174,953	175,399	175,844	176,289	**8,371**	**0.98%**
Pamlico	12,968	12,947	12,950	12,952	12,958	12,963	12,964	12,964	12,965	12,965	12,966	**-2**	**0.00%**
Pender	49,407	50,430	51,287	52,144	52,964	53,783	54,437	55,091	55,746	56,400	57,055	**7,648**	**2.92%**
Eastern Region	453,134	455,827	458,739	461,646	464,634	467,616	469,941	472,262	474,272	476,278	478,288	**25,154**	**1.09%**
NC	8,969,527	9,069,398	9,154,844	9,240,289	9,318,843	9,397,397	9,468,246	9,539,095	9,611,456	9,683,816	9,756,207	**786,680**	**1.70%**

County, Region and State Population and Projection 2007-2011

Source: Mid-year estimates are North Carolina Office of State Budget and Management, *County/State Annual Population Totals, June 2008*; and end-year estimates are Marstel-Day, January 2009

This growth report is not the subject of speculation, modeling, estimation or expectations. For eastern NC, the arrival of 11,477 new service members and civilian employees is a bona fide reality that has come to pass in a very short period of time. As affirmed by then-Lieutenant Governor Beverly Perdue in October, 2007, this influx of new growth represents the largest single job growth event in the state of North Carolina since the World War II era. Although many

military growth communities are grappling with these issues nationally, eastern North Carolina stands out as one of the most significantly impacted. The table below describes the net effect on area employment, among North Carolina communities as well as other comparable areas nationally, in the wake of BRAC, GTA and GTF decisions.

MSA (Installation)[1]	Impact Source	Net Employment Increase	Area Employment[1]	Percent Increase
Jacksonville, NC (Camp Lejeune/MCAS New River)	**BRAC[1]/GTF[2]**	**8,806**	**91,677**	**9.6%**
New Bern, NC (MCAS Cherry Point)	**BRAC[1]/GTF[2]**	**1,184**	**66,366**	**1.8%**
Goldsboro, NC (Seymour Johnson Air Force Base)	**BRAC[1]**	**663**	**60,040**	**1.1%**
Fayetteville, NC (Fort Bragg)	**BRAC[1]/GTA[3]**	**1,843**	**195,370**	**0.9%**
El Paso, TX (Ft Bliss)	**BRAC[1]/GTA[3]**	29,423	328,741	9.0%
Columbus, GA (Ft Benning)	**BRAC[1]/GTA[3]**	13,873	163,565	8.5%
Manhattan, KS (Ft Riley)	**BRAC[1]/GTA[3]**	5,988	72,434	8.3%
Colorado Springs, CO (Ft Carson)	**BRAC[1]/GTA[3]**	13,535	349,783	3.9%
Baltimore-Towson, MD (Aberdeen Proving Grounds)	**BRAC[1]/GTA[3]**	14,888	1,568,140	0.95%
San Antonio, TX (Ft Sam Houston)	**BRAC[1]/GTA[3]**	5,259	1,009,217	0.5%

References:

[1] US. Defense. Base Closure and Realignment Closure Report May 2005 . 15 June 2009. <http://www.defenselink.mil/brac/pdf/pt1_01_covero.pdf>

[2] MGTF of NC's Eastern Region. Growth Charts .March 2009.15 June 2009. <http://nceastmgtf.org/documents/MCIEASTGrowthChartsMarch2009.pdf>

[3] US. Army. Grow the Army . 19 Dec. 1007. 15 June 2009. <http://www.army.mil/growthearmy/>

Accronyms:

BRAC = Base Realignment and Closure Commission, Final decision 2005

GTF = US Marine Corps "Grow the Force" Initiative

GTA: US Army "Grow the Army" Initiative

MSA = Metropolitan Statistical Area

Note: BRAC Commission uses "MSA" to measure economic impact, positive or negative, resuting from gain/loss of military jobs.

As previously mentioned, this growth was scheduled to occur over a five-year period—from 2006 to 2011. Exacerbating the communities' challenges to assimilate 40,000 new residents, the growth began long before the military's formal announcement, in October, 2007. Furthermore, the direct impact growth will be in place two years before the date initially forecast by the military. Among defense growth communities, it has become somewhat commonplace to receive growth as a result of decisions by the Base Realignment and Closure (BRAC) Commissions. The results of a Commission are released years before the new residents arrive at the "receiving" installation. During those years, communities and installations have time to construct new facilities, add classrooms, improve roads, etc. However, in the case of eastern North Carolina communities, they are in the words of one local Mayor "…building an airplane while we are flying it." Indeed, by July 2009, all but 170 of the 11,477 new service members and civilian employees had arrived in the region.

This Regional Growth Management Plan (RGMP) provides the results of a comprehensive analysis of the impacts of such rapid and unexpected regional growth. The findings are derived from multiple working group sessions among functional area subject matter experts (SME), a review of other existing and ongoing studies and analysis, field inspections, and inputs from community and industry leaders. A draft of this report was vetted by a special committee comprised of county and town managers and planners as well as stakeholders.

The SME working groups were organized around the functional areas of housing, infrastructure, education, workforce, quality of life, transportation, public safety and emergency services, and medical, health care and social services. For the purposes of study, the region is defined as the North Carolina counties of Carteret, Craven, Duplin, Jones, Onslow, Pamlico, and Pender. The study period includes the five years, from 01 January 2007 through 31 December 2011.

This report was prepared in response to a request by North Carolina's Eastern Region Military Growth Task Force (MGTF). The RGMP was completed during the months of January through September, 2009. Funding to support this study was

provided by the Department of Defense Office of Economic Adjustment, North Carolina's Eastern Region, and counties and cities in the region.

Findings

This report identifies 108 regional needs that are associated with or directly generated by the requirement to assimilate growth. A complete list of the regional needs is found in **Appendix A**. From these needs, 467 specific recommendations for addressing shortfalls are provided. These recommendations are included in each of the functional area sections of the regional module and the specific county modules. Although all of these needs are considered important and related to the challenges of assimilating rapid population growth, some (outlined below) are urgent and directly and measurably attributable to military growth.

Infrastructure

The Onslow Water and Sewer Authority (ONWASA) provides water and sewer services to Camp Lejeune in the Dixon Region. New construction in the base's Stone Bay area to accommodate Marine Special Operations Command has created an urgent need for increased infrastructure capacity. Assistance with loans to help ONWASA meet this need without negative impacts to the remainder of the system would offer immediate assistance that would benefit both the installation and its community neighbors.

Education

It is difficult at this early date to determine how the military growth will impact area schools. In many cases, the service members' dependents have not yet arrived in the area. It will likely be 2011 before this growth is fully assimilated in the schools and precise impact can be reported. However, it is clear that the impacts will be substantial. In the case of Onslow County (where approximately 30% of the land – with an estimated assessed value of approximately $3.7 billion – is federal and therefore untaxed), financial assistance through Section 8002 of the Federal Impact Aid Program could provide immediate relief.

Workforce

The regional workforce is well served by a number of community colleges that are tuned to the needs of the area job market, including the military. The Marine Corps' growth in the area represents more than a mere addition of jobs to this market, but a different kind of workplace in many respects. The new civilian jobs at Marine Special Operations Command (MARSOC) are different, as will be those associated with the introduction of the F-35B at Cherry Point, the increased use of unmanned aerial systems, and the full fielding of the MV-22 at MCAS New River. The military installations will need to work closely with community colleges and existing and emerging technological centers in Jones and Duplin Counties as they acquire and allocate resources to support and plan for additional capabilities that will contribute to emerging local industries.

The region has a substantial shortage of qualified child care specialists. Resources should be immediately applied to increasing training, certification, and facilities. Not only will this action provide direct employment to child care specialists, but also additional, indirect employment by freeing military spouses and single parents to seek employment and contribute to the service industry that has been sparked by military growth.

Quality of Life

Statistics related to quality of life amenities in the region demonstrate a well-below average ranking in all areas. Library space, cultural events, parks and playing fields, hotel options, meeting spaces, events and venues for single Marines, water access points, and retail venues that are important to both civilian and military residents lag behind state averages. Grant funding exists for the improvement of much of this shortfall while market demands will drive others. Regardless, improvement in this area is a vital element in the process of assimilating growth.

Transportation

Among the most urgent needs are transportation improvements around and between the military installations. The widening of the remaining two-lane section of US Highway 17 between Jacksonville and New Bern is essential to reduce the accident rate and ensure strategic mobility for the Marines. This remains the highest priority community action of the Commanding General, Marine Corps Installations East (MCIEast.)

A new main gate at Camp Lejeune is being designed to alleviate the congestion along NC Highway 24, which is directly attributable to the increased growth on base. The safety, quality of life, and readiness issues associated with this congestion are characterized by increased accidents, travel times, and lost productivity. However, the opening of this new gate will not occur until 2014. The implementation of an Intelligent Traffic System in the City of Jacksonville would offer instant relief by monitoring and controlling key choke points on area roadways that connect the base to the neighborhoods where its employees live.

On US Highway 70 in Havelock, the Slocum Road Gate at MCAS Cherry Point is the source of similar congestion and safety shortfalls. In conjunction with the Air Station's internal improvements, a flyover that would direct eastbound traffic over the westbound lanes and into the base is an urgent need associated with assimilating the 11% growth in Cherry Point's workforce.

Public Safety and Emergency Services

Regional law enforcement, public safety, and emergency service providers are experiencing delays in response times as a result of rapid population growth, particularly as it affects congestion on area roads. The Department of Homeland Security (DHS) has mandated that all providers comply with the Voice Interoperability Plan for Emergency Responders (VIPER) by 2010. Full implementation of this plan will significantly reduce emergency service response times. Although DHS has funded the construction of VIPER towers and other infrastructure, the purchase of compatible radios and integration measures has been left to the local communities to fund. Regionally, this funding shortfall is estimated at $20 million. The rapid addition of 10% to the regional population has clearly and measurably exacerbated this issue. Federal assistance toward meeting this demand would contribute greatly to the ability of community service providers to satisfy the DHS mandate and continue to support its military population.

Medical and Health Care

The challenges associated with the shortage of medical providers in the area is exacerbated by military growth and aggravated by TRICARE reimbursement rates that are below those of MEDICAID and MEDICARE. Given the high percentage of TRICARE recipients in the region, this reality creates difficulty in recruiting medical professionals to serve in the area. Additionally, the closure of Naval Hospital, Cherry Point as a result of BRAC 2005 actions forced many military members and their families into the civilian healthcare system. A Department of Defense Locality Waiver that increases the TRICARE reimbursement rates in the region will help mitigate this dilemma.

Land Use and Compatibility

Among the tasks of this effort was to evaluate progress on the Joint Land Use Study (JLUS) recommendations for the Onslow County / Camp Lejeune / MCAS New River JLUS as well as the Craven County / Carteret County / MCAS Cherry Point JLUS. The Onslow County (Camp Lejeune) JLUS was completed in February, 2003 and the Eastern Carolina JLUS in November, 2002.

The status of JLUS program implementation for Onslow County and Eastern Carolina was ascertained through a series of interviews conducted during June, 2009 with Community Plans Liaison Officers for MCAS Cherry Point and Camp Lejeune and planners for the various counties and municipalities addressed in JLUS studies. Detailed findings related to the review of these studies can be found beginning in the Land Use and Compatibility module.

To summarize these findings, the military installations and their host communities have implemented many of the JLUS recommendations and continue to work toward accommodating those that remain. These steps have demonstrated the commitment of all parties to manage future land use, modify existing incompatible conditions and address potential friction with the clear objectives of preserving the utility of regional military bases and facilitating compatible community growth.

Strategy for Implementation

The 467 recommendations for addressing the impacts of military growth in the region are discussed throughout each module of the plan. Some are relatively easy to implement, can be accomplished quickly and incur little or no costs. Others are long-term, complex and very expensive. Many are still being developed, as accurate data is not yet available to establish timelines or costs. In the case of the latter category of these recommendations, it may be a year or more before reliable information exists that can support specific corrective action. For instance, the total population of dependents has not yet arrived and is therefore not fully assimilated in local schools, communities or workplace. Likewise, induced development throughout the service economy will lag behind the arrival of the service members and civilian employees that are already in place and cannot yet be accurately measured.

Although much work has been done to inform local, state and federal leaders of the growth impacts over the past two years, beginning with the release of this report the MGTF will formally embark on the Implementation Phase of its work. This will include increasing its staff and consultant support to effectively execute the vast array of tasks associated with the recommendations. Aside from the work that will be directly accomplished or facilitated by the MGTF and its supporting consultants, many of the tasks require action by local governments, agencies, organizations, military installations and service providers. The MGTF will increase its communications and outreach efforts to ensure that positive results are achieved that contribute to the smooth integration of the growth population into the region, with minimal negative impacts on the existing communities.

Conclusion

The demands placed on the region's seven counties are substantial and complex. They span all aspects of the region and affect area governments, school districts, service providers, regulators, businesses, residents, and the military installations. Although it will likely be years before the full measure of growth assimilation has been realized, there are immediate opportunities to act purposefully in addressing the most urgent needs – those with clearly defined mitigation strategies and implementation measures. This report is presented as a reference source from which that process can begin.

Regional Growth Management Plan

Military Growth Task Force

Table of Contents

Regional Working Groups page

Introduction..... 3

Housing.....15

Workforce and Job Creation.....43

Education.....63

Transportation.....73

Infrastructure.....119

Medical, Health and Social Services.....151

Public Safety and Emergency Services.....191

Quality of Life.....215

Land Use and Compatibility.....235

Regional County Modules

Carteret County.....245

Craven County.....308

Duplin County.....379

Jones County.....432

Onslow County.....484

Pamlico County.....570

Pender County.....618

THIS PAGE INTENTIONALLY LEFT BLANK

Introduction

Regional Growth Overview

Military growth communities across the nation are taking steps to address the impacts of a rapid influx of service members and their families. Some of this growth is attributable to the decisions of the 2005 Base Realignment and Closure Commission, and some results from the Army's "Grow the Army" (GTA) and the Marine Corps' "Grow the Force" (GTF) Initiatives. These latter initiatives are the result of war fighting realities in Afghanistan and Iraq that require the deployment of ground forces beyond levels that the two services could sustain with their pre-9/11 force structure.

Between the years 2006 and 2011, the Marine Corps will add 11,477 jobs at eastern NC installations. These service members will bring with them an estimated 13,500 dependents. The combined totals of these two population groups are referred to as the "direct impact" growth. Using commonly accepted population projection practices, this study concludes that the direct impact growth will induce the influx of approximately 15,000 new residents that will arrive to reinforce the regional service industry in response to the increased military population and activity. This growth of approximately 40,000 new residents represents a 160-percent increase in the normal regional population growth (25,157) in the same period as forecast by the NC State Demographer before the announcement of GTF impacts. The table below depicts this forecast growth.

Installation	Active Duty	Dependents	Total
Marine Corps Base, Camp Lejeune	8,581	10,093	18,674
Marine Corps Air Station, New River	1,411	1,660	3,071
Marine Corps Air Station, Cherry Point	1,485	1,746	3,231
Induced Growth (Est. / Service Industry)	//	//	15,110
Total	**11,477**	**13,499**	**40,086**

Marine Corps "Grow The Force" Population Increases Eastern North Carolina Installations

This growth plan is not the subject of speculation, modeling, estimation, or expectations. For the North Carolina Military Growth Task Force Region, it is a bona fide reality that has come to pass in a very short period of time. As affirmed by then-Lieutenant Governor Beverly Perdue in October, 2007, this influx of new employees represent the largest single job growth event in the state of North Carolina since the World War II era. Although many military growth communities are grappling with these issues nationally, eastern North Carolina stands out as one of the most severely impacted. The table below describes the net effect on area employment among North Carolina communities as well as other comparable areas nationally in the wake of BRAC, GTA, and GTF decisions.

MSA (Installation)[1]	Impact Source	Net Employment Increase	Area Employment[1]	Percent Increase
Jacksonville, NC (Camp Lejeune/MCAS New River)	**BRAC[1]/GTF[2]**	**8,806**	**91,677**	**9.6%**
New Bern, NC (MCAS Cherry Point)	**BRAC[1]/GTF[2]**	**1,184**	**66,366**	**1.8%**
Goldsboro, NC (Seymour Johnson Air Force Base)	**BRAC[1]**	**663**	**60,040**	**1.1%**
Fayetteville, NC (Fort Bragg)	**BRAC[1]/GTA[3]**	**1,843**	**195,370**	**0.9%**
El Paso, TX (Ft Bliss)	**BRAC[1]/GTA[3]**	29,423	328,741	9.0%
Columbus, GA (Ft Benning)	**BRAC[1]/GTA[3]**	13,873	163,565	8.5%
Manhattan, KS (Ft Riley)	**BRAC[1]/GTA[3]**	5,988	72,434	8.3%
Colorado Springs, CO (Ft Carson)	**BRAC[1]/GTA[3]**	13,535	349,783	3.9%
Baltimore-Towson, MD (Aberdeen Proving Grounds)	**BRAC[1]/GTA[3]**	14,888	1,568,140	0.95%
San Antonio, TX (Ft Sam Houston)	**BRAC[1]/GTA[3]**	5,259	1,009,217	0.5%

References:

[1] US. Defense. Base Closure and Realignment Closure Report May 2005 . 15 June 2009. <http://www.defenselink.mil/brac/pdf/pt1_01_covero.pdf>

[2] MGTF of NC's Eastern Region. Growth Charts .March 2009.15 June 2009. <http://nceastmgtf.org/documents/MCIEASTGrowthChartsMarch2009.pdf>

[3] US. Army. Grow the Army . 19 Dec. 1007. 15 June 2009. <http://www.army.mil/growthearmy/>

Accronyms:

BRAC = Base Realignment and Closure Commission, Final decision 2005

GTF = US Marine Corps "Grow the Force" Initiative

GTA: US Army "Grow the Army" Initiative

MSA = Metropolitan Statistical Area

Note: BRAC Commission uses "MSA" to measure economic impact, positive or negative, resuting from gain/loss of military jobs.

To exacerbate the impacts of this growth, the influx of GTF personnel and their families began long before its formal announcement by the military in October, 2007. Furthermore, the direct impact growth will be in place two years before the date initially forecast. Among defense growth communities, it has become somewhat commonplace to receive growth as a result of decisions by the Base Realignment and Closure (BRAC) Commissions. The results of a Commission are released years before the new residents arrive at the "receiving" installation. During those years, communities and installations have time to construct new facilities, add classrooms, improve roads, and take other steps to accommodate growth. However, in the case of eastern North Carolina communities, accommodating the growth, in the words of one local Mayor, is like "… building an airplane while we are flying it." Indeed, in less than two years following the October, 2007 announcement by the military, nearly all of the direct impact growth is settled in the region.

The regional impacts of this growth are substantial and complex, requiring the immediate and thoughtful attention of all levels of government, as well as the business sector and public service providers.

Purpose of Study

Derived from the challenges posed by this unprecedented growth, the purpose of this study effort is to develop a Regional Growth Management Plan (RGMP) for the North Carolina Military Growth Task Force (MGTF) Region – an area that includes the counties of Carteret, Craven, Duplin, Jones, Onslow, Pamlico and Pender. The GTF decision by the Marine Corps has affected each of the seven counties that are, to varying degrees, hosts to the employees and service members of Marine Corps Base Camp Lejeune, Marine Corps Air Station New River, and Marine Corps Air Station Cherry Point. The RGMP is a thorough regional assessment of conditions that describes current and future growth-related impacts and needs. It then makes recommendations to accommodate the growth, with respect to the following elements:

- Housing
- Workforce and Job Creation

- Education
- Transportation
- Infrastructure
- Medical, Health, and Social Services
- Public Safety and Emergency Services
- Quality of Life
- Land Use and Compatibility

Organization, Methodology and Parameters

Organization

The consultant team was task-organized (Image 1) around working groups that had been chartered and assembled under the supervision of the Military Growth Task Force Board of Directors. These working groups consisted of subject matter experts from the region, typically representing governmental entities, utility or public service providers, non-profit organizations, and the commercial sector.

The consultant provided a rapporteur to each working group to guide discussion and assist the group chairman with data collection and analytical production. The consultant also provided a research assistant to each working group who provided direct support to the rapporteur.

Finally, the consultant facilitated the working group chairperson by providing all measures of administrative support to the working group, including provision for meeting spaces, production of minutes, membership recruiting, and communications support.

Methodology

Throughout the six-month study period (January-June 2009), existing studies, analyses, and data were collected from local, state, and federal government sources. Information was also gathered from regional commercial and industrial interests, Chambers of Commerce, the United States Marine Corps, Public School districts and community colleges, hospitals, and other public service providers. This information was assembled and reviewed by the consultant and then presented to the working groups.

Working group meetings were held several times during the course of this analysis, during which specific needs, proposals for possible remedies, and potential sources of assistance were vetted between the rapporteur and the working group members.

The initial working group product, completed in late February, 2009, was titled the "Urgent Needs Statement" (UNS). This document, a series of working group-centric cover sheets, explained in priority order and by functional area, the growth-related needs of the region as well as proposed actions by the North Carolina General Assembly that would help the local governments address the negative impacts of such unanticipated growth. The UNS Cover Sheets are included as Appendix A.

Following the UNS, the working groups and consultant team focused on adding depth of research and analytical rigor to the early effort. The result of this next 90 days of effort was the draft RGMP. The draft RGMP, once approved by the working group, was forwarded to the County Managers and Planners Working Group for their comments.

Following approval by the Managers and Planners Working Group, the draft RGMP was forwarded to the seven county governments to ascertain their comments and approval. Upon consideration of the comments from the county commissioners, this RGMP became final.

The RGMP is divided into two general sections: the first section is a broad overview that discusses growth impacts that are regional in nature; the second section consists of county-specific modules. The plan is constructed so as to be useful both to town or county officials interested primarily in their own growth situation and to state and federal officials attempting to grasp the myriad regional impacts.

Parameters (Study Area and Time)

Seven counties define the area of analysis for this plan (Pamlico, Craven, Carteret, Jones, Duplin, Onslow and Pender). These counties collectively serve as hosts to the military service members and civilian employees of the three Marine Corps Bases in eastern North Carolina.

The period of this study begins January 1, 2007 and ends December 31, 2011. The beginning date was established based on the initial influx of "Grow the Force" military growth – which began long before the formal announcement (in October, 2007) by the Marine Corps. The end of the study period was selected based on the early projections by the USMC, that the influx of new employees and their dependents would be complete by that date. As will be discussed in future modules of this plan, the Marines have exceeded recruiting goals since 2007 and the population growth had largely occurred by the summer of 2009 – two and a half years ahead of the service's own forecast.

Summary of Findings

Housing

Demand for new housing in the region will be one result of growing military and civilian populations. Population estimates for the seven-county region forecast 65,130 new residents during the period between 2007 and 2011. Of these new residents, 11,477 will be active-duty and civilian personnel working on the three bases; 13,500 will be military family dependents; 15,000 will be indirect growth generated from investment at the three bases; and the remaining 25,157 will be new residents to the region, independent of investment at the three bases.

By 2011, a housing deficit is expected in the region based on current housing supply and the military's definition of adequate housing. Local deficits are expected in Onslow and Pender Counties. A significant portion of the housing deficit (82 percent) is attributable to a shortfall in adequate rental homes.

Completion of the yet-to-be-built dwelling units in the committed residential development database prepared by the Eastern Carolina Council could eliminate the housing deficit expected for the region, including in Onslow and Pender Counties. For 2007, the database estimates that 11,350 dwelling units are both approved but not yet built *and* affordable under the criteria of this study (< $300,000 for land and structure combined). Most of the dwelling units are located in the two housing market analysis areas for MCAS Cherry Point and MCB Camp Lejeune (including MCAS New River).

Tightening credit markets continue to threaten the region's ability to build many of the dwelling units in the residential development pipeline. This may ultimately affect the region's ability to supply adequate housing to new residents if current conditions continue over several years. The magnitude and timing of newly arriving residents could exacerbate the shortage

of adequate housing anticipated in 2011.

Workforce

The Military Growth Task Force Region will shoulder the impact of the increased military force on top of the state-projected population increase and will need to absorb 24,000 new job-holders. Growth-related issues include:

- Additional demand for daycare facilities and day-care specialists both on and off-base.
- An additional demand for employees to fill low-skill jobs in: retail trade, food and accommodations, construction.
- An additional demand for employees to fill high-skill jobs in healthcare, education, construction trades, aerospace, advanced manufacturing, information technology, and engineering.
- Decreasing the barriers to structural employment, no better illustrated than by the occupational reciprocity issue, whereby skilled former military personnel are unable to acquire a license for comparable civilian jobs, particularly related to health care, law enforcement, and commercial driver certifications.
- A long-run requirement for a highly-skilled, technology-adept, and adaptable workforce that is better able to adjust to changing economic conditions and workforce opportunities.
- Planning for, and controlling the expansive growth in the region over the five-year period, as well as setting a new agenda for post-USMC-related growth when the economy and workforce reach a more stable level in 2012 and 2013.

It is clear that an extensive infrastructure is already in place to mitigate many of the negative workforce impacts. Between the impressive collection of community colleges in the region, the County Economic Development Offices, and other organizations led by the Eastern Carolina Workforce Development Board, Inc., the institutions and their professional staffs are well-prepared to provide strategic planning and results to ease any transition the region must make.

However, resource constraints remain an obstacle to anticipating and lessening the devastating impact that unemployment can deliver to local residents. The state legislature and government must be available both to provide legislative and regulatory relief in some areas and to provide financial resources that can jump-start many of the recommendations and action that need to take place. The federal government will be providing an increased regional payroll and expanded construction activity, but it can also provide relief through educational and training grants and business loans. Local governments must realize that there will be a proven expansion in their economies, and that resources spent now for workforce development activities, including education, training, facility construction, and other infrastructure improvements, will be repaid through the future expansion in the stream of tax revenues. If these recommended strategies and actions are not supported by the required resources over the next year, the region can expect to see thousands of residents who want to work but cannot and an unemployment rate well above the state's average, rather than below the state's average where it is now.

Education

Childcare

By 2011, the total number of children under the age of 15 will increase due to normal growth and military growth, bringing in families with young children. By applying the same percentage of children enrolled in child care facilities and the student to staff ratio for each county, a predicted number of new students is obtained: the MGTF Region's child care enrollment is expected to grow by 2,500 from 2007 to 2011. The major challenges faced by regional child care providers are the lack of a qualified work force and the high employee turnover rate. The annual turnover rate of child care workers in the region is 24 percent. This translates to nearly 450 qualified workers per year needed to meet the existing demand.

K-12

Projected growth in the K-12 student population, ranging between 3,000 and 5,000, will create the following needs among the seven LEAs in the MGTF Region:

- Additional 125 to 230 teachers at a cost of between $7.4 and $12.6 million
- Additional 60 to 100 teacher assistants at a cost of between $1.9 and $3.2 million
- Additional 24 to 46 school buses at a cost of between $1.9 and $3.7 million
- Additional local funds to support the ancillary school operation cost between $4.7 and $8 million per year.
- Six new elementary schools at a cost of between $102 and $120 million, three new middle schools at a cost of between $60 and $75 million, and two new high schools at a cost of between $90 and $100 million. These estimates do not include land cost.

Community Colleges

The impact of the growth will be felt mainly at the schools near Marine bases: Coastal Community College in Onslow County and Craven Community College. Approximately one-half of the enrolled students at Coastal Carolina Community College are military connected, as are 14 percent of the enrolled students at Craven Community College. The military bases work very closely with these two community colleges to obtain the special training that they need for military purposes. Examples of this include Arabic language, aviation maintenance to support the Fleet Readiness Center East at nearby MCAS Cherry Point, and motorcycle safety training. These programs were developed specifically to respond to the needs of the military.

Currently, Craven Community College needs to recruit Aviation Instructors to meet the increased demand of the FAA General, Airframes, and Power Plant Exam Prep program. Craven Community College also needs to recruit additional Quality Process Instructors to meet the increased demands of Lean Six Sigma Quality Instruction. In planning for military and military-related students, several factors were identified that will have a significant impact on the community colleges:

- A strong need to provide additional 2+2 baccalaureate programs with UNC-W, ECU, and NCSU to meet the critical shortages of teachers and engineers, which will only be exacerbated with the increase in regional population.
- Continuing Education must be prepared to offer a full array of short-term training and to expand the current

programs that best prepare military and military-related students.

- The Associate Degree Nursing program, as well as other health care programs, needs to be expanded to meet critical workplace shortages stemming from this influx.
- Additional short-term training needs to be offered in the technical/vocational fields to support the workforce needs in the community, as well as the growth of military contractors.
- High-growth industries will be the federal government, local government, full-service restaurants, childcare services, and home health care services. The college needs to provide programs in both Curriculum and Continuing Education to support these specific workforce needs.

Transportation

Ensuring an efficient and accessible transportation network for the growing population of eastern North Carolina will require implementation of long-term strategic policy initiatives as well as funding and approval for immediate capital improvements. Successful implementation of both types of findings demands a cooperative, comprehensive, and multi-modal transportation strategy established between local governments, transportation providers, state agencies, and the USMC. The transportation module of this plan captures exhaustive, multi-modal analysis to support such a strategy and concludes with a thorough list of findings related to highway, rail, port, aviation, ferry, pedestrian, bike and public transit systems. Among these findings are the following high-profile considerations for strategic corridors:

- US 17 is designated as a Strategic Highway Corridor by NCDOT, signifying its value to local, regional, and state mobility. As a critical connection to Jacksonville and MCB Camp Lejeune, the region's largest cities, other strategic highways, North Carolina ports, and numerous neighborhoods throughout the seven-county region, an urgent need exists to improve the operating capacity of this roadway that carries up to 34,000 vehicles per day. US 17 also serves as the primary deployment route from MCB Camp Lejeune to the Port of Wilmington.
- Like US 17, the US 70 corridor is a major link in the state's transportation system and is designated as a Strategic Highway Corridor. Today, it exists as a multilane facility that carries up to 47,000 vehicles per day. This high volume of traffic and unpredictable access has created a safety hazard for motorists, whether they are residents, tourists, or military personnel. Between New Bern and the planned Havelock Bypass, the corridor experiences its greatest safety problems (157 crashes per 100 million vehicle miles traveled, or twice the state average for a similar roadway). A plan has been developed by the US 70 Corridor Commission that recommends retrofitting US 70 to a freeway from Raleigh to Morehead City. Improving the corridor will enhance regional mobility, alleviate safety concerns, improve the efficiency of evacuations, and enhance east-west travel times for freight traffic as well as military use. The current Transportation Improvement Plan (TIP) includes the Havelock Bypass, though this project remains unfunded.
- Within the seven-county region, NC 24 connects Duplin, Onslow, and Carteret Counties. The roadway – a mixture of five, six, and seven lane facilities with no control of access — is identified as an expressway in the Strategic Highway Corridor Concept Plan. In some places, it carries up to 52,000 vehicles per day, and is approaching its practical capacity in the non-municipal areas and over-capacity in urban areas. These volumes are the result of several factors: (1) its use by the military to transport troops, machinery, and equipment between Jacksonville/MCB Camp Lejeune/MCAS New River and the Port of Morehead City for embarkation and debarkation; (2) its use to access MCAS Cherry Point via US 70; (3) its use by local traffic to access residencies, businesses, and services; and (4) its use by tourists to access beach communities. NC 24 also serves as the primary deployment route from MCB Camp Lejeune to the Port of Morehead City.

Infrastructure

The planning horizon for infrastructure needs spans the years 2007-2011. Many of the region's infrastructure providers (both public and private) have already experienced growth with the recent housing boom in 2007 and early portions of 2008. Even with the economic slowdown, proposed developments are still being planned in the MGTF Region. Between 2005 and 2009, 19,135 housing units were approved in the region. These units will impose additional demands on existing and planned infrastructure. While some infrastructure services may be considered non-necessities, water and sewer availability is a necessity for homes and businesses. For businesses, services such as telecommunications are essential to operations and are expected by many business owners and entrepreneurs who are looking to invest in a community. It is essential to properly plan for the influx of military growth to ensure that infrastructure lines are sized properly, that capital improvement dollars are allocated to geographic locations where the influx of military will be the greatest, and that basic housing needs are met for the troops, their families, and the businesses that support these men and women.

While military growth is under way and expected to continue, increasing environmental regulatory demands at the federal and state levels are being placed on the infrastructure agencies in the MGTF Region. Current regulations are requiring the infrastructure providers to expend additional capital to provide existing and future customers with service. These regulations, combined with proposed military growth, create stress on infrastructure providers to provide existing customers with service while expanding the system to allow for growth.

Generally, the primary needs are with sewer, then water (the former needs also include reclaimed water), storm water, solid waste, and telecommunications. This prioritization represents short-term and near-term needs which must be accomplished for military growth to continue in the MGTF Region during the planning period ending in 2011.

Medical, Health and Social Services

There are presently significant health care needs in the region that are exacerbated by regional population growth of approximately 65,000 persons through 2011. Currently, Naval Hospital Camp Lejeune and Naval Clinic Cherry Point are the cornerstones of military health care in the region. However, both military treatment facilities (MTFs) receive substantial support from the five community hospitals within the seven-county region, as well as the tertiary facilities located in New Hanover and Pitt Counties. Patients from this region also regularly travel to the Research Triangle region for specialty services. Stakeholders across the region have identified several key concerns that will persist and even worsen following the military population growth, including:

- Low TRICARE reimbursement
- Physician shortages
- Insufficient behavioral health services

Medical and health services for active-duty military, activated guard and reserves members, retired members of the uniformed services, their families, and survivors are covered under the TRICARE system. Where there are gaps in military services, TRICARE supplements those resources with a network of civilian health care providers. TRICARE reimbursement levels for physician and non-physician providers and facility-based outpatient services remain lower than those for other payers. Low reimbursement deters (1) non-network providers from participation in the TRICARE Network and (2) network providers from increasing their TRICARE patient panel. Due to the importance of TRICARE beneficiaries to the region, it

is imperative that TRICARE reimbursement rates for physician and non-physician providers and facility-based outpatient services be increased to optimize beneficiaries' access to medical services. This issue is affecting existing beneficiaries in the region and will continue to affect the growing military population if appropriate action is not taken.

Local health care providers are currently working toward obtaining a Locality Waiver from the Department of Defense (DoD) that would effectively increase TRICARE reimbursement for physician and non-physician providers serving TRICARE beneficiaries. Failure to increase TRICARE reimbursement will likely discourage current non-network providers from participation and cause current network providers to limit their panels or withdraw from the network in the future.

Recent medical school graduates have virtually no financial incentive to practice in an area with a significant TRICARE population. The physicians in the MGTF Region are aging, raising concerns about future provider supply in the region. As such, it is imperative that incentives are put in place to attract younger physicians to the region.

Military families face unique pressures above and beyond those challenges faced by the civilian population, which increases their need to access behavioral health services. It has been reported that as many as one quarter of all returning service members struggle with psychological injuries. Families face a series of emotional changes during the pre-deployment, deployment, and reunion processes. Such stressful conditions put these families at high risk for mental health and substance abuse problems. In addition to the behavioral health needs of active-duty military families, the needs of retirees and non-military persons are increasing as well, placing additional stress on the system. Further, non-military families are seeking services at a higher rate as a result of increased financial pressures. If the economy remains uncertain, providers expect this trend to continue.

Consequently, the need for additional providers – both psychiatrists and non-physician providers – is substantial. Even without military population growth, there will be a need for additional psychiatric providers in the region by 2011. These providers are the cornerstone of behavioral health services in the region. When patients have easy access to outpatient therapeutic services their chances of later needing interventional and crisis services decrease. Although the shortage of behavioral health providers is partially a result of universal shortages in the mental health field, it is also likely attributable to factors discussed earlier that relate to TRICARE reimbursement rates.

The growth in the military populations at MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River is not expected to create a need for any new social services. Both Marine and Family Services and the county-level Departments of Social Services have the appropriate services in place. However, the growth in population at all three bases is expected to strain the financial and personnel resources used to support those programs. Marine and Family Services programs expect increased demand on all services as a result of population growth, but foresee particular increases with Marine and Family Readiness, Day Care, Individual and Family Counseling, and Family Advocacy programs. Most Departments of Social Services in the surrounding counties expect an overall minimal impact on resources, but also expect services such as Child Welfare (including Child Protective Services), Day Care and Food and Nutritional Services (FNS) to experience greater resource pressures due to military population growth.

Public Safety and Emergency Services (PS/ES)

The PS/ES sector in the MGTF Region faces substantial challenges in meeting service needs and ensuring preparedness in the coming years. There are a number of extant deficiencies; GTF growth has caused some of these deficiencies and greatly exacerbated others. These challenges can be categorized as communications interoperability, manpower, and facilities and equipment. Manpower and resource deficiencies are largely a reflection of the state of funding throughout the region. Though many specific needs can be identified by each department, the PS/ES sector will

continue to fall behind until sufficient, renewable funding streams are secured.

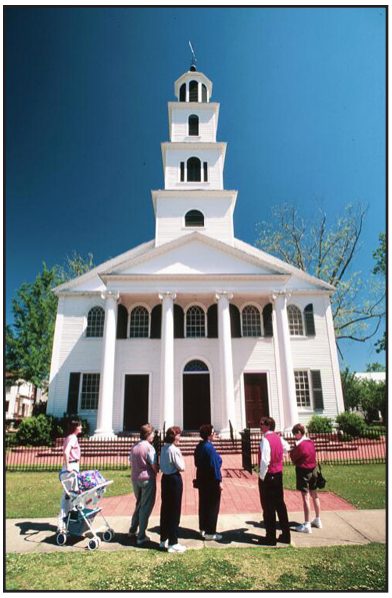
Despite the fact that this plan suggests outside funding sources, in all likelihood the counties and municipalities in the region will ultimately bear a great majority of the costs associated with maintaining PS/ES agencies. Therefore, it is best to approach alternate funding sources as a short-term stimulus, buying time while more sustainable revenue streams are developed. In some cases, however, counties and municipalities have tools at their disposal to help mitigate the stressful effects of military growth on the provision of PS/ES services. Absent the technical capacity to ensure full communications interoperability among the region's first responders, shared information and annual regional response drills can help identify gaps in operational coordination capabilities. Such preparatory actions may prove to have a significant "force multiplier" effect in cases of mutual emergency response.

Finally, the trends identified in this module suggest that state and federal entities should focus more attention on the capabilities of PS/ES agencies in the region. Military-related growth is essentially imposed on the area and localities are forced to adapt, whether or not they have the capabilities. The increased military presence and growing population increase the vulnerability of citizens throughout the region in a number of ways, from day-to-day crime and safety issues to regional natural disasters and even terrorist attacks.

The events of September 11, 2001 and Hurricane Katrina provided an important lesson in emergency management: that the cost of disaster preparedness now is a fraction of the costs borne after a poorly managed disaster event. Considering a number of climatic, geographic, and geopolitical factors, the potential for a regional disaster is now less a question of "if" than a question of "when." Simply put, the regional PS/ES sector in its current state is not prepared to adequately address such a contingency.

Quality of Life

Quality of Life factors are just as important to a community's livelihood and appeal as are its setting, highways, commerce, safety and employment base. The choice of a military spouse to remain in a military community during the deployment of the other spouse is largely dictated by the availability and quality of opportunities to enjoy recreation and social engagement outside of the home. These factors also influence a prospective jobseeker or business owner to locate in the area. Meaningful community activities also play a large role in providing safe activities for youth populations, reducing juvenile delinquency and overall crime rates.



eastern North Carolina already falls below state standards in most quality of life areas, including: numbers of athletic fields, park acreage, library space and computers, and community centers. In addition, water and beach access points are inadequate to support the current population and will be woefully inadequate to support an additional 65,000 residents.

Furthermore, there is a widely recognized lack of meeting space to accommodate large groups in the vicinity of MCB Camp Lejeune. The base is a magnet for those who have some affiliation to the service (e.g. retiree groups), as well as those doing business with the Marine Corps. It is expected that the number of USMC and DoD-related conferences will increase as the base expands its mission and induced population growth builds.

Meeting space in the region is generally limited to small- and medium-sized venues. Carteret, Craven, Duplin, and Jones Counties each have a meeting venue that will accommodate 1,000 people (Duplin has two venues to accommodate this many people). Pamlico County also has a facility that can accommodate up to 650 people, which is considered sufficient for the small county. Neither Onslow nor Pender Counties, however, have meeting facilities that will accommodate 500-1,000 people.

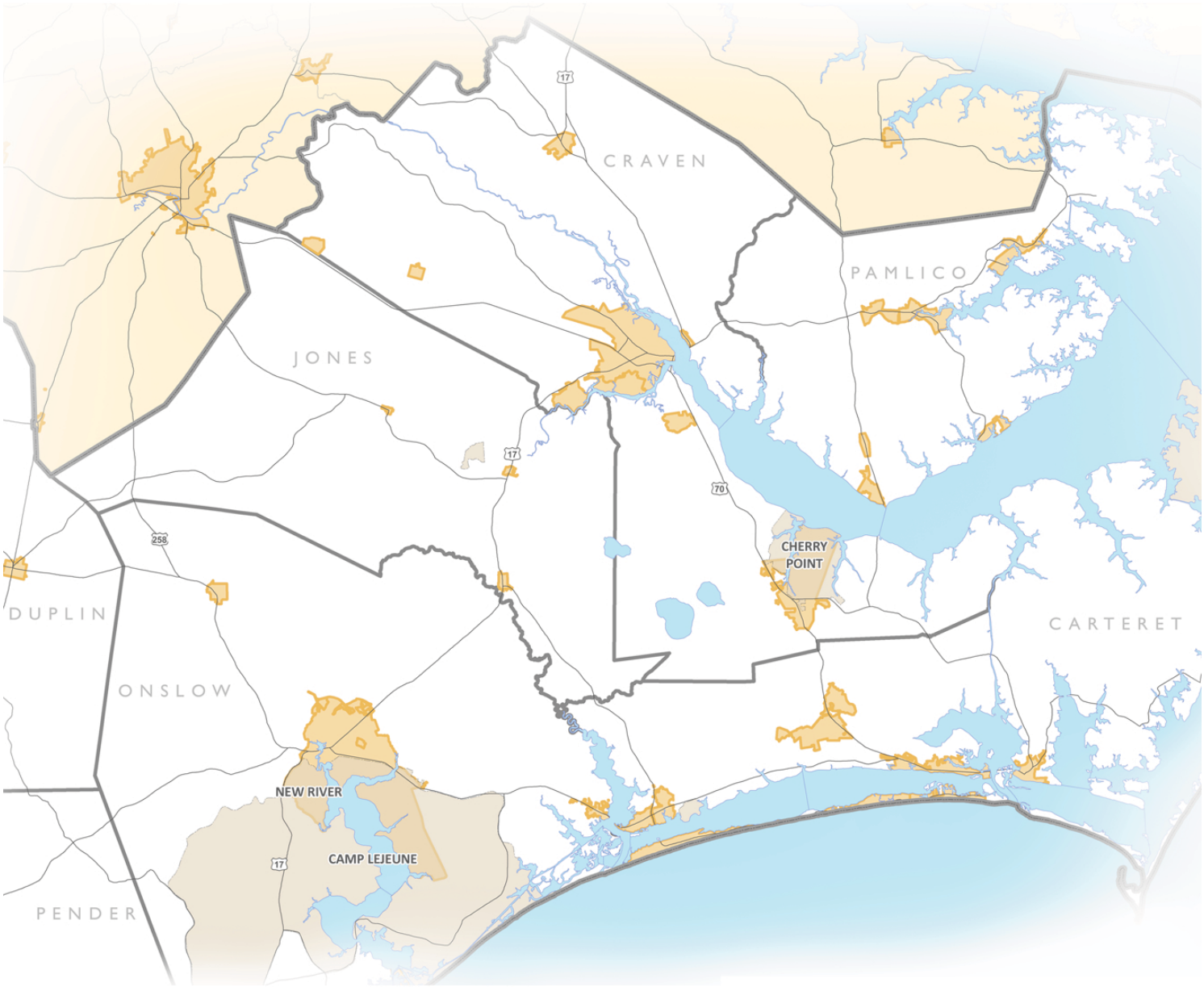
The only shopping destinations in the region are the Jacksonville and Twin Rivers Malls,

and these venues are considered inadequate by many area residents. There is a great desire for additional shopping opportunities, ranging from better supermarkets to more diverse shops to simply more shops. Many people in the region choose to drive to Raleigh/Durham or Wilmington to shop, which leads to a detrimental retail leakage throughout the region.

Another challenge in the region is the quality of hotel accommodations. Most of the hotels are economy venues that are older and lacking in amenities. There are few upscale lodging choices in the area.

Many of these needs must be addressed by local governments through the multiple funding opportunities outlined in this plan. Other quality of life needs will be met by industry through addressing normal market demands. Moreover, however, leaders from all sectors in the region must acknowledge that these factors, more than any other, define the community's desirability both for its residents and visitors.

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Housing

Housing

Introduction

Housing affordability and availability are essential to fostering a sustainable future for the North Carolina Military Growth Task Force (MGTF) Region. Housing directly affects economic prosperity and quality-of-life issues for cities and counties in the region and is a critical component to fulfilling the mission of the three military bases. Provision of a variety of housing types that meet the demands of new residents of all income levels is a critical component in improving the region's quality of life for current and future residents.

Long-term solutions for a sustainable housing strategy will require cooperation between local, state, and federal government, private developers, financial institutions, and the US Marine Corps. Previous planning initiatives in the region validate the power of 'one vision, one voice' for bringing about positive change in the MGTF Region.

This module inventories and evaluates factors in the region that influence the provision of adequate and affordable housing to growing military and civilian populations. The discussion is organized under six general headings: background information, demand for new housing, existing conditions, needs assessment, issues facing the region, and recommended actions.

Background

Market Influences

US stock returns in 2008 were negative for the first time in six years and experienced one of the worst years in history. Key components in the downturn were housing and the credit crisis. During the first three quarters of 2008, the economy was relatively stable in The MGTF Region because of military spending at the three bases. The fourth quarter saw the official declaration of a national recession and unemployment in the region rose sharply (see Module 2, Workforce). Credit markets froze and inter-bank lending rates soared. The $700 billion Troubled Asset Relief Program (TARP) bill was passed to help with troubled assets the banks were holding. The first quarter of 2009 continued the downward spiral of 2008, both for the nation and for eastern North Carolina.

The credit markets constricted so quickly in late 2008 and early 2009 that lending to builders working in the MGTF Region was constricted almost to the point of stopping completely. This phenomenon delayed construction of many dwelling units in the residential development pipeline and may ultimately affect the region's ability to supply adequate housing to new residents if conditions last over several years. The severity and length of the recession and instability in the banking and credit markets could also exacerbate the ability of new residents to qualify for a loan and afford a home.

Data sets used for this module represent data compiled through 2008. This information reflects the downward trend in the economy; however, the current severity in unemployment and the lending crisis for the region in 2009 are not fully realized in the data.

Definition of Adequate Housing

Cities and counties in the region adopt minimum housing standards in accordance with §160A-441 of the North Carolina General Statutes. Building and zoning officials in cities and counties enforce compliance with local ordinances and state building codes that ensure adequate housing. Both site-built homes and manufactured homes are subject to local and state standards. However, manufactured homes and site-built homes are often viewed differently.

The United States Marine Corps also maintains minimum adequate housing guidelines for its officers and enlisted members. Specifically, the Unified Facilities Criteria (UFC) publishes separate minimum construction guidelines for Navy and Marine Corps Bachelor Housing and for Family Housing. The UFC requirements ensure adequate and affordable housing is available to service members and their dependents. The military's definition of adequate housing excludes manufactured homes. For this analysis, the military's definition of adequate housing was used. Therefore, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

Demand for New Housing

Growing military and civilian populations will produce a demand for new housing in the region. During the period between 2007 and 2011, population forecasts for the seven-county region expect 65,130 new residents. Of these new residents, 11,477 will be active duty and civilian personnel working on the three bases; 13,500 will be military family dependents; 15,000 will be indirect growth generated from investment at the three bases; and the remaining 25,157 will be new residents to the region, independent of investment at the three bases.

Housing Preferences Profile

Active Duty Personnel

Significant military growth is expected to continue in the region under the "202 K Plus-Up" initiative, a five-year plan to increase the nation's total number of active-duty Marines through 2011. The growth associated with this initiative will have an impact on MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point. The housing requirements for newly arriving active-duty personnel are presented in the 2008 Housing Market Analysis Update Reports completed for both MCAS Cherry Point and MCB Camp Lejeune (including MCAS New River).

Service members may or may not have dependents, but those dependents may not always accompany the service member. Housing reports for the three bases assume unaccompanied active duty personnel, pay grade E5 and below, will live on-base. Higher ranking unaccompanied service members have the option to live off-base. All accompanied service members have the option to live on- or off-base subject to local base housing policy and housing availability.

Military Family Dependents

Military family dependents include spouses and children of active duty personnel. Active duty personnel and their families have the option to live on- or off-base subject to local base housing policy and availability. Issues considered important for housing military families include affordability, number of bedrooms, proximity to the base, quality of schools, availability of jobs for spouses, expected home price appreciation, and extent of favorable tax treatment of home ownership.

Indirect Civilian Growth

Military spending creates jobs in the region, and jobs attract new residents. New residents attracted to the region because of military spending may work as contract military venders (i.e., weapons development, on-base capital needs, or professional services), construction workers, school teachers, doctors, retail service employees, etc. It is assumed that most of these residents will prefer to live near one of the three military bases to realize the economies of scale for their industry.

Natural Civilian Growth

Population growth will continue in the region independent of investment at the three military bases. Primary sources of natural growth include new births and in-migration to the region, particularly retirees attracted to the mild climate, shoreline, and low cost-of-living associated with The MGTF Region. Increases in both military and non-military retirees are expected for the region.

New residents to the region associated with natural growth have the most freedom in selecting a place to live. Retirees expected from outside the region (primarily from the Northeast and Midwest areas of the United States) will likely find housing more affordable compared to their previous residences.

Demand for Housing Units

The number of new housing units required to serve growing military and civilian populations was estimated using information available from the US Census Bureau and the three military installations. Civilian population growth (i.e., indirect growth and natural growth) was calculated using average household size estimates published in the 2007 American Community Survey (ACS) and 2000 Decennial Census. The distribution of new civilians living in the seven counties used information summarized in Module 2, Workforce. A worksheet for estimating civilian demand for for-sale homes and rental homes is provided in Appendix B of this plan. **Table 1.1** summarizes the civilian demand for new housing anticipated in the region.

County	Population Growth	Average Household Size	Total Civilian Households	Owner Households	Renter Households
Craven	6,740	2.30	2,930	1,956	974
Carteret	3,442	2.29	1,503	1,151	352
Pamlico	210	2.38	88	73	16
Pender	8,598	2.43	3,538	2,923	615
Duplin	3,920	2.94	1,333	999	334
Jones	339	2.53	134	107	27
Onslow	16,908	2.49	6,790	3,947	2,834
Region	40,157	2.48	16,318	11,155	5,162

Table 1.1 - Civilian Demand for New Housing in the Region, 2011

Military population growth was calculated using a profile of active duty personnel by pay grade and information published in the 2008 Housing Market Analysis Update Reports completed for both MCAS Cherry Point and MCB Camp Lejeune (including MCAS New River). New active duty and civilian personnel working on the three bases were summarized by base assignment, pay grade, and dependent status (i.e., accompanied or unaccompanied) for estimating new housing demand. This information was used to estimate the percentage of new service members and their dependents living off-base. The number of homeowners and renters in this group was estimated using information published in the housing market analysis update reports for the three bases.

The distribution of new military families living in the seven counties used information summarized in Module 2, Workforce. A worksheet for estimating the military's demand for rental and for-sale homes in the surrounding communities is provided in Appendix B of this plan. **Table 1.2** summarizes the military's demand for new housing anticipated in the region.

County	Active Duty & Civilian Households	Off-Base Households	Off-Base Owner Households	Off-Base Renter Households
Craven	2,136	449	159	289
Carteret	199	199	71	128
Pamlico	1	1	0	1
Pender	164	164	58	106
Duplin	34	34	12	22
Jones	70	70	25	45
Onslow	8,873	2,009	713	1,296
Region	11,477	2,926	1,039	1,887

Table 1.2 - Military Demand for New Housing in the Region, 2011

Income Profile

Personal income and wealth represents the 'purchasing power' of residents in the region to secure adequate housing. Real estate developers study income levels and income patterns to make development decisions, such as whether to build for-sale or rental housing. Residents' income and personal wealth also have a significant impact on the transition to homeownership. Income profiles in the MGTF Region are presented below for both civilian and military populations.

Civilian Compensation

Civilian compensation in the region is represented by household income, which includes all wages, tips, and bonuses earned from employment, as well as retirement income earned from a pension plan or retirement account. Households include all residents living in the home, related or unrelated. According to mortgage lenders in the region, dual income households account for 90 percent of all mortgage applications in 2008.

County	Average Annual Household Income
Craven	$43,480
Carteret	$46,803
Pamlico	$34,084
Pender	$41,845
Duplin	$33,279
Jones	$30,882
Onslow	$42,173
Region	$38,935

Table 1.3 - Average Annual Household Income, 2007

Average annual household income was reported by place of residence, which represents the purchasing power for employees in the county in which they reside. Information for Onslow, Craven, Carteret, Pender, and Duplin Counties was published in the ACS (2007). Information for Pamlico and Jones Counties was published in the US Census Bureau 2000 Decennial Census.

Regular Military Compensation

Regular military compensation represents the average monthly military salary earned by service members. It combines basic pay, basic allowance for housing, and basic allowance for subsistence. A summary of each component follows.

Basic pay is the largest component of a service member's military compensation. Grade and years of experience determine the amount of basic pay received. The monthly basic pay table for all military grades can be found at *www.defenselink.mil/militarypay*, and is reproduced below in **Table 1.4**.

Pay Grade	Description	Monthly Pay
E-1	Private	$1,399.50
E-2	Private, First Class	$1,568.70
E-3	Lance Corporal	$1,859.70
E-4	Corporal	$2,218.50
E-5	Sergeant	$2,828.40
E-6	Staff Sergeant	$3,226.20
E-7	Gunnery Sergeant	$4,521.00
E-8	Master Sergeant	$5,160.90
E-9	Sergeant Major	$6,863.10
W-1	Warrant Officer, One	$4,484.40
W-2	Chief Warrant Officer, Two	$4,757.10
W-3	Chief Warrant Officer, Three	$5,860.80
W-4	Chief Warrant Officer, Four	$6,681.90
W-5	Chief Warrant Officer, Five	$8,513.10
O-1	Second Lieutenant	$3,340.50
O-2	First Lieutenant	$4,233.30
O-3	Captain	$4,948.80
O-4	Major	$6,534,30
O-5	Lieutenant Colonel	$7,697.40
O-6	Colonel	$9,910.80
O-7	Brigadier General	$11,284.50
O-8	Major General	$13,104.30
O-9	Lieutenant General	$15,936.00
O-10	General	$18,061.20

Table 1.4 - Military Basic Pay, by Grad

A **basic allowance for housing** (BAH) provides financial resources to service members and their dependents living off-base. The BAH program calculates appropriate allowances based on three criteria: location of the assigned military base, pay grade, and dependent status (accompanied or unaccompanied). Requests for BAH are awarded based on application and local base policy regarding minimum occupancy for government quarters on base.

The BAH calculations for pay grade and dependents status is fixed. The locality calculation for BAH is computed using rental-housing cost, utility bill, and renter's insurance information for housing located within the Military Housing Area (MHA) of each base. The criteria and procedures for determining the MHA is defined in the *Military Housing Office Process Guide for the 2006 BAH Data Collection Submission*. Two MHAs exist in the region: NC 177 (MCAS – Cherry Point) and NC 178 (MCB Camp Lejeune and MCAS – New River). **Table 1.5** shows BAH by rank, by base, and by dependent status.

Pay Grade	MCB Camp Lejeune / MCAS New River		MCAS Cherry Point	
	With Dependents	Without Dependents	With Dependents	Without Dependents
E-1	$986	$746	$1,013	$769
E-2	$986	$746	$1,013	$769
E-3	$986	$746	$1,013	$769
E-4	$986	$746	$1,013	$769
E-5	$1,036	$873	$1,122	$860
E-6	$1,176	$942	$1,362	$1,022
E-7	$1,221	$989	$1,387	$1,040
E-8	$1,270	$1,063	$1,415	$1,169
E-9	$1,361	$1,107	$1,449	$1,244
W-1	$1,177	$966	$1,362	$1,022
W-2	$1,241	$1,063	$1,398	$1,168
W-3	$1,300	$1,111	$1,432	$1,251
W-4	$1,384	$1,187	$1,456	$1,368
W-5	$1,482	$1,231	$1,483	$1,393
O-1	$1,052	$935	$1,149	$904
O-2	$1,173	$1,019	$1,357	$1,048
O-3	$1,298	$1,126	$1,431	$1,276
O-4	$1,523	$1,225	$1,495	$1,390
O-5	$1,682	$1,262	$1,539	$1,406
O-6	$1,696	$1,300	$1,552	$1,432
O-7	$1,716	$1,326	$1,570	$1,461
O-8	$1,176	$1,326	$1,570	$1,461
O-9	$1,176	$1,326	$1,570	$1,461
O-10	$1,176	$1,326	$1,570	$1,461

Table 1.5 - Allowance for Basic Housing by Rank, Base, and Dependent Status

A **basic allowance for subsistence** (BAS) offsets the cost of meals for a service member. It is not intended to cover the cost of meals for military dependents. Monthly BAS is calculated from the cost of food and re-adjusted annually based on the USDA food cost index. The BAS for 2009 was set at $323.27 for enlisted service members and $223.04 for officers.

A summary table representing regular military compensation, reported by grade, for service members of the United States Marine Corps stationed at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point is presented below.

Pay Grade	MCB Camp Lejeune / MCAS New River		MCAS Cherry Point	
	With Dependents	Without Dependents	With Dependents	Without Dependents
E-1	$2,709	$2,469	$2,736	$2,492
E-2	$2,879	$2,639	$2,906	$2,662
E-3	$3,170	$2,930	$3,197	$2,953
E-4	$3,528	$3,288	$3,555	$3,311
E-5	$4,188	$4,025	$4,274	$4,012
E-6	$4,726	$4,492	$4,912	$4,572
E-7	$6,066	$5,834	$6,232	$5,885
E-8	$6,755	$6,548	$6,900	$6,654
E-9	$8,548	$8,294	$8,636	$8,431
W-1	$5,985	$5,774	$6,170	$5,830
W-2	$6,322	$6,144	$6,479	$6,249
W-3	$7,485	$7,296	$7,617	$7,436
W-4	$8,390	$8,193	$8,462	$8,374
W-5	$10,319	$10,068	$10,320	$10,230
O-1	$4,616	$4,499	$4,713	$4,468
O-2	$5,629	$5,475	$5,813	$5,540
O-3	$6,470	$6,298	$6,603	$6,448
O-4	$8,280	$7,982	$8,252	$8,147
O-5	$9,602	$9,182	$9,459	$9,326
O-6	$11,830	$11,434	$11,686	$11,566
O-7	$13,224	$12,834	$13,078	$12,969
O-8	$15,043	$14,653	$14,897	$14,788
O-9	$17,875	$17,485	$17,729	$17,620
O-10	$20,000	$19,610	$19,854	$19,745

Table 1.6 - Regular Military Compensation by Base, Rank, and Dependent Status

Existing Conditions

Building Permit Activity

Tracking the number of building permits issued in the seven counties is a useful tool for monitoring growth trends and housing types prevalent in the region. Policy-makers and planning officials can use building permit activity to monitor progress toward promoting a healthy mix of housing types in new home markets. Building permit activity, however, does not account for the size of developments that are being built in the region.

Between 2002 and 2007, cities and counties in the region issued 23,919 building permits (US Census Bureau, BuildingPermit Tables). The number of permits issued increased from 2002 to 2005, reflecting an accelerating housing market. The number of permits issued since 2005 decreased each year and is expected to continue a downward trend during the economic recession. The average annual number of permits issued by cities and counties during the five-year period was 3,772. Single-family home permits represented 89 percent of the five-year total, with the remainder being multifamily home permits.

County	2002		2003		2004		2005		2006		2007	
	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF
Onslow	980	62	1,040	8	561	566	1,658	160	1,690	355	1,539	97
Craven	620	50	664	101	998	34	1,136	149	988	36	607	37
Carteret	543	106	481	133	591	139	839	196	637	120	299	20
Duplin	126	48	114	4	143	6	120	22	119	0	118	0
Jones	4	0	0	0	7	0	25	0	44	0	63	0
Pamlico	49	2	67	4	108	0	99	8	118	0	95	2
Pender	189	0	638	43	835	68	1,044	48	594	84	535	86
Region	2,511	268	3,004	293	3,243	813	4,921	583	4,190	595	3,256	242

Table 1.7 - Regional Building Permit Activity, 2002 – 2007

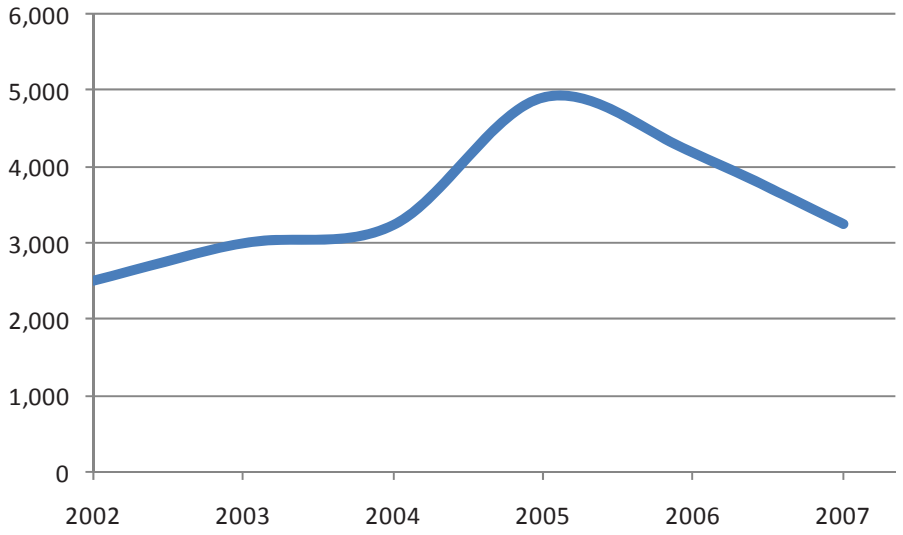


Figure 1.1 - Regional Building Permit Trends for Single Family Homes, 2002 – 2007

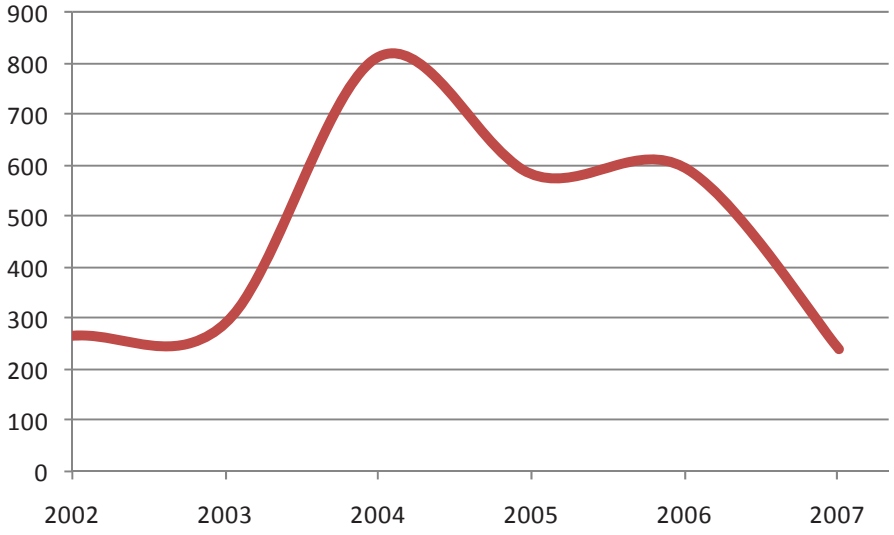


Figure 1.2 - Regional Building Permit Trends for Multifamily Homes, 2002 – 2007

Housing Supply

Housing unit estimates for the region were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this module was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the seven counties include the impacts of cities and towns within them.

Housing supply has an impact on pricing and the competition for homes in the region. In 2007, there were 209,076 housing units reported for the seven counties, an increase of 14.2 percent over the total number of housing units reported in 2000. The preference for housing types and neighborhood styles varies across counties in the region. This module focuses on five general home categories prevalent in the region: owner-occupied homes, rental homes, manufactured homes, second homes/seasonal rentals, and military housing.

Manufactured Homes

County	Manufactured Homes
Craven	7,755
Carteret	11,569
Pamlico	2,117
Pender	8,561
Duplin	7,100
Jones	1,633
Onslow	15,550
Region	54,285

Table 1.8 - Inventory of Manufactured Homes in the Region, 2007

One in four homes in The MGTF Region is a manufactured home. A manufactured home is built on an integral chassis in a factory and transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). In 2007, there were 54,285 manufactured homes in the seven counties. Table 1.8 summaries the number of manufactured homes for counties in the region.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011 as explained in the earlier section discussing adequate housing.

Owner-occupied Homes

Owner-occupied homes are occupied by the owner of the unit. They are site-built homes, typically purchased using a mortgage and represent the dominant housing type for every county in the region. In 2007, there were 85,982 owner-occupied homes in the seven counties. This represents 55.8 percent of all the housing units reported for the region. Table 1.9 summaries the number of owner-occupied homes for counties in the region.

County	Occupied For-Sale Units
Craven	21,423
Carteret	15,769
Pamlico	2,927
Pender	10,050
Duplin	9,491
Jones	2,109
Onslow	24,213
Region	83,274

Table 1.9 - Inventory of Occupied For-Sale Homes in the Region, 2007

Unoccupied or "vacant" homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council. A worksheet for estimating the number of available for-sale homes in the region is provided in Appendix E of this plan. Based on the foregoing database, 11,883 for-sale homes are available for new residents coming to the region as follows: Onslow (3,889), Craven (2,876), Carteret (1,615), Pender (1,418), Duplin (1,088), Pamlico (703), and Jones (294).

The number of for-sale homes available in the region was validated using Realtors' Multiple Listing Service (MLS) data collected by the Housing Working Group.

Owner-occupied housing in the region, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site-built home in the region is $207,500, which is nearly 25 percent below the state average of 278,943. Although the housing market has slowed in the region, negative impacts to the local economy are being reduced somewhat by the influx of new Marines to the region. The average number of days to sell a site-built home using the MLS was 239 days.

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time, usually one calendar year. In 2007, there were 40,288 occupied rental homes in the seven counties. This represents 25.0 percent of all the housing units reported for the region. Table 1.10 summarizes the number of occupied rental homes (traditional lease) for counties in the region.

County	Occupied Rental Units
Craven	10,673
Carteret	4,829
Pamlico	634
Pender	2,115
Duplin	3,177
Jones	535
Onslow	17,441
Region	40,288

Table 1.10 - Inventory of Occupied Rental Homes in the Region, 2007

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council. Appendix F provides a worksheet for estimating the number rental homes available in the region. Based on the foregoing database, 5,618 rental homes are available for new residents coming to the region as follows: Onslow (2,802), Craven (1,433), Carteret (494), Pender (298), Duplin (364), Pamlico (152), and Jones (74). These numbers were compared to the number of rental homes available in the region according to the MLS data collected by the Housing Working Group. Based on that comparison, it was determined that these numbers were much higher than the MLS indicated. There are several reasons for this discrepancy: the MLS service shows only units offered by agencies; many rentals are advertised and rented directly by owners; and most units below the $850 price point are offered by owners, not agencies.

Rental prices in the region were determined from an internet and telephone survey of apartments available in the seven counties (see Appendix D). The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a

two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy of rental homes in the region was estimated at 92 percent based on US Census Bureau Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98 percent).

Unless new units are constructed soon, the magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment properties, hoping to retire to the home once it was paid for in full(National Association of Realtors, 2004). When asked why they bought a second home, respondents to the National Association of Realtors survey reported that they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home because they had the extra money to spend.

The market for second homes frequently focuses on the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates. In 2007, there were 22,952 second homes/seasonal rentals in the seven counties. This represents 11.0 percent of all the housing units reported for the region. **Table 1.11** summaries the number of second homes/seasonal rentals for counties in the region.

County	Second Homes / Seasonal Rentals
Craven	402
Carteret	10,884
Pamlico	621
Pender	2,181
Duplin	111
Jones	34
Onslow	2,515
Region	16,748

Table 1.11 - Inventory of Second Homes/Seasonal Rentals in the Region, 2007

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 19,135 dwelling units were approved in the region between 2005 and 2009. Of these, 14,290 dwelling units, or 75 percent, were approved but not yet built in 2007. Nearly 91 percent of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. A majority of the yet to be built dwelling units are located in the host counties for the three military bases. The Committed Residential Development Database prepared by the ECC is included in Appendix G of this plan.

More than half of approved units not yet built are for single-family neighborhoods (10,841 dwelling units). Remaining dwelling units not yet built (3,371) are approved for townhome, condominium, or apartment communities. Of the total approved dwelling units in the region, 11,350 were assumed available and affordable for the housing gap analysis presented in this module (i.e., less than $300,000 for land and structure combined). The majority of the dwelling units yet to be built are in Craven, Onslow, and Carteret Counties.

Due to the drastic tightening of the credit markets in late 2008 and early 2009, lending to builders working in the region has almost completely stopped. This phenomenon delays the construction of the remaining approved but not yet built dwelling units in the region. As a result, as long as the credit market remains unchanged, the existing inventory of vacant housing in the region (i.e., for-sale and rental units) will have to meet demand.

The table below summarizes housing supply in the region. Housing units are reported by general residential category: for-sale home, rental home, manufactured home, and second home/seasonal rental. Vacant homes from existing inventory (17,501) and dwelling units reported as 'built' in 2007 from the ECC's Committed Residential Development Database

(11,350) were assigned as future for-sale homes or future rental homes using information published in the 2000 Decennial Census.

County	Rental Units	For-Sale Units	Seasonal Rentals
Craven	1,433	2,876	402
Carteret	494	1,615	10,884
Pamlico	152	703	621
Pender	298	1,418	2,181
Duplin	364	1,088	111
Jones	74	294	34
Onslow	2,802	3,889	2,515
Region	5,618	11,883	

Table 1.12 - Regional Housing Supply Profile, 2007

Military Housing

The Department of Defense allocates significant funding to provide adequate housing for bachelors and military families serving at MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River. Information on housing supply and demand at these installations was summarized from the *2008 Housing Market Analysis Update* completed separately for MCAS Cherry Point and MCB Camp Lejeune and MCAS New River (combined study).

MCAS Cherry Point

Officer and enlisted personnel assigned to MCAS Cherry Point totaled 9,254 in 2008. Personnel are categorized by the military as accompanied (bachelor) or unaccompanied (military family) for estimating housing demand. Unaccompanied personnel with the rank of E1 – E5 are assumed to live on base. Officer, warrant, and higher ranking enlisted (E6 – E9) personnel may live on or off base subject to local base housing policies adopted in accordance with the *Marine Corps Housing Management Manual*. Specifically, the Manual requires that "maximum practical occupancy of adequate (on-base) bachelor quarters be maintained at all times". Practical occupancy is defined as 95 percent for permanent personnel. Officials for MCAS Cherry Point report 3,544 service members live in on-base bachelor housing. Demand for bachelor housing is forecasted to increase to 3,710 in 2013.

Military families include a service member and his or her dependents. Accompanied personnel at MCAS Cherry Point represented 4,659 military families in 2008. Officials for the base report that 1,689 families live on base. All of these families are in privatized government housing. Neighborhoods on base include Binder Oaks, Grant's Landing, Lawson Village, Nugent Cove, and Slocum Village. Future plans for privatized government housing include the construction of 35 new units by 2013.

All other military families are expected to reside off-base. This trend toward moving military families off base is consistent with guidance from the Office of the Secretary of Defense (OSD) to rely primarily on private sector community housing to meet demand (Department of Defense, 2003). The *2008 Housing Market Analysis Update for MCAS Cherry Point* estimates 2,970 families in 2008 and 4,365 families in 2013 will seek housing in the community.

The recent housing market analysis update estimates 34.9 percent of all military families living off-base own a home (1,627 families). By 2013, the amount of housing affordable to military families is expected to decline to 32.8 percent unless the allowance for basic housing (BAH) is increased. As housing becomes less affordable, many potential home buyers may decide to rent.

In 2008, 1,343 families assigned to MCAS Cherry Point lived in off-base rental housing. The *2008 Housing Market Analysis Update for MCAS Cherry Point* forecasts 2,766 families will seek rental housing in 2013. Approximately 31 percent of the existing rental units in the housing market area were considered inadequate using US Marine Corps Standards. This includes 21.6 percent of the inventory that were manufactured homes and 9.4 percent of the inventory that was site-built homes but inadequate in quality (2008 Housing Market Analysis Update, MCAS Cherry Point). An inventory of available and qualified off-base housing for MCAS Cherry Point is provided in Appendix H of this plan.

Military renters (both accompanied and unaccompanied personnel) assigned to MCAS Cherry Point compete with civilian households for adequate rental housing in the community. Any future shortfall in rental housing for military families will

be influenced by the quantity, quality, and timing of adequate housing in the private sector.

MCB Camp Lejeune / MCAS New River

Officer and enlisted personnel assigned to MCB Camp Lejeune and MCAS New River totaled 47,878 in 2008. Unaccompanied personnel rank E1 – E5 are assumed to live on base. Officer, warrant, and higher ranking enlisted (E6– E9) personnel may live on or off base subject to local base housing policies adopted pursuant to the *Marine Corps*

Housing Management Manual. Officials for MCB Camp Lejeune report 25,802 service members currently live in on-base bachelor housing. Demand for bachelor housing is forecast to increase to 26,407 in 2013.

Accompanied personnel at MCB Camp Lejeune and MCAS New River represented 18,872 military families in 2008. Officials for the base report 3,650 families live on base and 1,300 more families are on a waiting list. All family housing units on base are privatized government housing. 672 housing units are currently offline for renovations between the two bases. By 2013, the two bases will have a total of 4,700 to 4,900 on-base housing units. Neighborhoods on MCB Camp Lejeune include Berkeley Manor, Courthouse Bay, Hospital Point, Knox Cove, Midway Park, Paradise Point, Tarawa Terrace, and Watkins Village. Neighborhoods on MCAS New River include McCutcheon Manor and Peterfield Point.

As with MCAS Cherry Point, all other military families are expected to reside off-base. The *2008 Housing Market Analysis Update for MCB Camp Lejeune and MCAS New River* estimates 15,222 families in 2008 and 17,786 families in 2013 will seek housing in the community.

The recent housing market analysis update estimates 35.5 percent of all military families living off-base own a home (6,693 families). By 2013, housing affordability for military families is expected to decline to 33.6 percent unless the allowance for basic housing (BAH) is increased. As housing becomes less affordable, many potential home buyers may decide to rent.

In 2008, 8,529 families assigned to MCB Camp Lejeune or MCAS New River lived in off-base rental housing. The *2008 Housing Market Analysis Update for MCB Camp Lejeune and MCAS New River* forecasts 11,146 families will seek rental housing in 2013. Approximately 36.5 percent of the existing rental units in the housing market area were considered inadequate using US Marine Corps Standards. This includes 25.0 percent of the inventory that were mobile homes and 11.5 percent of the inventory that was site-built homes but inadequate in quality (2008 Housing Market Analysis Update, MCB Camp Lejeune and MCAS New River). An inventory of available and qualified off-base housing for MCB Camp Lejeune and MCAS New River is provided in Appendix I of this plan.

Military renters (both accompanied and unaccompanied personnel) assigned to MCB Camp Lejeune and MCAS New River compete with civilian households for adequate rental housing in the community. Any future shortfall in rental housing for military families will be influenced by the quantity, quality, and timing of adequate housing in the private sector.

Cost of Homeownership

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the region.

The median home value published in the American Community Survey for 2007 was used to estimate the **purchase price** of a home in the region (see **Table 1.13**. Median Value of Homes in the Region). Median home values were validated using information published in the Realtors' Multiple Listing Service (MLS) for areas represented in the region.

A conventional, fixed-rate 30-year **mortgage** was assumed to estimate the typical monthly costs of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15 percent of the purchase price. No down payment was assumed for home loans to military families (i.e., consistent with terms of most VA home loans). The loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

County	Median Home Value
Craven	$124,803
Carteret	$144,792
Pamlico	$106,309
Pender	$162,568
Duplin	$96,840
Jones	$94,977
Onslow	$134,700

Table 1.13 - Median Value of Homes in the Region

All cities and counties in the region levy a **property tax**. The tax rate varies by political jurisdiction, ranging from $0.42 per $100 of value in Carteret County to $1.129 per $100 of value in Onslow County. **Table 1.14** summarizes the property tax rates used in this analysis. The tax rates used for Carteret and Onslow counties reflect the blended average of the city and county rates. (The tax rate in unincorporated Carteret is 23 cents).

County	Tax Rate (per $100 of Value)
Craven	$01.115
Carteret	$00.420
Pamlico	$00.650
Pender	$00.650
Duplin	$00.770
Jones	$00.790
Onslow	$01.129

Table 1.14 - Property Tax Rates for Counties in the Region, 2007

Note: Tax rates shown are blended rates.

Utility costs were estimated from state and local sources. Specifically, the average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductable levels, and the insurance company providing the policy.

The cost of homeowners insurance was estimated to be 0.75 percent of the purchase price of the home.

Monthly Payment

The monthly payment required to afford a home of median value in each of the seven counties is presented in **Table 1.15**. Values are reported for civilian and military populations because of the difference in down payment assumed for each group (i.e., 15 percent vs. 0 percent typical down payment respectively). A worksheet for estimating monthly payments is included in the Appendix of this plan.

	Carteret	Craven	Pender	Pamlico	Jones	Onslow	Duplin
				Summary for a Civilian Purchase (Monthly Impact)			
Purchase Price	$144,792	$124,803	$162,568	$106,309	$94,977	$134,700	$96,840
Down Payment (15%)	$21,719	$18,720	$24,385	$15,946	$14,246	$20,205	$14,526
Mortgage Payment	$695.61	$599.58	$781.01	$510.73	$456.29	$647.12	$465.24
Property Taxes	$50.68	$115.96	$88.06	$57.81	$62.53	$126.73	$62.14
Homeowner Insurance	$90.50	$78.00	$101.61	$66.44	$59.36	$84.19	$60.53
Utility Costs	$193.00	$193.00	$193.00	$193.00	$193.00	$193.00	$193.00
Total Monthly Payment	$1,029.78	$986.54	$1,163.67	$827.98	$771.17	$1,051.04	$780.90
				Summary for a Military Purchase (Monthly Impact)			
Purchase Price	$144,792	$124,803	$162,568	$106,309	$94,977	$134,700	$96,840
Down Payment (0%)	$0	$0	$0	$0	$0	$0	$0
Mortgage Payment	$818.36	$705.38	$918.83	$600.86	$536.81	$761.32	$547.34
Property Taxes	$50.68	$115.96	$88.06	$57.81	$62.53	$126.73	$62.14
Homeowner Insurance	$90.50	$78.00	$101.61	$66.44	$59.36	$84.19	$60.53
Utility Costs	$193.00	$193.00	$193.00	$193.00	$193.00	$193.00	$193.00
Total Monthly Payment	$1,152.53	$1,092.35	$1,301.49	$918.11	$851.70	$1,165.24	$863.00

Table 1.15 - Monthly Payment to Afford a Home of Median Value in the Region

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see Appendix D). Average rents assumed for this analysis are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost-Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active duty military personnel and their dependents buying homes, and active duty military personnel and their dependents renting homes.

Average monthly pay for civilian populations and regular military compensation (RMC) for active duty military personal were used to compute maximum allowable monthly payments for buying a home in the region. Average monthly pay for civilian populations and basic allowance for housing for active duty military personal were used to compute the maximum allowable monthly payments for renting a home in the region. In both cases, a moderate cost burden ratio of 30 percent was used to calculate the maximum allowable monthly payment available for housing (US Housing and Urban Development Department, 2009).

Civilian Population, For-Sale Housing

Table 1.16 below summarizes the cost burden analysis for civilians purchasing a home in the region. More information on average monthly household income and the cost of homeownership for a home of median value in the region is provided earlier in the module.

	Carteret	Craven	Pender	Pamlico	Jones	Onslow	Duplin
Impact to Household Housing Budget Surplus / (Deficit)	$140.29	$100.46	($ 117.54)	$24.12	$0.88	$3.28	$51.07

Table 1.16 - Affordability Gap for Civilians Purchasing Homes in the Region

Based on the table above, civilians in six counties of the region should find sufficient and affordable for-sale housing. Residents in Pender County would experience a moderate cost burden (31 percent) for owning a home in the county. The shortage of affordable housing in Pender County was raised as a concern during a telephone interview with housing officials for the county.

Civilian Population, Rental Housing

The table below summarizes the cost burden analysis for civilians renting a home in the region. More information on average monthly household income and the cost of renting a home or apartment in the region is provided earlier in this module.

	Carteret	Craven	Pender	Pamlico	Jones	Onslow	Duplin
Unit Size	**Impact to Household Housing Budget — Surplus / (Deficit)**						
One Bedroom Unit	$570.08	$487.00	$446.13	$252.10	$172.05	$454.33	$231.98
Two Bedroom Unit	$420.08	$337.00	$296.13	$102.10	$22.05	$304.33	$81.98
Three Bedroom Unit	$295.08	$212.00	$171.13	($22.90)	($102.95)	$179.33	($43.02)

Table 1.17 - Affordability Gap for Civilians Renting a Home in the Region

Based on the table above, civilians in all seven counties of the region should find affordable rental housing, at least in one- and two-bedroom units. Residents in Pamlico, Jones, and Duplin Counties would experience a moderate cost burden (31 percent for Pamlico County, 34 percent for Jones County, and 32 percent for Duplin County) for renting a three-bedroom unit.

Military Population, For-Sale Housing

The tables below summarize the cost burden analysis for military personnel purchasing a home in the region. Results are summarized separately for service members assigned to MCAS Cherry Point and MCB Camp Lejeune (including MCAS New River). More information on regular military compensation and the cost of homeownership for a home of median value in the region is provided earlier in the module.

Pay Grade	Carteret	Craven	Pender	Pamlico	Jones	Onslow	Duplin
	Impact to Housing Budget for Personnel without Dependents — Surplus / (Deficit)						
Staff Sergeant (E6)	$219.07	$279.25	$70.11	$453.49	$519.90	$206.36	$508.6
Chief Warrant Officer Two (W2)	$722.17	$782.35	$573.21	$956.59	$1,023.00	$709.46	$1,011.70
Chief Warrant Officer Four (W4)	$1,359.67	$1,419.85	$1,210.71	$1,549.09	$1,660.50	$1,346.96	$1,649.20
Captain (O3)	$781.87	$842.05	$632.91	$1,016.29	$1,082.70	$769.16	$1,071.40
Lieutenant Colonel (O5)	$1,645.27	$1,705.45	$1,496.31	$1,879.69	$1,946.10	$1.632.56	$1,934.80
	Impact to Housing Budget for Personnel with Dependents — Surplus / (Deficit)						
Staff Sergeant (E6)	$321.07	$381.25	$172.11	$555.49	$621.90	$308.36	$610.60
Chief Warrant Officer Two (W2)	$791.17	$851.35	$642.21	$1,025.59	$1,092.00	$778.46	$1,080.70
Chief Warrant Officer Four (W4)	$1,386.07	$1,446.25	$1,237.11	$1,620.49	$1,686.90	$1,373.36	$1,675.60
Captain (O3)	$828.37	$888.55	$679.41	$1,062.79	$1,129.20	$815.66	$1,117.90
Lieutenant Colonel (O5)	$1,685.17	$1,745.35	$1,536.21	$1,919.59	$1,986.00	$1,672.46	$1,974.70

Table 1.18 - Affordability Gap for Military Personnel Purchasing Homes in the Region, MCAS Cherry Point

Based on the table **above**, military personnel with or without dependents assigned to MCAS Cherry Point should find for-sale housing affordable in the local housing market area (i.e., Craven, Carteret, Jones, Onslow, and Pamlico Counties).

Pay Grade	Carteret	Craven	Pender	Pamlico	Jones	Onslow	Duplin
	Impact to Housing Budget for Personnel without Dependents — Surplus / (Deficit)						
Staff Sergeant (E6)	$195.07	$255.25	$46.11	$429.49	$495.90	$182.36	$484.60
Chief Warrant Officer Two (W2)	$690.67	$750.85	$541.71	$925.09	$991.50	$677.95	$980.20
Chief Warrant Officer Four (W4)	$1,305.37	$1,365.55	$1,156.41	$1,539.79	$1,606.20	$1,292.66	$1,594.90
Captain (O3)	$736.87	$797.05	$587.91	$971.29	$1,037.70	$724.16	$1,026.40
Lieutenant Colonel (O5)	$1,602.07	$1,662.25	$1,453.11	$1,836.49	$1,902.90	$1,589.36	$1,891.60
	Impact to Housing Budget for Personnel with Dependents — Surplus / (Deficit)						
Staff Sergeant (E6)	$265.27	$325.45	$116.31	$499.69	$566.10	$252.56	$554.80
Chief Warrant Officer Two (W2)	$744.07	$804.25	$595.11	$978.49	$1,044.90	$731.36	$1,033.60
Chief Warrant Officer Four (W4)	$1,364.47	$1,424.65	$1,215.51	$1,598.89	$1,665.30	$1,351.76	$1,654.00
Captain (O3)	$788.47	$848.65	$639.51	$1,022.89	$1,089.30	$775.76	$1,078.00
Lieutenant Colonel (O5)	$1,728.07	$1,788.25	$1,579.11	$1,962.49	$2,028.90	$1,715.36	$2,017.60

Table 1.19 - Affordability Gap for Military Personnel Purchasing Homes in the Region, MCB Camp Lejeune/MCAS New River

Based on the table **above**, military personnel with or without dependents assigned to MCB Camp Lejeune or MCAS New River should find for-sale housing affordable in the local housing market area (i.e., Onslow, Pender, Duplin, Carteret, Jones, and Craven Counties).

Military Population, Rental Housing

The tables **below** summarize the cost burden analysis for military personnel renting a home in the region. Results are summarized separately for service members assigned to MCAS Cherry Point and MCB Camp Lejeune (including MCAS New River). More information on average monthly household income and the cost of renting a home of median value in the region are provided earlier in this module.

Pay Grade	One Bedroom Unit	Two Bedroom Unit	Three Bedroom Unit
Impact to Housing Budget for Personnel without Dependents — Surplus / (Deficit)			
Staff Sergeant (E6)	$771.60	$621.60	$496.60
Chief Warrant Officer Two (W2)	$1,274.70	$1,124.70	$999.70
Chief Warrant Officer Four (W4)	$1,912.20	$1,762.20	$1,637.20
Captain (O3)	$1,334.40	$1,184.40	$1,059.40
Lieutenant Colonel (O5)	$2,197.80	$2,047.8	$1,922.80
Impact to Housing Budget for Personnel with Dependents — Surplus / (Deficit)			
Staff Sergeant (E6)	$873.6	$723.60	$598.60
Chief Warrant Officer Two (W2)	$1,343.70	$1,193.70	$1,068.70
Chief Warrant Officer Four (W4)	$1,938.60	$1,788.60	$1,663.60
Captain (O3)	$1,380.90	$1,230.90	$1,105.90
Lieutenant Colonel (O5)	$2,237.70	$2,087.70	$1,962.70

Table 1.20 - Affordability Gap for Military Personnel Renting Homes in the Region, MCAS Cherry Point

Based on the table **above**, military personnel with and without dependents assigned to MCAS Cherry Point should find rental housing affordable for one-, two- and three-bedroom units in the local housing market area.

Pay Grade	One Bedroom Unit	Two Bedroom Unit	Three Bedroom Unit
Impact to Housing Budget for Personnel without Dependents — Surplus / (Deficit)			
Staff Sergeant (E6)	$747.6	$597.60	$472.60
Chief Warrant Officer Two (W2)	$1,243.20	$1,093.20	$968.20
Chief Warrant Officer Four (W4)	$1,857.90	$1,707.90	$1,582.90
Captain (O3)	$1,289.40	$1,139.4	$1,014.40
Lieutenant Colonel (O5)	$2,154.60	$2,004.60	$1,879.60
Impact to Housing Budget for Personnel with Dependents — Surplus / (Deficit)			
Staff Sergeant (E6)	$817.80	$667.80	$542.80
Chief Warrant Officer Two (W2)	$1,296.60	$1,146.60	$1,021.60
Chief Warrant Officer Four (W4)	$1,917.00	$1,767.00	$1,642.00
Captain (O3)	$1,341.00	$1,191.00	$1,066.00
Lieutenant Colonel (O5)	$2,280.60	$2,130.60	$2,005.60

Table 1.21 - Affordability Gap for Military Personnel Renting Homes in the Region, MCB Camp Lejeune/MCAS New River

Based on the table **above**, military personnel with and without dependents assigned to MCB Camp Lejeune and MCAS New River should find rental housing affordable for one-, two- and three-bedroom units in the local housing market area.

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the region. The demand for housing reflects both civilian and military growth. In 2011, the demand for housing from new residents is expected to reach 19,244 households (see **Table 1.1.** Civilian Demand for New Housing in the Region and **Table 1.2.** Military Demand for New Housing in the Region). Anticipated demand for for-sale homes and rental homes in the region is as follows: civilian homeowners (11,155), civilian renters (5,162), military homeowners (1,039) and military renters (1,887).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as 'built' from the Committed Residential Development Database (2005 – 2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 17,051 households; divided between 11,883 for-sale homes and 5,618 rental homes. All manufactured homes and second homes/seasonal rentals inventoried for the region were removed from available housing supply for the gap analysis.

Table 1.22 summarizes the housing gap analysis for the region. Results are reported for for-sale homes, rental homes, and combined home demand.

County	Total Civilian Households	Total Civilian Renter Households	Total Civilian Owner Households	Total Military Households	Total Military Off-Base Households	Total Military Renter Households	Total Military Owner Households	Rental Gap	Owner Gap	Total Remaining Housing Supply
Craven	2,930	974	1,956	2,136	449	289	159	169	761	930
Carteret	1,503	352	1,151	199	199	128	71	14	305	318
Pamlico	88	16	73	1	1	1	0	136	630	766
Pender	3,538	615	2,923	164	164	106	58	-422	-1,563	-1,985
Duplin	1,333	334	999	34	34	22	12	8	77	85
Jones	134	27	107	70	70	45	25	2	162	164
Onslow	6,790	2,843	3,947	8,873	2,009	1,296	713	-1,338	-771	-2,109
Region	16,318	5,162	11,155	11,477	2,926	1,887	1,039	-1,431	-311	-1,742

Table 1.22 - Regional Housing Gap Analysis, 2011

By 2011, a housing deficit is expected in the region based on current housing supply and the military's definition of adequate housing. Local deficits are expected in Onslow and Pender Counties. A significant portion of the housing deficit (82 percent) is attributed to a shortfall in adequate rental homes.

Completion of the yet to be built dwelling units in the committed residential development database prepared by the Eastern Carolina Council could eliminate the housing deficit expected for the region, including Onslow and Pender Counties. For 2007, the database estimates 11,350 dwelling units are both approved but not yet built *and* affordable under the criteria of this module (i.e., less than $300,000 for land and structure combined). Most of the dwelling units are located in the two housing market analysis areas for MCAS Cherry Point and MCB Camp Lejeune (including MCAS New River).

Tightening credit markets continue to threaten the region's ability to build many of the dwelling units in the residential development pipeline. This may ultimately affect the regional ability to supply adequate housing to new residents if conditions last over several years. The magnitude and timing of newly arriving residents could exacerbate the shortage of adequate housing anticipated in 2011.

What about manufactured homes?

One in four homes in eastern North Carolina is a manufactured home; however, the US Military's definition of adequate housing excludes manufactured homes from this analysis. This exclusion explains some of the local frustrations with housing market analysis reports completed for MCAS Cherry Point and MCB Camp Lejeune/MCAS New River (combined study) that conclude that a large deficit exists for military personnel and their families hoping to live off-base.

The fact is, like civilians, some active duty personnel and their families enjoy living in manufactured homes, and housing officials at the three military bases acknowledge many service members are currently living in a manufactured home.

In 2007, there were 54,285 manufactured homes reported in the seven counties. Recognizing only 4 percent of these housing units are available in the region's housing supply could significantly reduce the housing deficit for civilian or military populations anticipated in 2011.

Issues Facing the Region

As the region grows, it faces new challenges and opportunities for addressing future housing demand and the preference for various housing types. Solutions contemplated for the region will require a comprehensive and cooperative strategy between local governments, public utility providers, state agencies, private developers, financial institutions, and the US Marine Corps to ensure successful implementation (i.e., a one vision, one voice mentality). The unique physical, social, and political characteristics of each city or county are the single greatest influence on the course of action most appropriate for addressing local housing issues in the region.

Future Residential Development around Military Installations

Residential development pressure around MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River provides the opportunity to increase adequate and affordable housing supply in close proximity to military bases. However, it also has the potential to become an encroachment issue that threatens the very mission footprint of the bases. Land use conflicts for host cities and counties in the region were recently evaluated in the Eastern Carolina Joint Land Use Study (JLUS) and the Onslow County Joint Land Use Study, as well as follow up Air Installation Compatible Use Zone (AICUZ) studies.

Recommendations in the JLUS and AICUZ studies advocate for an expanded jurisdiction (e.g., larger extraterritorial planning jurisdiction) for host cities and counties and/or the adoption of local development controls that promote land use compatibility around military bases. Implementation of these recommendations was left to the actions of surrounding local governments with no penalty for non-compliance. To date, many recommendations have yet to be implemented.

One opportunity to expedite or improve compliance with recommendations in the JLUS or AICUZ studies is to amend North Carolina Administrative Code (15A NCAC 07B), which requires a CAMA Land Use Plan for cities and counties in the region. Specifically, a new provision that requires military base host cities and counties list “land use compatibility around military bases” as a Local Area of Concern could strengthen local implementation of JLUS or AICUZ recommendations.

Water & Wastewater Capacity

New residential development in the region depends largely on the availability and timing of additional water and wastewater capacity. Increased demand on already burdened public facilities necessitates expansion and upgrades to the system, which require significant funding at local, state, and federal levels. Funding sources for such improvements are generally limited, and the level of water availability and wastewater capacity in desirable areas of the region is taxed by continued growth, without the funding available to keep pace.

Residential development located in areas already served by local utility providers is desirable to reduce the cost of expansion and upgrades. In the current economy, lowering the cost of system improvements by locating new development within, or in close proximity to, existing utility service areas has the greatest potential to ensure future residential development does not overburden existing utility customers with costly improvements.

County land use policy and ordinances guide growth and provide incentives for locating new development in the most appropriate areas. Using these tools, local officials have the opportunity to steer growth to locations where water and wastewater capacity still exists, thus ensuring these systems are not unfairly burdened by new development. Currently, only Pamlico County has a county-wide “adequate public facilities” ordinance to limit residential development in areas that are currently served by public services, or included in public service expansion plans. While this type of ordinance limits the location and timing of residential development, it also ensures that development occurs in a timely and appropriate fashion without overburdening public expenditures.

A detailed discussion on the availability of water and wastewater capacity to serve new residential development as well as other issues facing the region is provided in Module 5, Infrastructure. Specific county challenges are included in the County modules.

Rental Housing Crunch

Civilians and military personnel seeking available and affordable rental housing in the region are having a more difficult time finding suitable rental property. High occupancy levels in existing rental communities (as high as 98 percent for some areas) and tightening credit markets that severely limit the construction of new rental housing could exacerbate the situation to crisis levels if conditions last over several years.

High demand for remaining rental units could also increase rents. Service members in the region have a housing base allowance significantly higher than current market rents, which could force some civilians out of the market if landlords elect to take advantage of increasing military demand and their ability to pay higher rents. Although this phenomenon is not yet occurring in the study area, if it does happen, civilian renters may be forced to move further away from their place of employment or daily activities, or elect to live in a smaller housing unit to compensate for the price increase or lack of available rental units in their price range.

Threats to Homeownership Affordability

Homeowners Insurance Rate Increases

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the items in it. The price of homeowners insurance varies, influenced by the location of the home, deductable levels, and the insurance company providing the policy. Homeowner insurance is typically provided through standard insurance markets.

The North Carolina Insurance Underwriters Association offers insurance (the Beach Plan) to those who are not able to buy it through standard insurance markets. The Plan is authorized to offer insurance to primary residences and commercial properties in eighteen coastal counties – including Carteret, Craven, Jones, Onslow, Pamlico, and Pender Counties. (Note: Duplin County is eligible for the FAIR Plan administered by the North Carolina Joint Underwriters Association). Property and casualty insurance companies doing business in North Carolina are required to participate in funding the Beach Plan and share in any loses or profits.

Insurance rate increases were last approved for the Beach Plan in 2008 by the North Carolina Department of Insurance. The results are significant increases for homes and businesses in the MGTF Region effective May 1, 2009. The Business Alliance for a Sound Economy estimates the increase for a site-built home valued at $150,000 in the inland areas of the region as follows: Pamlico County – 22.0 percent; Pender, Carteret, and Onslow Counties – 29.8 percent; Craven and Jones Counties – 6.5 percent; and Duplin County – 7.0 percent (FAIR Plan). A similar home in a beach community for Pender, Carteret, or Onslow Counties would increase 17.5 percent.

The rate increase effective May 1, 2009, has a significant and negative impact on housing affordability in the region. The magnitude of the rate increase is captured in the insurance estimates used for the cost burden analysis that is presented in this module. The impact to civilian and military retirees could prevent many from living in the region.

A legal challenge to the rate increase was filed in 2009. In March, the Wake County Superior Court halted the increase in deductibles and surcharges in the Beach Plan. The North Carolina Commissioner of Insurance appealed the order issued by the Superior Court to the North Carolina Court of Appeals. The North Carolina General Assembly is now considering new legislation (HB 1305, Beach Plan Changes) that will completely overhaul the existing Beach Plan.

Storm water Regulations

Many local government representatives believe that the Coastal Stormwater Rules will pose a threat to affordable housing in the region. New rules that include reductions in impervious surface, excluding wetlands from impervious surface percentage

calculations, and requirements for retention ponds increase the overall development costs for housing development. The rules require developers to purchase additional land to build the same number of units and result in additional permitting requirements and site work that increase costs. These costs are passed on to residents, creating burdens on the average property owner and in some instances rendering affordable housing projects infeasible.

Recommended Strategies and Actions

Successful implementation of the strategies and action items recommended in this module will depend on the ability of local governments, public utility providers, state agencies, private developers, financial institutions, and the US Marine Corps to collaborate with one another. The action plan that follows summarizes recommended strategies and action items for providing adequate and affordable housing that keeps pace with future year demand. The intent of the action plan is two-fold; first, it must provide decision-makers with a blueprint for implementation that enables them to track progress and schedule subsequent future year initiatives or improvements. Second, clearly defined action items allow the Military Growth Task Force, as well as cities and counties in the region, to hold each other accountable for implementation.

General Strategies

Promote Sustainable Development Patterns

In recent years, planners and community leaders across the country have observed increased public interest in reducing or reversing the trends of urban sprawl and its consequences. Their efforts are largely motivated by the impacts associated with suburban development patterns: consumption of sensitive land for development, costly expansion of public infrastructure, and increased traffic congestion.

In response, urbanizing cities and counties in the MGTF Region are challenging the rules that make it difficult to implement more sustainable development patterns and intensities. In many of these communities sustainable development – measured by environmental stewardship, economic prosperity, and equitable distribution of community resources – is being achieved by implementing the principles and technologies of smart growth, low impact development, and green building.

Smart Growth[1]

Smart growth recognizes connections between development and quality-of-life by leveraging new growth to improve community. The principles of smart growth are significant because they determine an area's ability to provide housing in the long-term by recognizing the impact of public costs on development. The features that distinguish smart growth from more conventional development patterns vary from place to place. But in general, smart growth invests time, attention, and resources in restoring community and vitality to center cities and older suburbs. Smart growth is more town-centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial, and retail uses. It also preserves open space and many other environmental amenities.

There is no "one-size-fits-all" solution for smart growth. However, communities successful in implementing smart growth tend to have one thing in common – a vision of where they want to go and of what things they value in their community – and their plans for development reflect these values.

1 Text from executive summary of Why Smart Growth: A Primer by International City/County Management Assoication with Geoff Anderson, 7/98.

Smart Growth Principles

The Smart Growth Network defines ten principles for promoting smart growth. The impact and appropriateness of these principles varies based on the unique characteristics of cities and counties. Therefore, smart growth may look different within the region based on the principles that apply most to

local communities.

A brief summary of the ten principles for promoting smart growth is provided below.

No. 1 Create a Range of Housing Opportunities and Choices

Housing markets in the region are expected to shift in response to changing demographics and socioeconomic characteristics, lifestyle choices, and market conditions. Providing quality housing for all needs and preferences is a critical component of a smart growth strategy.

No. 2 Create Walkable Neighborhoods

Walkable neighborhoods locate places to live, work, learn, and play in an environment that promotes pedestrian activity. A comprehensive network of streets, mix of complementary land uses, and compact urban form serve a wide range of users – pedestrians, bicyclists, transit riders, and automobiles – and support "active living by design" initiatives.

No. 3 Encourage Community and Stakeholder Collaboration

Residents, business owners, and property owners know their community best. Continuous communication and coordination with key stakeholders during the development of any smart growth strategy raises the level of success for implementation.

No. 4 Foster Distinctive, Attractive Communities with Strong Sense of Place

Each community leaves an impression on those who live within it and those who simply visit. This impression is referred to as a "sense of place," which implies the distinct image unique to a community. Whether built around a tangible element — such as a park or a group of buildings — or a feeling of a community's theme — such as streetscape elements, signs, or general architecture — a sense of place is important to a strong smart growth strategy.

No. 5 Make Development Decisions Predictable, Fair, and Cost-Effective

Making development decisions predictable, fair, and cost-effective encourages developers to build in a community. Local governments should consider streamlining the development review process, amending development regulations, and investing in infrastructure to support smart growth strategies developed for the community.

No. 6 Promote a Mix of Land Uses

One type of development gaining popularity in the region is mixed use development. Integrating a mix of uses in a central location creates places where people live, work, and play as a cohesive community. Mixed use developments further the vitality and sustainability of an area, the efficiency of utilities and transportation serving the area, and the sense of community experienced by residents, business owners, and visitors to the area. Mixed use developments often become activity centers within the suburban landscape.

No. 7 Preserve Open Space, Farmland, Natural Beauty, and Critical Environmental Areas

Preservation of open space supports smart growth by directing development to areas where it can be served and preserving critical environmentally-sensitive areas. Within cities and suburbs, preservation of open space provides lakes, parks, trails, and greenways for the enjoyment of residents. Picturesque views and natural areas also contribute significantly to the

desirability of the region for second homeowners, re-locating businesses, retirees, and visitors to the region.

No. 8 Provide a Variety of Transportation Choices

Smart growth advocates for the reorganization of land use and urban form that supports a more efficient transportation system. Linking these three areas promotes the livability of local communities, measured for transportation by shortening commuting distance between land uses and providing more travel mode choices.

No. 9 Strengthen and Direct Development toward Existing Communities

Directing development toward existing communities promotes efficient (re)use of infrastructure and preserves both environmentally-sensitive areas and the rural character noted in the region. Compact development patterns also encourage a more efficient transportation system and provide critical mass for many civic and entertainment uses.

No. 10 Take Advantage of Compact Building Design

Recent studies by the American Farmland Trust and US Environmental Protection Agency confirm that the country's urban footprint is growing much faster than its population. Over the last 20 years, the amount of developed land (47 percent) increased nearly twice the rate of population (24 percent) (Source: US EPA's Report on the Environment, Highlights of National Trends, 2008). Smart growth recognizes the advantages of compact development to slow this trend, while increasing opportunities to preserve environmentally-sensitive areas, reduce flooding and storm water drainage, foster community cohesion, and provide cost savings by improving efficiency.

Smart Growth Toolbox

The Institute of Government recently prepared a *Smart Growth Toolbox for Local Governments in North Carolina*. It provides an overview of principal management tools that might be considered while developing and implementing a smart growth program. Some of the tools will be important for cities and counties in the region, while others may not. A copy of smart growth toolbox is included in Appendix K of this plan.

Local Examples

Many cities and counties in the region are actively working to implement smart growth initiatives for their communities. Notable examples include:

- Pamlico County, which received a joint grant from the U.S. Environmental Protection Agency and National Sea Grant for technical assistance related to the development of a corridor master plan that balances community and environmental concerns along NC Highway 55.
- City of New Bern, which is planning to update its subdivision ordinance to include "livability" standards. Future subdivisions proposed in the City's planning jurisdiction would be graded using a smart growth score card, and require a score of 70 (out of 100) for approval.

Low Impact Development

Impervious surfaces – roads, parking lots, and building rooftops – typically preclude rain water from soaking into the ground. Storm water run-off from a rain event travels quickly across impervious surfaces, picking up pollutants, and carrying them to nearby lakes and streams. The increase in water quantity leads to stream erosion and the pollutants it carries often degrade water quality.

Low impact development (LID) is a comprehensive strategy aimed at minimizing the impact of impervious surface on local watersheds. By managing storm water on site, communities are able to preserve open space, minimize land disturbance,

and protect natural systems. Recent LID projects throughout the country demonstrate significant cost savings to the developer for incorporating low impact development technologies. For example, it is estimated to be two to three times less expensive to install engineered grass swales compared to more traditional curb and gutter drain inlets or storm drainpipe systems (www.lowimpactdevelopment.org, 2009).

Recent LID projects in The MGTF Region include the Wal-Mart in Cedar Point, Core Sound Waterfowl Museum and Heritage Center, Cape Lookout National Seashore Visitor Center, Hammocks Beach State Park, and Smyrna Elementary School and Oak Elementary School in Carteret County. LID design features noted at one or more of these sites include: permeable pavement, rain gardens, wetland restoration, rain cisterns, and regional storm water collection ponds.

Low impact development solutions associated with reducing the impact or amount of impervious surface in large-scale developments include:

- Cluster development to reduce the total area of impervious surface
- Preserve existing wetlands to filter and store water, while constructing new wetlands to treat storm water run-off from impervious surfacesReplace traditional concrete curbs along streets with bio-retention swales that allow rain water to infiltrate the ground
- Use green building roofs to reduce the amount of storm water run-off that leaves the site
- Minimize the amount of surface parking
- Use more pervious materials for parking lots, streets, driveways, and sidewalks (e.g., a porous paver system)

Green Building

Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's lifecycle. The principles of green building influence decisions related to the location, design, construction, operation, maintenance, renovation, or deconstruction of a building (U.S. Environmental Protection Agency, 2009). General benefits from building green include: efficient use of energy, water, and other resources; protection of occupant health and improved employee productivity; and reduced waste, pollution, and environmental degradation. Green building methods may be integrated into a project at any time. However, the most significant benefits are realized at the onset of design and construction of the site and building.

The United States Military strongly advocates for green building principles, and is leading an initiative to incorporate green building technologies in all new and rehabilitated buildings. Enactment of the military's green building program helps implement the Energy Policy Act of 2005 and the Energy Efficiency and Security Act of 2007.

What is LEED Certification?

In 1993, the United States Green Building Council (USGBC) established the Leadership in Energy and Environmental Design (LEED) program. This program is used to evaluate green buildings using five key criteria: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. The rating system for each criterion is specific to the type of project being completed.

Certification levels within the LEED program include: certified, silver, gold, and platinum. Please visit the US Green Building Council for more information (www.usgbc.org).

Source: www.missourifamilies.org (2009)

Specific guidelines related to building green military housing are included in the Unified Facilities Criteria (UFC) published separately for Navy and Marine Corps Bachelor Housing and for Family Housing. Per the UFC, every new or rehabilitated residential building on base is required to meet the US Green Building Council's LEED Silver Rating. Up to two percent of a building's budget may be allocated to technologies that help meet the criteria for a LEED Silver Rating.

The military's efforts to build green were rewarded in the American Recover and Reinvestment Act signed into law on February 17, 2009. The Act authorizes $113 million for the US Marine Corps to improve, repair, and modernize facilities, restore and modernize real property, and invest in energy efficiency of facilities. In addition, the Act authorizes $100 million to the US Navy and US Marine Corps for troop housing and another $100 million for energy conservation and alternative energy projects.

In The MGTF Region, the US Marine Corps is incorporating green building technologies into the planning and construction of all new and rehabilitated buildings on base. The largest and most notable of these projects is Midway Park at MCB Camp Lejeune, a new neighborhood planned to replace the existing single-story cottage style homes constructed in the same location during the 1940's. When complete, the new neighborhood will include 537 new homes and be the largest concentration of all LEED-certified homes in the State of North Carolina. This project also represents the first neighborhood of all LEED-certified homes on a US Marine Corps Base.

Green building techniques noted for Midway Park include: energy efficient home construction (e.g., dual flush toilets, energy efficient appliances, CFL lighting, and more insulation), use of recycle materials, re-use of existing infrastructure, and re-purposed natural elements. Completion of the project is expected in 2013.

Several funding sources for green building are available at national, state, and local levels. Eligible participants may include homeowners, industries, government organizations, and non-profits. Please see the US Environmental Protection Agency website for more information on funding available for green building initiatives (www.epa.gov/greenbuilding/tools/funding.htm).

Public-Private Venture

A Public-Private Venture (PPV) represents a fifty-year partnership between the US Marine Corps and a private business for building and repairing housing units on a military base. PPVs provide all housing for military families living at MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River. Homes are managed and operated by the private business, with service members entering a lease following conventional landlord-tenant laws for the State of North Carolina. Basic allowance for housing (BAH) is used to pay monthly rents to the private business. The PPV is part of the Marine Corps commitment to enabling choice for accompanied active duty personnel and their dependents when selecting a place to live.

In addition to basic housing, PPVs provide community facilities and services to military families. For example, the following community services are offered to residents at MCB Camp Lejeune: school homework and afterschool club for school-age children, health awareness classes, movie night, card clubs, exercise groups, computer classes, craft and scarp booking clubs, babysitting club, teen council, neighborhood watch, and vandalism deterrence strategies. The private business in the PPV partnership also maintains the grounds and common areas within the neighborhood.

New PPV housing will not be programmed for a military base unless a housing deficit has been identified in the private sector. (Unified Facilities Criteria 2-000-05N, Section 710-1) Military officials evaluate the local housing market every two years, and publish a housing market analysis (HMA) report that notes a surplus or deficit of suitable rental housing based on forecasted growth. The most recent housing market analysis reports for MCAS Cherry Point and MCB Camp Lejeune / MCAS New River (combined study) were completed in 2008. Based on this and previous HMA reports, between 4,700 and 4,900 total PPV units will be available as on-base housing at MCB Camp Lejeune / MCAS New River to meet the demand forecasted through 2013. Base housing officials report the total number of PPV units expected in 2013 should meet existing demand (3,650) plus demand from military families currently on the waiting list for on-base housing (approximately 1,300). This growth in PPV housing units represents a net gain of approximately 500 new housing-units.

Local officials for the US Marine Corps are fully committed to initiatives underway by cities and counties in the region to meet future military family housing needs off-base. For the military, increased availability of off-base housing lowers competition for space on-base and maintains land within the fence line for military training. Off-base housing also guarantees PPV will not overbuild. For cities and counties, the increase in military families living off-base translates to higher property values, increased tax revenue, and increased economic activity at local businesses.

Attract Retirees to the Region

A growing retirement population offers great opportunity for cities and counties in the region. Mild weather and proximity to the shoreline attract retirees from outside the region, who typically have higher net worth and create a strong demand for housing, increase the tax base, and stimulate higher retail sales. Military retirees remaining in the region, who are often relatively young at the start of retirement, also improve the local economy, often for a longer period of time than

other retirees.. Maximizing both retiree categories in the region is important to the long-term health of the local housing industry.

Attracting Retirees to the Region

Retirees select a community based on several factors, including climate, quality-of-life, health services, cost-of-living, proximity to cultural and adult education activities, and a strong economic outlook. They first visit as tourists, and then more time spent in an area raises the likelihood of being chosen for retirement. Therefore, communities in The MGTF Region are not as likely to attract retirees unless they first recognize the need to attract tourists.

Military retirees assigned to one of the three military bases have experience with living or visiting cities and counties in the region. Some retirees come back to The MGTF Region as a "hometown returnee" after many years of service in the region. Others are attracted to high-tech jobs offered by military contractors that desire their skills and security clearance gained during active duty. Military retirees are also very interested in access and responsiveness to medical care provided through the DoD TRICARE health system.

Certified Retirement City Program [2]

Several government organizations are working to lure retirees from the baby boomer generation. One of the most successful examples is the Mississippi Development Authority's Hometown Mississippi Retirement Program (HMRP). The HMRP qualifies "certified retirements cities" using seven evaluation criteria – affordable cost of living, low taxes, low crime rate, quality health care, convenient access to recreation opportunities, convenient access to education and cultural opportunities, and a warm, welcoming community. Green highway signs proclaim "Corporate Limit, A Certified Retirement City" in 21 certified retirement communities along the Mississippi Gulf Coast. Another 26 cities throughout that state are on the waiting list for certification.

Since 1994, the program is credited with bringing 7,500 retirees to the Gulf Coast; generating nearly 2,300 jobs and $200 million per year for the state's economy. An economic impact study by the Institute of Government at Mississippi State University estimated that the 21 counties with certified retirement communities attracted nearly 350 more retirees per county for the period between 1995 and 2000. In 2005, volunteer groups for the HMRP fielded inquires about Mississippi's certified retirement communities from more than 88,000 prospective retirees.

Similar certified retirement community programs exist in Texas, Arkansas, Kentucky, and North Carolina. The North Carolina Certified Retirement Community Program is part of the 21st Century Communities Program administered by the North Carolina Department of Commerce. A proactive, highly-publicized retirement community certification program similar to the Hometown Mississippi Retirement Program could have a positive impact on the local initiatives of cities and counties in the region to attract more civilian and military retires to The MGTF Region.

Specific Recommendations

Completion of the Regional Growth Management Plan represents an important step in providing adequate and affordable housing in the region. The recommendations are structured to indicate that all improvements need not be completed in unison. This flexibility allows local governments to work in partnership with the development community to implement recommendations in the plan in many phases, or as needs arise or funding becomes available.

Local, state, federal, and private partnerships offer strategic advantages to implementing improvements on a timely-basis, especially considering the levels of growth and the impacts of growth anticipated for the region. The purpose of the action plan is to recognize these partnerships and suggest strategies and resources to address key housing challenges.

With this in mind, the following action plan identifies "next step" items recommended in the module. Ultimately, these recommendations can be administered concurrently or as priorities and regional initiatives present the opportunity for implementation.

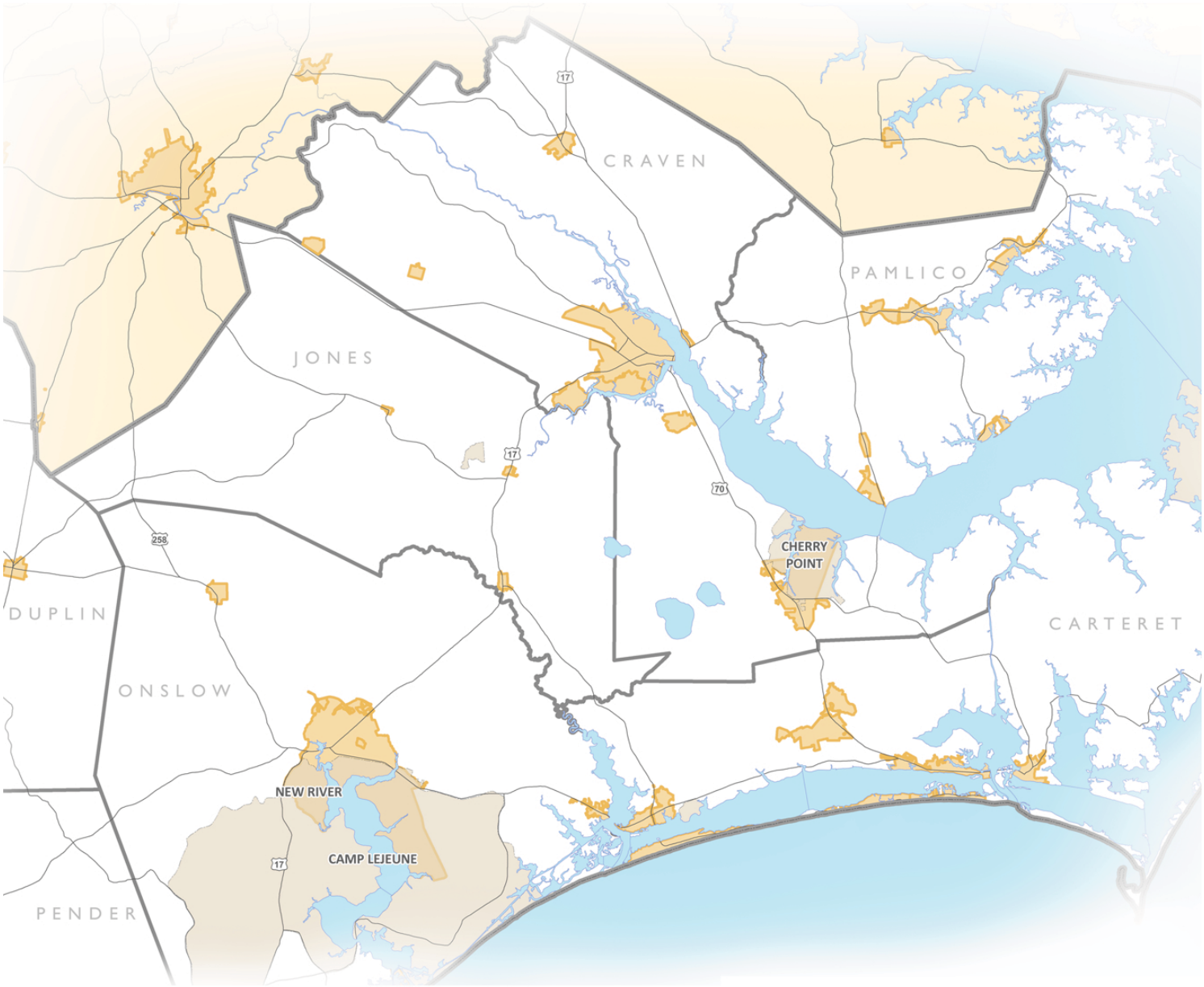
2 Text from executive summary of Why Smart Growth: A Primer by International City/County Management Association with Geoff Anderson, 7/98.

Recommendation	Priority Level	Implementation Target	Responsible Parties
The Military Growth Task Force should sponsor a lending summit for the region. The goal of the summit would be to bring together leaders from local financial institutions, private developers, and the US military to identify strategies aimed at loosening credit markets preventing new residential construction. North Carolina is designated as a "Military Friendly State" and the provision of housing depends on construction of new and approved housing, which cannot happen without appropriate and responsible lending.	High	2010	Military Growth Task Force
Cities and counties should adopt adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region. An APFO ensures development occurs in a timely appropriate manner that does not overburden supporting infrastructure. Planning in this way ensures that the ability to meet housing demand needs in the long-term will continue and reinforces the connection between housing and infrastructure needs.	High	On-going	All cities and counties in the region, especially Onslow and Pender Counties based on the findings from the housing gap analysis.
In a worsening economy, cities and counties should adopt policies or incentives that expedite the construction of new rental housing. Streamlining approval processes is one such way to approach this recommendation.	High	2010	Military Growth Task Force
Lobby the North Carolina General Assembly to re-visit recent rate increases in homeowner's insurance, which create significant and negative impacts on housing affordability in the region.	High	2009	North Carolina General Assembly / Business Alliance for a Sound Economy
The North Carolina General Assembly should study the merits of amending G.S. 113A-110, G.S. 113A-124, and 15A NCAC 07B to strengthen the relationship between military bases operations, development encroachment, and joint implementation of recommendations from the host city's or county's CAMA plan.	Medium	2011	All cities and counties in the region served by water and wastewater utilities.
Urbanizing cities and counties in the region should implement the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.	Medium	On-going	All cities and counties in the region facing the consequences of suburban sprawl.
Cities and counties should support green building requirements by updating their local zoning and subdivision ordinances.	Medium	2012	All cities and counties in the region.
Local officials for the US Marine Corps should be fully committed to initiatives underway by cities and counties in the region to meet future military family housing needs off-base.	Medium	On-going	MCB Camp Lejeune / MCAS New River / MCAS Cherry Point / host cities and counties
The DOD should add a section to the military's housing market analysis update studies for 2010 that acknowledges the preference of some service members to live in manufactured housing.	Medium	2010	MCB Camp Lejeune / MCAS New River / MCAS Cherry Point / cities and counties in local housing market areas for the military
The Eastern Carolina Council should update the Committed Residential Development Database bi-annually for distribution to local utility providers.	Low	On-going	Eastern Carolina Council
Lobby the North Carolina Department of Commerce to become a test site for a more robust certified retirement community program. Model initial efforts after the successes of the Hometown Mississippi Retirement Program.	Low	On-going	North Carolina Department of Commerce / Eastern North Carolina Economic Development Commission / all cities and counties in the region

Table 1.23 - Action Plan Matrix

Conclusion

The housing recommendations set forth in this module of the MGTF regional growth management plan adhere to good planning practices and encourage sustainable development. The recommendations and analysis were created through a collaborative process between state agencies, local governments, and military representatives and has engaged community leaders to create a comprehensive planning tool that directs future housing decisions within the 7-county region. Through this collaborative process, the MGTF and its constituents have created a comprehensive assessment of the fiduciary and political challenges for providing adequate and affordable housing in region. Cities and counties in the region should consider updating current regulatory documents to include the recommendations in this study. The desire is to create a consistent vision as well as a planning tool that can be used by State, local and military officials to implement the strategic policy initiatives listed here, ultimately, leading to a more robust off-base housing market in the region.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Workforce and Job Creation

Workforce

Introduction

The US Department of Defense (DoD) is aware of the economic impact that its military organizations have on local economies. The organization is also sensitive to the disruptions caused when its units are moved out of an area, for instance, through a Base Relocation and Closing action (BRAC), or when additional units are moved in, for instance, during a plus-up or a relocation. The regional economy, and particularly the local workforce, is instantly affected by these actions. In such circumstances, local government organizations and planners are presented with a whole new scenario for their long-range plans, and must change tack. Fortunately, the DoD and the federal government anticipate this regional economic disruption and make assistance available to local governments via Office of Economic Adjustment grants (OEA), which assist communities with economic adjustment and growth management planning.[1] This module is concerned with mitigating the potential damage to the local workforce by evaluating the current workforce situation, addressing the expected impact due to military growth, and designing strategies that will assist the local governments' plans for the inevitable change to existing patterns of labor force participation, employment, and unemployment.

Background

The US Marine Corps (USMC) announced that an additional 11,477 active-duty military members and DoD civilians would be added to the 62,081 already present at three facilities located in Onslow and Craven Counties in North Carolina. These new personnel would be assigned to MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point, would be arriving at their duty stations beginning in Fiscal Year (FY) 2007, and would be completely on-site before the end of FY 2011.

As these changes occur, the surrounding communities will inevitably experience significant economic and employment impacts. Because regional local governments and the private business sector recognized the importance of planning and preparing for these impacts, they began the process of developing a Regional Growth Management Plan (RGMP) with assistance from a DoD grant. The affected Military Growth Task Force (MGTF) Region includes Carteret, Craven, Duplin, Jones, Onslow, Pamlico, and Pender Counties, and the 53 municipalities within their county borders.

Public and private organizations within the MGTF Region have an extensive background in strategic economic analysis and growth planning, and have focused efforts directly on workforce development, education, and training. All of the regional reports that were uncovered during this analysis were unique, in-depth, and extremely professional in their analysis, planning recommendations, and conclusions. This plan does not attempt to update these stand-alone documents, but rather focuses on the implications of the military influx on the workforce over the five-year period. It is recommended that those seeking general research in these areas also examine these excellent, comprehensive reports:

- Comprehensive Economic Development Strategy, Eastern Carolina Council, 2007
- Investing in a Skilled Workforce for Eastern North Carolina - Annual Report, Eastern Carolina Workforce Development Board, Inc., 2006-2007.
- State of the Workforce Report, Eastern Carolina Workforce Development Board, Inc., 2006.
- State of the North Carolina Workforce, North Carolina Commission on Workforce Development, January 2007.
- North Carolina Economic Forecast, UNC Charlotte, 2009.
- Strategic Economic Analysis & Workforce Inventory, Jacksonville Onslow Economic Development, 2007.

1 See *High-Level Leadership Needed to Help Communities Address Challenges Caused by DoD-Related Growth, US Government Accountability Office, Report GAO-08-665, June 2008.*

- Onward Onslow, A Five-Year Plan to Promote Economic Development in Jacksonville and Onslow County, Jacksonville Onslow Economic Development, 2008.
- Regional Scan & Program Demand Reports (Cape Fear Community College, Carteret Community College, Coastal Carolina Community College, Craven Community College, James Sprunt Community College, Lenoir Community College, and Pamlico Community College), North Carolina Community College System, 2008.
- Long-Range Plans, 2007-2012 (Cape Fear Community College, Carteret Community College, Coastal Carolina Community College, Craven Community College, James Sprunt Community College, Lenoir Community College, and Pamlico Community College).

The focus of this module is on current and future conditions of the workforce in the MGTF Region.

Existing Conditions

Population

The level of, and projected change in, population is a primary driver of this analysis, and it is important to establish the benchmark of population in the MGTF Region prior to the impact of the increase caused by the Marine Corps' activity. The period chosen for the analysis begins on January 1, 2007 and extends through December 31, 2011, defining the five-year period when all of the direct impacts of the Marine Corps personnel movements will have occurred. The State of North Carolina provides annual, mid-year population projections by county that are completed in concert with the primary projections of the US Census Bureau. As shown in **Table 2.1**, at the beginning of the study period, the seven-county MGTF Region's population estimate was just over 453,000 and represented slightly more than five percent of the North Carolina State total.[2] Onslow County dominates the region with a population of around 168,000, over one-third of the total population in the region. Jones County is the smallest jurisdiction based on population with an estimated population of just over 10,000, accounting for two percent of the region.

	1-Jan-07	1-Jul-07	1-Jan-08	1-Jul-08	1-Jan-09	1-Jul-09	1-Jan-10	1-Jul-10	1-Jan-11	1-Jul-11	31-Dec-11	Number	AAG %
												Study Period Growth	
Carteret	63,360	63,294	63,551	63,807	64,118	64,428	64,685	64,942	65,173	65,404	65,636	**2,276**	**0.71%**
Craven	96,353	96,406	96,873	97,339	97,776	98,212	98,589	98,965	99,333	99,700	100,068	**3,715**	**0.76%**
Duplin	52,851	53,133	53,439	53,745	54,052	54,359	54,651	54,943	55,253	55,563	55,873	**3,022**	**1.12%**
Jones	10,277	10,315	10,343	10,370	10,391	10,411	10,408	10,404	10,403	10,402	10,401	**124**	**0.24%**
Onslow	167,918	169,302	170,296	171,289	172,375	173,460	174,207	174,953	175,399	175,844	176,289	**8,371**	**0.98%**
Pamlico	12,968	12,947	12,950	12,952	12,958	12,963	12,964	12,964	12,965	12,965	12,966	**-2**	**0.00%**
Pender	49,407	50,430	51,287	52,144	52,964	53,783	54,437	55,091	55,746	56,400	57,055	**7,648**	**2.92%**
Eastern Region	453,134	455,827	458,739	461,646	464,634	467,616	469,941	472,262	474,272	476,278	478,288	**25,154**	**1.09%**
NC	8,969,527	9,069,398	9,154,844	9,240,289	9,318,843	9,397,397	9,468,246	9,539,095	9,611,456	9,683,816	9,756,207	**786,680**	**1.70%**

Table 2.1 - County, Region and State Population and Projection 2007-2011

Source: Mid-year estimates are North Carolina Office of State Budget and Management, *County/State Annual Population Totals, June 2008*; and end-year estimates are Marstel-Day, January 2009

The North Carolina population projection for the end of the study period shows that the MGTF's population will increase to just over 478,000.[3] This represents a 1.09 percent annual increase over the five-year period compared to the state's 1.70 percent, and represents a baseline increase in the region of an additional 25,153 persons. Only one of the counties shows an increase above the state's rate—Pender—projected to grow by over 7,600 persons, at a 2.92 percent annual rate.

2 The mid-year forecasts were interpolated to derive beginning/end of year totals that are on a basis more comparable to comparisons of economic activity which are on a total, calendar year basis.

3 This baseline North Carolina population projection does not include institutional populations, which include those related to military facilities. For the military-adjusted growth projection of population, see later section in this module, "US Marine Corps Presence, Growth, and Impact."

Onslow is projected to add the most to its population, almost 8,400 persons, but that rate of growth is lower than both the state's level and the region's level at just under 1 percent. The Pamlico projection is for the county to possibly experience a drop in population over the five-year period. As shown in **Figure 2.1**, by the end of 2011, Onslow County is forecast to account for 36 percent of the region's population in 2011, Craven County 21 percent, Carteret County 14 percent, Pender County 12 percent, Duplin County 12 percent, Pamlico County 3 percent, and Jones County 2 percent.

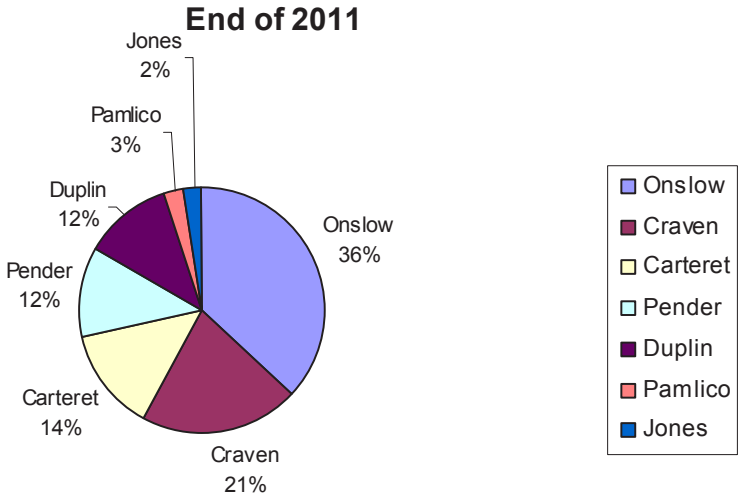


Figure 2.1 - Projected Military Growth Task Force Region Population Distribution on December 31, 2011

Employment and Unemployment

The regional economy was healthy and was expanding rapidly from 2001 through 2007, as shown in Table 2.2. The seven-county labor force rose from just over 174,000 in 2001 to 194,000 in 2007, an 11 percent increase. However, that was outpaced by a 13 percent increase in employment from 164,000 to almost 186,000 over the period. While rising in 2002, decreasing unemployment occurred during all other years in the period, from 9,897 in 2001 to 8,416 by 2007, a 15 percent decline. Along with an expanding labor force, increasing employment, and decreasing unemployment comes a reduction in the unemployment rate. Over this period, the MGTF Region experienced a decrease in the unemployment rate from 5.7 percent to an extremely low level of 4.3 percent.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	174,035	164,138	9,897	5.7
2002	176,368	164,871	11,497	6.5
2003	179,945	168,885	11,060	6.1
2004	183,570	174,233	9,337	5.1
2005	186,202	176,809	9,393	5.0
2006	191,011	182,557	8,454	4.4
2007	194,347	185,931	8,416	4.3
2008	195,785	184,233	11,552	5.9
J'09	196,690	177,831	18,859	9.6
F'09	198,497	178,157	20,340	10.2
M'09	197,534	178,630	18,904	9.6

Table 2.2 - Employment Trends in the Military Growth Task Force Region, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics, 2009.

While the labor force continued to expand in 2008, employment stalled and dropped by 1,700 from the previous year's level, causing unemployment to soar by over 3,000, a 37 percent increase in the unemployment rolls. Most of this downward pressure on growth and employment can be attributed to recent, overwhelming national trends of the housing market disaster, an unprecedented rise in the price of oil and petroleum products, and the financial collapse of many major financial institutions. In addition, there are reports that many former residents, having lost their jobs in other locations, are coming back home to the seven-county region

in search of better employment opportunities. These cascading recessionary impacts have affected every region of the country, and the MGTF Region was not exempt. As shown in **Figure 2.2**, major jumps in the number of unemployed during the first three months of 2009 have pushed unemployment over the 20,000 level and led to a 9-10 percent unemployment rate.[4]

Figure 2.2 - Employment Trends in the Military Growth Task Force Region, 2001-2009
Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics, 2009.

While it is to be expected that the military growth in the area, coupled with additional labor force entrants, might have exacerbated the unemployment situation in the MGTF Region, as addressed later in this module, the picture is much murkier. The military has certainly had positive impacts on the local economy, and that is most likely reflected in the fact that the region's 2009 unemployment rate is now at least 1.0 percentage points lower than the North Carolina State average. See Appendix R, BLS Overview of the Quarterly Census of Employment and Wages.

Recent Business, Employment, and Pay Trends

The period that immediately preceded the study period, 2001 to 2007, recorded positive and strong growth, according to detailed US Bureau of Labor Statistics (BLS) data in the MGTF Region.[5] The reported number of establishments increased 12 percent over the period, the same increase registered across the state (see **Table 2.3**). Although the number of employees in Jones County dropped in the Census by just over 200 during the period, all six other counties experienced increasing employment, rising by over 12,000 jobs to almost 146,000, a 9 percent increase. The average annual median pay also increased strongly over the six-year period, increasing by one-quarter to an average of almost $30,000. The state registered a slightly lower increase in employment over the period, seven percent, and a slightly lower increase in median

4 The 2009 monthly figures are not seasonally adjusted. Based on past historical employment relationships in the region, seasonally adjusted figures (not yet available) would be marginally lower.

5 The Quarterly Census of Employment and Wages remains one of the best tools to measure employment and pay changes over time. It has its weaknesses though, since it only records employees who are covered under unemployment insurance programs sponsored by the Federal and State governments. This excludes many employees who are hourly and transient workers, and many who are otherwise self-employed.

pay, 21 percent, thus leading to a convergence of pay between the MGTF Region and the state. By 2007, the MGTF Region's median pay rose to a level 77 percent of that recorded across the state.

	Establishments		Employees		Average Annual Pay	
	2001	2007	2001	2007	2001	2007
Carteret	2,042	2,275	21,574	23,382	$21,778	$26,877
Craven	2,210	2,489	38,897	41,985	$28,604	$36,207
Duplin	1,114	1,137	20,126	20,629	$23,624	$28,423
Jones	198	204	1,860	1,631	$22,727	$29,624
Onslow	2,530	2,858	39,912	44,637	$21,395	$27,005
Pamlico	285	307	2,886	3,200	$20,526	$25,282
Pender	847	1,062	8,622	10,687	$22,519	$28,000
Eastern Region	9,226	10,332	133,877	146,151	$23,958	$29,892
North Carolina	224,426	252,241	3,805,498	4,062,955	$32,024	$38,909
ER as % of NC	***4.1%***	***4.1%***	***3.5%***	***3.6%***	***75%***	***77%***

Table 2.3 - Military Growth Task Force Region and North Carolina Employment and Pay – 2001 and 2007

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, 2009; and Marstel-Day, 2009.

Very detailed, county-level employment and pay trends by industry are listed separately in individual county modules of the plan, and reinforce the fact that economic growth across the entire region was robust from 2001-2007. In addition, very detailed, county-level employment by occupational group, detailed occupation, and the top employers in the counties are also listed separately in the individual county modules.

Other Economic and Demographic Indicators

A number of other key economic and demographic variables provide additional information about the state of a region's workforce and its ability to grow in the future. A few of those indicators appear in Table 2.4 below and present a picture of differences and similarities among the seven counties within the MGTF Region. The wide range of characteristics among the counties is illustrated by the following:

- The median age of residents in 2008 ranged from:
  - 26 in Onslow County[6] to
  - 47 in Pamlico County.
- The median household income in 2007 ranged from:
  - $35,040 in Duplin County to
  - $47,064 in Carteret County.
- In 2007, those minorities reporting themselves as African American ranged from:
  - 7.3 percent in Carteret County to
  - 33.6 percent in Jones County.
- In 2007, those minorities reporting themselves as other than White or African American ranged from:
  - 0.8 percent in Duplin and Jones Counties to
  - 2.9 percent in Onslow County.

6 This extremely low average median age for an entire county is caused by the numeric influence of primarily young, active-duty military personnel.

- In 2007, those who also classified themselves as Latino or Hispanic ranged from:
  - 1.5 percent in Pamlico County to
  - 21.1 percent in Duplin County.
- The percentage of persons under 65 with no health insurance coverage in 2005 ranged from:
  - 17.5 percent in Craven County to
  - 24.1 percent in Duplin County.
- The percentage of persons below the poverty level in 2007 ranged from:
  - 10.7 percent in Carteret County to
  - 19.4 percent in Duplin County.
- The projected percentage of persons with at least an educational attainment of a high school graduate in 2008 ranged from:
  - 70.1 percent in Duplin County to
  - 86.7 percent in Onslow County.
- The projected percentage of persons with at least an educational attainment of a bachelor's degree in 2008 ranged from:
  - 10.4 percent in Jones County to
  - 21.4 percent in Carteret County.

Economic/Demographic Indicator	Carteret	Craven	Duplin	Jones	Onslow	Pamlico
Persons Below Poverty Level, Percent, 2007	10.7%	13.9%	19.4%	17.3%	14.2%	14.3%
Median household income, 2007	$47,064	$44,227	$35,040	$37,870	$41,799	$40,890
2008 Projected Education Attainment - % At Least High School Graduate	84.7%	84.7%	70.1%	75.8%	86.7%	78.7%
2008 Projected Education Attainment - % With At Least Bachelor's Degree	21.4%	20.7%	11.6%	10.4%	15.9%	16.0%
Median Age, 2008	46	37	37	42	26	47
% of Health-Uninsured, Ages 0-64, 2005	17.7%	17.5%	24.1%	21.1%	21.9%	19.1%
Race–White	90.3%	72.4%	72.1%	64.7%	76.6%	75.3%
Black	7.3%	24.2%	26.5%	33.6%	17.5%	22.8%
Other	1.3%	2%	.8%	.8%	2.9%	1.1%
Hispanic	2.3%	3.7%	21.1%	3.7%	6.6%	1.5%
Federal Spending, 2007 (thousands)	$499,377	$1,363,451	$311,569	$83,955	$3,080,045	$110,215

Table 2.4 - Military Growth Task Force Region Economic and Demographic Indicators by County

Sources: U.S. Department of Commerce. U.S. Census Bureau. State and County QuickFacts, for Persons Below Povery Level, Percent, 2007; Median Household income; Race; and Federal Spending.

North Carolina Department of Commerce. Economic Development Intelligence System (EDIS). County Profiles, April 2009, for 2008 Projected Education Attainment. https://edis.commerce.state.nc.us/docs/countyProfile/NC/

Mark Holmes and Tom Ricketts, UNC Chapel Hill, and The North Carolina Institute of Medicine. County Estimates of the Number of Uninsured in North Carolina, 2005 Update, for % of Health-Uninsured. https://www.shepscenter.unc/new/NorthCarolinaUninsured2005.pdf

US Marine Corps Presence, Growth, and Impact

One of the largest primary economic drivers in the State of North Carolina is the federal military "industry." Estimates place the impact on the state's Gross Domestic Product (GDP) at seven percent in both 2004 and 2007. The USMC and its three facilities and operations at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point are estimated to account for over one-half of that federal military impact to the state's economy.[7] This activity comes to the local economy in a number of tangible and measurable ways, including: employment in the form of military and civilian payrolls; contracts and procurements for products and services; research grants to local organizations; military retiree compensation and veteran benefits; and impact aid for local schools. Of course, the military presence also contributes to the local community through various intangible and hard-to-measure ways, including: outreach programs; volunteer assistance; local government planning and coordination activities, etc.

In FY 2007, the population of assigned personnel at the three Marine Corps MGTF Region installations included:[8]

- 38,798 military active duty and 4,509 civilians, totaling 43,307 at MCB Camp Lejeune,
- 6,487 military active duty and 474 civilians, totaling 6,961 at MCAS New River,
- 8,420 military active duty and 5,368 civilians, totaling 13,788 at MCAS Cherry Point, and
- All summing to a combined force of 64,056.

Not only are there the assigned personnel, but many are also accompanied by dependents who either live on the USMC installations or out on the private economy. Dependent spouses and older dependent children will also be actively engaged in the regional workforce. It is estimated that there are just over 48,000 dependents that reside in the extended regional area, and that just over 40,000 of them are dependents of active-duty personnel. The Marine Corps is able to track dependents of the active-duty personnel by county of residence, and the results of a recent census is listed in **Table 2.5**

County	Total	Adults	0-18 Yr
Carteret	684	312	372
Craven	7,728	3,350	4,378
Duplin	146	53	93
Jones	247	109	138
Onslow	29,663	13,913	15,750
Pamlico	2	2	0
Pender	440	257	183
MGTF Region	38,910	17,996	20,914
Out of Region	1,163	606	557
Total	40,073	18,602	21,471

Table 2.5 - Residence of USMC Military Dependents by County

Almost 39,000 of the 40,000 dependents live in the MGTF Region, with fewer than 3 percent live outside the region. Surprisingly, 93 percent of the dependents consider Onslow and Craven counties their place of residence: Onslow County accounts for 74 percent and Craven for 19 percent of the total. Using the results of an in-depth study of military spousal employment, it is estimated that approximately 10,000 of these dependents are actively employed.[9]

7 See *North Carolina Statewide Military Impact Study, East Carolina University Regional Development Services and regional Economic models, Inc., February 2004; and North Carolina's Military Footprint: Current Economic impacts and Projections for 2013, The Policy, Research, and Strategic Planning Division of the North Carolina Department of Commerce, June 2008.*

8 The typical Federal government Fiscal Year runs from October 1 of the previous year to September 30 of the current year reported. These figures were found on the Military Growth Task Force web page, http://www.nceastmgtf.org/

9 See *Monitoring Employment Conditions of Military Spouses, RAND National Defense Research Institute, 2006.*

The direct federal financial expenditures or obligations of the Marine Corps in the MGTF Region for FY 2007 are listed in Table 2.6.[10] These figures provide a good idea of the total federal monies being transferred to persons and organizations throughout the seven-county area. The USMC is functionally an organization within the Department of the Navy, so Navy expenditures and obligations have also been listed and include the USMC dollars. Note that the USMC payroll (salaries and wages) is $1.7 billion and includes the active-duty military, while the Navy payroll includes both the active-duty USMC military and the USMC-related civilian employees. In addition to almost a $2.2 billion payroll, the USMC-related transfers include $209 million of retirement and disability pay, and procurements accounting for over $621 million. In FY 2007, the USMC presence accounted for $3 billion in federal government spending in the region.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	209,070	174,937
Grants	44	-
Procurements	621,091	-
Salaries & Wages	2,187,081	1,707,415
Total	3,017,286	1,882,352

Table 2.6 - Direct Expenditures or Obligations in the Military Growth Task Force Region FY 2007 (in thousands of dollars)

Source: U.S. Census Bureau. Consolidated Federal Funds Report, Fiscal Year 2007.

These levels of personnel and federal spending have continued to grow in 2008 and 2009 as the additional 11,477 assigned personnel have arrived at the three installations. The actual and Marine Corps-projected active-duty and civilian population growth over the five-year period by USMC base is shown in **Figure 2.3**.

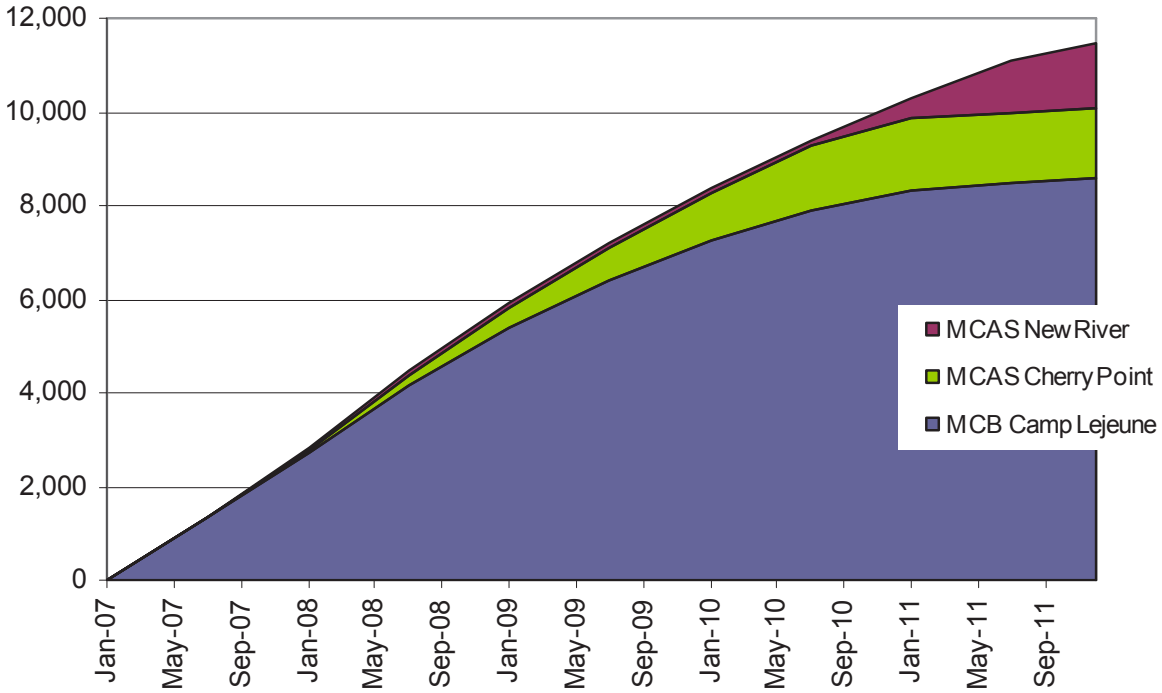


Figure 2.3 - Projected Active-Duty and Civilian Population Growth by Base, 2007-2011

Source: MGTF, *Updated Growth Chart (December 2008)*, and Marstel-Day converted the FY data to CY basis. 2009.

10 The military services are classified separately and, therefore, the parallel DoD figures would be much higher and would include, for instance, retirement and disability payments to former Air Force, Army, etc. personnel. In addition, these USMC and Navy data do not include the large influence of the US Coast Guard in the Region, which would be classified as an expenditure or obligation of the Department of Homeland Security.

According to the Marine Corps, by the end of 2011, the bases will have seen a growth in personnel of:

- 8,581 at MCB Camp Lejeune,
- 1,411 at MCAS New River,
- 1,485 at MCAS Cherry Point, and
- Summing to a combined force addition of 11,477 personnel.

With this increased active-duty and civilian presence, there will also be spouses and other dependents accompanying the new arrivals. Earlier, the MGTF estimated that the total number of additional dependents would be as high as 13,500, bringing the total direct population impact to the MGTF Region to 24,977. This additional population and increased USMC spending will have an initial financial impact on the region's economy. Using the principles of regional economic impact analysis and North Carolina multiplier, the MGTF estimates that an additional 15,000 persons will move into the region to support the expanded economic direct impacts. Figure 2.4 shows the direct and indirect population growth in the MGTF Region over the five-year period of almost 40,000 on top of the projected baseline increase forecast by the state of just over 25,000, bringing the total population increase in the region to 65,130 by December 31, 2011.

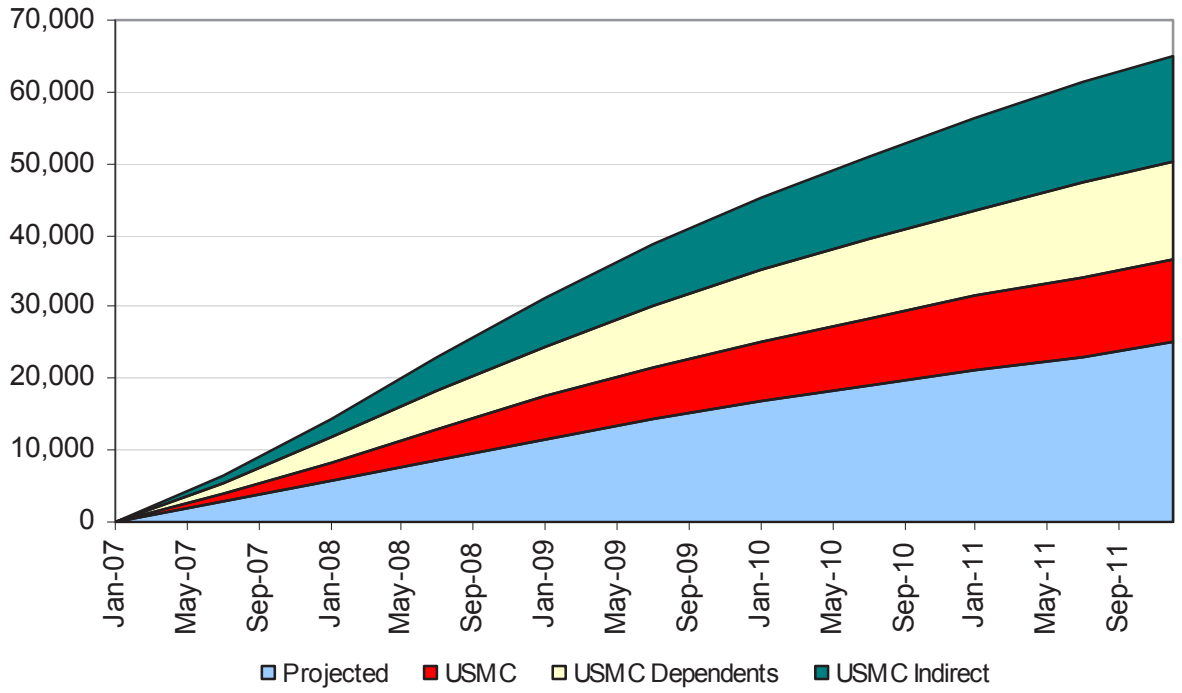


Figure 2.4 - Natural Projected Population Growth and USMC-Related Population Growth Impact

Source: North Carolina Office of State Budget and Management, *County/State Annual Population Totals, June 2008*; and Marstel-Day, February 2009.

Knowing the dispersion of the newly arriving population is critical to all segments of the growth planning strategy. Using the residence dispersion patterns of the existing personnel assigned at the three military facilities and the existing network and patterns of economic and business activity in the region, estimates were made for the population dispersion in the MGTF Region by county. The left half of Table 2.7 shows the North Carolina state projection without the USMC growth scenario. The right half displays the projected total impact including the USMC growth scenario. Over the period, the MGTF Region's population will increase at an annual rate of 2.7 percent, substantially more than the state's baseline estimate of almost 1.1

percent. The counties most affected are projected to be Onslow, accounting for 55 percent of the additional population, and Craven, accounting for almost 18 percent. However, all counties are projected to realize measurable increases in their populations, and therefore, to their economies and number of employment opportunities.

	NC Projection without USMC Growth				MGTF Projection with USMC Growth				
	1-Jan-07	31-Dec-11	Number Study Period Growth	AAG % Study Period Growth	Total Impact	31-Dec-11	Number Study Period Growth	AAG% Study Period Growth	AAG % Impact
Carteret	63,360	65,636	2,276	0.71%	1,602	67,238	3,878	1.20%	0.49%
Craven	96,353	100,068	3,715	0.76%	7,843	107,911	11,558	2.29%	1.53%
Duplin	52,851	55,873	3,022	1.12%	982	56,855	4,004	1.47%	0.35%
Jones	10,277	10,401	124	0.24%	370	10,771	494	0.94%	0.70%
Onslow	167,918	176,289	8,371	0.98%	27,702	203,991	36,073	3.97%	2.99%
Pamlico	12,968	12,966	-2	0.00%	212	13,178	210	0.32%	0.32%
Pender	49,407	57,055	7,648	2.92%	1,267	58,322	8,915	3.37%	0.45%
Eastern Region	453,134	478,288	25,154	1.09%	39,977	518,265	65,131	2.72%	1.64%
NC	8,969,527	9,756,207	786,680	1.70%	39,977	9,796,184	826,657	1.78%	0.08%

Table 2.7 - Relative Population Impacts on the Region and the State of the USMC Growth

Source: Marstel-Day, 2009.

In summary, employment in the MGTF Region is projected to increase over the five-year period by an estimated:

- 11,477 newly assigned USMC personnel,
- 3,000 newly-arriving military and civilian dependents and potential jobholders,
- 8,000 indirect potential jobholders moving into the region due to USMC-related economic expansion, and
- 13,000 potential jobholders due to natural population growth.

While the active-duty and civilians have assured jobs with the USMC, the region will also experience a demand for an estimated 24,000 additional jobs over the five-year period. Considering that the number of unemployed in the region currently totals around 19,000-20,000, this represents a more than doubling of today's unemployment rolls. At these levels, serious reassessments are required by regional government planning organizations, community and business leaders, and particularly the local educational system, to assist in efforts to accommodate those who want to be active in the workforce.

While severe disruption is expected in the employment market, the expanding economic activity brought on by the USMC-related growth is forecast to permanently increase the Gross State Product in the MGTF Region annually by slightly over $1 billion by 2011, and to result in an increase of an estimated $70 million in additional state and local tax revenues.[11]

11 While a permanent increase in regional GDP of just over $1 billion is expected every year beginning in 2011, a collection of construction projects on the three USMC installations have already been announced, advertised, or awarded in FY 2009 and FY 2010. These new construction projects are not included in the permanent increase, but are one-time projects related to the increased personnel and are expected to add a minimum of another $610 million to the local economy over the next two years. Others may follow.

Needs Assessment

Current Regional Issues

The MGTF Region has a number of systemic, workforce-related issues that local organizations were aware of, and had been addressing, even prior to the beginning of the USMC-related growth. These include:

- Many high school graduates and associate degree graduates leave the region seeking employment and "a change," and ultimately move to other locations. More importantly, many of the top students who go to four-year colleges in other parts of the state, or out-of-state, do not come back to the region after college, causing what some term a "brain drain."
- While other regions in the state have developed technology centers—nexuses of business, advanced academics, and research—one has not been developed in the MGTF Region.
- Like many areas of the state and the country, the region has experienced losses over the past 15 years to its manufacturing base, which has taken many good-paying, steady jobs out of the region's local economy.
- The region has a number of younger residents who lack a high school diploma (or equivalency), or have legal infractions on their records, or have a history of personal financial problems. This makes it difficult, if not impossible, for these residents to attain employment at many available jobs where employers need security-clean employees for government contracts. Other employers will not risk hiring an employee without a high school degree, because of potential unemployment and disability-related financial commitments.
- Underemployment is present in the region, but at the same time, many high technology/professional jobs remain unfilled. The region has a high degree of structural unemployment, whereby the jobholders and jobseekers do not meet the qualifications for local jobs.
- Teacher turnover rates are high, and currently there is a high demand for teachers that is outstripping available candidates. Current government budgetary cutbacks and freezes on hiring may mitigate this issue, but not in favor of supporting a well-educated workforce.
- The multi-year planning process of the community colleges is an appropriate and prudent management and financial tool, but it hinders the colleges from reacting quickly to changing local population and economic conditions.

Growth Related Issues

The MGTF Region will shoulder the impact of the increased military force on top of the state-projected population increase, and will need to absorb 24,000 new job-holders. These new, growth-related issues will include:

- An additional demand for day care facilities and day care specialists both on- and off-base.
- An additional demand for employees to fill low-skill jobs in retail trade, food and accommodations, and construction.
- An additional demand for employees to fill high-skill jobs in healthcare, education, construction trades, aerospace, advanced manufacturing, information technology, and engineering.
- Decreasing the barriers to structural employment, no better illustrated than by the occupational reciprocity issue, whereby skilled former military personnel are unable to acquire a license for comparable civilian jobs, particularly in health care, law enforcement, and commercial driver certifications.

- A long-run requirement for a highly-skilled, technology-adept, adaptable workforce that is better able to adjust to changing economic conditions and workforce opportunities.
- Planning for, and controlling, expansive growth in the region over the five-year period, as well as setting a new agenda for post-USMC-related growth when the economy and workforce reach a new, stable level in 2012 and 2013.

Recommended Strategies and Actions

The MGTF Region has a number of tools available to mitigate the impacts of military-related growth on the workforce, while at the same time positioning the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include, first and foremost, trying to increase the economic base of the region so that new entrants find meaningful and productive employment that matches their skills and desired occupations by:

- Acquiring and allocating resources to support and plan for additional capabilities to existing emerging centers in Jones and Duplin Counties or for a new Technology Center in the region and a new Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and entrepreneurship.
- Emphasizing industrial clusters that can expand at current areas including an aerospace cluster related to the Global Transpark, a boating and marine industry cluster in the coastal areas, and finally, new clusters at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.
- Supporting private and public efforts such as “Onward Onslow” that encourage new and relocating business to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.
- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and other adults who guide and influence teenagers in the region.
- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.

- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce, to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before in many other parts of the country and to

plan for the training and educational requirements of those future green jobs. Examples of similar projects already exist at Lenoir Community College and these programs are accessible to Jones County residents.

- Devoting immediate resources to increasing child-care training, certification, and facilities. Not only will this action provide direct employment to child-care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.
- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region through:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.
- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small and disadvantaged businesses.
- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.
- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.
- Creating a more military-family-friendly workplace by offering flexible benefit packages, which has the added benefit of reducing the cost of labor to business.

Federal and State Government Sources of Support and Assistance

Support and assistance is available to the region through various federal and state government grant and cooperative programs. Sources for both workforce-related and economy-wide programs are listed below. They represent a starting point for regional planners, managers, and other community leaders to seek opportunities to mitigate the impacts of military growth, grow the region's economy, and reduce unemployment.

The American Recovery and Reinvestment Act

The Act provides $750 million for a program of competitive grants for worker training and placement in high-growth and emerging industry sectors. Of that amount, $500 million is targeted for research, labor exchange, and job training projects that prepare workers for careers in energy efficiency and renewable energy as defined in the Green Jobs Act: energy-efficient building, construction, and retrofitting; renewable electric power; energy-efficient and advanced drive-train vehicles; bio-fuels; deconstruction and materials use; energy efficiency assessment for the residential, commercial, or industrial sectors, and manufacturing of sustainable products using sustainable processes. The remaining $250 million will be for projects in other high-growth and emerging industry sectors, with a priority for projects that prepare workers for careers in the health care sector, and projects that are tied to industry sectors where jobs are being created as a result of Recovery Act investments such as infrastructure investments. In order to maximize the impact of these competitive grants and leverage the other investments in the Recovery Act, the Department of Labor (DOL) is collaborating with other Federal agencies and developing a multi-pronged investment approach with these funds. DOL plans to issue Solicitations for Grant Awards (SGA) no later than June 30, 2009. The SGA will provide specific requirements for use of the funds, certification, data reporting, performance measures, and other necessary information. DOL will be publishing the grant opportunities on Grants.gov. Information on grant opportunities will also be available on DOL's Recovery Web site: **[http://www.dol.gov/recovery].**

Economic Development Administration - US Department of Commerce

The Economic Development Administration (EDA) targets its investment assistance on attracting private capital investment and creating higher-skill, higher-wage jobs in those communities and regions that are suffering from economic distress. EDA investments are focused on locally-developed, regionally-based economic development initiatives that achieve the highest return on the taxpayers' investment and directly contribute to economic growth. The EDA is authorized to partner with nonprofit organizations and units of local government. The EDA has seven areas of investment programs:

- **Public Works:** *Empowers distressed communities to revitalize, expand, and upgrade their physical infrastructure to attract new industry, encourage business expansion, diversify local economies, and generate or retain long-term, private sector jobs and investment.*
- **Economic Adjustment:** *Assists state and local interests in designing and implementing strategies to adjust or bring about change to an economy. The program focuses on areas that have experienced, or are under threat of, serious structural damage to the underlying economic base.*
- **Research and National Technical Assistance:** *Supports research of leading-edge, world-class economic development practices and information dissemination efforts.*
- **Local Technical Assistance:** *Helps fill the knowledge and information gaps that may prevent leaders in the public and nonprofit sectors in distressed areas from making optimal decisions on local economic development issues.*
- **Partnership Planning:** *Supports local organizations (Economic Development Districts, Indian Tribes, and other eligible areas) with long-term planning efforts.*
- **University Centers:** *A partnership of the federal government and academia that makes the varied and vast resources of universities available to the economic development community.*
- **Trade Adjustment Assistance:** *A national network of eleven Trade Adjustment Assistance Centers to help manufacturers and producers affected by increased imports prepare and implement strategies to guide their economic recovery.*

Address and contact information: Economic Development Administration; 1401 Constitution Avenue, NW; Washington, D.C. 20230; [www.eda.gov]; For State and local offices, contact: **Eastern Carolina Council (serving Carteret, Craven, Duplin, Jones, Onslow, and Pamlico)**; 233 Middle Street, 3rd Floor; New Bern, NC 28560; 252-638-3185, ext. 3005; 252-638-3187 (FAX); Website: www.eccog.org; and **(serving Pender)**, contact **Economic Development Regional Representative for North Carolina Robin Cooley**; 1835 Assembly Street, Suite 1075; Columbia, SC 29201; 803-253-3640; Email: rcooley@eda.doc.gov

United States Department of Agriculture (USDA)

The USDA Rural Development Business and Cooperative Programs invest financial resources and provide technical assistance to businesses and cooperatives located in rural communities; and establish strategic alliances and partnerships that leverage public, private, and cooperative resources to create jobs and stimulate rural economic activity.

- **Business and Industry Guaranteed Loans (B&I):** The purpose of the B&I Guaranteed Loan Program is to improve, develop, or finance business, industry, and employment, and to improve the economic and environmental climate in rural communities.
- **Intermediary Re-lending Program (IRP):** The purpose of the IRP program is to alleviate poverty and increase economic activity and employment in rural communities. Under the IRP program, loans are provided to local organizations (intermediaries) for the establishment of revolving loan funds. These revolving loan funds are used to assist with financing business and economic development activity to create or retain jobs in disadvantaged and

remote communities. Intermediaries are encouraged to work in concert with State and regional strategies, and in partnership with other public and private organizations that can provide complimentary resources.

- **Rural Business Enterprise Grants (RBEG) Program:** The RBEG program provides grants for rural projects that finance and facilitate the development of small and emerging rural businesses, and help fund distance learning networks and employment-related adult education programs.
- **Rural Business Opportunity Grants:** The RBOG program promotes sustainable economic development in rural communities with exceptional needs, through the provision of training and technical assistance for business development, entrepreneurs, and economic development officials, and assistance with economic development planning.
- **Rural Economic Development Loan and Grant (REDLG):** The REDLG program provides funding to rural projects through local utility organizations.
- **Bio-refinery Assistance Program Bio-refinery Assistance Loan Guarantees:** This program assists in the development of new and emerging technologies for the development of advanced bio-fuels, in order to: increase the energy independence of the United States; promote resource conservation, public health, and the environment; diversify markets for agricultural and forestry products and agriculture waste material; and create jobs and enhance the economic development of the rural economy.
- **Rural Energy for America Program/Energy Audit and Renewable Energy Development Assistance (REAP/EA & REDA):** The REAP/EA/REDA Grant Program will provide grants for energy audits and renewable energy development assistance.
- **Rural Energy for America Program/Renewable Energy Systems/Energy Efficiency Improvement Program (REAP/RES/EEI):** The REAP/RES/EEI Grants Program provides grants for energy audits and renewable energy development assistance. It also provides funds to agricultural producers and rural small businesses to purchase and install renewable energy systems and make energy efficiency improvements.
- **Rural Energy for America Program/Feasibility (REAP/FEASIBILITY):** The REAP/Feasibility Grant Program will provide grants for energy audits and renewable energy development assistance. It also provides funds to agricultural producers and rural small businesses to conduct feasibility studies for a renewable energy system.
- **Rural Energy for America Program Guaranteed Loan Program (REAP LOAN):** The REAP Guaranteed Loan Program encourages the commercial financing of renewable energy (bio-energy, geothermal, hydrogen, solar, wind, and hydro power) and energy efficiency projects. Under the program, project developers will work with local lenders, who in turn can apply to USDA Rural Development for a loan guarantee of up to 85 percent of the loan amount.

Address and Contact Information

For the US Department of Agriculture: [http://www.rurdev.usda.gov/rbs/oa/oadir.htm], [http://www.rurdev.usda.gov/rbs/busp/bprogs.htm], and for the State and local offices: North Carolina Rural Development Office; Acting State Director, Rural Development, George Batchelor, Jr.; 4405 Bland Road; Raleigh, North Carolina 27609; 919-873-2000; 919-873-2075(FAX); Email: george.batchelor@nc.usda.gov Website: [http://www.rurdev.usda.gov/nc/whoweare.htm]; Kinston Area Office (serving Carteret, Craven, Duplin, Jones, Onslow, Pamlico); 2044-C Hwy 11/55 South; P.O. Box 6189; Kinston, NC 28501; 252-526-9799; 252-526-9607(FAX); Email: connie.miller@nc.usda.gov; Lumberton Area Office (serving Pender); 440-C Caton Road; Lumberton, NC 28359; 910-739-3349; 910-618-9444(FAX); Email: judy.hunt@nc.usda.gov

Small Business Administration Programs

The US Small Business Administration (SBA) is an independent agency of the federal government that aids, counsels, assists, and protects the interests of small business concerns, preserves free competitive enterprise, and maintains and strengthens the overall economy of the nation. The SBA helps Americans start, build, and grow businesses, and offers a

variety of types of assistance that include: technical assistance (small business training and counseling); financial assistance (loan programs); government contracting assistance; disaster assistance recovery; and special assistance to women, Native American, and disadvantaged populations. A subset of SBA programs that matches well with the region's requirements include:

- **The Office of Entrepreneurial Development's** mission is to help small businesses start, grow, and compete in global markets by providing quality training, counseling, and access to resources.
- **The Office of Entrepreneurship Education** provides entrepreneurial information and education, resources and tools to help small businesses succeed. The office is an integral component of Entrepreneurial Development's network of training and counseling services.
- **Office of Small Business Development Centers - Entrepreneurial Development:** The Office of Small Business Development Centers (SBDC) provides management assistance to current and prospective small-business owners. SBDCs offer one-stop assistance to individuals and small businesses by providing a wide variety of information and guidance in central and easily-accessible branch locations. The program is a cooperative effort of the private sector, the educational community and federal, state, and local governments, and is an integral component of Entrepreneurial Development's network of training and counseling services.
- **The Small Business Training Network (SBTN)** is a virtual campus that provides quality, targeted online training to meet the information needs of prospective and existing small-business owners.
- **The Office of Technology** administers the Small Business Innovation Research (SBIR) Program and the Small Business Technology Transfer (STTR) Program. Through these two competitive programs, the SBA ensures that the nation's small, high-tech, innovative businesses are a significant part of the federal government's research and development efforts. Eleven federal departments participate in the SBIR program; five departments participate in the STTR program, awarding $2 billion to small high-tech businesses.
- **The Office of Government Contracting (GC)** works to create an environment for maximum participation by small, disadvantaged, and woman-owned businesses in federal government contract awards and large prime subcontract **awards. GC advocates on behalf of small business in the federal procurement world.**
- **Opportunity Gaps (Disadvantaged and Special Interests Groups):** The SBA seeks to foster an environment where small businesses can overcome barriers to economic opportunity in all areas of business development, including government contracting. The SBA strives to reach those sectors of the population that are currently underserved by its programs, including ethnic populations, women, veterans, and both urban and rural businesses. One example, the **HUBZone Empowerment Contracting Program**, encourages economic development in historically-underutilized business zones—"HUBZones"—through the establishment of preferences. The SBA's HUBZone program aims to promote economic development and employment growth in distressed areas by providing access to more Federal contracting opportunities. Another example, the **8(a) BD Program**, named for a section of the Small Business Act, is a business development program that helps small, disadvantaged businesses compete in the American economy and gain access to the federal procurement market.

See detailed address and contact information for each SBA program at: [http://www.sba.gov/aboutsba/sbaprograms/index.html]

National Science Foundation

The National Science Foundation has four workforce-related grant programs that match well with the region's requirements:

Advanced Technological Education (ATE) Grants

With an emphasis on two-year colleges, the Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive the nation's economy. The program involves partnerships between academic institutions and employers to promote improvement in the education of science and engineering technicians at the undergraduate and secondary-school levels. The ATE program supports curriculum development, professional development of college faculty and secondary school teachers, career pathways to two-year colleges from secondary schools and from two-year colleges to four-year institutions, and other activities. A secondary goal is articulation between two-year and four-year programs for K-12 prospective teachers that focus on technological education. The program also invites proposals focusing on applied research relating to technician education. Eligibility: Undergraduate Students and K-12 Educators. Full Proposal Deadline Date: October 15, 2009. See: [http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5464].

Cyber-infrastructure Training, Education, Advancement, and Mentoring for Our 21st Century Workforce (CI-TEAM)

The NSF expects to select for support 12 to 15 Demonstration Projects at up to $250,000 total each and 7 to 12 Implementation Projects at up to $1,000,000 total each that together constitute a rich portfolio of cyber-infrastructure-related workforce development activities. New information, communication, and computational technologies have had profound impacts on the practice of science and engineering. Linked to create a comprehensive cyber-infrastructure, the systems, tools, and services emerging from these new technologies are enabling individuals, groups, and organizations to advance research and education in ways that revolutionize *who can participate, what they can do, and how they do it.* Sustaining this revolution across all areas of science and engineering requires the formation of a workforce with the knowledge and skills needed to design and deploy as well as adopt and apply these cyber-based systems, tools and services over the long-term. The opportunity for such preparation should be available at all stages of formal and informal education, training, and professional development, and must be extended to all interested individuals and communities. The CI-TEAM program supports projects that position the national science and engineering community to engage in integrated research and education activities that will promote, leverage, and utilize cyber-infrastructure systems, tools, and services. CI-TEAM awards will:

- Prepare current and future generations of scientists, engineers, and educators to design and develop, as well as adopt and deploy, cyber-based tools and environments for research and learning, both formal and informal.
- Expand and enhance participation in cyber-infrastructure science and engineering activities of diverse groups of people and organizations, with particular emphasis on the inclusion of traditionally-underrepresented individuals, institutions, and communities as both creators and users of cyber-infrastructure.

This solicitation seeks two types of project proposals, both aimed at the preparation of a diverse, cyber-infrastructure-savvy science and engineering workforce. One type of proposal, the *Demonstration Project*, is exploratory in nature and may be somewhat limited in scope and scale. *Demonstration Projects* have the potential to serve as exemplars to effective larger-scale implementation activities in the future. The other project type, the *Implementation Project*, is generally larger in scope or scale and draws on prior experience with the activities or the teams proposed. *Implementation Projects* are expected to deliver sustainable learning and workforce development activities that complement ongoing NSF investment in cyber-infrastructure.

See: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12782.

Education and Workforce Programs

The mission of the Education and Workforce programs is to achieve excellence in computing and information technology education, in order to support the development of a diverse and well-prepared workforce of professionals in the field of computing and information technology, across a wide range of application domains and career fields. This is accomplished through developing and sustaining a broad, highly-productive, professional workforce, with knowledge and understanding of critical computing concepts, methodologies, and tools, and capable of interacting with all sectors of society. The main goals of the EWF programs are to:

- Promote and enable excellence in computing education through integration of research and education.
- Provide leadership and engage communities in infusing computational thinking into education at all levels and across disciplinary boundaries to insure that our computing workforce is prepared to sustain our nation's global competitive goals.
- Develop and support sustainable communities of researchers involved in innovative and transformative computing education.
- Transform *computing education at all levels and on a national scale to meet the challenges and opportunities of a world where computing is increasingly essential to all sectors of society.*
- Broaden participation in computing to ensure that the computing and information technology community is broadly representative of the nation's individuals, geographic regions, and types of institutions.
  Recognize and support outstanding students and faculty in the field of computing and information technology to become knowledge experts who can contribute significantly to research, teaching, and innovations in the field of computing.

See: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13396.

Workforce Program in the Mathematical Sciences

The long-range goal of the DMS Workforce Program is to increase the number of well-prepared US citizens, nationals, and permanent residents who successfully pursue careers in the mathematical sciences and in other NSF-supported disciplines. Among intermediate goals to this end are improvements in recruitment, retention, education, and placement of trainees in the mathematical sciences. The program's primary interest is in activities centered on education through research involvement for trainees at the undergraduate through postdoctoral educational levels. Activities that broaden participation in the mathematical sciences are of significant interest to the Division of Mathematical Sciences.

See: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503233.

Congressionally-Directed Grant Awards

The Omnibus Appropriations Act of 2009 includes the *Fund for the Improvement of Postsecondary Education (FIPSE)* and, so far in 2009, three grants have already been awarded to North Carolina institutions:

- Campbell University - for its Advancement for Underrepresented Minority Pharmacists and Pharmaceutical Scientists Program at $262,000, sponsored by House member Bob Etheridge,
- Central Piedmont Community College - for curriculum development at the Center for Integrated Emergency Response Training at $95,000, sponsored by House member Robin Hayes, and
- Richmond Community College - for purchase of equipment at $428,000, sponsored by House member Robin Hayes.

Further information about the program through the US Department of Education can be found at: [http://www.ed.gov/about/offices/list/ope/fipse/index.html]

Other Education-Related Grants

Finally, there are two other US Department of Education programs that match well with the regional requirements:

- Community Technology Centers (CTC) Program Grants: Funding opportunity for cities and nonprofit organizations to support community technology centers. See: [http://www.ed.gov/GrantApps/#84.341T]
- Carl D. Perkins Vocational and Technical Education Grants: Grant money funding school technology and higher education for community-based organizations (CBO's), local education agencies (LEA's), boards of co-operational education services (BOCES), schools, and school districts. See: [http://www.ed.gov/about/offices/list/ovae/index.html?src=mr] ; and [http://www.ed.gov/offices/OVAE/CTE/legis.html]

Conclusions

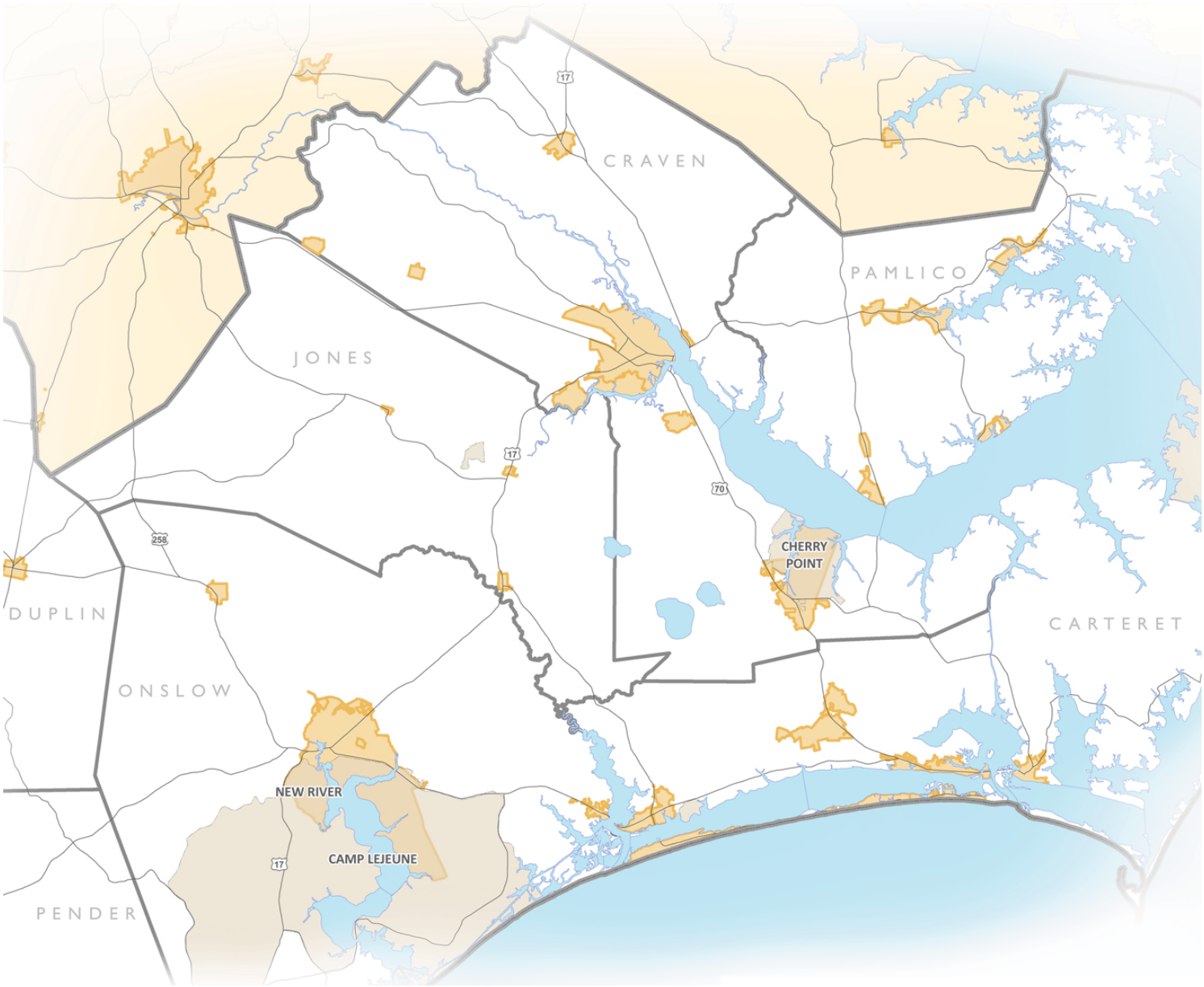
The North Carolina Military Growth Task Force region is experiencing a rapid increase in local population, which over the five-year study period is projected to result in the addition of 65,000 persons and an estimated 34,000 to 35,000 new labor force entrants. Fortunately, most of this rapid growth is due to the reassignment and transfer of 11,477 military and civilian personnel to the region's three USMC installations. Each of these is assured employment. However, that is not the case for the 24,000 others who will seek to join the region's workforce through employment.

It is clear that there is an extensive infrastructure already in place to mitigate many of the negative workforce impacts. Between the extensive and impressive collection of community colleges in the region, the County Economic Development Offices, and other organizations led by the Eastern Carolina Workforce Development Board, Inc., the institutions and their professional staffs are well-prepared to provide strategic planning and results to ease any transition the region must absorb.

However, resource constraints remain that will challenge the region's attempt to stay ahead of the curve and lessen the devastating impact that unemployment can deliver to local residents. The state legislature and government must be available to provide legislative and regulatory relief in some areas, and to provide financial resources to jump-start many of the recommendations and action that need to take place. The federal government will be providing an increased regional payroll and expanded construction activity, but it can also provide relief through educational and training grants and business loans. Local governments must realize that there will be a proven expansion in their economies, and that resources spent now for workforce development activities, including education, training, facility construction, and other infrastructure improvements, will be repaid through the future expansion in the stream of tax revenues.

If these recommended strategies and actions are not supported by the required resources over the next year, the region can expect to see thousands of residents who want to work, out-of-work, and an unemployment rate well above the state's average, rather than below the state's average, where it is now.

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Education

Education

Introduction

The Regional Growth Management Plan's Education Module will assess the military growth impacts and needs for K-12 education, post-secondary education, and child care to the Military Growth Task Force Region (MGTF Region). The information contained in the module was gathered from the region's public school systems, child care agencies, community colleges, universities, private colleges, MCB Camp Lejeune Dependents Schools, and military liaisons.

The assessment of education within the region was based on information gathered, including:

- A list of all school and degree programs in each county and Department of Defense (DoD) facilities
- A list of planning and proposed schools in each county including DoD and non-base programs
- A list of child care facilities and work force
- Identified gaps in funding, facility, and work force in all levels of education needs
- Identified additional requirements to meet the growth
- Identified strategies schools should consider to meet the expected needs

Background

The cause of growth impacting the school-age population in this region is complex. In addition to the military growth, the majority of the impacted region is a thriving tourist and retirement destination due to the highly sought-after coastal communities. Because of this, most of the counties have modest inherent normal growth. Typical growth indicators such as new subdivisions do not necessary reflect demands on the schools, post-secondary institutions, and child care centers. Conversely, the growth in number of new births in the county, which is typically a reliable predictor of school population growth, does not necessary reflect future demands on schools due to the transient nature of the military families. These observations are especially evident in Onslow and Craven County schools.

There is one Local Education Agency (LEA) in each of the seven counties in the MGTF Region. The LEAs are: Carteret County Schools, Craven County Schools, Duplin County Schools, Jones County Schools, Onslow County Schools, Pamlico County Schools, and Pender County Schools.

During the 2008-09 school year, it is estimated that three-quarters of the planned military growth had already occurred. However, the growth in the number of the military-connected students in the seven LEAs that is collected annually does not mirror the military growth that has already occurred. There are three possible explanations for this: (1) military families do not move to the region at the same time as the uniformed services personnel so the impacts to schools are spread over a longer period of time; or (2) military families have not moved to the region because the uniformed services personnel are deployed; and (3) a significant portion of the military personnel who are coming to the region are young, single men and women who have no children.

Because of these uncertainties and lack of data to identify specific demographic signatures, the K-12 forecast is expressed in a range of minimum impact to maximum impact. The minimum impact is based on the assumption that the K-12 growth impact has already occurred and therefore exists in the school enrollment cohort. Thus the enrollment trend over the past four years is a good predictor for the remaining impact period. The maximum K-12 impact assumes that only a portion of the K-12 impacts have been felt in the schools but the historical data indicates the schools have the potential to see higher growth.

Based on the methodology explained above, between 3,000 and 5,000 school-aged children are estimated to impact the seven LEAs in the MGTF Region from 2007 to 2011. Onslow County Schools will receive a majority of this growth (1,800 – 2,100 students).

The forecast for the child care population (age 0-15) for each county is derived from a combination of data from North Carolina State Department of Health and Human Services (NC DHHS), Division of Child Development Child Care Analysis Detail and data provided by the Regional Growth Management Plan's Workforce Module and Medical, Health and Social Services Module. Within the counties in the MGTF Region, 9-15 percent of children under the age of 15 were enrolled in child care facilities as of April 2009.

By 2011, the total number of children under the age of 15 will increase both due to normal growth and to military growth bringing in families having young children. By applying the same percentage of children enrolled in child care facilities and the student to staff ratio for each county, a predicted number of new students is obtained: the MGTF Region's child care enrollment is expected to grow by 2,500 from 2007 to 2011.

After careful study of individual community colleges' Long Range Plans, it became evident that the future enrollment of the post-secondary education institutes in the MGTF Region is primarily driven by local and regional workforce needs. Although general population growth and the K-12 enrollment growth are referenced in some post-secondary institute growth plans, these data do not offer a solid connection to future enrollment. Fortunately, post-secondary education institutes in the MGTF Region are well attuned to the military growth and were able to provide a specific needs assessment.

Existing Conditions

K-12

The total number of students in the impacted region was 66,319 during the 2008-09 school year (North Carolina Department of Public Instruction, School Statistical Profile). Onslow County Schools, with an enrollment of 23,680 students, is the largest LEA in the region and constitutes 36 percent of the region's total enrollment. Craven County Schools is the second largest LEA with 22 percent of the K-12 students in the region. Pamlico County Schools is the smallest with 1,429 students. **Figure 3.1** below illustrates the membership distribution by county based on the 40th-Day Average Daily Membership.

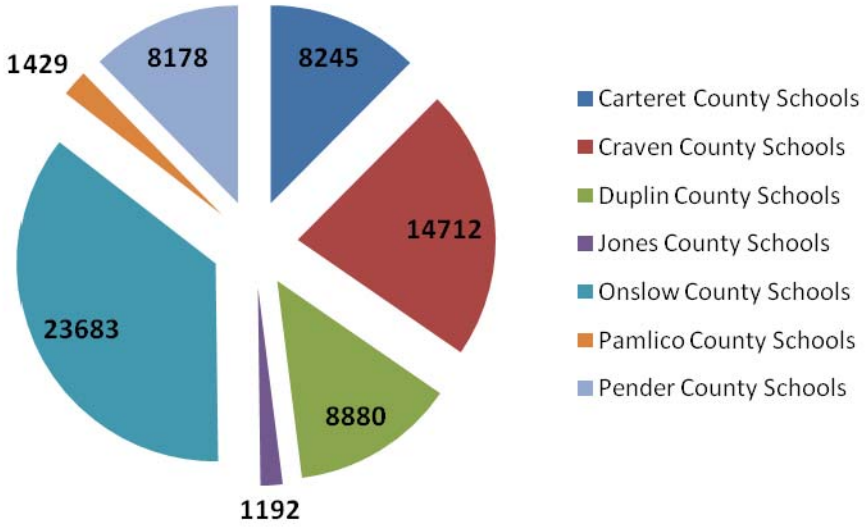


Figure 3.1 - Region's 7 LEAs 40th - Day Average Daily Membership (2008-2009 school year)

During the 2008-09 school year, nearly 15,000 students attending the seven LEAs have parents who are either in active uniformed services or work at one of the military installations in the region. Next to the Cumberland County Schools (home of the Fort Bragg Army Base), Onslow County Schools has the second highest number of military-connected students in North Carolina, with 9,522 military-connected students. Craven County Schools is third, with 3,868 military-connected students (2008-2009 LEA Federal Impact Aid data from LEAs). **Figure 3.2** below illustrates the number of military-connected students in the seven LEAs. LEAs must have at least 400 students, or at least 3 percent of the total student population to be military-connected in the average daily memberships in order to qualify for Federal Impact Aid. Pamlico County Schools did not collect military-connected student data due to the low number of eligible students from previous years and Duplin County Schools began collecting the data this year.

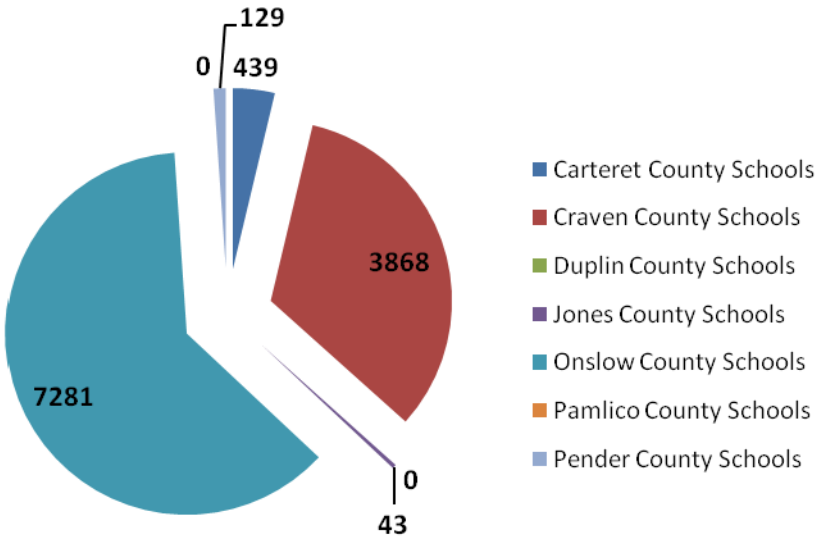


Figure 3.2 - Number of military-connected students in LEAs (2008-2009 school year)

As illustrated in **Table 3.1** below, the regional average per-pupil expense is $8,758, with 70 percent of this expense being state funded, 12 percent being federally funded, and 18 percent being locally funded. The highest per-pupil expense is Jones County Schools at $11,242. The lowest per-pupil expense is Onslow County Schools at $7,588. Thirty percent of the per-pupil expense in Carteret County Schools is from local funds and that is the highest locally-funded portion of the region (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).

LEA	State Fund	Federal Fund	Local Fund	Total Fund
Carteret County Schools	$ 5,504	$ 760	$ 2,725	$ 8,989
Craven County Schools	$ 5,323	$ 1,055	$ 1,284	$ 7,662
Duplin County Schools	$ 5,871	$ 1,204	$ 1,037	$ 8,112
Jones County Schools	$ 8,401	$ 1,572	$ 1,269	$ 11,242
Onslow County Schools	$ 5,157	$ 796	$ 1,635	$ 7,588
Pamlico County Schools	$ 7,771	$ 993	$ 1,483	$ 10,247
Pender County Schools	$ 5,147	$ 829	$ 1,490	$ 7,466
Average	**$ 6,168**	**$ 1,030**	**$ 1,560**	**$ 8,758**
Average Share	**70%**	**12%**	**18%**	

Table 3.1 - Per pupil expenditures of the North Carolina Military Growth Task Force Region.

Source: North Carolina Department of Public Instruction, School Statistical Profile, 2006-2007 Expense Expenditures by Souce of Funds

There are 750 school buses with 36,000 daily riders in the MGTF Region. The average annual school transportation cost per pupil is $631 and 59 percent of the students that attend public school travel to and from school in school buses. As illustrated in **Table 3.2**, the highest school bus ridership is Jones County Schools at 82 percent and the lowest is Carteret County at 47 percent.

LEA	# of Buses	Bus riders	Annual school bus cost/stu	% Students Ride bus
Carteret County Schools	97	3883	$ 551.21	47%
Craven County Schools	148	7721	$ 556.43	52%
Duplin County Schools	121	5260	$ 568.97	59%
Jones County Schools	27	981	$ 665.30	82%
Onslow County Schools	230	12958	$ 688.83	55%
Pamlico County Schools	29	854	$ 891.88	60%
Pender County Schools	98	4417	$ 497.39	54%
Region Average			**$ 631**	**59%**

Table 3.2 - LEA school transportation services of the North Carolina Military Growth Task Force Region.

Source: North Carolina Department of Public Instruction, School Statistical Profile

On average in the MGTF Region, the cost of building a new elementary school with a capacity of 650 students is from $17 to $20 million. A new middle school with a capacity of 950 students ranges in cost from $20 to $25 million. A new high school with a capacity of 1,200 ranges from $45 to $50 million (North Carolina Department of Public Instruction, School Planning Section). These cost estimates do not include land.

There are three charter schools in the MGTF Region. The two charter schools in Carteret County have a combined enrollment of 256 students, with one school serving kindergarten to 5th grades and another serving 9th to 12th grades. The Arapaho Charter School in Pamlico County is the first charter school in the state serving kindergarten to 8th grades with an enrollment of 347.

The 27 private schools in the MGTF Region have a combined enrollment of 2,148 students. Twenty-three of the 27 private schools have religious affiliation and four are independent. There are twelve private schools in Onslow County, seven in Craven County, five in Carteret County, and three in Duplin County. Four of the 27 private schools are accredited by the Southern Association of Colleges and Schools.

DoD currently operates five elementary/primary schools, one middle school, and one high school at MCB Camp Lejeune and MCAS New River. There are no DoD schools at MCAS Cherry Point. The 2008-09 student enrollment is 3,009 and there are 503 employees at the MCB Camp Lejeune/MCAS New River DoD schools (MCB Camp Lejeune Schools Data and Information, April 8th, 2009 update).

	Current Data (October 2008)	Projected Growth Data (2009-2012)
Schools	5 Elementary, 1 Middle, 1 High	8 Elementary, 1 Middle, 1 High
Enrollment	3009*	4300-4800
Employees	503	698

*This number is smaller than typical enrollment because of offline housing due to renovation and rebuilding.

Table 3.3 - Camp Lejeune Schools Data and Information

Child Care

There are total 166 child care centers and 257 family child care homes in the MGTF Region. The total child care work force is 1,812 and the combined enrollment is 10,994 children (NC DHHS, Child Care Statistical Report, April 2009). Onslow County has highest child care membership at 4,036 children enrolled in 41 centers and 106 homes. Jones County has the lowest membership at 175 children enrolled in six centers and two homes.

MCAS Cherry Point has two child care centers, with combined enrollment of 368 children, along with a school age program with the capacity of 90 children. There are 120 employees working in these two centers. There is currently a waiting list for children at both centers.

The MCB Camp Lejeune and MCAS New River facilities have five child care centers with a combined enrollment of 608 children and 265 employees. There are also two facilities housing before- and after-school programs with 250 children enrolled. These facilities have 40 employees.

Unlike child care facilities in Fort Bragg and Seymour Johnson Air Force Base, the child care facilities at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point are not recognized as regulated child care facilities by the NC DHHS, Division of Child Development.

The challenge faced by the MGTF Region child care providers is the lack of a qualified work force and the high turnover rate. The annual turnover rate of the child care workforce in the region is 24 percent (Onslow County Partnership for Children, MGTF Workforce Module, Child Care Industry Data and Information). This translates to nearly 450 qualified workers per year needed to meet the existing demand.

Community College and Post-Secondary Education

The MGTF Region is well served by community colleges. Five of the counties have their own community colleges: Carteret, Craven, Duplin (James Sprunt Community College), Onslow (Coastal Carolina Community College), and Pamlico. Jones

County	Child Care Members	Staff	Homes	Centers
Carteret	1085	192	17	24
Craven	2641	384	57	29
Duplin	1663	300	32	40
Jones	175	39	2	6
Onslow	4036	652	106	41
Pamlico	289	50	7	7
Pender	1105	195	36	19

Table 3.4 - Inventory of county child care details as of April, 2009.

Source: North Carolina Department of Health and Human Services, Child Care Statistical Report, April 2009

County is served by the Lenoir Community College (which also serves Greene County), and Pender County is served by Cape Fear Community College in Wilmington (New Hanover County).

In general, these colleges offer three basic types of educational programs:

- Curriculum (e.g. two-year Associate Degree programs in Arts, Science and Applied Science).
- Continuing Education/Occupational Extension (e.g. professional development, computer training, healthcare, public safety, and teacher renewal).
- Basic Skills (e.g. Adult Basic Education, GED preparation, and English as a second language).

An increasingly popular option at community colleges is enrolling in a college transfer program that enables a student to attend the community college for two years, then easily transfer to one of the four-year colleges or universities in the University of North Carolina (UNC) system for the final two years (2+2 programs).

Another popular program at the community colleges is the Early College High School concept. Early College High Schools blend high school and college in a rigorous yet supportive program, compressing the time it takes to complete a high school diploma and the first two years of college. These schools are designed so that low-income youth, first-generation college goers, English language learners, students of color, and other young people underrepresented in higher education can simultaneously earn a high school diploma and an associate degree (or up to two years of credit toward a bachelor's degree), tuition free.

Distance learning/distance education programs are becoming increasingly important at the community colleges. This is an important development for military personnel because it allows them to take (or continue) courses while deployed. In addition, it allows the families of military personnel to take courses if they should leave the region while the military personnel are deployed overseas.

Mount Olive College is the only independent college in the region, with a main campus in Mount Olive (in Wayne County) and satellite campuses in New Bern and a newly opened Jacksonville location. Mount Olive College offers an associate degree program and five bachelor's degree programs: Management and Organization Development, Health Care Management, Criminal Justice and Criminology, Early Child Education, and Religion. These programs appeal to military personnel anticipating discharge and career change. Mount Olive College has 14 full time employees in Craven and Onslow counties and has recently increased classroom size and enrollment in New Bern, Jacksonville, and Wilmington.

The UNC system is also well-represented in the MGTF Region and in other North Carolina military bases. East Carolina University's Military Outreach Program was established to create working relationships between the university and the military service men and women stationed in eastern NC and around the world. The program operates through the well-established online degree program and degree completion program (aka 2+2 or college transfer). The program allows the service members and their immediate family members to attend a NC community college then transfer to an online

bachelor's degree paying in-state tuition rates. East Carolina University currently has an office in Havelock (shared with Craven Community College) and is in the process of securing office space in MCAS Cherry Point.

Needs Assessment

K-12 Education

Projected growth in K-12 student population ranging between 3,000 and 5,000 will create the following needs and estimated costs among the seven LEAs in the MGTF Region (not including land costs):

- Additional 125 to 230 teachers at a cost between $7.4 and $12.6 million
- Additional 60 to 100 teacher assistants at a cost between $1.9 and $3.2 million
- Additional 24 to 46 school buses at a cost between $1.9 and $3.7 million
- Additional local funds to support the ancillary school operation cost between $4.7 and $8 million ***per year***
- Six new elementary schools at a cost between $102 and $120 million
- Three new middle schools at a cost between $60 and $75 million
- Two new high schools at a cost between $90 and $100 million

LEAs in the MGTF Region are facing tremendous challenges recruiting and retaining qualified teachers. There has been noticeable progress made at the state level and with the NC Department of Public Instruction making revisions to the licensure for out of state and lateral entry on regular bases.

The cost of constructing new public schools falls solely on the shoulder of county government (with a small contribution from the North Carolina Education Lottery Fund). The most common funding source is through a general obligation bond which is difficult to gain public support of in today's economy. The LEAs in the MGTF Region should seek alternate funding sources for support of the school construction costs.

Child Care

Projected growth of 2,500 children over the 2007 – 2011 period creates a significant strain on child care services in the MGTF Region. Meeting this demand will require an additional 411 child care professionals in child care services, early childhood education, and after school programs. The region will also need to replace 435 personnel in the child care work force ***per year*** to absorb the annual 24-percent work force turnover rate.

In addition to working with the region's community colleges to increase the early childhood education program, the MGTF Region should seek legislative support for reciprocity, so that the DoD regulated facilities at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point are recognized as regulated child care facilities under the North Carolina Division of Child Development. The Eastern Carolina Council has already begun to examine issues of reciprocity and licensing for lead teachers and child care facilities and hopes to receive funding from the Office of Economic Adjustment (OEA) to pursue this goal. Reciprocity would allow child care professionals licensed in DoD facilities in other part of the country to be considered qualified in the state of North Carolina and therefore able to seek employment at child care facilities outside the military base. In addition, military families who are qualified for child care subsidies through the NC DHHS would be allowed to choose military or civilian child care programs.

Community College and Post-Secondary Education

The impact of the growth will be felt mainly at the schools near Marine bases: Coastal Community College in Onslow County and Craven Community College. Approximately one-half of the enrollment at Coastal Carolina Community College is military connected, as is 14 percent of the enrollment at Craven Community College.

The military bases work very closely with these two community colleges to obtain the special training that they need for military purposes. A few examples include Arabic language training, the Institute of Aeronautical Technology at the Craven Community College Havelock campus, which provides training in aircraft maintenance to support the Fleet Readiness Center East at MCAS Cherry Point, and motorcycle safety training. These are all programs developed specifically to respond to the military needs.

Currently, Craven Community College needs to recruit an Aviation Instructor to meet the increased demand of the FAA General, Airframes and Power Plant Exam Prep program. The instructor salary is between $55,000-65,000 and the equipment needs are $25,000 ($15,000 for plane, $10,000 in tools).

Craven Community College also needs to recruit an additional Quality Process Instructor to meet the increased demands of Lean Six Sigma Quality Instruction. The instructor salary is between $55,000-65,000 and the estimated supply costs is $10,000.

In planning for military and military-related students, several factors were identified that will have a significant impact on Coastal Community College:

- There is a strong need to provide additional 2+2 baccalaureate programs with the University of North Carolina in Wilmington (UNCW) and build upon the teacher training program to meet the critical teacher shortage, which will only be exacerbated with the increase in population in the counties.
- Continuing Education must be prepared to offer a full array of short-term training and to expand the current programs that best prepare our military and military-related students.
- The Associate Degree Nursing program, as well as other health care programs, needs to be expanded to meet critical workplace shortages stemming from this influx. An additional problem with this program is low teacher compensation, evidenced as qualified nursing instructors frequently leave the region's community college system to pursue comparable jobs with higher salaries in other parts of the country.
- Additional short-term training needs to be offered in the technical/vocational fields to support the workforce needs in the community, as well as with the growth of military contractors.
- High-growth industries will be the federal government, local government, full-service restaurants, childcare services, and home health care services. The college needs to provide programs in both Curriculum and Continuing Education to support those workforce needs.

The estimated cost of military-related expenditures as reported by the Coastal Carolina Community College totals $44 million as shown in **Table 3.5**.

Facility	Expenditure
Class/Lab Construction/Renovation	$37,400,000
Support Services Construction/Renovation	$ 4,079,674
Additional Instructors/Support Personnel	$ 2,000,000
Instructional Supplies	$ 1,000,000
Total	**$44,479,674**

Table 3.5 - Estimated cost of military growth-related expenditures (Coastal Carolina Community College)

In the post secondary sector, UNCW currently offers baccalaureate degree though the UNCW Onslow Extension Program. The degrees offered include Elementary Education, Nursing, Social Work, Business Administration, Criminal Justice, and Clinical Research. In order to meet the child care and K-12 teacher needs, staffing and facilities will need to be increased significantly beyond the current shared facilities with the Coastal Carolina Community College.

Recommended Strategies and Actions

Potential funding sources to be explored from DoD to support LEAs with military impact will require justification from LEAs on the number of affected students who are military-connected. LEAs that have not traditionally collected Federal Impact Aid data should develop robust process collecting this data every year. The current level of compensation of the Federal Impact Aid does not sufficiently support the military impacts to the LEAs. The region should negotiate with the US Department of Education and Department of Defense to seek a higher level of compensation.

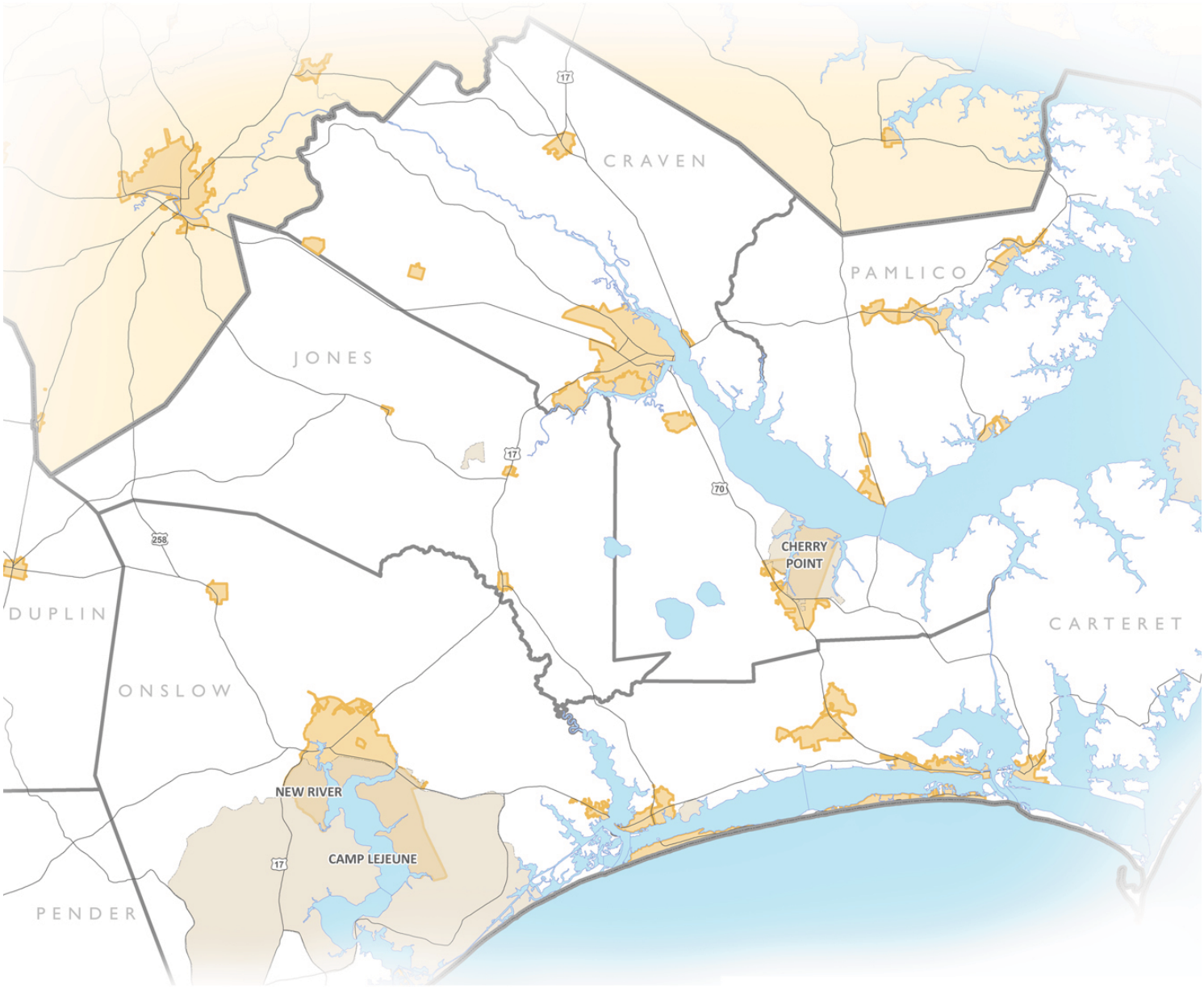
The current funding sources will not provide sufficient funding to meet the forecasted capital cost for building new schools in the MGTF Region. LEAs should collaborate with local government in selecting school sites that have maximum joint-use potential and minimum impact to the infrastructures. The region should also work with policymakers on legislation such as the Military Children's School Investment Act and the Zero-Interest Loans Program to finance school construction projects.

The region should work with the region's community colleges to increase the child care work force within the MGTF Region. The region should also work with the North Carolina General Assembly seeking reciprocity by the North Carolina Division of Child Development (NCDCD) for the DoD-regulated child care facilities at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point.

Conclusions

Military and induced growth arriving at MCB Camp Lejeune, MCAS Cherry Point, MCAS New River and the MGTF Region is expected to increase the demand for schools, child care, community colleges, and post-secondary education. It is important to ensure that those moving to the region are well served though the region's education system, from Pre-K through college. In order for the region to continue to provide quality educations for Marines and their families, the region should actively plan for the education system as the region grows.

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

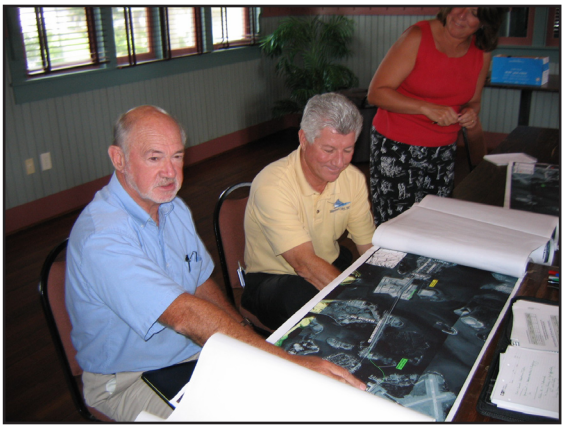
Transportation

Transportation

Introduction

Transportation facilities within the seven-county, Military Growth Task Force (MGTF) Region are represented by seven major modes—highways, ports, rail, aviation and maritime, bicycle and pedestrian, and public transit. The mobility needs of people, goods, and services depend on the level of service and functional quality of these modes. Continued economic development, military deployments, and mission readiness require an efficient and accessible multi-modal transportation network.

The United States Marine Corps is increasing its presence at MCAS New River, MCAS Cherry Point, and MCB Camp Lejeune, adding an additional 11,477 active duty military members and DoD employed civilians by 2011. In addition to the active duty Marine and DoD-employed civilians, dependents of these new residents will total 13,500 by 2011 and such growth will induce an additional 15,000 civilians to move to the area. Combined with a natural increase of over 25,000 new residents, the MGTF Region will see 60,000 new residents by 2011, a 2.6% average annual increase between 2007 and 2011. Although this growth is not enough to over burden existing transportation infrastructure, it will prove to be the 'tipping point' for many of the region's critical public services, infrastructure, and quality of life factors.



Ensuring an efficient and accessible transportation network for the growing population of eastern North Carolina will require implementation of long-term strategic policy initiatives as well as funding and approval for immediate capital improvements. Successful implementation of both types of recommendations demands a cooperative, comprehensive, and multi-modal transportation strategy established among local governments, transportation providers, state agencies, and the US Marine Corps.

This module examines the impacts of military, induced, and natural growth on the MGTF Region in relation to transportation infrastructure. Based on this analysis, this module includes recommended strategies and actions to alleviate existing deficiencies and plan for future growth beyond the 2011 planning horizon. All recommendations have been substantiated by community leaders and local transportation experts.

Key transportation focus areas will be relative to the transport of military personnel, goods, and services with an emphasis on:

- Base to base mobility
- Port to base mobility
- Residential to base mobility

Background

Guiding Principles

A top down approach to the Regional Growth Management Plan identified high, medium, and low priorities for the region. This approach relied on evaluating the regional context and then applying the local perspective. This "top-down" evaluation approach generated a two tiered needs assessment that identified capacity deficiencies that exist today and therefore will be exacerbated by the impacts associated with military influx, as well as strictly local transportation challenges. Strategic

corridor mobility was a priority for high level of investment. Access management and interchange improvements were considered low level or smaller type of investment opportunities with a positive impact to transportation. By approaching prioritization in this way, the plan provides the best opportunity for improvements to be funded and implemented based on funding type and availability. The level of detail afforded to each perspective county is dependent upon existing services and deficiencies as well as the need for the improvements relative to the military influence.

Regional Context

This module focuses on the regional transportation issues that have a direct relationship to the military as well as smaller, cost-effective projects like military installation gate improvements. Ultimately, this planning document can be used by military officials to help guide transportation-related services and infrastructure needs for their base installations as well as the safe and convenient mobility of troop deployments, equipment supplies, and ammunitions. Regional and local civilian decision-makers can use this plan as a tool for prioritizing transportation capital improvements (contained in CIPs and TIPs) for local municipalities and counties. Considerations will be given to all relevant (military influenced) modes of transportation, including highways, rail (freight and passenger), aviation, ports, bicycle and pedestrian, and public transportation. Implementation of these strategies will require ongoing collaboration among state agencies, local governments, and military representatives to help guide future transportation decisions.

Existing Conditions

Highways

As military bases in eastern North Carolina realign and expand, tourism-based travel increases, and more permanent residents relocate to the region, the frequency and length of trips on the current system of US and NC highways, city streets, and rural roads can be expected to increase. This increase in traffic volumes will create new deficiencies on the existing transportation network. Traffic bottlenecks may become evident in places that currently function adequately, and existing deficiencies will be magnified.

Although the military influx may have minimal impacts on the overall MGTF Region transportation network, the examination of existing conditions and formulation of recommendations is needed to ensure a safe and efficient roadway network that supports military needs as well as those of the traveling public and transport of goods and services.

Prior to anticipating future traffic problems, it is helpful to gain an understanding of the existing roadway characteristics. The discussion of existing roadway characteristics is organized into four sections — Corridors and Activity Centers, Functional Classification, Regional Mobility, and NCDOT Strategic Highway

Corridors. Several resources were used to assemble and evaluate current and anticipated highway needs for the MGTF Region: stakeholder interviews, web-based research, and existing highway documentation. The existing roadway characteristics set the stage for subsequent sections on needs assessment and roadway recommendations.

Corridors and Activity Centers

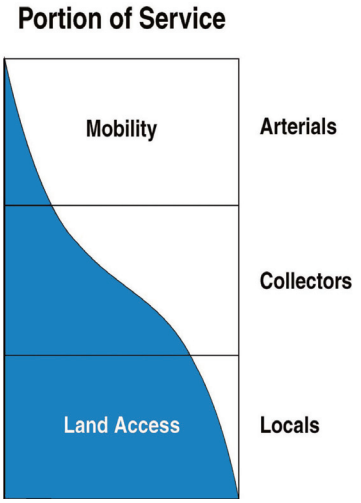
As growth occurs and more vehicles take to the road, roadway improvements are needed to reduce traffic congestion and maintain adequate levels of safety. These roadway improvements often enhance access, thus raising land values and attracting more development. The image to the right illustrates this continuing cycle of influence between land use and transportation.

The interaction between activity centers and the transportation corridors that link them to other centers is important, as is the mobility choices that are provided within the center. Often, neighborhoods and activity centers rely on a small number of transportation corridors to provide essential links between home, school, employment, shopping, social, and recreational destinations. Within the MGTF Region, activity centers include the military installations, neighborhoods, city centers, and small towns. The level of success for corridors connecting these activity centers depends in large part on the intended function of the street.

A unique challenge in creating a successful transportation system for the study area is blending connectivity and access functions for people, goods, and services while preserving natural features and the largely rural character of the MGTF Region. Individual counties, smaller communities, and neighborhoods within the region may have different needs and priorities. While recognizing these differences, it is important not to lose focus on the practical concept of overall connectivity. Though the scope of the Regional Growth Management Plan focuses on higher level roadway facilities (US and NC highways), the concept of connectivity remains relevant in fulfilling the desire to make all trips safe and efficient.

Functional Classification

The classification of streets into "functional" categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character as well as operational features for the movement of vehicles.



Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridor (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic.

The existing public street network in the MGTF Region is divided into several functional classifications, including arterials, collectors, and locals. The functional classifications described in this report are based on NCDOT designation. The scope of the Regional Growth Management Plan emphasizes the operation of arterials and necessary improvements to ensure the functionality of these corridors.

Arterials

Arterials provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distance travel. Arterials can be subdivided into categories that include facilities with full access control such as freeways and expressways, as well as major and minor arterials. Arterials usually connect to one another or to collector streets. Very few arterials connect to local streets.

- Expressways and freeways provide the most mobility and least access (since access is only available at interchanges). Expressway/freeway facilities typically serve longer distance travel and support regional mobility. The state funds roadway improvement and maintenance on these facilities. Interstate 40 and US 70 west of New Bern are examples of expressways and freeways in the region.
- Principal arterials typically have tightly controlled access and few, if any, individual site driveways. These facilities serve medium to longer distance travel and typically connect minor arterials and collector streets to freeways and other high-mobility roadway facilities. Generally, roadway improvements and maintenance on principal arterials are funded by the state. Principal arterials within the study area include US 17, US 258, and NC 24.
- Minor arterials primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. The minor arterial network primarily serves local traffic and connects to other minor arterials, principal arterials, and collector streets. Minor arterials provide a higher level of access to adjacent land uses than principal arterials and typically have lower traffic volumes. For the most part, minor arterials are maintained by the state but the cost may be the responsibility of local governments. Piney Green Road and Country Club Road in Jacksonville are minor arterials.

Collectors

Collectors typically provide less overall mobility, operate at lower speeds (less than 40 mph), have greater land use access flexibility, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-expressway/freeway arterials.

The primary purpose of the collector street system is to collect traffic from neighborhoods and distribute it to the system of major and minor arterials throughout the region. In general, collector streets have two lanes and often have exclusive left-turn lanes at intersections with major and minor arterials and less frequently at intersections with other collector streets. While many existing collector streets are state owned and maintained, new collector streets rarely are constructed and funded by the state. Responsibility for collector streets usually falls to the local government and the development community for funding, design, and construction.

Collector streets have a wide range of physical characteristics, some of which are attributable to the neighborhoods in which they exist; however, all collector streets provide good connectivity. NC 101 in Havelock is designated as a Major Collector.

Locals

Local facilities provide greater access and the least amount of mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Many of the local roads within the study area are unpaved or unimproved facilities.

Regional Mobility

Regional mobility in the MGTF Region is provided by a variety of interstate highways, US highways, and NC highways.

- I-40 travels roughly north-to-south through Duplin and Pender Counties, connecting Wilmington with Raleigh and points west.
- US 117 parallels I-40 through Duplin and Pender Counties.
- US 70 stretches from northwestern Jones County through the heart Craven County and terminates in northeastern Carteret County.
- US 17 travels through Craven, Jones, Onslow, and Pender Counties in its trek along the eastern seaboard. Within the MGTF Region, it connects Wilmington, Jacksonville, and New Bern.
- NC 24 provides east-west mobility, connecting I-40 in Duplin County, Jacksonville in Onslow, and Morehead City in Carteret County.

NCDOT Strategic Highway Corridors

In September 2004, the North Carolina Board of Transportation adopted the Strategic Highway Corridors concept as part of the state's Long-Range Statewide Multimodal Transportation Plan. The overarching purpose of the initiative is to identify, protect, and maximize the use of highway corridors that provide critical regional or statewide mobility. The intent of this state program is to enhance transportation, economic development, and environmental stewardship throughout the state. Statewide, more than 5,400 miles of designated Strategic Highway Corridors (which include existing and proposed facilities) account for seven percent of the state highway system but carry more than 45 percent of the traffic.

A roadway's designation as a NCDOT Strategic Highway Corridor adds special emphasis to the preservation of regional mobility within the context of local access. The Strategic Highway Corridors Vision Plan identifies several corridors within the MGTF Region. These corridors are placed into one of four categories (freeway, expressway, boulevard, or thoroughfare) according to their intended function.

- Knoxville, TN to Wilmington (Corridor 06) – I-40 – Freeway
- Raleigh to Morehead City (Corridor 46) – US 70 – Freeway, Boulevard
- Fayetteville to Morehead City (Corridor 47) – NC 24, US 70 – Freeway, Expressway, Boulevard
- Wilmington to Norfolk, VA (Corridor 52) – US 17 – Freeway, Boulevard
- Jacksonville to Kinston (Corridor 54) – US 258 – Expressway

Designation as a Strategic Highway Corridor allows NCDOT, other agencies, and stakeholders to respect the long-term vision for the corridor, ensure consistency in the decision-making process, and maintain appropriate land use, design, and operation parameters. For each corridor segment, the Concept Development Report assigns a status of Existing, Needs

Upgrade, or Recommended. The status of the Strategic Highway Corridors within the MGTF Region was considered during the needs assessment and development of recommendations.

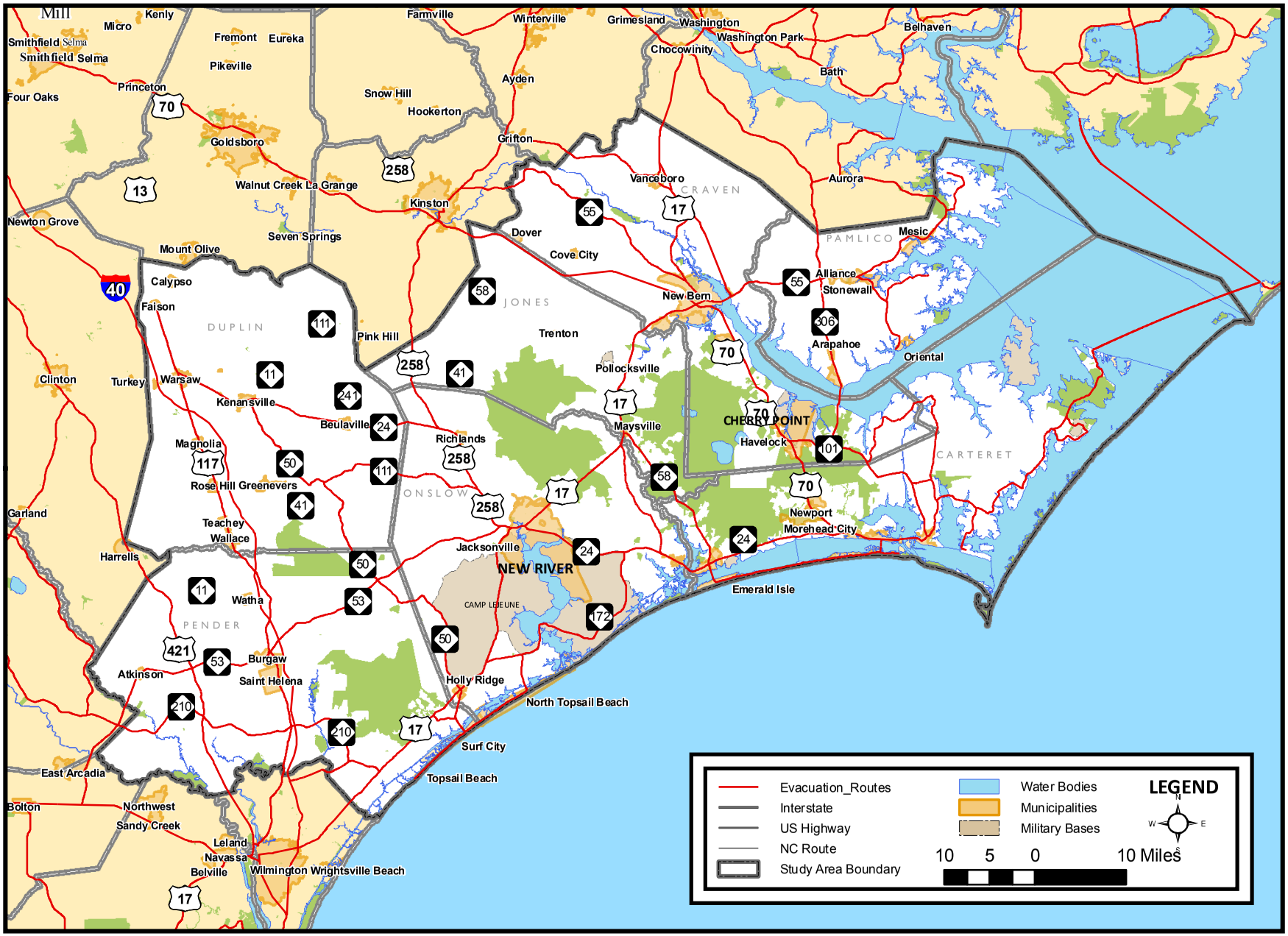
Evacuation Routes

Evacuation routes are designated segments of roadway to be used during a natural disaster and are designated as such in order to concentrate resources such as emergency responders, law enforcement officers, NC DOT's Incident Management Assistance Patrols, and other personnel. Evacuation routes run through all counties in the study area and include: US-70, US-70 Business,US-421, US-258, US-17-Business, US-17, US-117, SR-1440, SR-1332, SR-1324, SR-1300, SR-1182, SR-1163, South US-258 (NC 24), NC-55, NC-53, NC-41, NC-33, NC-304, NC-24, NC-210, NC-172, NC-12, NC-11, NC-101,and I-40. NC DOT estimates the hours needed for evacuation with peak tourist population for coastal counties. In the study area, Onslow County has the highest evacuation time of 13 hours, followed by Carteret with 12 and Pender with 9. (http://www.wral.com/weather/hurricanes/page/1045600/). Improvements on evacuation routes are even more important because they will enable efficient transportation during an emergency. Local emergency management offices and hazard mitigation plans are also in place in the Coastal Counties of the study area. The military bases do not have an official evacuation policy during natural disasters. Military personnel are encouraged to use private vehicles to evacuate in the same manner as civilians if they choose to do so.

Rail

The MGTF Region is currently served by two independent rail lines. These lines connect the existing port facilities and military installations and help transport military goods, equipment, and troops. In addition, these lines promote economic growth and development across the MGTF Region, the State of North Carolina, and the southeastern United States. For these reasons, rail services are a key element to the military growth needs, multimodal transportation system, and the region's economy. Proposed improvements for a specific rail line may provide an indirect benefit or needed relief to another mode (e.g., highways). This assessment examines existing uses of rail facilities (i.e., freight, military, and passenger), describes how rail services and infrastructure interact with ports and highways to create a dynamic multi-modal transportation system, uncovers potential constraints, and identifies the system improvements necessary to meet the future capacity demands for the movement of goods, equipment, and troops.

More than 75% of all tracks in North Carolina are owned or operated by CSX Transportation or Norfolk Southern Railroad (NS). In the MGTF Region, CSX and NS are the only commercial rail carriers that own tracks. Within the region, there are three primary rail lines that provide a connection between the port facilities and military installations. CSX owns tracks that run parallel to the I-40/US 117 corridors from points west of Goldsboro, southward to the terminus at Wallace. A 27-mile stretch of abandoned CSX rail line (now NCDOT owned right-of-way) connects Wallace to Castle Hayne in New Hanover County. Access to Camp Lejeune is provided exclusively through a 26-mile spur owned by the Marine Corps and affiliated with NS. This spur runs between the NS North Carolina Railroad corridors in Havelock, from Cherry Point to Camp Lejeune in Jacksonville. This spur route serves the military but is also available for commercial traffic, providing it does not interfere with military traffic needs. In addition, this spur route has daily rail service connecting the bases with mainline NS service to the Port of Morehead City. The spur runs from the base through Croatan National Forest and connects to the main line Havelock. In Havelock, the spur connects to the NS main line which runs an additional 17 miles to the Morehead City Port. The NS main line, connecting the US rail system from points west of Goldsboro to the Port of Morehead City, is designated as Strategic Rail Corridor Network (STRACNET) by DoD. To be designated a STRACNET corridor the rail lines



EVACUATION ROUTES Figure 4.1

must meet the DoD's minimum requirements for width and weight to accommodate oversized loads. In addition, there is also an abandoned rail line connecting the Jacksonville/Camp Lejeune area with the Port of Wilmington. This line runs almost 40 miles from the southern border of Camp Lejeune south through Onslow and Pender Counties to Wilmington in New Hanover County.

Ports

Ports and maritime transportation play a vital role in the continued and successful operations of military base installations. Ports and their land connections are critical to transporting military personnel, goods and services and are a key component of enhancing port to base mobility. Continued investment in these facilities and the supporting rail and roadway infrastructure is necessary to ensure that their existing and future missions are not compromised.

There is a strengthened emphasis on the importance of ports and rail to the national security and economic well-being of the country. This emphasis is heightened as roadway congestion through urban centers continues to increase. While the movement of freight via trucks plays an important role for long distance hauling, rail infrastructure is a much more efficient means of transporting bulk materials and containers from ports to destinations. As the cost of transportation increases and roadway congestion begins to impact travel times, enhanced coordination between modes will become even more important.

Priority needs associated with the accessibility, capacity, and operations of area ports are consistent with rail and highway priority needs. Within the study area, there are three main deep water ports that are impacted by the military influx. The North Carolina State Ports Authority (NCSPA) operates the Port of Morehead City and Port of Wilmington. The third port, the Military Ocean Terminal Sunny Point (MOTSU) is located in Southport, NC, is the nation's largest ammunitions port, and its activity is confined to secure military operations.

The Port of Morehead City and the Port of Wilmington play crucial roles in the state's economy and are likewise influenced by the increased demands associated with military growth in the region. The NCSPA projects that by 2030 the ports in the state will be directly responsible for supporting 39,145 jobs and $93 million in tax revenues in the eastern region of North Carolina (including Craven, Carteret, Duplin, Jones, Onslow, Pamlico) and 78,537 jobs and $262 million in tax revenues in the Southeast region (including Pender County).

Ports also support the military installations in eastern North Carolina. The Ports of Morehead and Wilmington are critical points of embarkation and debarkation and help supply equipment, supplies and humanitarian aid to locations around the globe. The Port of Morehead City, and its sister facility on Radio Island, are the port of deployment for the II Marine Expeditionary Force (II MEF) at Camp Lejeune. The Port of Wilmington is the home port for Army troop, supply, and equipment movements out of Fort Bragg *(North Carolina State Ports Authority (NCSPA)*.

Another consideration is that most of the larger ports in the US are limited in their ability to expand and are reaching or have exceeded their operating capacity. For this reason, the small and medium sized ports are expected to absorb the projected growth of freight activity. The geographic location of the mid-Atlantic ports places these ports in a category of projected high growth. In addition, changes to global shipping routes resulting primarily from improvements to the Suez Canal will likely increase the demand for port freight on the eastern seaboard and Gulf of Mexico. Experts estimate that port activity on the East Coast will increase 100 percent by 2012. However, without significant improvements in local and regional transportation systems, these growth and expansion opportunities may be missed. Other nearby regions, including South Carolina and Georgia, are preparing for the projected increase of port activity through expansion of existing facilities and construction of new ports. The Jasper Ocean Terminal is a joint South Carolina and Georgia deepwater container port planned for the north side of the Savannah River on 1,518 acres. The Port will be co-owned by the South Carolina State

Ports Authority and the Georgia Ports Authority. The planning for this project started in early 2009, and the port is expected to be operational by 2019/2021. Currently, the project is in the first two years of Project Management Services for the port and port infrastructure planning.

Military and civilian growth in the eastern region provides additional impetus for enhancing port operations and needs through strategic capital improvements. Unlike most transportation infrastructure, the vitality and operational performance of the ports is directly impacted by the provision of other modes (highways and rail). This assessment examines the interaction of rail services/infrastructure, port, and highway infrastructure, and identifies the system improvements necessary to meet the future capacity demands for the movement of goods, equipment, and troops. The section concludes with an inventory of shared-priority investments required to ensure that adequate freight capacity and efficient operations are maintained for commerce and military operations.

The following section includes a summary of general conditions and characteristics for each port as supplied by the NC State Ports Authority.

Wilmington Port

The Wilmington Port is located on the east bank of the Cape Fear River, south of Wilmington, NC. The Port has vehicular access from Shipyard Boulevard via US 117. The primary routes for truck freight movements are US 74, US 421, US 17, I-140, I-40, and I-95. The port has rail service via a CSX line that runs westward to Columbia, SC and a CSX/NRCC line that runs north to Goldsboro, with additional main line connections to the north and west. One of the port's primary commercial functions is the transfer of container, general, and bulk cargo between ships, barges, trucks, and trains. The port also provides important logistical support to area military bases including the deployment of troop personnel and supplies.

Logistics

- Located within 700 miles of 70 percent of the industrial base of the United States;
- CSX Transportation provides rail transportation;
- Terminal switching railroad operated by Wilmington Terminal Railroad;
- Substantial rail car storage available
- Two secured port gate entries to expedite arrival and departure of motor carriers
- Three certified truck scales with weighmasters available 24 hours per day
- Vehicular access via US 17, US 74, and I-40
- Efficient handling of project, dimensional, and heavy lift cargoes between vessels and inland transportation modes

Staging & Warehousing

- Almost one million square feet of prime covered and sprinkler storage
- 100+ acres of paved and 25 acres of semi-improved open storage area
- Rail access to berths, transit sheds, warehouses and open storage
- Direct transfer of heavy lift and dimensional loads between vessel and rail or truck

Foreign Trade Zones

- Can lower, defer or avoid import duties
- Entire Wilmington Terminal approved as Foreign Trade Zone 66
  - Over 1 million square feet of warehouse space within main terminal
  - Over 100 acres of open storage
- Provides for storage, manipulation, exhibition and limited manufacturing operations
- Can accommodate special purpose subzones

Harbor Features (US Army Corps of Engineers Project Dimensions)

- Ocean bar channel depth of 44 ft. M.L.L.W. and width of 500 ft.
- Inside harbor channel depth of 42 ft. M.L.L.W. and width of 500 ft.
- Anchorage/turning basin depth of 42 ft. M.L.L.W. and diameter of 1,200 ft.
- Depth of 38 ft. M.L.L.W. at berths 1 and 2; 42 ft. M.L.L.W. at berths 3 through 9
- Minimum air draft in channel of 164 ft.

Fiscal year 2008 Statistics

- Total Containers: 1,404,401
- Total TEU's: 204,896
- Total Breakbulk: 701,993
- Total Bulk: 1,361,815
- Total Ships/Barges: 339
- Total tonnage: 3,468,209

Military Ocean Terminal Sunny Point (MOTSU)

MOTSU is located on approximately 16,000 acres in Southport, NC. It is the primary east coast location for shipping military munitions. It provides global distribution of ammunition, explosives and other dangerous cargo under the 1303d Major Port Command and is the only military facility equipped to handle containerized ammunition. The terminal commander also supervises deployment and redeployment of joint forces through the North Carolina state ports of Wilmington and Morehead City. For safety and security, the facility was constructed with a large undeveloped buffer zone and huge sand berms. MOTSU also holds the title of largest ammunition port in the nation. Truck and train transport are used to bring the materials to the port where they are loaded on secure vessels bound for destinations around the world. The port also provides logistical support to Fort Bragg's 82nd Airborne Division by facilitating the transport of heavy equipment, bulk supplies, and ammunition.

About 1,000 Marines from Camp Lejune descend upon the N.C. State Port of Morehead City on Thursday as preparations are made before their deployment for the Mediterranean and the Middle East. (Dylan Ray photo)

Marines, sailors deploy

BY MARK HIBBS

MOREHEAD CITY — About 1,000 Marines from the 22nd Marine Expeditionary Unit (22 MEU) boarded two ships at the state port here earlier this week along with tons of equipment and vehicles.

The movement was part of a regularly scheduled deployment that included more than 4,000 Marines and sailors from the 22nd MEU and the Bataan Amphibious Ready Group (BAT ARG) that began Wednesday from Camp Lejeune and Norfolk, Va.

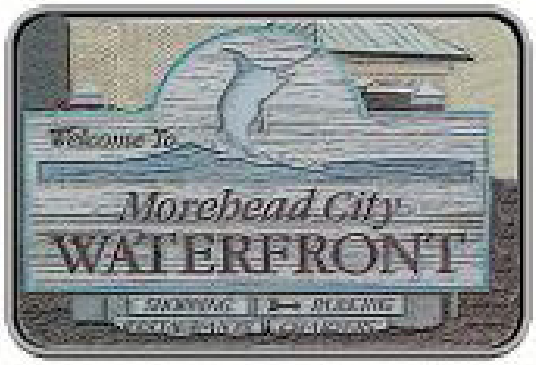
The personnel and equipment were loaded Thursday aboard the amphibious transport dock ship *USS Ponce* (LPD 15) and the dock landing ship *USS Fort McHenry* (LSD 42) at the N.C. Port of Morehead City. About 600 of the personnel departed from the port's main facility while another 400 or so left from the port's Radio Island facility, said Capt. Clark Carpenter with the 22nd MEU's public affairs department.

The deployment is to support

See Deploy / Page 2A

Morehead City Port

The Morehead City Port is located on the east side of Morehead City at the inlet to Money Island Bay. A companion facility at Radio Island is located on the opposite side of the channel. Both facilities are located opposite Fort Macon State Park adjacent to the Atlantic Intercoastal Waterway. The Port has direct vehicular access from US 70. The primary route for truck freight movements is via US 70 from other primary routes including, NC 24 to Jacksonville, NC, US 17, I-40 and I-95. The port has rail service via a CSX/NCRR line that runs westward to Raleigh, NC. There also exists a military rail line (CPLJ) that connects MCB Camp Lejeune in Jacksonville to the City of Havelock where the line intersects with the CSX/NCRR to gain access to the port. One of the port's primary commercial functions is the transfer of container, general, and bulk cargo between ships, barges, trucks, and trains. This function also includes transfers for commercial fishing fleets. The port also provides logistical support to area military bases including the deployment of troop personnel and supplies from Camp Lejeune and Cherry Point. The port serves as the primary point of embarkation and debarkation for the Second Division of the US Marine Corps. For this reason, NC 24 between Jacksonville, NC and Morehead City includes a heavy amount of military related traffic. The Military Sealift Command also has a berth at the Aviation Fuel Terminal on Radio Island.



Logistics

- Within 700 miles of more than 70 percent of the industrial base of the United States
- Rail service provided by Norfolk Southern Railway
- Terminal switching railroad operated by Morehead & South Fork Railroad
- Certified railroad scale

- Substantial rail car storage available
- One secured port gate entry designed to expedite arrival and departure of motor carriers
- Two certified truck scales with weighmasters available 24 hours per day
- Vehicular access via US 70
- Efficient handling of project, dimensional, and heavy lift cargoes between vessels and inland transportation modes

Staging & Warehousing

- Over one million square feet of prime covered and sprinkler storage, including a new warehouse completed in September 2007
- 30 acres of paved and 9 acres of semi-improved open storage area
- Rail access to berths, transit sheds, warehouses, and open storage
- Direct transfer of heavy lift and dimensional loads between vessel and rail or truck

Foreign Trade Zones

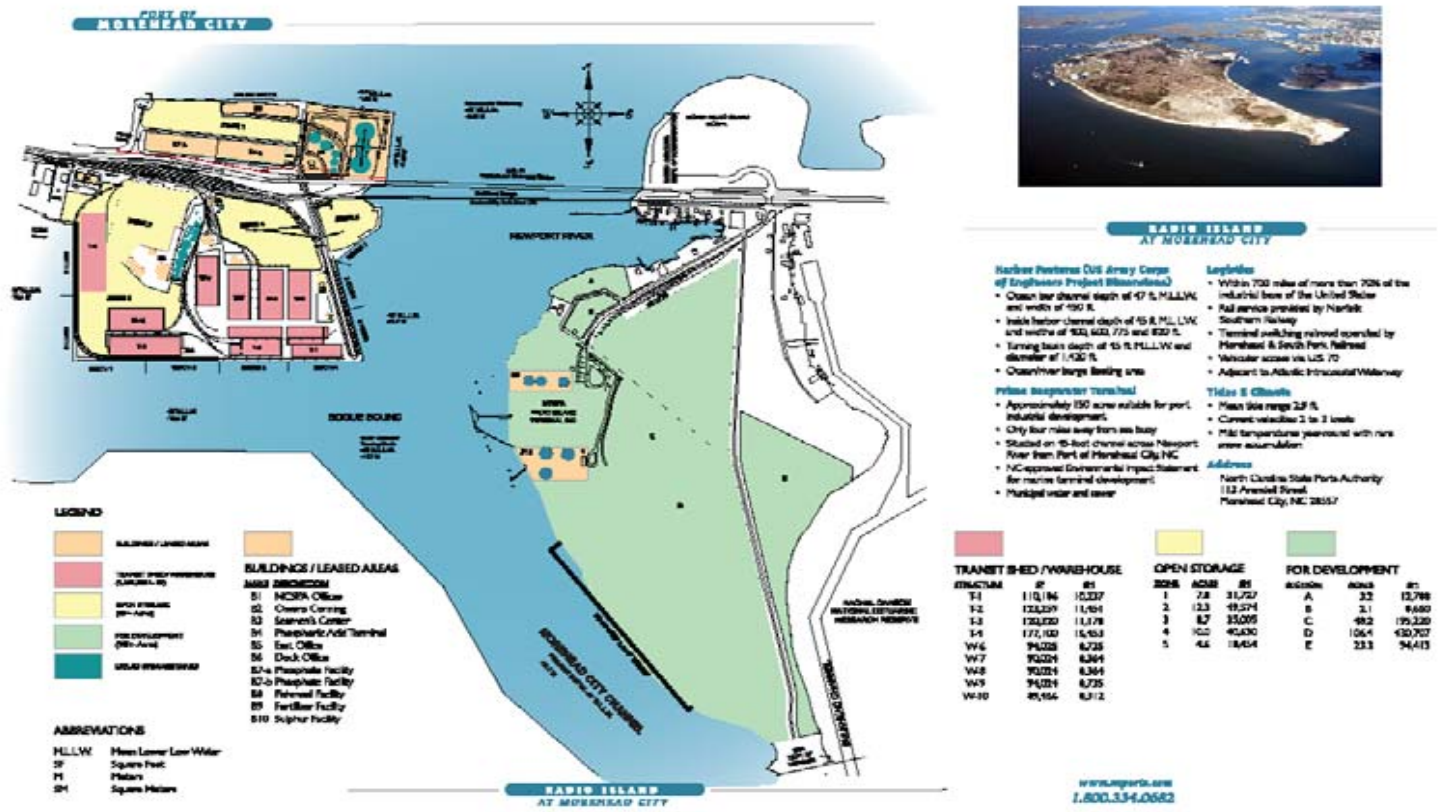
- Can lower, defer, or avoid import duties
- Zone 67 approved as Foreign Trade Zone
  - Site One: 190,000 square feet of warehouse space within main terminal
  - Site Two: 40 acres of open storage
- Provides for storage, manipulation, exhibition and limited manufacturing operations
- Can accommodate special purpose subzones

Harbor Features (US Army Corps of Engineers Project Dimensions)

- Ocean bar channel depth of 47 ft. M.L.L.W. and width of 450 ft.
- Inside harbor channel depth of 45 ft. M.L.L.W. and widths of 400, 600, 775 and 820 ft.
- East turning basin depth of 45 ft. M.L.L.W. and diameter of 1,350 ft.; West turning basin depth of 35 ft. M.L.L.W. and 1,100 ft. radius
- Depth of 45 ft. M.L.L.W. at berths 1, 2 and 3; 35 ft. M.L.L.W. at berths 4 through 9
- No air draft restriction in channel

Fiscal year 2008 Statistics

- Total Breakbulk: 231,072
- Total Bulk: 1,652,863
- Total Ships/Barges: 124/ 414
- Total tonnage: 1,883,935



Public Transit

For many residents and military personnel in the MGTF Region, taking public transit is not a choice, but a necessity. Residents without access to private automobiles depend on transit to access military bases, jobs, medical care, professional services, and many other aspects of daily life. Some residents choose to ride transit. These residents board buses, vans, and shuttles to take advantage of the convenience and cost savings afforded to transit users. As the region grows, military expands, and development patterns shift, convenient and reliable transit service becomes more important, and, in some ways, more difficult. This transit component identifies local and regional issues related to transit relative to the military presence. This section also identifies system deficiencies and strategies to enhance access and mobility for transit users with special emphasis on military needs.

Within the context of the transportation system, the underlying principal of transit is to provide viable transportation alternatives to decrease dependence on the automobile and, in turn, lessen the demand on the existing transportation system. The idea is to create a transportation system whose primary motive is to move people rather than cars. One way to encourage use of existing transit services is to better connect the needs of military personnel with off-base activity and destination points, through a balanced, safe, and comfortable customer delivery system, complete with attractive and convenient amenities. These amenities include a network of sidewalks, safe street crossings, bicycle facilities, multi-use paths, and pedestrian level lighting. The efficiency of transit also depends on an interconnected system of roads and highways that provide access to transit stops.

Transit is a mode of transportation which cannot be considered in isolation. The strategies presented in this module also support improvements to the larger transportation system which aim to move the region's military personnel and citizens safely and conveniently between destinations.

Public transit in the MGTF Region currently includes intercity rail, bus, ferry, and paratransit services. The large majority of existing transit services is paratransit rather than fixed-route. Paratransit is a method of transportation in which people that

are traveling the same route share a car, minivan, or other vehicle. Paratransit relies on passenger cars, vans, or small buses that operate in response to calls from passengers or their agents to the transit operator. Currently, public transit services are provided in all seven counties within the region. The extent, type, and capacity of these services vary between counties. Populated cities in the study area tend to offer fixed-route public transit, while rural areas and unincorporated portions of counties operate "demand-response" services. Regionally, each county's public transit options are linked by RouteMatch, administered by the Eastern Carolina Council (ECC). RouteMatch enables transportation providers in surrounding counties to secure a county resident a seat on a public transit vehicle traveling beyond the region (to locations like Duke Medical Center of Wake Medical Hospital). Existing public transit services are augmented by taxis in the region. In some counties, taxi fleets are used for public transit, including Human Services, and Dial-a-ride. Although using taxis to satisfy paratransit demands is not as cost effective as establishing fixed route services, taxis currently provide transit services when other options have been exhausted.

Craven, Jones, and Pamlico counties are jointly served by the Craven Area Rural Transit System (CARTS). CARTS provides public transit for the general public, with special emphasis on provision of services to the elderly and/or handicapped. Carteret County is served by the Carteret County Area Transportation System (CCATS). In addition, NCDOT operates Ocracoke Island Ferry in Carteret County and the Minnesott/Cherry Branch Ferry in Pamlico County. Duplin County is served by Duplin County United Transit System (DCUTS). Onslow County and the City of Jacksonville are served by the Onslow United Transit System (OUTS) and the Jacksonville Transit Service (JTS). Additional details on existing conditions, by county, are provided below.

Onslow County

As part of the Jacksonville MPO's transit plan (currently underway), the Local Coordinated Plan (LCP) and transit planning for unincorporated Onslow County will also be completed (draft expected in July 2009). This plan will address transit services in the City of Jacksonville, connections to county-wide services and bicycle and pedestrian infrastructure. Currently, OUTS and JTS both offer fixed-route services.

Carteret County

The LCP was adopted in March 2009 and identifies challenges and opportunities for the Carteret County Area Transportation System (CCATS). CCATS participates in the RouteMatch program through the Eastern Carolina Council, which enables transportation providers in surrounding counties to secure county residents a seat on a van traveling to beyond the region. Currently, CCATS operates 17 vehicles and operates Monday through Friday, 7:00am to 7:00pm.

A transportation survey (10 February 2009 and 6 March 2009) helped identify system needs and priorities for CCATS. Results of the survey indicated that the majority of CCATS riders are Medicaid clients and senior citizens. Approximately 20 percent of riders use CCATS for health appointments.

Craven County

The LCP was adopted in February 2009 and identifies challenges and opportunities for the Craven Area Rural Transit System (CARTS), which also provides public transit services to Pamlico and Jones counties. CARTS also participates in the RouteMatch program through the Eastern Carolina Council. Like the ridership of CCATS, Medicaid and elderly are the largest proportion of users of CARTS and the majority of trips are made to health appointments. New Bern has two fixed routes and Havelock has none.

Jones and Pamlico Counties

Jones and Pamlico counties are both served by CARTS and do not have county-wide public transit agencies.

Duplin County

The LCP was adopted in March of 2009 and identifies challenges and opportunities for the Duplin County Transportation Department (DCTD), which is a rural transportation system with a fleet of 22 vehicles and 23 full and part time drivers. DCTD offers services based on "Demand Response, Deviated Fixed Routes, and Subscriptions." Like other public transit agencies in the region, the transportation department has established a policy of transporting individuals to county medical facilities on a scheduled basis during the month. DCTD also participates in the RouteMatch program though the Eastern Carolina Council.

Pender County

The LCP was adopted in March 2009 and identified opportunities and challenges for public transit in the county.

Aviation and Ferry

Aviation and ferry services throughout the MGTF Region serve the needs of the traveling public and military personnel, whether as passengers on an airline, freight aircraft, or a quick trip across the Neuse River via boat. The state's airports and ferry system vary in size and function, but each is an important component of the statewide transportation system and vital to the state's economy.

Airports

While the majority of air passengers travel to and from the state's international airports (Charlotte-Douglas and Raleigh-Durham), many daily trips originate and end at one of the many smaller facilities located throughout North Carolina. Two such airports are within the MGTF Region—Coastal Carolina Regional Airport and Albert Ellis Airport (Onslow County). In general, airport facilities in North Carolina can be categorized into one of two groups:

Air carrier (commercial)

These include the group of facilities that serve regularly scheduled passenger service. They are large facilities with the capacity to handle significant volumes of freight and passengers on a daily basis.

General aviation (civil)

These airports include the network of smaller facilities that exist in the majority of counties throughout the state. These facilities typically have paved runways 2,000 to 5,500 feet in length and are capable of accommodating small-sized (single engine) and medium-sized (multiengine) aircraft. These airports often provide opportunities for businesses with suitable aircraft to avoid the use of larger facilities and maximize lag time associated with air travel.

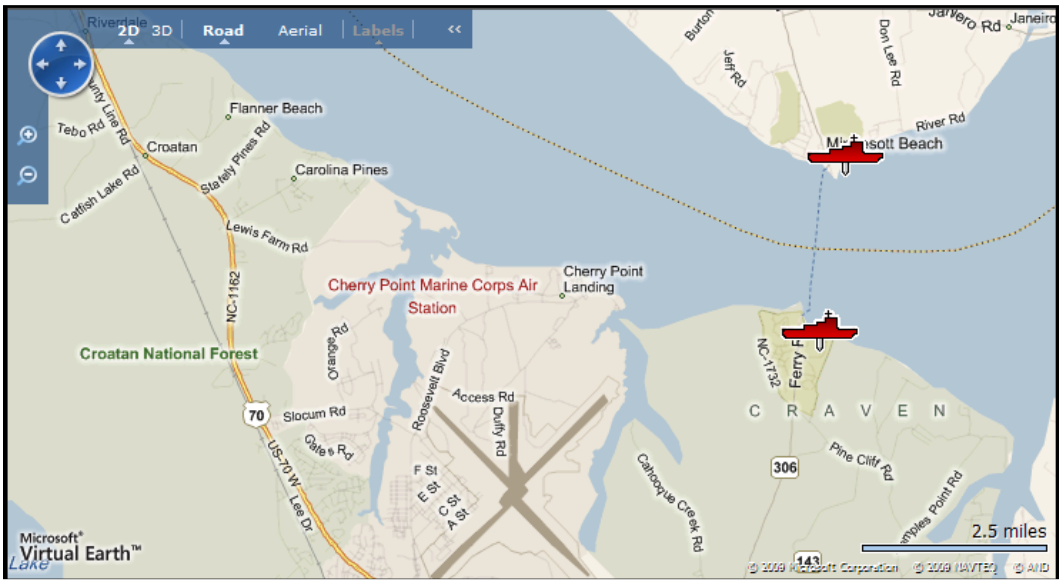
Both Coastal Carolina Regional Airport and Albert Ellis Airport provide civil and commercial aviation services. Their commercial activity is primarily served by US airways Express with connecting service to Charlotte and Delta Connection with service provided via Atlanta. Coastal Carolina Regional Airport in Craven County provides two runways at 6,004 and 4,000 feet. Albert Ellis Airport provides one runway at 7,100 feet.

Ferry Service

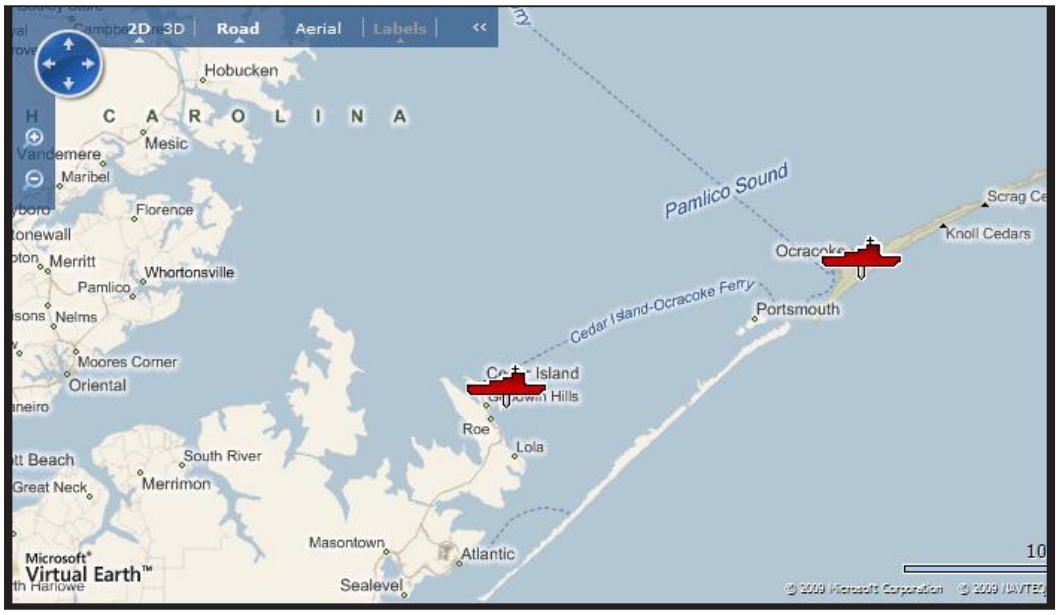
Ferries have played a vital role to residents and visitors of eastern North Carolina since the mid 1920s, when Captain J.B. (Toby) Tillett established tug and barge service across Oregon Inlet along North Carolina's Outer Banks. Today, the N.C. Department of Transportation's Ferry Division extends over seven routes, has 21 ferries and employs over 400 workers. The operations are supported by a full service shipyard, dredge, tugs, barges, and other support vessels.

Each year, North Carolina ferries transport over 1.1 million vehicles and more than 2.5 million passengers across five separate bodies of water – the Currituck and Pamlico sounds and the Cape Fear, Neuse, and Pamlico rivers.

Within the MGTF Region, ferry services are provided at two locations. The Cherry Branch Ferry Terminal is very active as it provides year-round departures to Minnesott Beach across the Neuse River, near Cherry Point in Havelock. The 20-minute ride is free and runs several times a day. Cedar Island Ferry Terminal provides year-round departures to Ocracoke across the Pamlico Sound. This runs four times a day with a travel duration of 2 ¼ hours and a variable fare rate.



Source: NCDOT - NC Ferry Routes - Cherry Branch Ferry Terminal



Source: NCDOT - NC Ferry Routes - Cedar Island Ferry Terminal

Bicycle and Pedestrian

A transportation system that responds to the needs of a growing and healthy community requires infrastructure for bicycles and pedestrians. Walking and bicycling have numerous personal, societal, and environmental benefits for a community. Understanding the benefits of an interconnected bicycle and pedestrian network, the City of Jacksonville, New Bern, Havelock and the Town of Morehead City have all addressed bicycle and pedestrian planning. New Bern and Morehead City have dedicated bicycle and pedestrian plans, while the City of Jacksonville's Long Range Transportation Plan and Havelock's Coordinated Transportation Plan address bicycle and pedestrian planning as a critical element.

Although there are many challenges to planning for bicyclists and pedestrians at the regional level, there are many also untapped opportunities in the MGTF Region. Both the Mountains-to-Sea trail and East Coast Greenway pass through the study area. The East Coast Greenway (ECG) was designed to link seaboard states with trails and on-road bicycle routes. Traversed states include Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Washington DC, Virginia, North Carolina, South Carolina, Georgia, and Florida. www.greenway.org/

The Mountains-to-Sea trail is a North Carolina-sponsored hiking trail that extends across 1,000 miles from Clingmans Dome in the Great Smoky Mountains to Jockey's Ridge on the Outer Banks. Although only 50 percent of the trail is constructed, it is expected that the trail will be fully completed as land is purchased and local investments are made. The MTS trail runs through Craven, Carteret, and Pamlico counties and through the Croatan forest in the study area.

Dedicated bicycle routes in the study area exist in the following locations:

- New Bern
- Town of Morehead City
- Jacksonville
- Swansboro
- Havelock

Opportunities exist for the region to link these existing bicycle facilities to each other through the planned greenways and trails that run through the study area. Few bicycle-related policies or program initiatives that extend beyond town limits exist in the region.

Needs Assessment

Highways

In order to develop a regional transportation strategic plan that adheres to good planning practices, encourages sustainable development, and positions the area to address regional growth, it is necessary to identify the needs of the region. The needs assessment emphasizes the transport of military personnel, goods, and services from base to base, port to base, and residential to base.

Congested Corridors

Congested corridors result from a number of factors, but most often from bottlenecks along the corridor — primarily at intersections. Aside from individual bottleneck locations in corridors, congestion frequently results from too many people trying to use a route that is already at or over capacity. Traffic volumes signify the total number of vehicles traveling along a roadway segment on an average day. **Figure 4.2** illustrates 2006/2007 average daily traffic (ADT) volumes on roadways in the MGTF Region. The region's highest traffic volumes occur on NC 24 west of Corbin Street in Jacksonville (52,000 vehicles per day) and US 70 south of New Bern (47,000).

However, traffic volumes alone should not determine congested corridors because this measurement does not account for roadway capacity. A better measurement for this comparison is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. The result is a universal measurement. The congested corridors according to V/C ratios shown in **Figure 4.3** fall into one of the following categories:

- **Approaching Capacity** (V/C = 0.8 to 1.0) — A roadway with a V/C less than 0.8 typically operates with efficiency. As the V/C nears 1.0, the roadway becomes more congested. A roadway approaching capacity may operate effectively during non-peak hours but be congested during morning and evening peak travel periods.
- **At Capacity** (V/C = 1.0 to 1.2) — Roadways operating at capacity or slightly above capacity are heavily congested during peak periods and moderately congested during non-peak periods. A change in capacity due to incidents greatly impacts the travel flow on corridors operating within this V/C range.
- **Over Capacity** (V/C > 1.2) — The roadways in this category represent the most congested corridors. These roadways are congested during non-peak hours and most likely operate in stop-and-go gridlock conditions during the morning and evening peak travel periods.

Traffic increases in the seven counties due to residential/military growth and the influx of tourists passing through the area combine with insufficient increases in roadway capacity to create peak hour traffic congestion on many major area roadways. During morning and afternoon peak travel periods, large sections of these corridors are frequently congested, and in some cases, travel speed is reduced to a crawl.

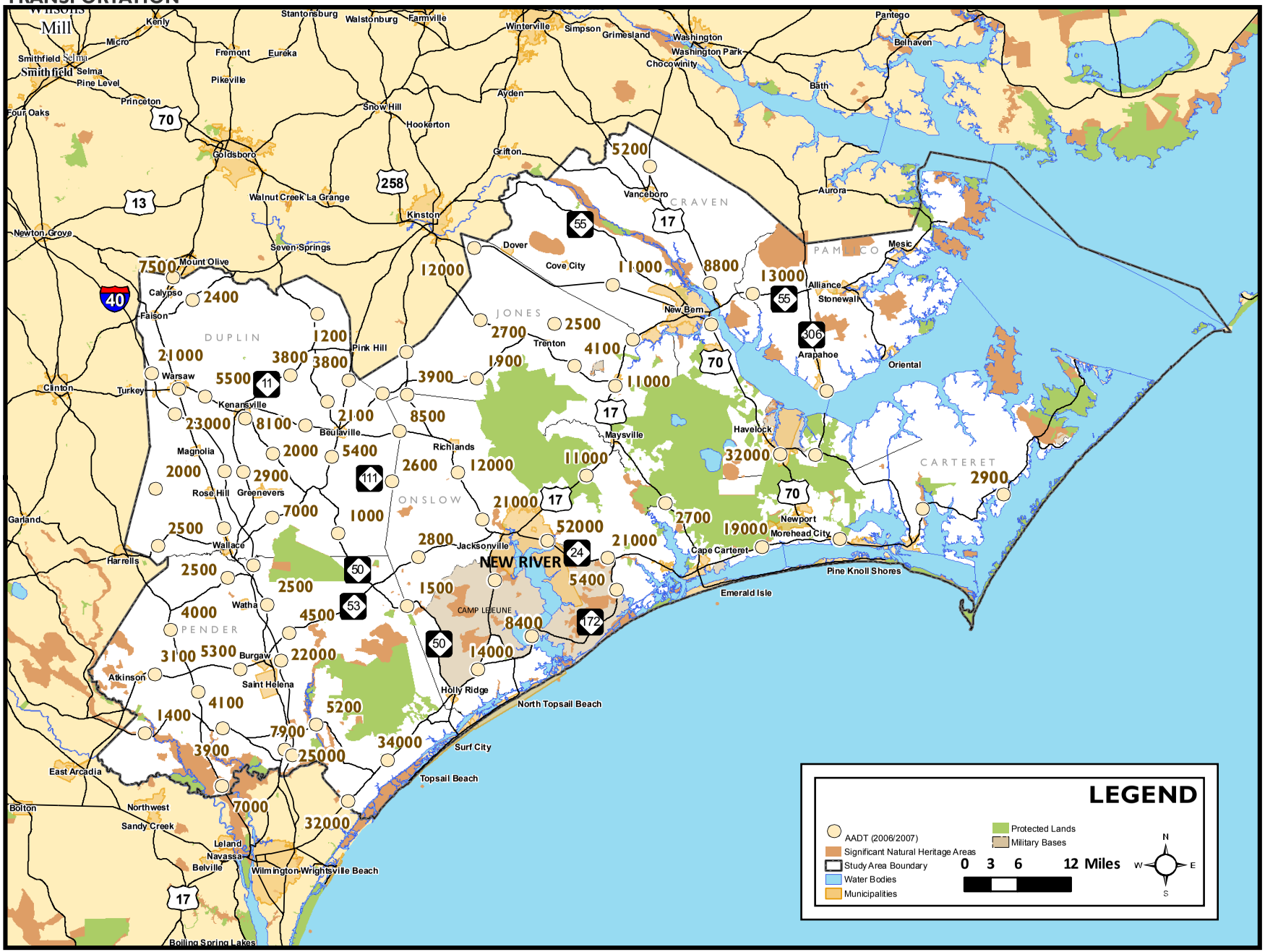
The most notable congestion occurs along US 70 between New Bern and Morehead City, US 17 from north of New Bern to Jacksonville, and US 17 approaching Wilmington. NC 24 in the vicinity of Jacksonville has the highest V/C ratios in the MGTF Region, with ratios as high as 2.37. Traffic volumes on US 70 at Gallants Channel in Morehead City are more than 11/2 times the roadway's capacity.

Traffic Safety and Crash History

Traffic safety is a key component to any successful transportation plan, and the examination of crash history and traffic patterns usually can predict key locations where an improvement in traffic safety will be beneficial to both motorists and the community as a whole. The 5-year crash average provided by NCDOT for each of the seven counties was examined and compared to the state average. This information is shown in **Table 4.1.**

REGIONAL GROWTH MANAGEMENT PLAN

TRANSPORTATION



LEGEND

- AADT (2006/2007)
- Significant Natural Heritage Areas
- Study Area Boundary
- Water Bodies
- Municipalities
- Protected Lands
- Military Bases

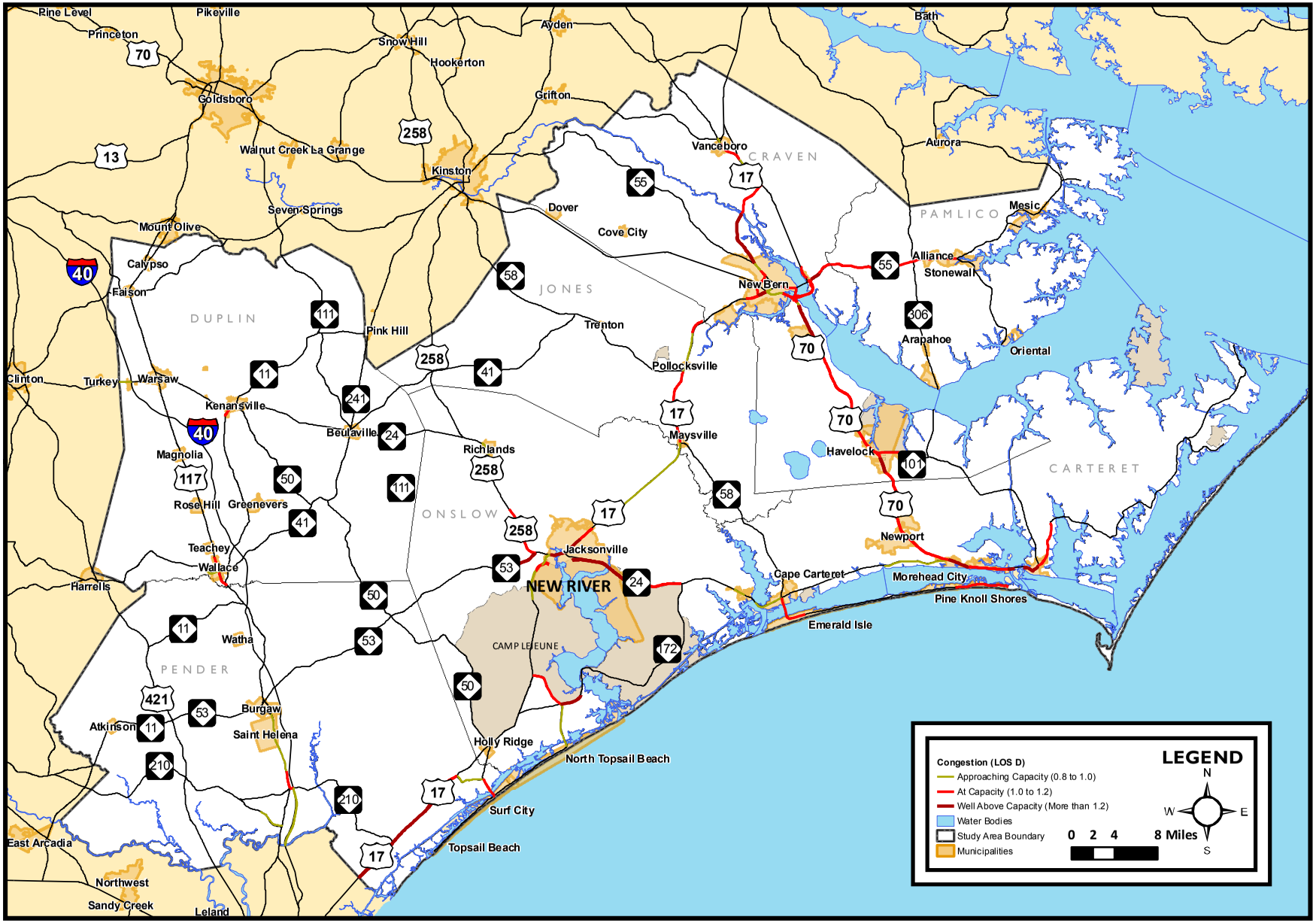
0 3 6 12 Miles

N W E S

AVERAGE ANNUAL DAILY TRAFFIC **Figure 4.2**

REGIONAL GROWTH MANAGEMENT PLAN

TRANSPORTATION



CONGESTED CORRIDORS Figure 4.3

	Carteret	Craven	Duplin	Jones	Onslow	Pamlico	Pender	NC
Total Crashes	1,231	1,699	1,564	310	3,494	228	1,184	224,772
Fatal Crashes	12	14	14	3	22	3	10	1,402
Non Fatal Injury Crashes	506	637	522	117	1,248	94	407	82,060
Property Damage Only Crashes	713	1,048	1,028	190	2,224	131	767	141,310
Pedestrian Crashes	15	12	9	2	34	2	8	1,848
Bicycle Crashes	7	9	3	1	13	1	3	654
Percentage of Injury or Fatal Crashes	42.1%	38.3%	34.3%	38.7%	36.3%	42.5%	35.2%	37.1%
Crash Rate*	229.43	192.06	241.39	160.88	313.50	169.43	189.41	293.77
Average Cost^	$11.85	$8.91	$11.24	$7.10	$12.78	$9.95	$9.09	$11.11

* per 100 million vehicle miles traveled

^ per 100 vehicle miles traveled

Table 4.1 - 5 Year Crash Averages (2001 to 2005)

The crash rates shown in the table can effectively measure the relative safety for a given county. The crash rate results from the combination of crash frequency (crashes per year) and vehicle exposure (traffic volumes or miles traveled). The crash rate shown is expressed as "crashes per Million Vehicle Miles Traveled" (MVMT) for roadways within each county. This method provides a quick glance at how roadways in the counties compare to one another and the state average.

As shown in the table, the five-year average crash rate — or relative frequency of crashes — was highest in Onslow County (which exceeded the state average), followed by Duplin and Carteret Counties. Onslow and Duplin also exceed the state average cost per crash. In terms of crash severity, four of the seven counties (Carteret, Craven, Jones, and Pamlico) had higher percentages of injury or fatal crashes compared to the state average. The crash data provided by NCDOT was supplemented with feedback provided from sources within the MGTF Region.

Contributing factors to a county's high crash rate include intersection design, access considerations, and traffic congestion. The counties with high crash rates also have frequently congested corridors. The direct relationship that exists between traffic congestion and crash frequency justifies ongoing efforts to strategically plan roadway improvements and seek adequate funding for transportation projects that minimize traffic congestion. Driveway access in proximity to intersections, a local issue, also can contribute to crash frequency by increasing the unexpected conflict points near the intersection.

Transportation Improvement Program

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements for an area. The seven-year document includes provisions for highway, bicycle, pedestrian, rail, and public transportation projects. The statewide TIP contains funding information and schedules for multiple transportation divisions including highways, aviation, enhancements, public transportation, rail, bicycle and pedestrians, and the Governor's Highway Safety Program. Projects listed on the current (2009-2015) TIP in the MGTF Region are detailed below. However, not all projects listed in the TIP are recommended as a priority by the TWG. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have

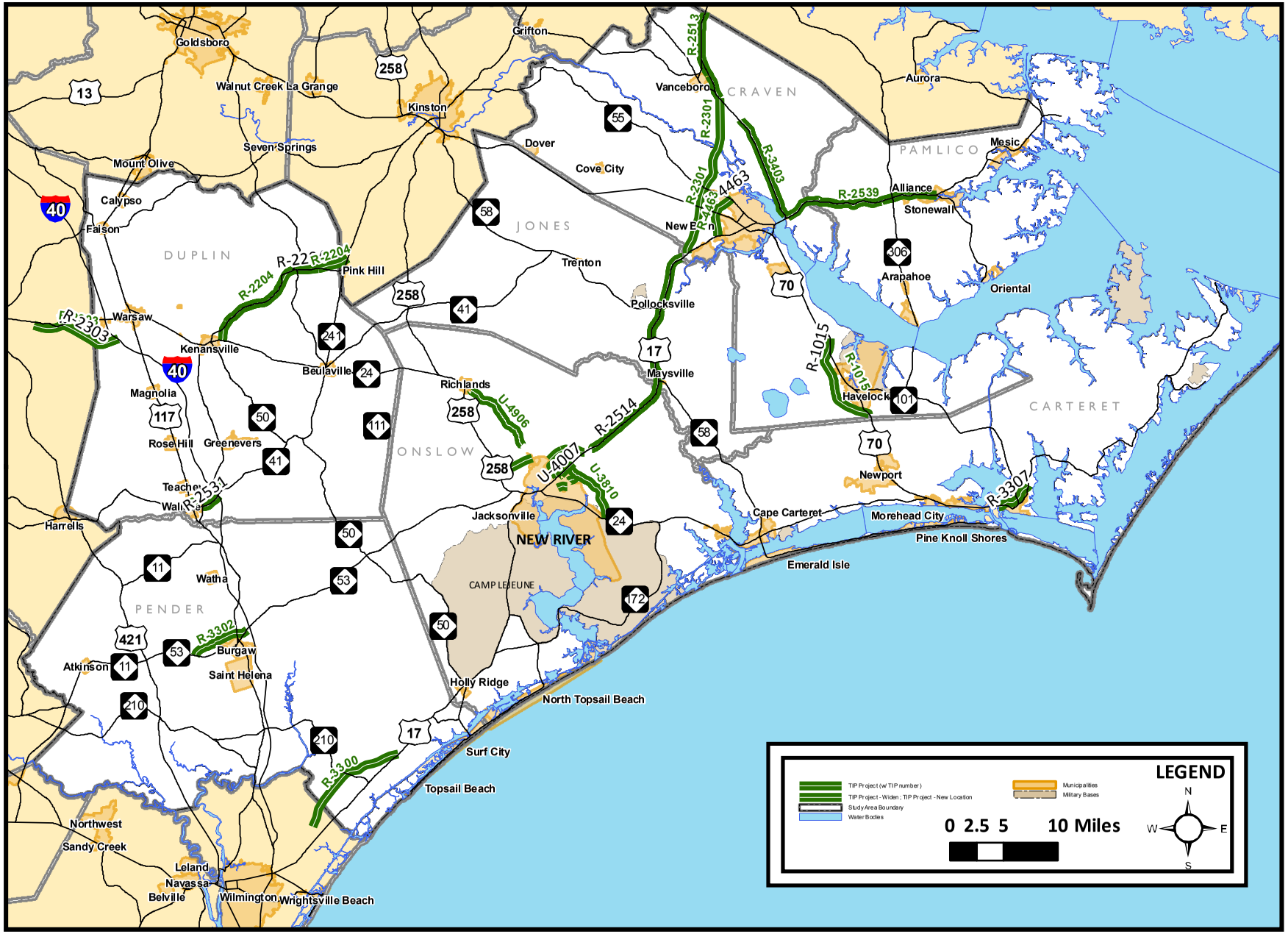
relatively low impact on the military while others will contribute a high level of positive impact. Other recommendations developed through the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone, as addressed in subsequent sections of this report. These projects are also shown in **Figure 4.4**.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/Funding
R-3302	Widen; New Location	Burgaw Bypass (New Route)	Pender County near Burgaw	NC 53 at New Savannah Road to NC 53 west of I-40	Two lanes with paved shoulders, some new location	Unfunded
R-2531	Widen	NC 41	*West* of Wallace in Duplin County	NC 11 to I-40	Widen to multi-lanes	Planning/design in progress
R-2303	Widen; New Location	NC 24	*Western* Duplin County	*West* of Maxwell Road/Clinton Road in Cumberland County to I-40 in Duplin County	Four lanes divided; some on new location	Planning/design in progress
R-2204	Widen; New Location (Pink Hill Bypass)	NC 11-903	Duplin County northwest of Kenansville	NC 24 to Rosewood Drive north of Pink Hill	Four lanes divided; some on new location	Programmed for planning and environmental study only
U-4906	Widen	Gum Branch Road (SR 1308)	*Between* Richlands and Jacksonville in Onslow County	*East* of Richlands to Summersill School Road	Widen to 3 lanes	Unfunded
U-5106	Widen, New Location	Northwest Loop (New Route)	*North* of Jacksonville in Onslow County	US 258/NC 24 to US 17	Four lanes divided; some on new location	Unfunded
U-4007	Widen	US 17; various other streets	Jacksonville in Onslow County	US 17 Business/Jacksonville Bypass to Drummer Kellum Road	Add additional lanes to US 17; Extend the Jacksonville Bypass to the north to Western Boulevard with side street improvements; Extend Huff Drive to the Jacksonville Bypass	Unfunded
U-4907	Widen	Country Club Road	Jacksonville in Onslow County	North of Office Park Drive to Piney Green Road	Widen to three lanes	Unfunded
U-3810	Widen	Piney Green Road	*East* of Jacksonville in Onslow County	NC 24 to US 17	Widen to multi-lanes	Unfunded
R-2514	Widen, New Location (Bypasses of Belgrade, Maysville, Pollocksville)	US 17	*Northeast* of Jacksonville in Onslow and Jones Counties	*North* of Jacksonville to New Bern Bypass	Widen to multi-lanes with bypasses of Belgrade, Maysville, and Pollocksville	Planning/design in progress; Total cost is $227.9 million; Unfunded portion is $95.9 million.
R-2301A	New Location	US 17/New Bern Bypass (New Route)	*West* of New Bern in Craven County	US 17 to US 70	Four lanes divided freeway on new location	Planning/design in progress and right-of-way
R-4463	New Location	NC 43 Connector (New Route)	west of New Bern in Craven County	NC 43-55 to US 17	Four-lane divided freeway on new location	Unfunded
R-2513	Widen	US 17	near Vanceboro in Craven County	Spruill Town Road to Possum Track Road	Widen to multi-lanes	Unfunded
R-3403	Widen	US 17	northeast of New Bern in Craven County	Mills Street in Bridgeton to NC 43	Widen to multi-lanes	Planning/design in progress
R-2539	Widen	NC 55	east of New Bern in Craven and Pamlico Counties	US 17 at Bridgeton to NC 304 in Bayboro	Widen to multi-lanes	Unfunded
R-1015	**New Location**	**Havelock Bypass (New Route)**	**near Havelock in Craven County**	**US 70 south of Lewis Farm Road in Craven County to US 70 north of the Carteret County line**	**Four lanes divided on new location**	**Planning/design in progress – Garvee Bond Funding (partially funded) $91.2 million construction – Payback FY 2015-2026**
R-3307	Widen, New Location	US 70	Beaufort in Carteret County	Radio Island to US 70 north of Beaufort near Olga Road	Multi-lanes part on new location	Planning/design in progress – Right-of-way in progress
R-3300	New Location	Hampstead Bypass (New Route)	north east of Wilmington in Pender and New Hanover Counties	US 17 near Long Leaf Drive in Pender County to US 17 (John Jay Burney Jr. Freeway) in New Hanover County	Multi-lanes on new location	Planning/design in progress

Table 4.2 - TIP Projects in the Study Area

REGIONAL GROWTH MANAGEMENT PLAN

TRANSPORTATION

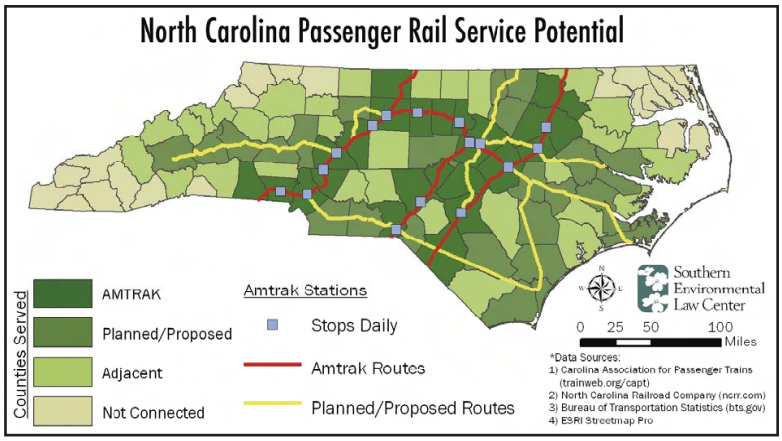


TRANSPORTATION IMPROVEMENT PROGRAM PROJECTS **Figure 4.4**

FY 2009 - 2015

Rail

The needs assessment for rail infrastructure in the MGTF Region was compiled based on a review of existing conditions, documentation, research, and stakeholder interviews. This needs assessment is not exhaustive, but contains the key issues and rail needs relative to military use and future growth in the study area.



Source: Southern Evnironmental Law center, "How do we get there? A Road Map of North Carolina's Transportation Future", 2009

In May 2001, NCDOT released results of a feasibility study that indicated there is interest in passenger rail service to/from Wilmington. In July 2005, the department released the Southeastern North Carolina Passenger Rail Study, describing the results of more detailed studies that identified costs and needed improvements for reestablishing service to southeastern North Carolina. The study recommended implementing passenger rail service from Raleigh to Wilmington via Goldsboro in phases, as funding becomes available. Other recommendations included investigating the possibility of commuter service between Selma and Raleigh, and working with the State Ports to define benefits and investments needed to reestablish freight service between Goldsboro and Wilmington.

The 2005 study compares several route options and provides more detailed analysis of projected ridership, revenue, and cost associated with re-establishing passenger rail service to Wilmington. This study focused on four key elements:

- Station inventory
- Travel habits and ridership estimates
- Track capacity and safety improvements
- Economic benefits of track restoration.

The ridership and revenue projections provide an indication of the public's interest in traveling the alternative route under study. Surveys found that 42 percent of employees in the Goldsboro area travel for business. Raleigh-Durham was listed as the most frequently visited destination, followed by Wilmington. Of the routes studied, Wilmington to Raleigh route via Goldsboro with potential connections to Northeast cities performed the best in terms of revenue, number of riders, and operating losses. The new studies estimate an 87 percent increase in ridership and more than twice the revenue from the earlier studies for the Goldsboro alternative.

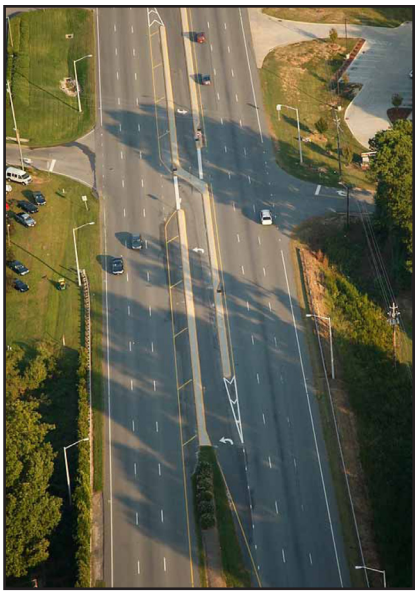
While there remains a strong interest in passenger train service to/from Wilmington, reintroducing such services will require track and infrastructure improvements in order to safely and efficiently accommodate both freight and passenger trains. Infrastructure improvements would include replacing 27 miles of track between Castle Hayne and Wallace, as well as installation of centralized train traffic controls (CTC) to allow train speeds to reach 59 to 79 mph. With contingencies and other necessary construction elements, it is estimated that the costs to restore and upgrade the Raleigh-Goldsboro-Wilmington route to optimal conventional passenger train standards of 79 mph with CTC is approximately $184 million.

Ports

The needs associated with area ports are also supported by additional research and stakeholder interviews. The resulting list of needs is identified by the NC Ports Authority and stakeholders as critical to supporting port to base mobility. In many cases there is an implicit overlap between the needs of the Ports Authority and the military installations.

The NCSPA has reported projected increases in international trade to grow 100 percent by 2020. With this growth, the east coast ports are projected to double their container through-put by 2012. Some industry experts even suggest that this number could double again by 2025. During this same time frame, it is also expected that the military use of the ports at Morehead City-Radio Island, Port of Wilmington, and Sunny Point will increase. The combination of increased growth and expansion in the commercial container movements has resulted in the following shared list of priorities for area ports.

Morehead City / Radio Island



Radio Island, on the Newport River across from the Port of Morehead City, is situated on more than 100 acres adjacent to the 45-foot Morehead City Channel with a North Carolina-approved environmental impact statement for marine terminal development. Development of Radio Island will necessitate roadway transportation infrastructure improvements. These improvements include:

- Completion of the Highway 70 Corridor
- Completion of the Gallant's Channel Bridge to provide interstate access to the port
- Replacement of the Newport River bascule bridge to allow rail cars to cross the Newport River from Radio Island to Morehead City

Completion of the Highway 70 Corridor will provide access from Camp Lejeune to the Port of Morehead City; the Highway 70 Corridor will also help MCAS Cherry Point Base be more attractive as a joint facility providing access to the Port of Morehead City.

Port of Wilmington and NC International Port

In 2005, the Authority purchased 600 acres of riverfront property in Brunswick County to expand the Port of Wilmington. It is projected that the expansion, the North Carolina International Port, will handle between two and three million containers or more a year. This trade activity will have enormous statewide economic benefit, including supporting distribution and manufacturing centers along the Interstate 74 and Interstate 95 corridors.

In addition, completion of the Castle Hayne to Wallace rail tracks would allow freight and passenger trains to travel directly from Goldsboro to Wilmington, and the completion of the Pembroke Northern Bypass rail connecting track will allow efficient and timely rail access to the Port of Wilmington.

Public Transit

In order for each county to receive federal funding, their Local Coordinated Plan (LCP) must be updated. Each county within the MGTF Region is on track to receive federal funding based on this qualification. Onslow County's LCP is the only remaining LCP to be completed, and a draft is expected from the MPO in June of 2009.

Each county's Local Coordinated Plan was reviewed to evaluate existing transit conditions, future strategies and recommended actions. Across the region, although public transit services exist in each county, there is a need to coordinate these services across county boundaries and to take advantage of federal funding opportunities, such as Jobs Access and Reverse Commute (JARC). The two most critical issues facing public transit agencies in the region are providing connections to large cities and providing adequate routes and service to accommodate trips to medical facilities.

Public transportation funding is a joint effort of federal, state, and local governments supplemented by farebox revenues where available. The state portion of public transportation funding differs across the nation, though in North Carolina most funds are from motor fuel and highway use taxes. In the fiscal year ending in June 2008, the Public Transportation Division of NCDOT administered $73 million in state funds and $36 million in federal funds.

Funding

In North Carolina, local governments and nonprofit organizations can apply for federal and state transit funding for eligible projects. In particular, the Public Transportation Division of NCDOT solicits applications annually for rural transportation funding through three federal programs: Elderly and Disabled Persons (Federal Section 5310), Job Access Reverse Commute (Federal Section 5316), and New Freedom (Federal Section 5317). Projects funded through these programs must be derived from a locally developed Coordinated Public Transit-Human Services Transportation Plan (CPT-HSTP).

Elderly and Disabled Persons

Funding for this program is allocated to ensure the planning and design of transportation facilities and services meet the special needs of elderly persons and persons with disabilities. Through this funding program, NCDOT provides grants to local governments and nonprofit organizations approved by the state to coordinate service for these special populations or to local governments that certify no entity currently provides such service. Funds can be used for vehicles, related capital expenses, or operating expenses.

Job Access Reverse Commute (JARC)

This program funds initiatives to develop new or expanded transportation services that connect employees to jobs and other employee-related needs. These transportation services may include shuttles, vanpools, guaranteed rides home, or connector/feeder services. JARC projects target new or expanded services for low-income persons as well as services to suburban or rural employment locations for all populations. Funds can be used for capital, planning, and operating expenses that support both the development and maintenance of such transportation services.

New Freedom

Funds through New Freedom provide services and facility improvements that go beyond the requirements of the Americans with Disabilities Act to address the transportation needs of persons with disabilities. Grants provide funding in order to eliminate barriers that persons with disabilities face as they seek to enter the work force and more fully participate in society. Funds can be used to support the capital and operating costs (North Carolina Department of Transportation, Public Transportation Division Website, www.ncdot.org/transit/nctransit/).

County Needs

Across the region, there is an overwhelming demand for transit services to and from Camp Lejeune and Cherry Point. Expansion of currently offered transit services will allow greater mobility of younger ranking Marines as well as more residential to base connections. Although the ECC facilitates RouteMatch to coordinate intracounty public transit, it is underused and needs enhanced technical support. Additional details on documented needs by county are provided below.

Onslow County

Although a draft of the LCP is not yet complete, the survey to identify needs has been initiated. So far, there are identified needs for rural express service, connections to existing services, and a link to New Hanover via OUTS. An ongoing study has been monitoring ridership of public transit in Jacksonville and the county; historically only 25% of the ridership was military, and this percentage has now increased to 35%. Both daytime and nighttime services (including weekend) need to expand fixed-routes to the base in order to accommodate the increasing military demand.

Jacksonville TRANSIT

Carteret County

The highest scoring priorities identified during the LCP workshop were:

- Need fixed routes
- Need night/weekend/holiday services
- Need more marketing/advertising

- Need to reduce cost to ride

In addition, the LCP has listed the following as critical needs for public transit in Carteret County:

- Expand service frequency
- Extend service hours
- Institute formal/informal park and ride locations
- Connect to other transit services

Craven County

The highest scoring priorities identified during the LCP workshop were:

- Expanding fixed routes
- Working with companies employing large number of people to form public/private
- partnership
- Creating a marketing plan
- Meeting with MCAS Cherry Point to discuss how service on base might be provided without having to disembark riders already on the van

The Community Transportation Improvement Plan (Craven Area Rural Transportation System) also urged Jones and Pamlico to coordinate with Craven more on transit planning.

Jones and Pamlico Counties

The LCPs for Jones and Pamlico County stress greater coordination with CARTS and Craven County on administration, management, dispatch, planning, and marketing of CARTS. Highest priorities for all two counties relative to CARTS include:

- Expansion of services to include night and weekend hours
- Expansion of fixed routes
- Greater inter-county and inter-agency coordination on public transit

Duplin County

A transportation survey (10 February 2009 and 6 March 2009) helped identify system needs and priorities, and 92% of respondents believed that there is not enough public transportation service available across the county. The highest priority needs identified by LCP workshop participants were:

- Decrease the amount of time needed to pre-arrange a ride on the system, and
- Develop an automated centralized transportation information system to provide information on all types of transportation available in the area

Pender County

Critical issues identified during the preparation of the LCP included:

- County needs more vans and better transportation in general (Hampstead-Topsail Beach area especially in need of more routes and vans)
- Transportation to out of county employment in New Hanover and Duplin counties is particularly important
- Saturday service (especially for medical visits) is essential
- Non Medicaid recipients need to receive vouchers for transportation

Aviation and Ferry

Source: NCDOT - Aviation - Coastal Carolina Regional

Based on discussions with the local airport directors, military staff representatives, and the TWG members, the Coastal Carolina Regional Airport is well prepared for the impacts related to the military influx as well as anticipated civilian growth within the region. Both service and capacity improvements are expected to be minimal over the next ten years. However, arterial access to the airport via the US 70 corridor remains an issue. Based on the recommendations contained within this plan, the US 70 corridor is recommended to be upgraded to freeway standards.

In addition, Albert Ellis Airport remains as the main hub of Marines/dependents for air travel. Recently, Onslow County approved the construction of cell towers at a site that airport officials claim obstruct air traffic routes. More importantly, the construction of new cell towers in close proximity to the airport essentially limits future opportunities to expand the runway. The airport is currently only accessible via NC 111. This road is a narrow, two lane facility that has been temporarily closed in the past due to weather/flooding conditions.

Source: NCDOT - Aviation - Albert J. Ellis Airport

Based on discussions with local staff and community members, there are no problems with service or capacity issues related to the Cherry Branch Ferry Terminal or the Cedar Island Ferry Terminal.

Bicycle and Pedestrian

Bicycle and Pedestrian facility funding can be divided into two types: independent and incidental. Independent projects are those that are independent of scheduled highway projects, while incidental projects are bicycle accommodations that are created as a part of a highway project. Both types of funds are needed to create a well-connected and user-friendly network in the region; however, regional initiatives will most likely be funded by incidental projects.

The region should take advantage of cost-effective opportunities to include bicycle facilities in incidental roadway improvements, such as repaving and reconstruction projects. It is recommended that jurisdictions in the study area take a proactive approach to creating the bicycle facility network and finding opportunities to enhance the network.

Recommended Strategies and Actions

Modal Recommendations

Highway

The transportation network of the MGTF Region includes a variety of modes — highways, ports, rail, aviation, and maritime. Given the critical need to ensure that people, goods, and services move freely throughout the region and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected

officials at the local, regional, and state levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the many Transportation Improvement Program projects described above. Still, more must be done, particularly in light of organic and military-infused growth throughout the seven counties. The recommendations that follow include roadway recommendations (new location facilities, widen existing facilities, and improve existing facilities) as well as improvements to gate access points at military installations. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position the region to effectively manage future growth. These recommendations also are illustrated in **Figure 4.5**.

Roadway Recommendations

The roadway recommendations that follow are presented by corridor. The organization of recommendations in this way respects the regional scope of the Military Growth Task Force and acknowledges the need to adequately plan for the movement of people, goods, and services throughout the MGTF Region and beyond.

US 17 Corridor

US 17 is designated as a Strategic Highway Corridor by NCDOT, signifying its value to local, regional, and state mobility. As a critical connection to Jacksonville and Camp Lejeune, the region's largest cities, other strategic highways, North Carolina ports, and numerous neighborhoods throughout the MGTF Region, an urgent need exists to improve the operating capacity of this roadway that carries up to 34,000 vehicles per day. US 17 also serves as the primary deployment route from Camp Lejeune to the Port of Wilmington.

The connection between New Bern/US 70 and Jacksonville/Camp Lejeune/Marine Corps Air Station at New River is a high priority due to the corridor's significance to the region's development and transport of military troops in and between Jacksonville/Camp Lejeune and New Bern, as well as the direct connection it provides between US 70 and NC 24. Widening US 17 would provide the needed capacity relief and regional mobility as most of the corridor currently operates near or over-capacity. Additional benefits include safety improvements for the traveling community and tourists as well as an alternative hurricane evacuation route.

The current TIP calls for widening US 17 to multi-lanes, with bypasses of Belgrade, Maysville, and Pollocksville (TIP # R-2514), and laying the groundwork for an enhanced route to the west of New Bern (TIP # R-4463 and R-2301A). The following recommendation for NC 43 supplements these TIP projects to complete an enhanced corridor throughout the 7-county region. In particular, improvements to NC 43 help create an alternative route to US 17 north of New Bern.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
US 17	Widen	near River Bend in Craven County	Jones County Line to US 258/NC 24	4 miles	Widen to multi-lanes	Alleviate congestion; Connects TIP projects R-2514 and R-2301 to create an improved route from Jacksonville to New Bern and points north
NC 43	Widen	northwest of New Bern in Craven County	Washington Post Road to NC 55	2.5 miles	Widen to multi-lanes	Alleviate congestion; Connects TIP projects R-4463 and R-2301 to create an improved route from Jacksonville to New Bern and points north as an alternative to US 17

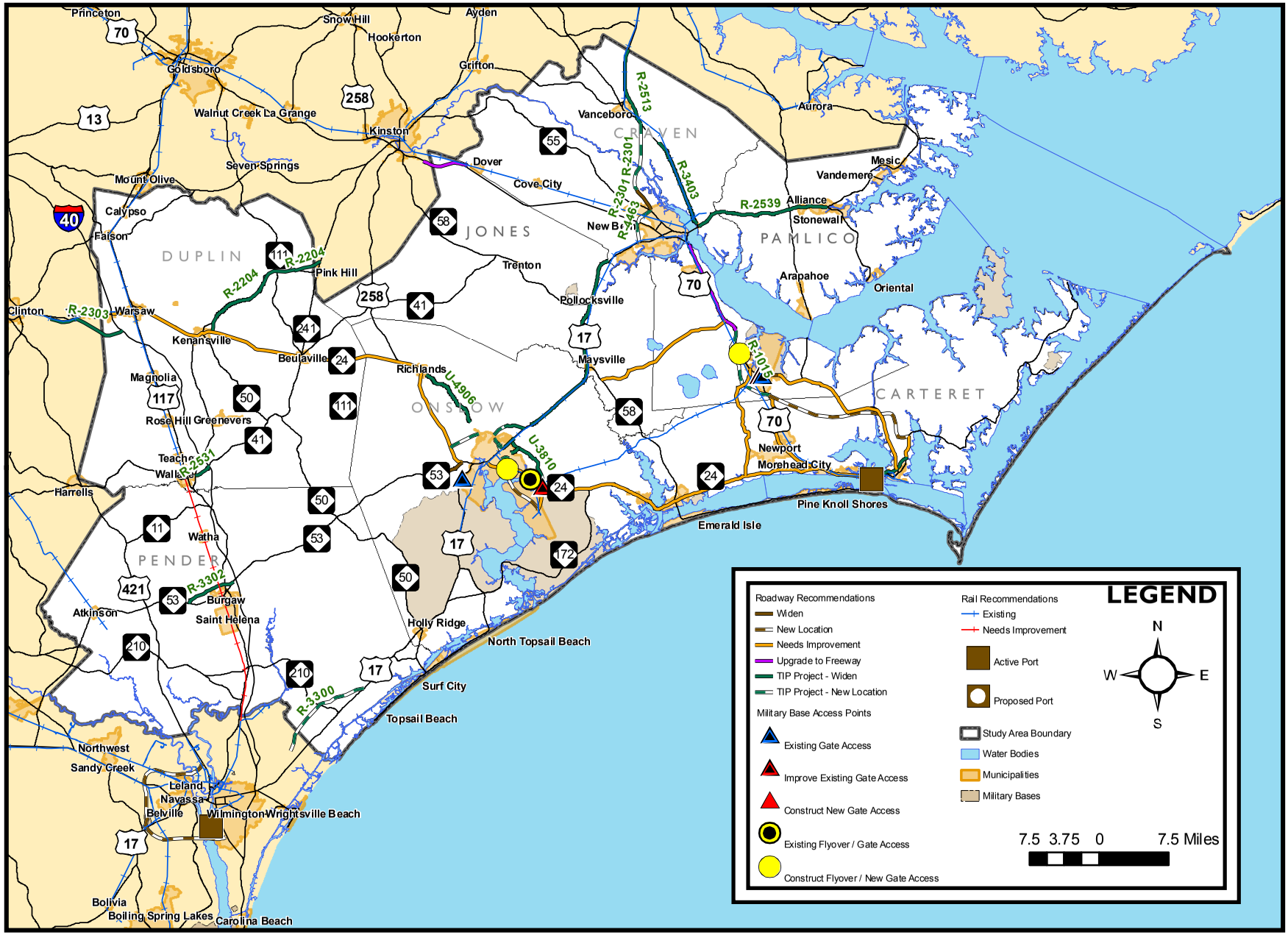
Table 4.3 - US 17 Corridor Roadway Recommendations

US 70 Corridor

Like US 17, the US 70 corridor is a major link in the state's transportation system and is designated as a Strategic Highway Corridor. Today, it exists as a multilane facility that carries up to 47,000 vehicles per day. The cross section and functionality

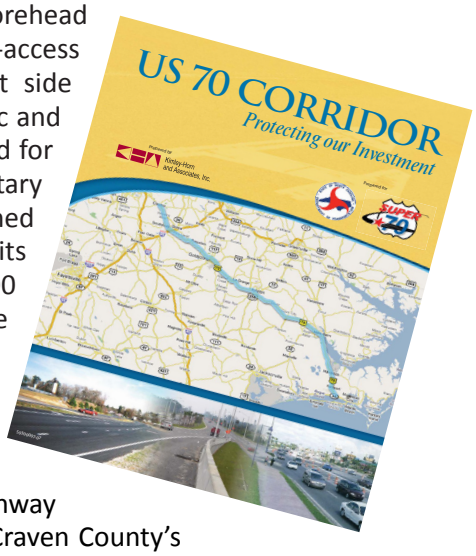
REGIONAL GROWTH MANAGEMENT PLAN

TRANSPORTATION



ROADWAY AND RAIL RECOMMENDATIONS **Figure 4.5**

of US 70 varies on its trek from Raleigh to Morehead City. The corridor alternates between a limited-access freeway and a regional arterial with frequent side streets and driveways. The high volume of traffic and unpredictable access has created a safety hazard for motorists, whether residents, tourists, or military personnel. Between New Bern and the planned Havelock Bypass, the corridor experiences its greatest safety problems (157 crashes per 100 million vehicle miles traveled or twice the state average for a similar roadway).



The significance of US 70 to the military and civilians is directly related to its distinction as the only east-west mobility corridor for the region. The Marine Corps utilizes US 70 for the transport of troops and equipment from MCAS Cherry Point to the Port of Morehead City, a major point of embarkation and debarkation. The highway is virtually the only way for residents to travel between New Bern and Havelock, Craven County's largest towns and links the beach towns to Raleigh and points west. In Morehead City, US 70 is the main arterial and serves the dual role of providing service to residential and commercial land uses while connecting NC 24 (and thus personnel and equipment from Camp Lejeune) to port facilities. US 70 also serves as a major hurricane evacuation route.

A plan has been developed by the US 70 Corridor Commission that recommends retrofitting US 70 to a freeway from Raleigh to Morehead City. Improving the corridor will enhance regional mobility, alleviate safety concerns, improve the efficiency of evacuations, and enhance east-west travel times for freight traffic as well as military use. The current TIP includes the Havelock Bypass, though this project remains unfunded. The following recommendations for US 70 assume the eventual completion of this critical project and supplement it to fulfill the vision of the Super 70 concept

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
US 70 (southeast of New Bern)	Upgrade to Freeway	Between New Bern and Havelock in Craven Counties	US 17 interchange to proposed Havelock bypass	11 miles	Upgrade existing divided highway to freeway standards (restrict access to side street and close median openings)	Conform with the vision of Super 70, a unified effort to transform US 70 into a freeway from I-40 to the coast; Increase mobility for residents, tourists, troops, military equipment; Allow safer and quicker evacuation during emergencies; Improve access between Cherry Point and the Port of Morehead City
US 70 (west of Dover)	Upgrade to freeway	west of Dover in Jones County	West Kornegay Street to the proposed Kinston Bypass	5 miles	Upgrade existing divided highway to freeway standards (restrict access to side street and close median openings)	Conform with the vision of Super 70, a unified effort to transform US 70 into a freeway from I-40 to the coast; Increase mobility for residents, tourists, troops, military equipment; Allow safer and quicker evacuation during emergencies
US 70 (southeast of Havelock)	Improve existing	Between Havelock and Morehead City in Craven and Carteret counties	Proposed Havelock Bypass to NC 101	17.5 miles	Improve existing divided highway through enhanced access management	Provide an enhanced route between Havelock and Morehead City; increase mobility for residents, tourists, troops, military equipment; Allow safe and quicker evacuation during emergencies; improve access between Cherry Point and the Port of Morehead City
US 70 (northeast of Beaufort)	Improve existing	Northeast of Beaufort in Carteret County	North Carteret Bypass to Olga Road	2.5 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced connection between Port of Morehead City and the North Carteret Bypass; create a primary route from Havelock and Cherry Point to Morehead City; Increase mobility for residents, tourists, troops, military equipment; allow safe and quicker evacuation during emergencies
North Carteret Bypass	New location	Between Havelock and Morehead City in Craven and Carteret Counties	Proposed Havelock Bypass to US 70 near Pleasant Drive in Carteret County	17.5 miles	Construct new freeway	Conform with the vision of Super 70, a unified effort to transform US 70 into a freeway from I-40 to the coast; increase mobility for residents, tourists, troops, military equipment; allow safer and quicker evacuation during emergencies; improve access between Cherry Point and the Port of Morehead City

.

Table 4.4 - US 70 Corridor Roadway Recommendations

NC 24

Within the MGTF Region, NC 24 connects Duplin, Onslow, and Carteret Counties. The roadway — a mixture of five, six, and seven lane facilities with no control of access is identified as an expressway in the Strategic Highway Corridor Concept Plan. In places, it carries up to 52,000 vehicles per day and is approaching its practical capacity in the non-municipal areas and over-capacity in urban areas. These volumes are the result of several factors: (1) its use by the military to transport troops, machinery, and equipment between Jacksonville/Camp Lejeune/ Marine Corps Air Station at New River and the Port of Morehead City for embarkation and debarkation; (2) its use to access the Marine Corps Air Station at Cherry Point via US 70; (3) its use by local traffic to access residencies, businesses, and services; and (4) its use by tourists to access beach communities. NC 24 also serves as the primary deployment route from Camp Lejeune to the Port of Morehead City.

The section of NC 24 between US 17 in Jacksonville and US 70 in Morehead City is a high priority for access management enhancements to improve safety and mobility. Operational issues along NC 24 are exasperated during the summer months due to tourist traffic. The urgency for improvements to this particular stretch of NC 24 is related more to the opportunity to protect the corridor than capacity-driven. That is, the time is now to properly plan land use and transportation decisions concurrently. The recommendations that follow aim to improve the safety and regional mobility of this strategic connection between I-40 and Morehead City.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 24 (northwest of Jacksonville)	Improve existing	Duplin and Onslow counties	I-40 in Duplin County to NC 53 near Jacksonville in Onslow County	46 miles	Improve existing roadway—add shoulders, enhance access management and control the number of new signals	Improves safety for motorists traveling from I-40 to Jacksonville, Camp Lejeune, and New River
NC 24 (southeast of Jacksonville)	Needs improvement	Onslow and Carteret counties	US 17 in Jacksonville (Onslow County) to US 70 in Morehead City (Carteret County)	38.5 miles	Improve existing roadway—access management, add shoulders	Improves safety for motorists traveling between Jacksonville and Morehead City; improves safety and efficiency of transporting troops, machinery, and supplies between Jacksonville, Camp Lejeune, New River and the Port of Morehead City

Table 4.5 - NC 24 Corridor Roadway Recommendations

Other Roadway Projects

Recommendations for the three Strategic Highway Corridors are supplemented with improvements to other regionally-significant roadways. The collective result of the following recommendations is improved access and safety between the MGTF Region's largest cities, NC Ports, MCAS Cherry Point, and Camp Lejeune.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 53	Widen	West of Jacksonville in Onslow County	Holly Shelter Road to Trent Creek Road	4 miles	Widen to multi-lanes	Alleviate congestion on existing two and three lane section for motorists entering Jacksonville or accessing the Jacksonville Bypass
NC 101 (Havelock)	Widen	Havelock in Craven County	US 70 to Outer Banks Drive	2 miles	Widen existing 2-lane road to multii-lanes	Enhance connection between US 70 and access points to Cherry Point; increase mobility for residents, troops, military equipment, allow safer access to Havelock High School
NC 101 (between Havelock and Beaufort)	Improve existing	Between Havelock and Beaufort in Craven and Carteret Counties	Outer Banks Drive in Havelock to US 70 in Beaufort	19.5 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced connection between the Port of Morehead City and the North Carteret Bypass; Increase mobility for residents, troops, military equipment; improve access between Cherry Point and the Port of Morehead City
Catfish Lake Road	Improve existing	Northwest of Havelock in Craven and Onslow Counties	NC 58 to US 70	15.5 miles	Improve existing roadway—widen lanes; add shoulders	Provide an enhanced east-west route in the study area; improve access between Cherry Point/Havelock and Jacksonville; increase mobility for residents, troops, military equipment
Lake Road/ Nine Mile Road	Improve existing	Southwest of Havelock in Craven and Carteret Counties	US 70 to NC 24	13 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced north-south route in the study area; improve access between Cherry Point/ Havelock and Jacksonville; increase mobility for residents, troops, military equipment

Table 4.6 - Other Roadway Projects

Wilmington / North Carolina International Port

In 2005, the North Carolina Ports Authority purchased 600 acres of riverfront property in Brunswick County near Southport to expand the Port of Wilmington. When opened, the expanded North Carolina International Port will handle between two and three million twenty-foot equivalent units (i.e., containers) or more per year. Though the economic benefits for the state are extensive, the roadway network must be improved to handle new freight and support military-related supplies, equipment, and military needs.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 87	Widen	Near Boiling Spring Lakes in Brunswick County	US 17 to River Road	12 miles	Widen to multi-lanes	Alleviate traffic congestion; improve access to Military Ocean Terminal at Sunny Point; improve access to port facilities for military deployments from Camp Lejeune and Fort Bragg; improve general access to proposed North Carolina International Port
I-40 Outer Loop	New location	West of Wilmington in Brunswick and New Hanover Counties	US 17/US 421 at existing interchange with I-140 north of Wilmington in New Hanover County to US 17 near NC 87 in Brunswick County	12 miles	New location roadway	Alleviate traffic congestion; allow safe and quicker evacuation during emergencies; improve access to Military Ocean Terminal at Sunny Point; improve access to port facilities for military deployments from Camp Lejeune; complete urban loop around Wilmington
Cape Fear Skyway	New Location	South of Wilmington	US 17 Bypass to US 421	9.5 miles	New location roadway, including a bridge over the Cape Fear River; Toll facility; preliminary cost estimated at $971.5 million	Alleviate traffic congestion; Allow safer and quicker evacuation during emergencies; improve access to Military Ocean Terminal at Sunny Point; improve access to port facilities for military deployments from Camp Lejeune and Fort Bragg; complete urban loop around Wilmington

Table 4.7 - Wilmington/North Carolina International Port Roadway Recommendations

Military Installation Access

Although the TIP projects and the roadway recommendations for the MGTF Region will help with the safe and efficient flow of military, civilian, and tourism-based traffic, the region's transportation network will continue to experience critical choke points at the access points to the military installations. The following recommendations aim to supplement corridor-based improvements with a series of measures to improve ingress and egress at existing and proposed gate locations.

MCAS Cherry Point

As the main entrance point to MCAS Cherry Point, the US 70/Slocum Road gate experiences significant operational issues during military personnel shift periods. Delay and safety problems result from spillback problems associated with vehicles entering and exiting the base coupled with vehicle inspections and pass verifications. The result is a bottleneck along the US 70 corridor, causing safety and operational issues during peak-hour travel periods. With the influx of additional military personnel and civilian staff, the operation of the Slocum gate will continue to degrade. For these reasons, the City of Havelock has identified the intersection as a priority need for the community.

A feasibility study currently being conducted by a collaboration of the City, Cherry Point, and Department of Defense indicate the need for a grade-separated flyover directly into Slocum Road and the Base with improvements to the gate operation. This project should improve the ingress and egress of military operations as well as improve the security and gate operations to the MCAS Cherry Point. The proposed flyover essentially will eliminate "stop and go" conditions at this strategic gate entrance to the Base and will provide a higher level of operation and safer environment for travel. The enhancements also will serve as a gateway to the community. This project is unfunded at a total probable cost of $18 million.

Camp Lejeune

Today, two gates along NC 24 provide access to Camp Lejeune. The gates — located at Piney Green Road and Holcomb Road — operate over capacity while providing access for vendors, civilians, and military personnel. Regionally, these gates provide ingress/egress for military operations (i.e., supplies and ammunitions) between the base and Southport via US 17 and the movement of military equipment and troops for deployment between the base and Morehead City and Cherry Point via NC 24. With the influx of additional military personnel and civilian staff, the operation of the NC 24 gates will continue to degrade. For these reasons, these gates are critical to the efficient and safe operation of Camp Lejeune.

Although recommended enhancements to the Piney Green Road gate and improvements to the internal road will help, more must be done to disperse military traffic to multiple access points.

To improve the operation and security inspection process, an additional gate has been planned at the Bell Fork Road entrance. This improvement calls for the construction of an inspection area, parking capacity, and a grade-separated flyover into the Base. This project is needed to improve the ingress and egress of military operations as well as improve the security and gate operations to Camp Lejeune.

In addition, the City of Jacksonville has been working with Base personnel and NCDOT to improve the operation of NC 24.

They understand the need to improve this urban primary arterial and have committed to advocate for its improvement. Most recently, the operation of the NC 24 corridor has been improved to include a progression-controlled signal system by NCDOT. This proposed flyover improvement will benefit the users of this facility by providing a higher level of operation along NC 24 and a safer environment for travelers within the community.

Other Improvements

Jacksonville Intelligent Transportation System

Traffic operations within the community of Jacksonville are only as good as the quality of their signal system. The Jacksonville Metropolitan Planning Organization (MPO) has identified the need to develop and implement a community-wide Intelligent Transportation System (ITS). This project would interconnect approximately 135 existing traffic signals to effectively respond to area-wide traffic demands in real time. This project may include installation of traffic cameras, progression controlled signal systems, variable message signs, and the creation of a Traffic Management Center.

The community-wide ITS will improve traffic operations along key corridors within the Jacksonville community as well as the entrances/exits to Camp Lejeune and the Marine Corps Air Station at New River. The full implementation of this project will benefit the City by improving traffic flow, limiting travel delay and improving air quality. This project is unfunded at a total cost of approximately $5.5 million.

Rail

Key recommendations described in this rail assessment and research as they relate to military needs include the following:

- Implement intercity passenger rail services from Wilmington to Raleigh via Goldsboro in phases as funds become available will allow for enhanced military travel options within the region and State
- Work with state and local governments, host railroads, and other business interests to help secure a federal funding partner to obtain the necessary money to develop passenger service. Freight partnerships can be identified for joint funding of track and crossing improvements where there are clear benefits to each party.
- Work with the Department of Commerce, State Ports Authority and Global Transpark to further define benefits and investments needed to reestablish freight rail service between Goldsboro and Wilmington to provide more direct freight access to markets north and west.
- Partner with the State Ports Authority and freight railroads to develop dual rail carrier access to both Wilmington and Morehead City.
- Work with local governments along the routes to refurbish historic stations and partner with the city of Wilmington to acquire property and develop multi-modal station.
- Reopen the 27-mile line segment between Wallace and Castle Hayne to re-establish passenger and freight rail service to the Port of Wilmington. Probably construction cost is listed at $81 million

The movement of freight throughout the southeastern United States has always played an important role in the economic vitality of the region. These recommended improvements will enhance existing facilities and also support port activity in the region. A significant component of this transport element is the waterway ports within the region. In many cases, these same ports and the corresponding supporting highway and rail infrastructure are used by military-related operations.

Ports

Future success begins with an increased understanding of the interrelationship between the ports, rail, and military needs in the area. The NC Ports Authority and other community and military leaders have expressed the desire for a comprehensive rail planning study that specifically addresses the growing needs of area military installations. This study would include an improved understanding of military growth needs and devise a complementary strategy between military, port, and rail growth.

The NC Ports Authority has recently expressed a series of transportation priorities in order to respond to projected growth. However, only those projects that have a direct impact to the MGTF military influx will be included in the final implementation plan for this document.

Roadways

- I-74 upgrade Gastonia to Wilmington (including Monroe Bypass)
- NC International Port Transportation Corridor (to connect the proposed terminal to I-40, I-140, and/or I-74)
- Wilmington By-pass (I-140) (Wilmington Long Range Transportation Plan Priority #1)
- Cape Fear Skyway Bridge (Wilmington Long Range Transportation Plan Priority #2)
- I-40 Extension south to MLK (Wilmington LRTP Priority #4)
- River Road Relocation (around tank farm to improve port expansion) (Wilmington LRTP Priority #8)
- US17/74/76/NC133 widening from four to six lanes from NC-133 to US 421 (Wilmington LRTP #9)
- NC133 widening from two to four lanes from the Cape Fear Skyway to US 17/74/76 (Wilmington LRTP #19)
- I-40 improvements between N. College Road and New Hanover Co. border (Wilmington LRTP #26)
- I-73 in central NC
- I-73 from Lumberton to SC
- Elevated rail crossings related to NC International Port
- Front Street widening and improvements
- Gallant's Channel Bridge (R-3307)
- Completion of US 70 Strategic Corridor including Havelock Bypass, Beaufort Bypass, and Northern Carteret Bypass, Clayton Bypass, Goldsboro Bypass, Kinston Bypass
- Arendell Street port entrance improvements (vicinity of stop lights)

Rail

- Newport River bascule bridge replacement
- Pembroke Northern Bypass rail connecting track (turn at Pembroke)
- Comprehensive rail planning studies that address lack of east-to-west corridor to mid-west (e.g., "Carolina Corridor") and CSX vision that includes NC Ports freight needs -- Advantage West inland port study; 21st Century

Transportation Committee; new NCSPA/Rail Division Port Inland study

- CSX-Ft. Bragg Connector
- Access and improvements to the existing rail line from Davis Yard (located 23 miles north of the NC International Terminal Site in Navassa) to the planned North Carolina International Terminal.
- Castle Hayne to Wallace Rail Restoration

Unlike many modes, regional water ports are complex intermodal facilities. They play a vital role in regional, state and national economics while simultaneously representing critical support to the military mission of national security. For these reasons, the direct and indirect growth needs of ports should play a heightened role in future transportation decision making. Military bases and the NCSPA should cooperate to identify multi modal transportation improvements that complement economic development and military missions. While their priorities may not be identical, in many cases there exists a common set of needs, especially improvements to shared roadway and rail infrastructure. Dramatic increases in commercial port activity as well as tremendous growth in area military bases will require these improvements. The priorities, funding, and implementation of projects by state, regional and local agencies should reflect the importance and need for success at the Morehead City Port and Radio Island facility, Port of Wilmington and Military Ocean Terminal at Sunny Point as well as the future NC International Port.

Public Transit

Although each county is currently served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient
- Onslow—Expand fixed route services for daytime and nighttime to the base
- Craven – Carts to work with MCAS Cherry Point to provide transit service on base without the need to disembark riders mid-trip.

Aviation and Ferry

According to local staff and military officials, demand for airport and ferry service should grow steadily over the next 10-15 years. Key recommendations described in this section as they relate to military needs include the following:

- The Albert Ellis Airport Authority, in cooperation with NCDOT, should prepare hydraulic design plans and upgrade

NC 111 from the Airport entrance to US 258 to prevent future closing due to flooding.

- The US 70 corridor between New Bern and the future Havelock Bypass should be upgraded to freeway standards. Probable construction cost is estimated at $120 million.

Bicycle and Pedestrian

Bicycle and pedestrian facilities are important components of a multi modal transportation network. Bicycle and pedestrian projects should be included as incidental projects for larger roadway improvements.

Implementation Plan

Successful implementation of the Regional Growth Management Plan – Transportation Projects and Initiatives will depend to a great extent on the ability of local, military, and governmental entities to collaborate with one another. The Action Plan provides a summary of the implementation strategy, including a list of specific projects, planning level cost estimates, and agencies responsible for implementing the vision. The intent of this section is two-fold: first, it must provide decision-makers with an implementation blueprint which will enable them to track progress and schedule future year improvements; second, clearly defined action items will enable the MGTF to identify public and private investment opportunities that are achievable through well-guided transportation policies that will support the safe transport of military personnel, goods, and services – including base to base mobility, port to base mobility, and residential to base mobility.

Implementation will be a collaborative effort between multiple parties

The complex intermodal relationship of highways, rail, ports, and public transportation often results in a mix of on-site and offsite improvements that enhance the accessibility and mobility of the military. For this reason, a multi-faceted approach to implementation is required. Coordinated leadership from the NCDOT, NC State Ports Authority (NCSPA) and military is required in order to communicate and effectively lobby federal, state, regional, and local agencies.

A vigorous effort should also be made by the military to seek out opportunities for participation in regional transportation planning initiatives especially Metropolitan Planning Organizations (MPO) and Rural Planning Organizations. Both agencies are required to maintain multi-modal transportation plans and the incremental implementation of their plans plays a role in the overarching shared strategy of military and port needs. Both organizations include provisions for both technical and policy related committees for which the military should be represented. A shared voice of priority will serve to protect the integrity of potential future projects as well as help to secure vital funding when opportunities arise.

A blue ribbon committee with representatives appointed by the Governor's office (including NC Department of Commerce), NCSPA, and military should be convened to elevate the awareness and importance of the region's transportation needs. An emphasis on national security, military growth, and operations, national economics, state economics, and transportation mobility could serve as the emphasis for the committee. The results of this activity would be used to increase awareness and support all levels for implementing area priorities and serve as a mandate for local, regional, and state agencies to cooperate on the strategic implementation of a common set of priorities:

- Enhance military participation in local, regional state planning including regional MPO and RPO activities

Highway — Action Items	Priority	Responsible Party
Multi-Agency Collaboration/Blue-ribbon Committee - Enhance military participation in local, regional state planning including regional MPO and RPO activities. Convene a blue-ribbon committee to elevate awareness of the strategic importance of the military growth in the region: lobby for continued implementation of priority projects.	High	NCDOT/ Cherry Point/ Camp LeJeune/ NCPorts/ Jax MPO
US 17 - Widen to multi-lanes, Jones County Line to US 258/NC 24 – unfunded.	High	NCDOT
R-2514 - US 17 - Widen to multi-lanes with bypasses of Belgrade, Maysville, and Pollocksville, north of Jacksonville to New Bern Bypass - Unfunded portion is $95.9 million.	High	NCDOT
US 70 (southeast of Havelock) - Improve existing divided highway through enhanced access management, proposed Havelock Bypass to NC 101 – unfunded.	High	NCDOT
U-3810 - Piney Green Road - Widen to multi-lanes, NC 24 to US 17 – unfunded.	High	NCDOT/ Jax MPO
US 70 (southeast of New Bern) - Upgrade existing divided highway to freeway standards, US 17 interchange to proposed Havelock Bypass – unfunded.	High	NCDOT
R-4463 - NC 43 Connector (New Route) - Four-lane divided freeway on new location, NC 43-55 to US 17 – unfunded.	High	NCDOT
R-1015 - Havelock Bypass (US 70 - New Route) - Four lanes divided on new location, US 70 south of Lewis Farm Road in Craven County to US 70 north of the Carteret County line.	High	NCDOT
R-3307 - US 70 - Multi-lanes part on new location, Radio Island to US 70 north of Beaufort near Olga Road.	High	NCDOT/ NCPorts
R-3300 - Hampstead Bypass (US 17 - New Route) - Multi-lanes on new location, US 17 near Long Leaf Drive in Pender County to US 17 (John Jay Burney Jr. Freeway) in New Hanover County.	High	NCDOT
Catfish Lake Road - Improve existing roadway – widen lanes; add shoulders, NC 58 to US 70 – unfunded.	High	NCDOT
US 70 (northeast of Beaufort) - Improve existing roadway – access management; add shoulders, North Carteret Bypass to Olga Road – unfunded.	High	NCDOT
NC 24 (southeast of Jacksonville) - Improve existing roadway – access management; add shoulders, US 17 in Jacksonville (Onslow County) to US 70 in Morehead City (Carteret County) – unfunded.	High	NCDOT
US 70/Slocum Road Gate Improvements @ MCAS Cherry Point - New grade-separated flyover directly into Slocum Road and the Base – unfunded.	High	Cherry Point/ DOD
NC 24 New Gate #1 @ Camp Lejeune – New gate (with flyover) at the Bell Fork Road entrance. This includes major roadway improvements and new bridge over river.	High	Camp LeJeune/ DOD
Lake Road / Nine Mile Road - Improve existing roadway – access management; add shoulders, US 70 to NC 24 - unfunded.	High	NCDOT
U-4007 - US 17; various other streets - Add additional lanes to US 17; Extend the Jacksonville Bypass to the north to Western Boulevard with side street improvements; Extend Huff Drive to the Jacksonville Bypass, US 17 Business/Jacksonville Bypass to Drummer Kellum Road – unfunded.	Medium	NCDOT/ Jax MPO

Table 4.8.1 - Implementation Action Plan

Highway — Action Items	Priority	Responsible Party
U-4906 - Gum Branch Road (SR 1308) - Widen to 3 lanes, east of Richlands to Summersill School Road - unfunded.	Medium	NCDOT/ Jax MPO
R-2204 - NC 11/NC 903 - Four lanes divided; some on new location, NC 24 to Rosewood Drive north of Pink Hill.	Medium	NCDOT
NC 101 (Havelock) - Widen existing 2-lane road to multi-lanes, US 70 to Outer Banks Drive – unfunded.	Medium	NCDOT
U-5106 - Northwest Loop (New Route) - Four lanes divided; some on new location, US 258/NC 24 to US 17 - unfunded.	Medium	NCDOT/ Jax MPO
North Carteret Bypass - Construct new freeway, proposed Havelock Bypass to US 70 near Pleasant Drive in Carteret County – unfunded.	Medium	NCDOT
R-2513 - US 17 - Widen to multi-lanes, Spruill Town Road to Possum Track Road - unfunded.	Medium	NCDOT
Cape Fear Skyway - New location roadway, including a bridge over the Cape Fear River, US 17 Bypass to US 421 – unfunded.	Medium	NCDOT
NC 24 Improve Gate #2 @ Camp Lejeune – Gate improvements at the Piney Green entrance. This includes major roadway improvements - unfunded.	Medium	Camp LeJeune/ DOD
R-3302 – Burgaw Bypass (New Route) – Widen; New Location, NC 53 at New Savannah Road to NC 53 west of I-40 – unfunded.	Low	NCDOT
R-2531 – NC 41 - Widen to multi-lanes, NC 11 to I-40.	Low	NCDOT
R-2303 – NC 24 - Four lanes divided; some on new location, west of Maxwell Road/Clinton Road in Cumberland County to I-40 in Duplin County.	Low	NCDOT
U-4907 – Country Club Road - Widen to three lanes, North of Office Park Drive to Piney Green Road - unfunded.	Low	NCDOT/ Jax MPO
NC 53 - Widen to multi-lanes, Holly Shelter Road to Trent Creek Road – unfunded.	Low	NCDOT/ Jax MPO
NC 101 (between Havelock and Beaufort) - Improve existing roadway – access management; add shoulders, Outer Banks Drive in Havelock to US 70 in Beaufort – unfunded.	Low	NCDOT
R-3403 - US 17 - Widen to multi-lanes, Mills Street in Bridgeton to NC 43.	Low	NCDOT
Cape Fear Skyway - New location roadway, including a bridge over the Cape Fear River, US 17 Bypass to US 421	Low	NCDOT

Table 4.8.2 - Implementation Action Plan

Rail & Port — Action Items	Priority	Responsible Party
Rail Restoration (New Tracks) - Castle Hayne to Wallace.	High	NCDOT/ CSX
Funding of Passenger Rail Service - Work with state and local governments, host railroads, and other business interests to help secure a federal funding partner to obtain the necessary money to develop passenger service.	High	FTA/FHWA/ NCDOT/ WMPO
Rail Access and Improvements - to the existing rail line from Davis Yard to the planned North Carolina International Terminal.	Medium	NCDOT/ CSX/ NCPorts
Implement Intercity Passenger Rail Services - from Wilmington to Raleigh via Goldsboro for enhanced military travel options within the region and State	Medium	NCDOT
Pembroke Northern Bypass (Rail) - rail connecting track (turn at Pembroke).	Low	NCDOT/ CSX/ NCPorts
Freight Rail Service - Work with the Department of Commerce, State Ports Authority and Global Transpark to further define benefits and investments needed to reestablish freight rail service between Goldsboro and Wilmington.	Low	NCDOT/GTP/NCRR/ CSX/DOC/ NCPorts

Public Transportation — Action Items	Priority	Responsible Party
Aggressively Pursue Transit Funding - Identify, apply, and use funding available through federal funding programs, in particular, Job Access and Reverse Commute (Section 5316), New Freedoms (Section 5317), and Transportation for Elderly Persons and Persons with Disabilities (Section 5310).	High	FTA/ NCDOT/ County Planning Staff/ ECC
County Collaboration - Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient.	High	County Planning Staff/ ECC
Camp Lejeune/OUTS Transit Services — Expand OUTS fixed route services for daytime and nighttime to the base.	Medium	Camp LeJeune/ OUTS/ Jax MPO
Cherry Point/CARTS Transit Services - CARTS to work with MCAS Cherry Point to provide transit service on base without the need to disembark riders mid-trip.	Medium	Cherry Point/ CARTS
Cherry Point/CARTS Transit Services - CARTS to work with MCAS Cherry Point to provide transit service on base without the need to disembark riders mid-trip.	Medium	Cherry Point/ CARTS

Aviation & Ferry Services — Action Items	Priority	Responsible Party
Albert Ellis Airport Entrance Improvements - prepare hydraulic design plans and upgrade NC 111 from the Airport entrance to US 258 to prevent future closing due to flooding.	High	NCDOT/ Albert Ellis Airport
Coastal Carolina Regional Airport Access Improvements - The US 70 corridor between New Bern and the future Havelock Bypass should be upgraded to freeway standards.	High	NCDOT/ Coastal Carolina Regional Airport

Bicycle & Pedestrian — Action Items	Priority	Responsible Party
Mountains-to-Sea Trail – Aggressively pursue full funding for completion of the Mountains-to-Sea trail within 7-county region.	High	NCDOT/ County Planning Staff
East Coast Greenway (ECG) – Work with local and State agencies to fully fund and implement the East Coast Greenway within 7-county region.	High	NCDOT/ County Planning Staff
Bicycle and Pedestrian Provisions in Incidental Highway Projects - Bike and pedestrian provisions should be strongly pursued as incidental projects in roadway improvements .	High	NCDOT/ Counties

Table 4.8.3 - Implementation Action Plan

- Convene a blue-ribbon committee to elevate awareness of the strategic importance of the military growth in the region: lobby for continued implementation of priority projects.

Local, state, and private partnerships offer strategic advantages to implementing improvements on a timely basis, especially considering the level of military impacts to the MGTF Region. The purpose of the Action Plan is to recognize these challenges and suggest strategies and resources to address each challenge.

With this in mind, the following Action Plan identifies next step items for each modal element described and summarized in the Regional Chapter of this plan. Specific recommendations include transportation policy and agency collaboration, committed transportation projects, interim and long-term transportation improvements (High, Medium, and Low priority), and potential funding strategies. Ultimately, these recommendations can be administered concurrently or as military priorities and regional initiatives present the opportunity to do so.

Funding Strategies

There are a variety of funding strategies to implement the recommended improvements given in this section. These funding strategies include state and local monies, which are often limited or committed well into the future. Grant funding from the state typically requires a local match, but these monies may be used to cover many of the capital and operating expenses identified in the transportation recommendations.

An incremental funding approach would be possible, but is not as attractive because the full benefit of the collective improvements would not be realized for quite some time. Alternative funding sources for expediting implementation and construction include special assessments along key corridors and/or a locally-adopted sales tax or tax incentives.

One thing is certain: with the current municipal and state funding shortfall, the most critical steps toward implementation will be carried by leaders identified within the community and military installations. In collaboration with federal, state and local officials, their collective efforts will lead to a transformation of a safe and high level of mobility within the MGTF Region.

Funding Opportunities

The implementation of region-wide transportation improvements can occur through adoption of local and state policies and programs, as well as through the receipt of federal contributions. With this in mind, it will be important for the MGTF and NCDOT to identify funding sources to implement the recommendations of this plan. While some projects and programs will be funded by the military installations or NCDOT, alternatives are also available to provide financial support for implementing the transportation recommendations. The following funding opportunities should be considered to implement the regional recommendations presented in this plan:

Funding - Action Items	Priority	Responsible Party
Lobby NCDOT, Board of Transportation and the State legislature to include partial funding of improvements in the Phase II Stimulus Package and next Transportation Improvement Program (TIP) to design and implement the recommended US 17, US 70 and NC 24 corridor improvements. www.stimulusrecoveryplan.net	High	MGTF/ Jax MPO/ WMPO/ County Board of Commissioners
Powell Bill funds are collected by the state in the form of a gasoline tax. The amount of these funds distributed to a municipality is based on the number of street miles to be maintained and the municipality's population. These monies can be used for access management, sidewalks and maintenance-related improvements. www.ncdot.org/programs/Powell_Bill	High	City Council
Aggressively pursue City and County matching funds for the Energy Efficiency and Conservation Block Grant (EECBG) Program sponsored by the Department of Energy. This funding program can be used for bike and pedestrian infrastructure improvements, operational and system (signals) improvements and planning activities. www.eecbg.energy.gov/	High	MGTF/ Jax MPO/ WMPO/ Counties
Solicit NCDOT Division Spot Safety, Hazard Elimination, Governor's Highway Safety Program (GHSP), Economic Development, and Contingency Funds to implement corridor and safety improvements. www.ncdot.org/programs/ghsp/	High	MGTF/ Jax MPO/ WMPO/ Counties/ NCDOT
Consider a Local Option Sales Tax. The NC Legislature in 2007 gave counties the authority to ask voters for permission to levy a 0.4 percent land transfer tax or an additional quarter-cent sales tax. A county-wide sales tax could be used to pay for major investment projects. However, a sales tax would require the identification of specific projects and special legislative authority.	High	City/County Board of Commissioners
NC cities have had a successful history of utilizing transportation bonds in the strategic implementation of local roadways, transit, and non-motorized travel throughout the region. Voters in communities both large and small regularly approve the use of bonds in order to improve their transportation system. Some improvements identified in this plan could be candidates for funding from a future transportation bond program.	High	City/County Board of Commissioners
Pursue NCDOT STP-Enhancement grant funding to implement bike and pedestrian improvements. These funds are administered through a grant program with a 20% local match requirement. Website: www.ncdot.org/financial/fiscal/Enhancement	High	MGTF/ Jax MPO/ WMPO/ Counties/ NCDOT

Table 4.9.1 - Funding Action Plan

Funding - Action Items	Priority	Responsible Party
Adequate Public Facilities Ordinances (APFOs) – Also referred to as Concurrency Regulations, adequate public facilities ordinances allow local governments to deny or delay new developments if existing government services (water and sewer, roads, schools, fire and police) cannot support it. APFOs place the burden on developers to ensure adequate services are in place for new developments they propose, fund such improvements or postpone plans until such services are in place. State legislation allows municipalities to enact such regulations. www.belkcollege.uncc.edu/resources/pdfs/APFOLegalReviewJan24-06.pdf	High	City Council/ Board of Commissioners
Tax Increment Financing (Self-Financing Bonds) - In 2004, North Carolina voters approved self-financing bonds, also known as tax increment financing (TIF). To qualify for self-financing bonds, a development must include private and public expenditures that will result in job creation and an expansion of a local government tax base. The development must create more than $150 million increment or increase in property value in a defined district. The location of the new development must be in a section of a community that is deteriorated, undeveloped, underdeveloped or in need of rehabilitation. Examples of eligible projects are new manufacturing plants, reuse of abandoned or vacant facilities, affordable housing, commercial developments in inner-city areas and redevelopment of areas damaged by environmental pollution or natural disasters. www.nctreasurer.com	High	City Council/ Board of Commissioners
Impact Fees – Developer impact fees and system development charges are another funding option for communities looking for ways to pay for transportation infrastructure. They are used most commonly for water and wastewater system connections or police and fire protection services, but they have been used recently to fund school systems and pay for the impacts of increased traffic on existing roads. Impact fees place the costs of new development directly on developers and indirectly on those who buy property in the new developments. Impact fees free other taxpayers from the obligation to fund costly new public services that do not directly benefit them. The use of impact fees requires special authorization by the North Carolina General Assembly. www.impactfees.com	High	City Council/ Board of Commissioners

Table 4.9.2 - Funding Action Items Table

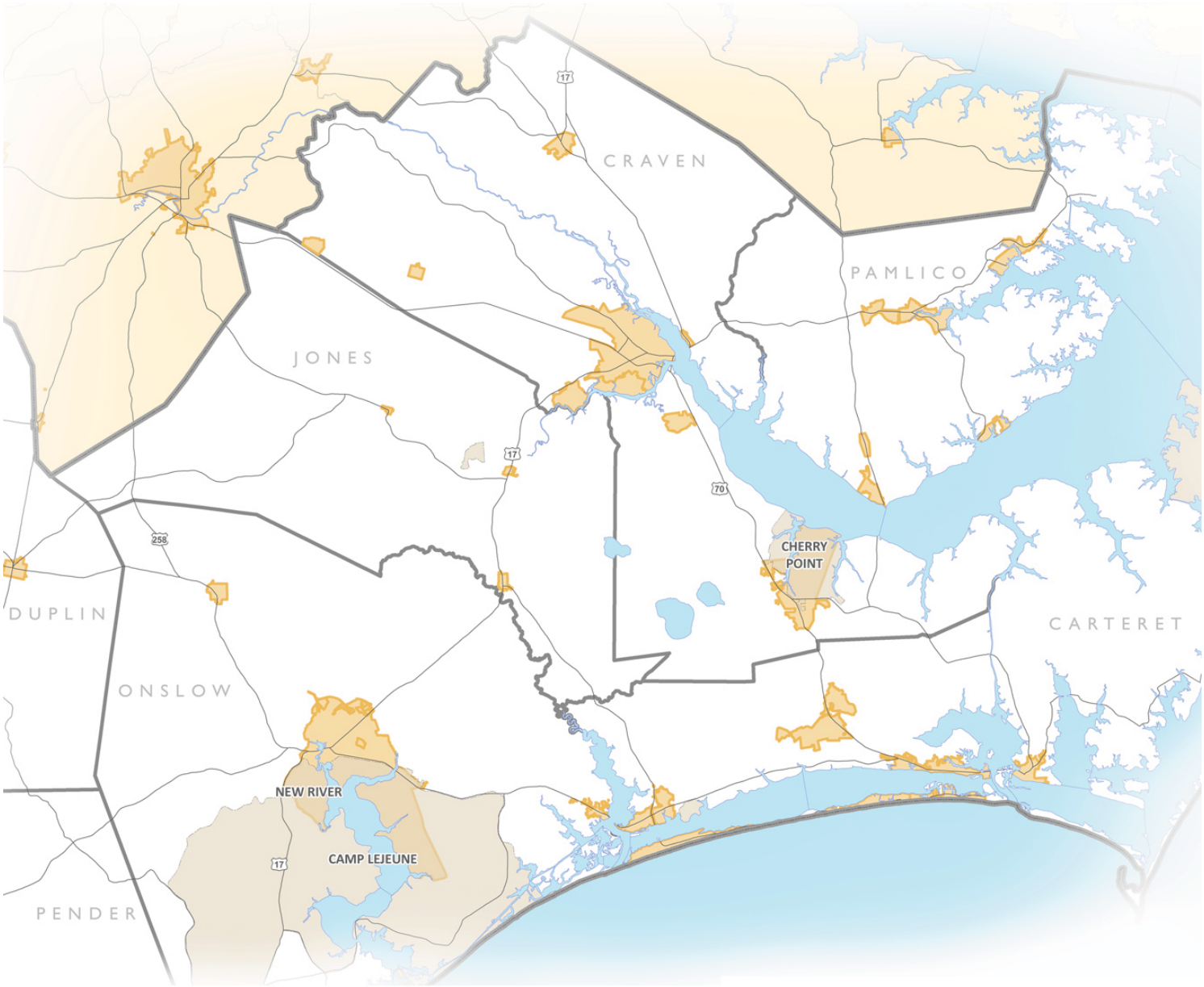
Funding - Action Items	Priority	Responsible Party
Safe Routes to School has encouraged many children to bike and walk to school by promoting bicycle and pedestrian facility funding. Funding for this federal program is provided through SAFETEA-LU, including $2.4 million for North Carolina for FY 2009. The program provides funding for individual schools to create route plans or develop facilities (i.e., sidewalks, etc.) that create a safer walking and biking environment for their students. North Carolina has a yearly application program for which any school, school district, municipality or other governmental body, or non-profit association may apply. www.ncdot.org/transit/bicycle/saferoutes/SafeRoutes.html	High	City Council/ Board of Commissioners/ Jax MPO/ WMPO/ NCDOT
Rail Industrial Access Program Policies and Procedures - NCDOT will help fund the cost of constructing rail tracks required to serve a new business or a business expansion as part of a statewide effort to attract new industry to North Carolina. The purpose of the funds is to provide an incentive for companies to locate or expand in North Carolina rather than out of state. www.bytrain.org/industrial/programsummary.html	High	City Council/ Board of Commissioners/ Jax MPO/ WMPO
The Job Access and Reverse Commute (JARC - 5316) program was established to assist welfare recipients and low-income persons seeking to obtain and maintain employment. The JARC program funds transportation projects designed to help low-income individuals access to employment and related activities where existing transit is either unavailable or insufficient. The JARC program also funds reverse commute transit services available to the general public. www.fta.dot.gov/funding/grants/grants_financing_3550.html	High	City Council/ Board of Commissioners/ ECC
Transportation for Elderly Persons and Persons with Disabilities (5310) provides formula funding to States for the purpose of assisting private nonprofit groups in assisting the elderly and persons with disabilities when the transportation service provided is unavailable or insufficient to meeting these needs. www.fta.dot.gov/funding/grants/grants_financing_3556.html	High	City Council/ Board of Commissioners/ ECC
The New Freedom grant program aims to provide assistance to Americans with disabilities seeking integration into the work force. Lack of adequate transportation is a primary barrier to work for individuals with disabilities. The New Freedom formula grant program seeks to reduce barriers to transportation services and expand the transportation mobility options available to people with disabilities beyond the requirements of the Americans with Disabilities Act (ADA) of 1990. www.fta.dot.gov/funding/grants/grants_financing_3549.html	High	City Council/ Board of Commissioners/ ECC

Table 4.9.3 - Funding Action Items Table

Conclusions

The transportation recommendations set forth in this module of the MGTF Regional Growth Management Plan adhere to good planning practices and encourage sustainable development by integrating transportation and land use decisions. The recommendations and analysis were created through a collaborative process between state agencies, local governments, and military representatives and will effectively engage community leaders to create a comprehensive planning tool that directs future transportation decisions within the MGTF Region. Through this collaborative process, the MGTF and its constituents have created a comprehensive assessment of the transportation needs and priority investments for the MGTF Region. The desire is to create a consistent vision as well as a planning tool that can be used by State, local and military officials to implement the strategic transportation improvements listed here, ultimately, leading to improved safety and mobility options for the citizenry and military personnel of this region.

The implementation of recommendations will only be realized based on the collective efforts of volunteers and stakeholders associated with the Military Growth Task Force. The MGTF will continue to play an important role in coordination and advocacy with the intent to complement local efforts to implement the regional plan priorities.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Infrastructure

Infrastructure

Introduction

Problem Statement

Military growth combined with a challenging regulatory environment creates pressure and stress on infrastructure in the North Carolina Military Growth Task Force (MGTF) Region. For purposes of this module, infrastructure includes water, sewer, reclaimed water, stormwater, solid waste, and telecommunications. This infrastructure needs to be in place to not only sustain the quality of life current residents expect, but to promote economic development in the region and to ensure the needs of future military personnel and their dependents are met.

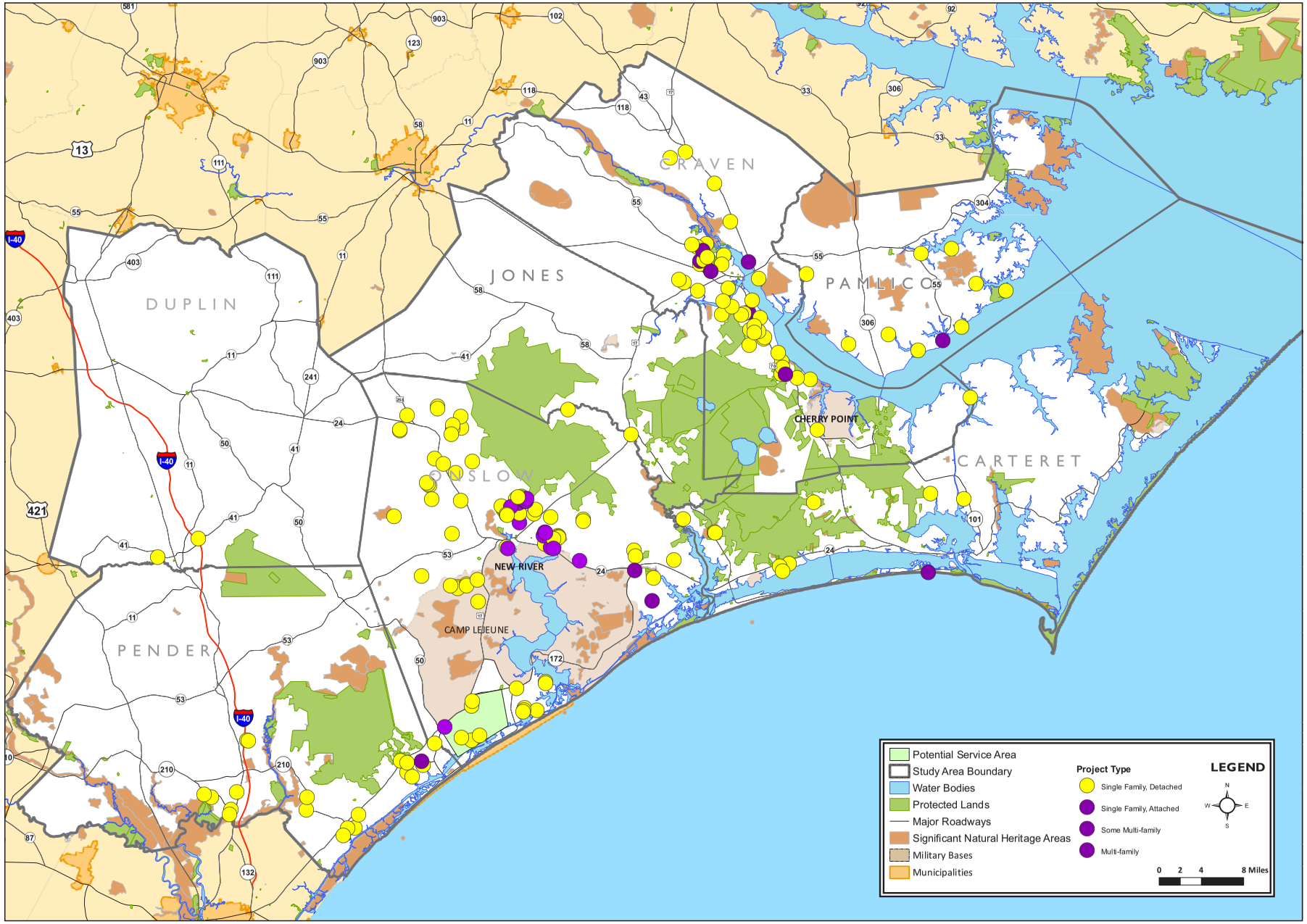
This module will discuss existing conditions, indicating whether existing capacities are sufficient to meet the needs associated with expected growth or whether improvements or expansions are needed. In addition, recommendations and strategic actions are made to overcome the challenges facing infrastructure in the MGTF Region.

Effects of Military Growth

The planning horizon for infrastructure needs spans the years 2007-2011. Many of the regions infrastructure providers (both public and private) have already experienced growth with the recent housing boom in 2007 and early portions of 2008. Even with the economic slowdown, proposed developments are still being planned in the MGTF Region. Between 2005 and 2009, 19,135 housing units were approved in the region, which will add additional demands on existing and planned infrastructure. While some infrastructure services may be considered non-necessities, water and sewer availability is a necessity for homes and businesses. For businesses, services such as telecommunications are also essential for operations and are expected by many business owners and entrepreneurs when looking to invest in a community.

It is essential to plan properly for the influx of military growth to ensure that infrastructure lines are sized correctly, capital improvement dollars are allocated to geographic locations where the influx of military will be the greatest, and basic housing needs are met for the troops, their families, and the businesses that support these men and women. Identification of funding available for infrastructure needs due to military growth is essential to maintaining current rates for existing customers so that the burden of military growth does not solely rely on existing residents and businesses owners in the region.

As military growth continues, increasing environmental regulatory demands at the federal and state levels are being placed on the infrastructure agencies in the MGTF Region. Current regulations require that infrastructure providers expend additional capital to provide existing and future customers with service. These regulations, combined with proposed military growth, create stress on infrastructure providers to provide existing customers with service while expanding the system to allow for growth.



COMMITTED RESIDENTIAL DEVELOPMENTS

Figure 5.0

Approved Development Projects in the Study Area
2005-2009; in various stages of completion.

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Background

The United States Marines Corps (USMC) will be growing the local bases in the MGTF Region (MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point) by 11,477 active duty personnel and Department of Defense (DoD) employees. The total number of dependents accompanying the military personnel is estimated at 13,500 people, while induced growth from vendors and support personnel is estimated at 15,000 people. Combined, this is a region-wide population increase of 39,977. With natural growth for the MGTF Region at 25,157 people based on the 2000 US Census Bureau, the region-wide population increase between 2007 and 2011 is 65,134.

Population Growth Summary

Sub-county housing and population projections are not available in this plan because approved developments are not built out; however, review of the location of committed residential developments in the region reveal that growth is concentrated in certain areas of the region (see Committed Residential Developments).

Committed Residential Developments

The majority of growth due to military expansion will occur in Onslow and Craven Counties due to the proximity of MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point. Across the region, growth will be located near major highways, including I-40 in Duplin and Pender Counties, US 17 in Pender, Onslow, and Craven Counties, NC 24 in Onslow and Carteret Counties, and US 70 and NC 43 in Craven County. In addition, along the coast all counties are expecting growth, and these developments are anticipated to have higher-end home prices (> $300,000).

Based on these geographic concentrations of growth combined with system capacity deficiencies and regulatory changes, infrastructure needs were identified that would sustain military growth in the MGTF Region through the 2011 planning period.

Guiding Principles

Primary Goal

The goal of the Infrastructure module is to accurately assess the region's current infrastructure needs and create a strategy which would allow the region to provide the infrastructure necessary to allow for military growth within the region while continuing to be good stewards of the environment.

Level of detail

The level of detail represented for infrastructure is an overview of system capacities and demands and operating challenges where reported, including evaluations of existing systems.

While geographic locations of housing needs (beyond those currently vacant) were not identified beyond the county-determined housing needs, infrastructure needs did consider MCB Camp Lejeune and MCAS's New River and Cherry Point's Housing Market Analysis (HMA) dated 2008 found in Appendix L. An economic consultant performs a housing market analysis once every two years for the region's bases for areas within a 60-minute drive of the base. Active duty personnel are not required to live in the HMA, but for this plan it is a planning-level assumption that the majority of military growth will occur within the HMA.

Based on the housing gap analysis (see **Table 1.22**), there are a number of unoccupied residences within the MGTF Region. In addition, there are several planned developments that are partially built or not started but have received final approval by their jurisdictions. It is assumed that all existing residences independent of occupancy have water and sewer allocated

to them. Un-built homes are not assumed to have water and sewer allocated. Because differing service areas may have different demand projections for approved per-home water and sewer, and because geographic locations of un-built residences are not provided beyond the county, accepted NCDENR Statewide water and sewer demand projections per residence were allocated to the un-built houses. These residential demand projections are 400 gpd per water connection (NCAC T15A.18C.0400 – Water Supply Design Criteria) and 360 gpd per residence for sewer assuming a 3-bedroom house (15A NCAC 02T.0114 Wastewater Design Flow Rates).

Table 5.1 summarizes the Housing Module findings for housing needs in the MGTF Region and their corresponding water and sewer demands. Regardless of growth, Pender and Onslow Counties will have additional water and sewer demand because of an existing housing deficit. Minimum levels for the remaining Counties assume that vacant housing can handle the growth through 2011.

County	Total Remaining Housing Supply	Un-built Total Homes	Projected Water Demand (MGD) Range	Projected Sewer Demand (MGD) Range
Craven	930	4,467	0.0-1.79	0.0-1.61
Carteret	318	1,437	0.0-0.57	0.0-0.52
Pamlico	766	1,497	0.0-0.60	0.0-0.54
Pender	-1,985	1,194	0.0-0.79	0.0-0.71
Duplin	85	230	0.0-0.09	0.0-0.08
Jones	164	225	0.0-0.09	0.0-0.08
Onslow	-2,109	5,242	0.84-2.10	0.76-1.89

Table 5.1 - Housing Needs and Corresponding Water and Sewer

Total remaining housing supplies with a negative number indicates a deficit in existing housing based on civilian and military growth. Because Pender County's recorded un-built homes do not exceed its housing deficit, only one number was reported for Pender County.

Existing Conditions

Water

Potable water facilities are defined as structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Supply

Groundwater is the primary source of potable water in the region, with the Black Creek Cretaceous Aquifer being the major source. Some public water providers in the MGTF Region have transitioned to using the Castle Hayne aquifer for water supply.

Water Utility Companies

Water service is available to residents and businesses in portions of the region through a combination of public and private water providers – including municipalities, counties, authorities, and private utility companies. Water distribution

systems generally serve the municipalities of the region through a series of groundwater wells and water lines. In general, Craven, Jones, Duplin, and Onslow County have service extensions county-wide. Some portions of the MGTF Region are not served with public water, including the more rural portions of each of the 7-Counties and the rural portions of Pender, Carteret, and Pamlico Counties. The majority of the rural portions of the region are served with private property-owner groundwater wells. **Figure 5.1** shows the water providers in the region.

Water Treatment

There are several treatment plants operating in the region as shown in **Figure 5.1**. These treatment plants supply water by groundwater wells that draw water from the Black Creek Cretaceous aquifer and Castle Hayne aquifer.

Regulations

In recent years, the Black Creek Cretaceous aquifer has been characterized as stressed, and aquifer withdrawals are causing significant drawdown and impairing water quality in the region. In addition to increased drawdowns, saltwater was able to migrate into the aquifer, creating saltwater intrusion. The North Carolina Environmental Management Commission (EMC) and the North Carolina Department of the Environment and Natural Resources (NCDENR) studied the aquifer, and the resulting action was the creation of the Coastal Plain Capacity Use Area (CCPCUA) rules. The CCPCUA rules were established into law in the North Carolina Administrative Code (NCAC) under 15A NCAC 2E.0501-0507 and went into effect on August 1, 2002 (see **Appendix M**). These CCPCUA rules apply to several counties in eastern North Carolina including all the MGTF Region counties except Pender, and nearby Beaufort, Edgecombe, Greene, Lenoir, Martin, Pitt, Washington, Wayne, and Wilson Counties.

The CCPCUA rules have identified that water from the Black Creek Cretaceous Aquifer is being withdrawn at rates greater than its ability to recharge, thus limiting the useful life of the Black Creek aquifer. To limit the withdrawals of the Black Creek aquifer to a sustainable rate, CCPCUA rules require users of the Black Creek Aquifer to limit withdrawals gradually over a 16-year period and to encourage the use of other water supplies including alternative aquifers, surface water, and other sources. There are few water treatment plants in the MGTF Region because of the high water quality in the Black Creek aquifer. Historically, these treatment plants are local to each well, and providers only need add chlorine or fluoride as treatment. Over the 16-year period, regulated water users (users pumping more than 100,000 gpd) will be required to reduce water use from the Black Creek Cretaceous aquifer up to 75% over 3 phases (6 years, 5 years, and 5 years). Thus, many of the water providers in the MGTF Region are required to reduce use 25% over the first 6 years (to August 2008), an additional 25% over the following 5 years (August 2008 to August 2013), and an additional 25% over the remaining 5 years (August 2013 to August 2018).

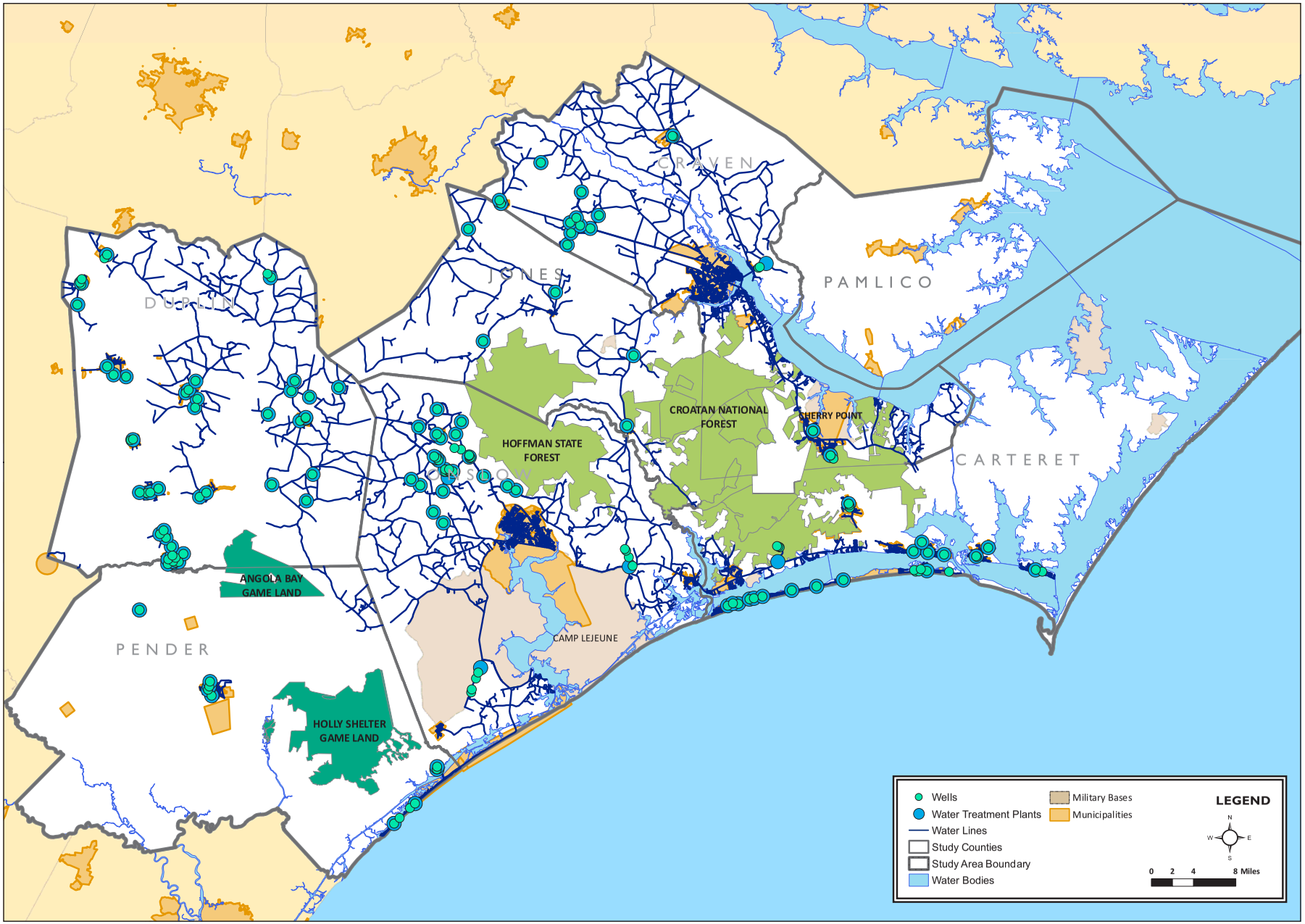
In addition, regulated water users will be required to implement water conservation measures that may include:

- Conservation ordinances
- Leak detection programs
- Tiered rate structures to encourage conservation
- Plumbing retrofit programs
- Public education advocating water conservation measures
- Goal based conservation plans

Details on the rule's impacts on the region are found in the Needs Assessment section of the Regional Growth Management Plan. NCDENR's Division of Water Resources monitors saltwater intrusion in the region through a series of monitoring wells

REGIONAL GROWTH MANAGEMENT PLAN

INFRASTRUCTURE



REGIONAL WATER MAP

Figure 5.1

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

that are sampled every 3 to 4 years. **Figure 5.2** shows the approximate location of saltwater intrusion in the region.

Pending Regulations

Representative Tucker (Duplin County) has introduced House Bill (HB) 643, which proposes creating a salinity barrier between saltwater and groundwater in an effort to protect the MGTF Region's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the Reclaimed Water section of the Regional Growth Management Plan.

Sanitary Sewer

Sanitary sewer facilities are defined as structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems.

Wastewater Treatment

A combination of several public utility companies and community private package wastewater treatment plants (WWTPs) provide sanitary sewer service to residents and businesses in their service areas. These service areas generally cover the municipalities of the region, but the majority of rural, unincorporated portions of the region are not served with public sewer. **Figure 5.3** shows the sewer providers and their service areas. The remainder of the population use septic systems for the collection, treatment, and disposal of sewage. A brief summary of municipal and private systems is provided below. More detailed information on sewer systems can be in found in the individual county modules of this plan.

The majority of wastewater treatment plants in the MGTF Region use some form of land application, spray irrigation, or infiltration basin for wastewater effluent. In some locations, such as the City of Havelock, Town of Burgaw, and MCB Camp Lejeune, wastewater effluent is discharged as a point source in streams or rivers. These point discharges are regulated through the state's NPDES program, and waste load allocations are approved on an individual basis based on the biological, chemical, and physical characteristics of the wastewater effluent and of the body of water in which the effluent is discharged.

Sewage collected by sewer providers is treated and disposed of at one of approximately 28 wastewater treatment plants in the region. **Figure 5.3** shows the location of the wastewater treatment plants in the region. **Table 5.2** details the permitted capacity for each county. Specific sewer provider capacities and actual usage is summarized in the individual county Infrastructure sections of the plan.

.

County	Permitted Capacity (MGD)
Carteret	3.7
Craven (including MCAS)	13.4
Duplin	7.6
Jones	0.9
Onslow (including 15 MGD MCBCL)	25.73 (incl. 3 MGD City of Jacksonville upgrades)
Pamlico	1.077
Pender	4.72

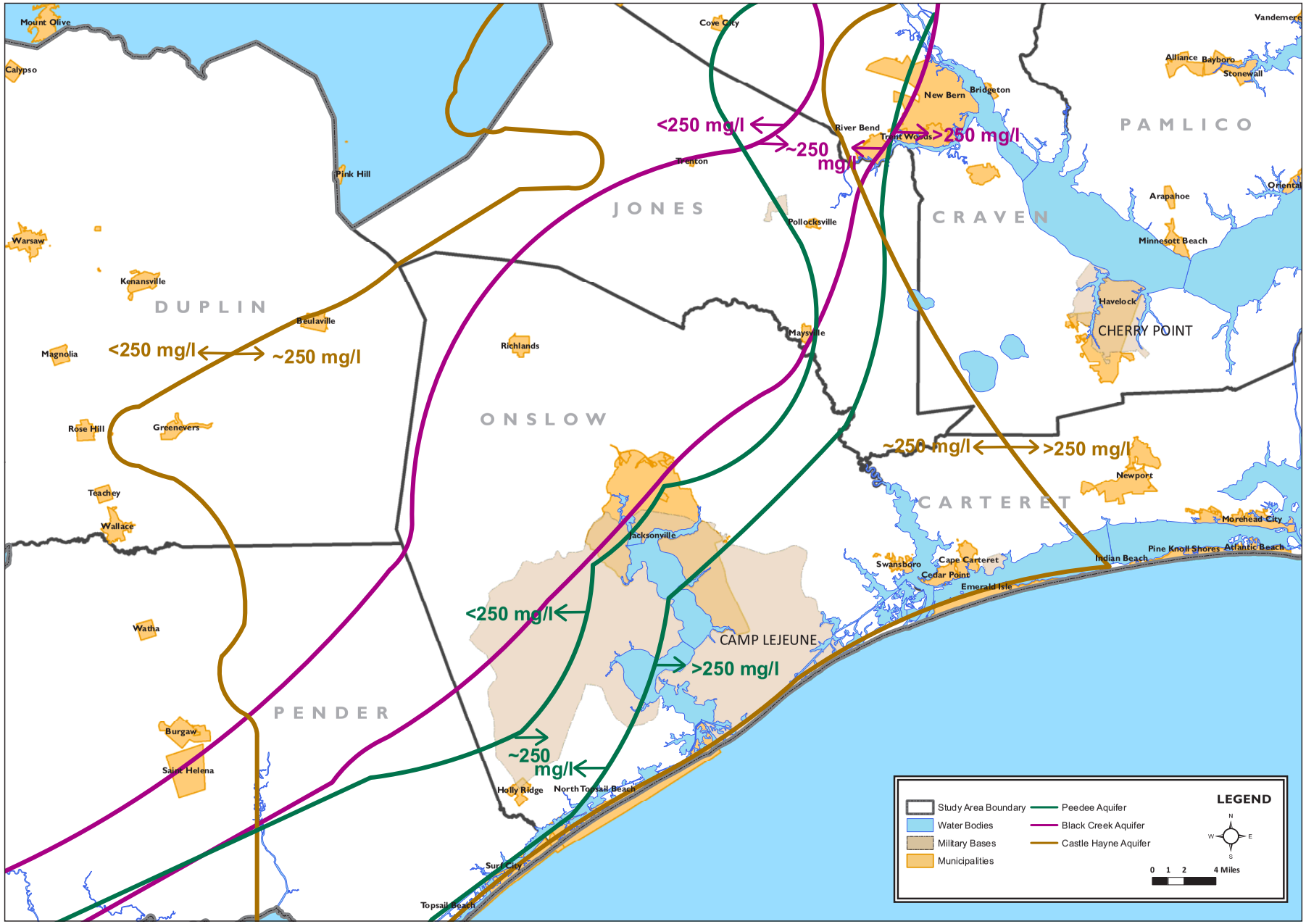
Table 5.2 - Permitted Capacities in the MGTF Region

Infrastructure Assessment

In general, infrastructure within the MGTF Region is classified by the operating staffs as good to fair. All wastewater systems experience some inflow/infiltration in their gravity sewer collection system, and most of these areas are located in the oldest portions of the collection systems. Discussions on inflow and infiltration are included in individual county sections based on reports from the sewer providers.

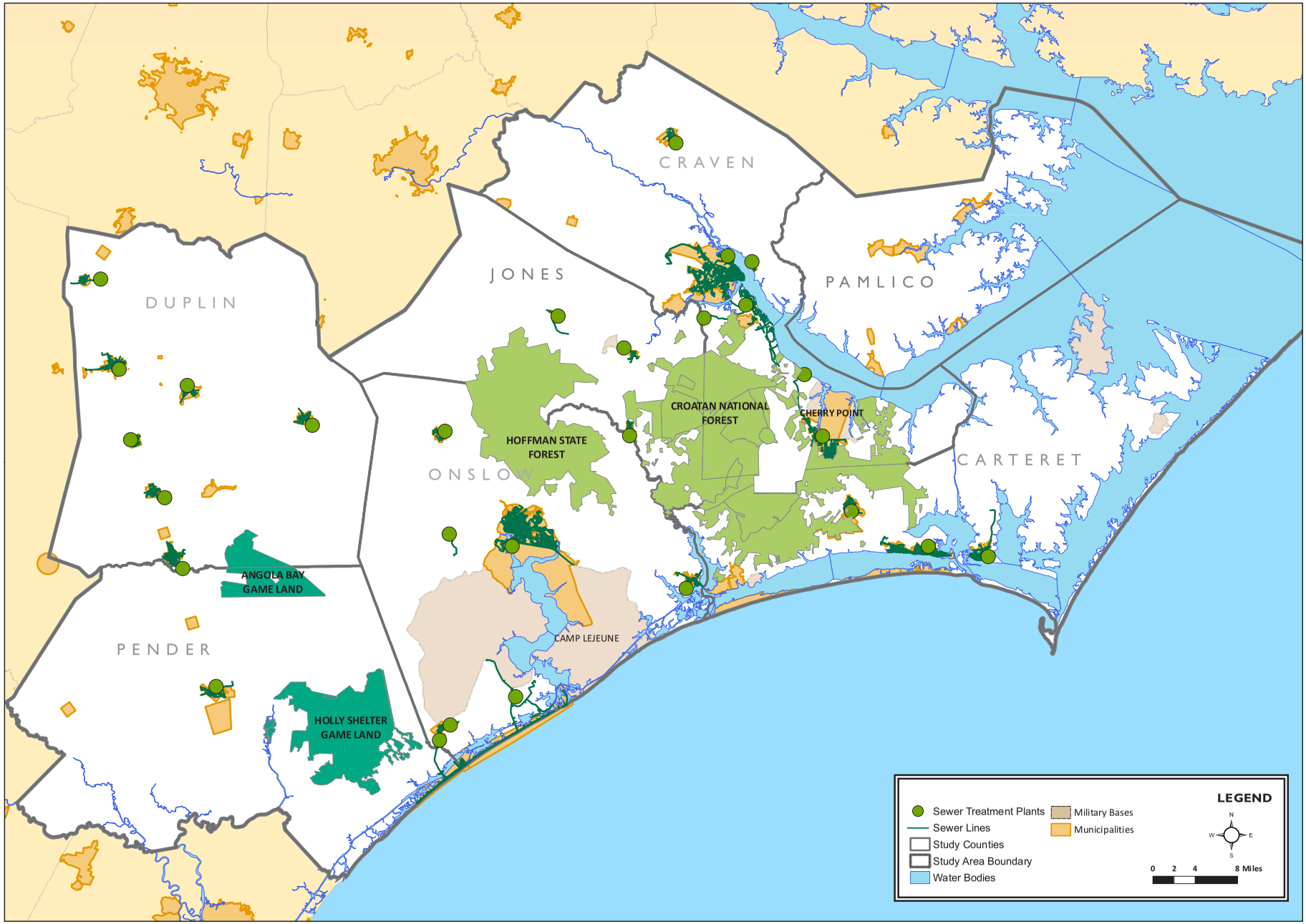
Private Package WWTPs

Several private package wastewater treatment plants are located throughout the region. These package WWTPs are often designed, permitted, and constructed by developers. At the time of development completion, they are typically turned over to the developments' homeowners associations



REGIONAL SALTWATER CONCENTRATION MAP Figure 5.2

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE



REGIONAL SEWER MAP

Figure 5.3

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

(HOA) or purchased by private wastewater treatment plant companies for operations and maintenance. In some cases, private package WWTPs are requested by NCDENR or the HOA to be taken over by the local water and sewer authority. Although design and discharge effluent requirements are regulated by NCDENR in the same manner as publicly owned WWTPs, the package treatment plants are not required to be designed to the local water and sewer authority standards. Also, the permitting process for private package WWTPs is significantly streamlined because only private-sector money is used. When public monies are used for WWTPs, the State Environmental Protection Act (SEPA) permitting process is initiated, which tends to add at least 6 months to the permitting process. If only private sector money is used, then the SEPA process is not triggered, so individual private package WWTPs can be designed, permitted, and constructed quicker than publicly owned plants. It is not uncommon for developers, who seek to sell product as quickly as possible, to move ahead with private package WWTPs instead of extending sewer lines to existing public sewer collection systems or waiting on local governments to create or expand public WWTPs.

Septic Systems

For portions of the region where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work well with proper siting, design, installation, operation, and maintenance. However, poor soil conditions throughout the region limit the installation of many new septic systems. All new septic systems in the region require a permit from county Health Departments prior to construction. Because poor soil conditions result in an inability to percolate, properties without access to sewer are often rendered undevelopable. This could have a significant impact on growth in the region.

Regulations

NCDENR's Division of Water Quality administers the permitting and enforcement of wastewater collection and treatment in North Carolina. In general, wastewater treatment regulations that most greatly affect infrastructure are the 80%/90% rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities). Summarized, these rules mean that, when the wastewater treatment system approaches 80% of permitted hydraulic capacity, the sewer provider is required to complete an engineering evaluation of the next system expansion, modification, or alteration to increase capacity including funding mechanisms. When the wastewater treatment system approaches 90% of permitted hydraulic capacity, the sewer provider is required to obtain all necessary permits and obtain final plan and specification approval (if construction is required) to implement or construct the next system expansion, modification, or alteration to increase capacity (i.e. the solution that was identified during the 80% stage). If either the 80% or 90% rule is not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system. To allow for military growth, it is important for the sewer providers in the MGTF Region to meet these 80%/90% requirements to avoid moratoriums.

Across the MGTF Region, several bodies of water are listed on the Clean Water Act's Section 303d Impaired Waters List. For many of these streams and rivers, total maximum daily loads (TMDLs) are such that the point discharge of wastewater effluent is not a feasible option. In addition, the coastal portions of the MGTF Region have brackish or saltwater surface waters, and the discharge of wastewater effluent in these surface waters is not allowed and is actually considered freshwater pollution into saltwater estuaries. Because of these sensitive surface waters, sewer providers have few options to discharge wastewater and historically opt for land application or spray irrigation.

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how WWTPs capable of producing reclaimed water quality effluent can discharge effluent and will save additional space in land application facilities. Additional discussion on these rule changes, along with HB 643, is included under the Reclaimed Water section of this portion of the plan. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in ASR systems.

Reclaimed Water

Reclaimed water is an emerging technology and water resource in North Carolina and is often referred to as re-use water or recycled water. By definition, reclaimed water is:

- Reclaimed water, sometimes called recycled water, is former "Wastewater" that has been treated to remove solids and certain impurities, and then allowed to recharge the aquifer rather than being discharged to surface water. This recharging is often done by using the treated wastewater for irrigation.
- Water that is used more than one time before it passes back into the natural water cycle; wastewater that has been treated to a level that allows for its re-use for a beneficial purpose.
- Reclaimed water is generated at wastewater treatment plants or water reclamation facilities (WRF) by treating wastewater effluent to tertiary levels to reclaimed water quality standards where it is able to be used in place of potable water for approved non-potable uses. Reclaimed water projects in the region have largely been initiated over the last 5 to 10 years, with several reclaimed water projects and capabilities currently underway in the region.

Current and proposed allowable reclaimed water uses will be discussed in detail in this module in later sections.

The benefits of reclaimed water for the MGTF Region include:

- Decreased potable water demand for irrigation
- Decreased nutrient loading based on decreased point discharges to waterways
- Assistance to water providers by alleviating peak summer irrigation conditions on the potable water system
- Highly treated reclaimed water as a water resource and valuable commodity rather than waste
- Decreased demands on land application sites

Providers

Reclaimed water is relatively new to the MGTF Region and to the State of North Carolina. In the MGTF Region, several sewer providers are already using reclaimed water for irrigation, as summarized in Table 5.3:

County	Owner	Facility	Permitted Flow (gpd)
Carteret	Carolina Water Service Inc of NC	Brandywine Bay WWTF	350,000
	Beacon's Ranch Master Assoc. Inc	Beacons Ranch WWTF	135,000
	NCDENR (Division of Aquariums)	NC Aquarium at Pine Knoll Shores WWTF	25,000
	Town of Morehead City	Morehead City WWTP	30,000
	Fmb of Atlantic Beach LLC	The Grove WWTF	120,000
	R A North Development Inc	Cannonsgate at Bogue Sound WWTF	200,000
	Bogue Watch LLC	Bogue Watch WWTF	150,000
	Wal-Mart Stores East LP	Wal-Mart Supercenter Store #4573 WWTF	14,400
Craven	City of New Bern	New Bern Seven Water Reclamation Facility	499,362
	MCAS Cherry Point	US Marine Corps - Golf Course	1,650,000
	City of New Bern	New Bern City - Martin Marietta	
Duplin	Duplin Land Utilities Inc	River Landing WWTF	470,000
	Town of Warsaw	Town of Warsaw Reclaimed Water Utilization System	10,959
	Town of Magnolia	Magnolia WWTF Conjunctive Re-Use Spray Irrigation	45,550
Onslow	ONWASA (formerly Town of Swansboro)	Swansboro WWTF	600,000
	Aqua North Carolina Inc	Alligator Bay WWTF	117,090
	Carolina Investments Inc	Southwest Plantation and Bear Trail Golf Course WWTF	250,000
	Blue Marlin LLC	Mimosa Bay WWTF	118,080
	ONWASA (purchased from RA North Development 1 Inc)	Summerhouse on Everett Bay WWTF	392,680
Pender	Carolina Water Service Inc of NC	Belvedere Plantation WWTF	216,000
	Aqua North Carolina Inc	Castle Bay WWTF	100,000
	Hampstead Pines Homeowners Association Inc	Hampstead Pines Subdivision WWTF	23,640
	Coastal Carolina Country Club	Coastal Carolina Country Club Golf Course	27,040
	Town of Burgaw	Burgaw WWTF Conjunctive Re-Use Spray Irrigation	27,040
	Demers, Chuck	Hampstead Retail Center WWTF	5,760
	Avendale Development LLC	Avendale WWTF	82,440

Table 5.3 - Sewer Providers Using Reclaimed Water in the MGTF Region

Capacities

Based on permitted flows, the capacity of the MGTF Region to produce reclaimed water is approximately 5.66 MGD.

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems.

Reclaimed water is wastewater treated to tertiary levels to meet minimum water quality requirements as defined by 15A NCAC 02T.0906:

- Monthly average BOD_5 less than or equal to 10 mg/L
- Daily maximum BOD_5 of less than or equal to 15 mg/L

- Monthly average TSS of less than or equal to 5 mg/L
- Daily maximum TSS of less than or equal to 10 mg/L
- Monthly average NH_3 of less than or equal to 4 mg/L
- Daily maximum of NH_3 of less than or equal to 6 mg/L
- Monthly geometric mean fecal coliform level of less than or equal to 14/100mL
- Daily maximum fecal coliform of less than or equal to 25/100 mL
- Maximum turbidity of 10 NTUs

In North Carolina, NCDENR allows the following uses for reclaimed water:

- Land application such as lawns, golf courses, cemeteries, parks, school grounds and ball fields, landscaped areas, and highway medians
- Industrial process water or cooling water
- Decorative ponds or fountains
- Fire fighting
- Construction activities such as dust control, soil compaction, concrete cutting, subsurface directional boring
- Utility construction and maintenance such as reclaimed water distribution pressure line testing and sewer cleaning
- Street sweeping
- Vehicle washing
- Dual plumbed systems (flushing toilets, fire protection sprinkler systems) by special approval by the Director

Current regulations specifically prohibit the use of reclaimed water for the following:

- Irrigation of direct food chain crops
- Swimming pools, hot tubs, etc.
- Direct re-use as raw water supply

Pending Regulations

There are currently two pending regulatory changes that will alter the ways that reclaimed water can be used in the State of North Carolina and that have significant impact to the MGTF Region: updated 15ANCAC Reclaimed Water Rules, and HB 643 – Authorize Aquifer Storage of Reclaimed Water.

A draft of an update to 15A NCAC 02.T.09000 – Reclaimed Water Systems was prepared in Fall, 2008 and approved by the North Carolina Environmental Management Commission to move forward with public hearings (3 will be scheduled in 2009). The goal of the updated rules is to provide more flexibility to reclaimed water producers to the allowable uses of reclaimed water. One additional approved use under the new rules is wetland augmentation. Under these rules, wetland augmentation is allowed in freshwater wetlands but not in saltwater wetlands (SWL) or unique wetlands (UWL). The rules also strive to create a more streamlined review process because the existing rules had a complicated and cumbersome permitting process. One major change is that two types of reclaimed water are classified as: Class B (same as the current

standards) and Class A (more stringent than the current standards). The difference in the two classifications is generally that Class A has a greater likelihood of human contact. The Class A reclaimed water quality standards are:

- Monthly average BOD_5 less than or equal to 5 mg/L
- Daily maximum BOD_5 of less than or equal to 10 mg/L
- Monthly average NH_3 of less than or equal to 1 mg/L
- Daily maximum of NH_3 of less than or equal to 2 mg/L
- Monthly geometric mean fecal coliform level of less than or equal to 3/100mL
- Daily maximum fecal coliform of less than or equal to 25/100 mL
- Monthly average coliphage of less than or equal to 5/100mL
- Daily maximum coliphage of less than or equal to 25/100mL
- Monthly average clostridium perfringens of less than or equal to 5/100mL
- Daily maximum clostridium perfringens of less than or equal to 25/100mL
- Maximum turbidity of 5 NTUs

Representative Russell Tucker (Duplin County) proposed House Bill (HB) 643 early in 2009. The purpose of the bill would be to allow the use of reclaimed water in an aquifer storage and recovery (ASR) system. Currently, NCDENR allows the use of potable water in ASR systems (one has been permitted by NCDENR in Greenville, NC). The bill will be reviewed by the House Committee on Water Resources and Infrastructure, then Environment and Natural Resources, then Finance. It passed the first Reading on April 14, 2009. Once passed at the House, the bill will be introduced to the Senate Committee(s) and will be voted on by the Senate. If approved, HB 643 would allow for reclaimed water to be injected into a reclaimed water ASR for temporary storage followed by recovery and beneficial re-use. The injected reclaimed water could be pulled up from the aquifer during peak irrigation periods to conserve potable water, or it could be used as a salinity barrier between groundwater and saltwater along the coast to prevent saltwater intrusion, also conserving potable water supplies.

Stormwater

Regulations

Post Construction Stormwater Management

Pollution associated with stormwater runoff is the number one water quality problem in the region, as well as the state as a whole. As a result, several regulations have been initiated to manage stormwater. Stormwater regulations and ordinances exist at the state (North Carolina Division of Water Quality –NCDWQ), county and municipal levels. Many of the requirements overlap. In general, it should be assumed that the most stringent of the requirements will be required. State-level programs are aimed at water quality as opposed to runoff quantity. The most likely state-level programs that can apply in the MGTF Region include the State Stormwater Management Program (Coastal Stormwater Rules), Neuse River Nutrient Sensitive Waters (NSW) Management Strategy requirements (often administered at the local level), NPDES

Phase II Stormwater (often administered at the local level), and stormwater management required by a 401 Water Quality Certification/Neuse Buffer Approvals for wetland, stream, and Neuse Buffer impacts. Local requirements are specific to each of the counties and municipalities. In addition to the locally administered state programs described above, the local requirements often include requirements to address stormwater runoff quantities (to address potential flooding issues). These requirements, and where they apply in the MGTF Region, are described below.

State Stormwater Management Program (Coastal Stormwater Rules)

The State Stormwater Management Program, established in the late 1980's, applies to the twenty coastal counties, and/or development draining to Outstanding Resource Waters (ORW) and/or High Quality Waters (HQW). In the MGTF Region, this program applies to Pender, Onslow, Craven, Pamlico, and Carteret Counties and their municipalities. The program applies to developments in these areas that disturb one or more acres or require a Coastal Area Management Act (CAMA) major permit. The regulations are specified in 15A NCAC 2H .1000. However, the rules were recently amended by NC Senate Bill 1967. which addresses coverage, low density thresholds, design storm requirements, wetlands and impervious surface calculations, and vegetative buffer size, especially as they apply to SA and ORW classified watersheds. (N.C. Division of Water Quality)

Neuse River Nutrient Sensitive Waters (NSW) Management Strategy

In March 2001, the cities of Havelock and New Bern became two of fifteen local governments subject to the Neuse River Nutrient Sensitive Waters (NSW) Management Strategy (15A NCAC 2B .0235). The cities are required to implement nitrogen reduction programs that include review and approval of stormwater management plans for new development with specific requirements to reduce nitrogen loading to certain levels using a combination of stormwater best management practices (BMPs) and/or purchase of nutrient offsets. There are also requirements for public education, identification and elimination of illegal discharges, and identification of retrofit sites where water quality management projects can be installed in existing developments. The cities also had to develop state-approved ordinances and are responsible for implementation of the strategy. The Neuse River NSW Management Strategy may satisfy NPDES Phase II stormwater requirements. (N.C. Division of Water Quality)

NPDES Phase II Stormwater Program

Federal law requires certain counties or municipalities that own or operate a Municipal Separate Storm Sewer System (MS4) to obtain an NPDES Phase II stormwater permit. Typically these include urbanized or urbanizing areas. For counties, only those urbanized areas where the county owns an MS4 are subject to Phase II stormwater requirements. In addition, areas called "municipal spheres of influence" (MSIs) were developed to define those areas of counties where the program had to be implemented. Under the program, a county could be "tipped in" to the NPDES Phase II stormwater requirements if it contains an area designated as an urbanized area by the US Census and had a population growth rate between 1995 and 2004 that exceeded the state population growth rate. Development projects in these municipalities and counties must apply for and receive a permit for post-construction stormwater control if a project disturbs an acre or more of land, is located in an unincorporated area beyond a Phase II municipality, and is located within an MSI, urban areas, or county that was "tipped in." In most cases, the review is conducted at the local level but may be conducted by the state where no local review program has been established.

The NPDES Phase II Permits issued by NCDWQ require the local governments to provide the following:

- Public education and outreach on stormwater impacts
- Public involvement/participation
- Illicit discharge detection and elimination

- Construction site stormwater runoff control
- Post-construction stormwater management in new development and redevelopment
- Pollution prevention/good housekeeping for municipal operations

In the MGTF Region, the City of Jacksonville is subject to the Phase II Stormwater Program. In addition, Onslow County was "tipped in" in July 2007. The new Coastal Stormwater Rule satisfies NPDES Phase II stormwater requirements. (N.C. Division of Water Quality)

401 Water Quality Certification/Neuse Buffer Requirements

Any activity within the State of North Carolina that includes impacts to wetlands, streams, and/or protected riparian buffers in the Neuse River Basin is regulated by NCDWQ (15A NCAC 2B .0233 and 2H .0500). Whether or not a written authorization is required by NCDWQ, there are certain post-development stormwater measures that may be required for development activities. In the MGTF Region, additional BMP requirements may apply in watersheds classified as NSW or watersheds that contain systems listed on the 303(d) list as impaired waters. The NCDWQ 401 Water Quality Certification Unit maintains the option of reviewing all stormwater management plans under its regulation; however, approvals under other state stormwater programs such as those listed above may satisfy the requirements as long as the approval is provided by the state or a "Certified Local Stormwater Program." A list of such programs and other stormwater information can be found on the 401 Unit's web site (http://h2o.enr.state.nc.us/ncwetlands/).

In all cases in the Neuse River Basin where a written approval to impact streams, wetlands, or protected buffers is required, NCDWQ reviews the stormwater plan to determine whether or not the plan complies with the requirements in 2B. 0233 for diffuse runoff flow through the buffer. (N.C. Division of Water Quality)

Senate Bill 845

Senate Bill 845 applies to all areas of the state that are not currently under a state- or federal-mandated stormwater program. In the MGTF Region, these provisions apply in Jones and Duplin County, the two counties not subject to Coastal Stormwater Rules (N.C. Division of Water Quality). As of April 1, 2009, those areas without existing stormwater control requirements are subject to limitations on the percent of impervious areas used for vehicular parking lots. The bill requires that parking fields have a maximum of 80% impervious cover or that 20% of new parking fields runoff into bioretention areas.

Other Local Requirements

In addition to the state programs described above, local governments often have additional stormwater and stormwater-related requirements. These include requirements to reduce peak stormwater runoff rates or volumes. They may also include additional development or impervious cover restrictions. In any event, local governments must meet the state requirements, but have the option of exceeding them as well.

Table 5.4 provides a summary of stormwater regulations and where they apply in the region.

Entity	SSMP	Phase II	Neuse	CAMA	Other	E&SC	SB 845
Pamlico	✓			✓		County	
Carteret	✓			✓		State	
Onslow	✓	✓		✓	Pre = Post; Buffers		
Jacksonville	✓	✓		✓	Utility; Retain 4" Rain in Class B Watershed		
Pender	✓			✓		State	
Craven	✓			✓		State	
Havelock	✓		✓	✓		State	
New Bern	✓		✓	✓		City	
Jones							✓
Duplin							✓

Table 5.4 - Applicable Stormwater Regulations in the MGTF Region

Solid Waste

The regional approach to solid waste management involves a system of curbside pickup, disposal at convenience sites and transfer stations, and transport to landfills by residents, local governments, and private haulers. All waste in the region, whether collected curbside or dropped off at convenience sites or transfer stations, is transported to one of five landfills. Three of these landfills are located within the region, and two are located outside of the region. The landfills within the region include the Onslow County Landfill, the Craven, Pamlico, Carteret Regional Landfill (CRSWMA), and the Camp Lejeune Landfill. The Camp Lejeune landfill is a private landfill and accepts only waste generated on the base. Additional waste in the region is transported outside of the region to either Sampson County or Bertie County.

Providers

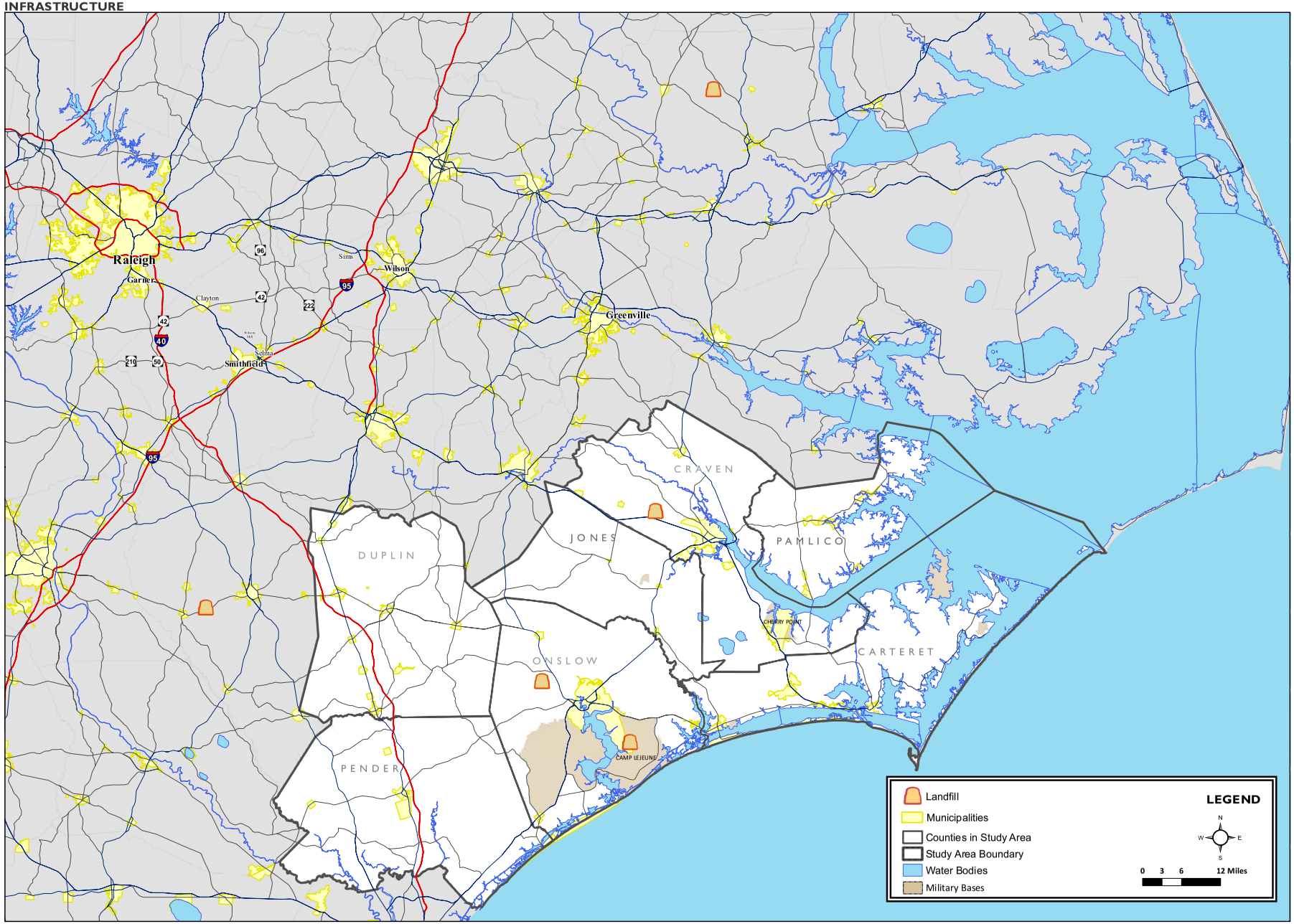
Solid waste in the region is collected and disposed of by local governments, private hauler, and/or taken directly to transfer stations or landfill by residents. Specific information on providers, collection methods, recycling options, disposal methods, and individual landfill capacities can be found in the individual county modules of this plan.

Capacities

NCDENR measures landfill capacity in both cubic yards and tons. According to NCDENR 2007-2008 reports, the region has roughly 8.6 million cubic yards of remaining airspace in the five landfills serving the region (based on constructed airspace). If landfills in the region were built to maximum site design, the region has an overall capacity of over 70 million cubic yards.

If measured in tons, the region has a capacity of slightly over 8 million tons constructed. If built to maximum site design, the region has an overall capacity of just less than 57 million tons.

In addition, the figures included in the NCDENR reports do not include the expansion efforts and additional landfill phases under construction in the region. The CRSWMA landfill has purchased additional land contiguous to the existing landfill and identical in size. This will increase the landfill capacity by approximately 9 million tons, doubling overall capacity to 18 million tons. Both Onslow County and Camp Lejeune are in the final stages of construction and acceptance of landfill expansions. All three of these efforts underway will increase capacity in the region beyond the figures indicated in the 2007-2008 NCDENR reports. (N.C. Department of Environment and Natural Resources)



REGIONAL LANDFILLS MAP Figure 5.4

Regulations

Rules pertaining to the management of solid waste exist at the federal, state, and local levels.

Federal

At the federal level, solid waste is managed by the Environmental Protection Agency (EPA) through The Resource Conservation and Recovery Act (RCRA) (Title 40, Parts 239-259, specifically deal with solid wastes). These regulations specify the requirements that state programs must meet and how to determine the adequacy of state programs.

In response to the Act, the EPA also established criteria for solid waste disposal facilities and practices. (Environmental Protection Agency)

State

Solid waste is managed at the state level by the Division of Waste Management of the North Carolina Department of Environment and Natural Resources (NCDENR). State laws pertaining to solid waste management includes the Solid Waste Management Act of 2007 and the Solid Waste Disposal Tax. The Solid Waste Management Act affected solid waste law in the following ways:

- Strengthened the requirements concerning financial responsibility and compliance history of management and ownership of solid waste facilities,
- Increased the standards of construction and operation of future landfills,
- New or increased buffer (separation) requirements from future landfills to groundwater, bedrock, streams, wetlands, National Wildlife Refuges, State Gamelands, and the State Parks System,
- Limited the capacity, disposal area and height of future landfills,
- Clarified the circumstances under which a county or a city can collect a fee for solid waste availability fee,
- Allowed a local government unit to employ a landfill liaison,
- Established the Solid Waste Management Account and allowed fees to be assessed on permit actions and annually,
- Enacted Discarded Computer Equipment Management Article 9 of Chapter 130A was enacted (televisions were included in the law in July 2008). Included in this law is a ban on disposal of televisions and computer equipment, effective January 1, 2011.

In addition, as of July 1, 2008, the state imposes a $2 per ton excise tax on solid waste disposed of at North Carolina landfills and at transfer stations handling waste that will go to out-of-state landfills. The revenue from the tax is distributed to the Inactive Hazardous Sites Cleanup Fund, the Solid Waste Management Trust Fund, and to the units of local government which provide solid waste programs.

NCDENR also requires each county to prepare a 10-year solid waste plan that must be revised every three years. Each county's plan can be found at http://www.wastenotnc.org/swhome/swmplans.asp. (N.C. Department of Environment and Natural Resources)

Local

Cities and counties enforce the solid waste laws and rules established at the federal and state levels. In addition they can adopt solid waste ordinances, litter laws, and ordinances pertaining to abandoned or junk vehicles. Programs at the local level such as school recycling programs or curbside recycling pickup influence the amount of waste generated.

Pending regulations

Two solid waste regulations are currently pending: transfer storage and recovery rules and septage rules. The transfer storage and recovery rules propose minimum standards and additional standards for various transfer storage and recovery facilities. The septage rules propose changes to the waste management industry that include dewatering of septage, training of septage management firms, and land application of treatment plant septage. (N.C. Department of Environment and Natural Resources)

Telecommunications

Information and Communications Technology (ICT)

Availability of Information and Communications Technology is important to the region for several reasons. In a report created for the e-NC Authority in June 2008 entitled *Capturing the Promise of Broadband for North Carolina and America,* the benefits of broadband are described in detail. These benefits include enhancing economic development by enabling communities to develop, attract, retain, and expand job-creating businesses and institutions, improving the productivity and profitability of businesses and institutions, increasing educational opportunities and enhancing public safety by assuring rapid and effective responses by First Responders and emergency medical crews during periods of community-wide emergencies.

The MGTF Region is a rural region, with a population density of less than 250 people per square mile. According to 2007 e-NC Authority reports, internet is available in 68.81% of households in the region. Craven and Carteret counties have the highest connectivity in the region, both exceeding state averages. Onslow and Pender counties are slightly below the state average of 83.33%, with 78.71% and 73.99% connectivity respectively. Jones, Duplin, and Pamlico counties are considered "Connectivity Challenged," with connectivity well below the state average. In 2008, service providers in Jones County received a grant to extend service in the county. By the beginning of 2009, at least 70% of households in the county had internet access. In March 2009, service providers in Duplin and Pamlico counties received similar grants. These grants will also increase the percentage of households with access in these counties to over 70%. By 2010, the regional average of 68.81% will increase dramatically as Jones, Duplin, and Pamlico county availabilities will all increase to over 70% due to e-NC Authority grants.

The internet is not a regulated utility; therefore, service provision is not mandated. Cost is the largest factor in determining whether coverage is available. Low population levels, particularly in rural areas, make it cost prohibitive for providers to extend service throughout the region (regardless of demand). As a result, internet access is greatest within cities, with outlying areas and rural counties having the lowest access. The e-NC Authority annually identifies those Counties with the least access and offers grants to utility providers to extend access in these areas. These efforts greatly enhance access for rural areas of the state, where three counties in the region (Jones, Duplin, and Pamlico) in particular have benefited. (The e-NC Authority)

Wireless internet capabilities are limited in the Region. According to the e-NC Authority, three wireless providers have registered with the e-NC Authority: Interstar in Duplin County, Pine Link in Pamlico County, and Always Online in Carteret County. Some places, such as New Bern, have limited wireless capabilities in hotels and other local hotspots. The e-NC Authority encourages companies to contact them when they initiate or expand service in an area and to register their company and its service areas online.

Needs Assessment

Water

Challenges

CCPCUA Rules

In recent years, the Black Creek Cretaceous aquifer, the region's major source of water, has been noted as being stressed and that aquifer withdrawals were causing significant drawdown, impairing water quality and resulting in saltwater

intrusion in the region. As a result, the Coastal Plain Capacity Use Area (CCPCUA) rules were created. These CCPCUA rules apply to all of the Counties in the MGTF Region except Pender County, plus Beaufort, Edgecombe, Greene, Lenoir, Martin, Pitt, Washington, Wayne, and Wilson Counties.

The CCPCUA rules are altering the way that public water providers supply water to their end users. The requirements to decrease withdrawals have forced public water suppliers in the MGTF Region to look to alternative sources for water. Some providers have purchased excess capacity from neighboring water providers; however, the majority of water providers have turned to the Castle Hayne aquifer, which is shallower and requires more treatment, as their water supply. The alternative aquifer source and additional treatment have put a financial stress on the water providers in the MGTF Region to locate, test, permit, and construct new wells and design, permit, and construct new water treatment plants. For both new wells and the treatment plants, the water providers have also incurred the expense of acquiring the property to build this water infrastructure. Private groundwater wells that withdraw less than 100,000 gpd are not required to reduce their Black Creek aquifer withdrawals under the CCPCUA rules.

Alternative aquifers and surface water sources are of poorer water quality compared to the Black Creek aquifer, requiring higher levels of treatment to eliminate organics and contaminants from the water supply source to become potable water. The higher levels of treatment can be achieved with full-scale water treatment plants; however, this infrastructure in some geographic locations is simply not in place because it was not needed before the CCPCUA rules. As a result, several authorities have constructed larger full-scale traditional water treatment plants to treat alternative water sources, such as the Onslow Water and Sewer Authority's (ONWASA) Dixon and Hubert Water Treatment Plants that treat water from the Castle Hayne aquifer. The cities of New Bern and Jacksonville are currently in the final stages of constructing or designing their water treatment plants, which will also treat water from the Castle Hayne aquifer. Without the construction of large, full-scale traditional water treatment plants many providers will have difficulties meeting the requirements of the CCPCUA.

Saltwater Intrusion

Saltwater intrusion was documented during the EMC and NCDENR studies associated with the creation of the CCPCUA. Based on these studies, the freshwater/saltwater interface may have migrated significantly along the coastal plain and in the MGTF Region, leaving large portions of Onslow, Craven, Carteret, and Pamlico Counties with potential for saltwater intrusion. Saltwater intrusion occurs either laterally from the ocean or upwards from deeper salty aquifers. Water treatment to eliminate saltwater from the water supply is most accepted to be reverse osmosis/desalination. To date, only one North Carolina desalination plant is in operation (Kill Devil Hills, Dare County, NC). Similar to alternative groundwater aquifers in the Castle Hayne or with surface water, existing water treatment infrastructure is not in place in the MGTF Region to treat saltwater. If reverse osmosis/desalination were the only option, several if not all of the public water providers within the MGTF Region would require new WTPs, deep injection wells to dispose of brine, or significant and expensive modifications to existing WTPs.

Required Infrastructure

At the same time water users are expected to reduce withdrawals for the CCPCUA, water demands in the region are expected to increase. The MGTF Region is challenged with meeting increasing demands based on military growth combined with decreases in currently supply based on CCPCUA rules and the potential for saltwater intrusion. The CCPCUA rules require water providers to find alternative sources for water supply, and these alternative sources require new infrastructure including wells, raw water lines, and water treatment plants. The new water treatment plants and well sites have additional costs in land acquisition.

Needs

Based on regulatory changes and proposed growth in the region, the following needs have been identified.

- Additional water supply is needed in Onslow County based on existing demands and potential water demands through the planning period ending in 2011. Estimates for additional water could be as high as 2.1 MGD. Coupled

with a reduction of supply based on the CCPCUA rules for ONWASA and the City of Jacksonville of an additional 25% by 2013, the use of water supply will exceed 80% of available capacity. In the City of Jacksonville, current water usage is as high as 78.2% of available capacity. With the proposed CCPCUA reductions by 2013, water usage could reach as high as 120.5% of available capacity. Both Jacksonville and ONWASA need to identify additional water supply in excess of 2.1 MGD.

- Additional water treatment is needed in Pender County based on existing demands and potential additional water demands through the planning period ending in 2011. Estimates for additional water could be as high as 0.8 MGD from military growth. The county is currently constructing a 2 MG water treatment plant; however, current allocations are approximately 5.8 MGD. The planned usage exceeds capacity by 3.8 MGD or 290% of capacity, and Pender County needs to identify additional water treatment in excess of 3.8 MGD by 2015. By 2010, Pender County is expected to exceed 2 MG in water usage, which is 100% of treatment capacity.
- The Town of Maysville operates a small water plant served by a single well drawing water from the Castle Hayne aquifer, permitted at 0.144 MGD. The Town of Maysville's well supply currently meets NCDENR redundancy requirements by having one water supply well and the emergency interconnection with the Jones County Water System. Long-term growth in Maysville, coupled with the effects of CCPCUA water use reductions to Jones County, is expected to compromise the ability of Jones County to serve as the additional supply to Maysville after the 50% CCPCUA reductions take effect in 2013. The Town of Maysville currently has one 75,000 gallon elevated storage tank. The Town's 75,000-gallon maximum capacity is considered borderline relative to providing adequate storage to meet daily fluctuations on the potable distribution side while providing the required 60,000 gallons of fire protection storage.

Sewer

Challenges

Limited Land Supply for Land Application Systems

Land application systems have become increasingly difficult to find and/or expand over recent years due to environmental, geographic, and economic constraints. Because much of the land in the MGTF Region is dotted with jurisdictional wetlands and because only certain soil types allow for land-applied wastewater effluent to percolate, sewer providers are limited in their ability to find suitable land on which to discharge. In addition, much of the land in the MGTF Region is actually DoD property with MCB Camp Lejeune and MCAS New River in Onslow County, MCAS Cherry Point in Craven County, and the Bogue OLF in Craven County. It is currently not an option for the non-military sewer providers to land-apply wastewater effluent on military properties. Sewer providers are also currently not able to land-apply wastewater effluent in the Hofmann State Forest, Croatan National Forest, and the Angola Bay and Holly Shelter Gamelands. These large land mass restrictions, coupled with soil limitations, make it difficult to find suitable land application sites in the region. Due to the recent economic boom of the mid 2000s, sewer providers also have to compete with developers for land. By creating sizeable land application sites (e.g. the City of Jacksonville's land application site is in excess of 7,200 acres), those jurisdictions lose valuable land that could generate taxes and income for the region and local community.

Existing Expansion Policies

Package WWTPs funded with private monies are subject to less stringent environmental regulations by NCDENR than public WWTPs. Based on decreased permitting times, developers have the ability to move ahead of public WWTP plans, new construction, and expansions, which makes it difficult to properly plan sewer needs. In many cases, if public water or sewer is not available at the proposed development, developers opt to construct their own package WWTP or septic system in lieu of paying for the public sewer infrastructure extensions that would be required to connect to the public system. From a land use planning perspective, the location of developer-driven package WWTPs changes the desired land use patterns and can actually contribute to urban sprawl. Urban sprawl places significant burdens on public services (i.e. schools, water, sewer, police, EMS, and fire protection). In some municipalities, private package plant providers are required to meet with the public sewer agencies at plan review time to determine if sewer can be provided through the

public system. In some cases, failing package WWTPs have become problematic to the point that NCDENR has asked public providers to take ownership of these failing facilities, which creates additional operations and maintenance activities for sewer provider staff.

Needs

- Land suitable for spray irrigation is scarce, expensive, and not conducive to economic development or tax-generating development. In addition, much of the land in the MGTF Region is either DoD-owned, National Forest, or gamelands that do not allow spray irrigation (with the exception of MCAS Cherry Point's land application site). Several of the area's land application sites that provide wastewater effluent disposal are approaching capacity. The City of Jacksonville estimates that short term allocated flows to their LTS system exceed 6.96 MGD, and their 80% requirement occurs at 7.2 MGD. The city's LTS may reach 80% of capacity prior to 2011. New Bern and ONWASA also have limited land application facilities. Alternative disposal methods for the region's wastewater effluent are necessary for growth to continue.
- ONWASA system-wide WWTP capacities are at 71.3%. With the potential of an additional 1.89 MG of wastewater flow for Onslow County, capacities could triple ONWASA's current capacity of 0.96 MGD (over 400% of existing capacity). The Richlands area in particular is anticipated to see significant growth, and the Richlands WWTP currently operates at 73.5% of capacity. In addition, the Hunters Creek WWTP is currently operating at 77.2% of capacity. This WWTP is located in the Piney Green area, which is anticipated to have significant growth primarily due to the military because of its close proximity to the gates of MCB Camp Lejeune.
- The City of Havelock currently has only 200,000 gpd of available capacity in its WWTP. Current additional wastewater allocations exceed 500,000 gpd, and the City is currently in the study phase of a plant expansion and to ultimately relocate its current creek discharge through a pump station and force main to the Neuse River. This project is not anticipated to be completed during this study period ending in 2011. The City of New Bern and Havelock are working towards an agreement for New Bern to accept 0.5 mgd of wastewater flow from Havelock in the interim. Several new developments are being constructed along US 70 between New Bern and Havelock. While the City of New Bern does have WWTP capacity to handle additional WWTP flows from Havelock and the portion of Craven County in between the two Cities, there is a wastewater collection system bottleneck with an 8" force main underneath the Trent River which would convey wastewater from south of the Trent River (including diverted flow from the City of Havelock). Currently, no additional wastewater allocations can be given south of the Trent River.
- The Town of Maysville has an existing 30-year old package wastewater treatment facility that is permitted for a 180,000 gpd discharge to the White Oak River. The facility needs to be upgraded and expanded to approximately 360,000 gpd with conversion of the disposal to a nondischarge system infiltration disposal system in order to accommodate increased flow from two (2) new subdivisions with a total of over 500 homes that are planned for the increased housing needs in the area from the MCBCL expansion.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For the MGTF Region, several accepted methods of beneficial use of reclaimed water elsewhere in coastal and neighboring states could benefit both water and sewer systems within the MGTF Region. Of primary importance is the protection of existing groundwater sources from saltwater intrusion.

Currently, the primary means to apply reclaimed water is irrigation; however, suitable land application sites are costly and scarce, and using developable land for spray irrigation does not help local economies and does not provide a tax base to the jurisdictions where they are located.

Needs

Both the re-write of the current NCDENR reclaimed water regulations and the proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary to allow for expanded use of reclaimed water within the MGTF Region. The beneficial use of reclaimed water can decrease potable water demands, positively impacting water needs in the region, and could be used to protect the MGTF Region's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed NCAC updated regulations would allow reclaimed water to be treated as a valuable water resource allowing it to be applied to more end users. The expanded uses will also reduce the demand on land application sites.

Stormwater

Challenges

Unfunded mandate

Federal and state entities have enacted regulations to manage stormwater that include public education and outreach, public participation/involvement, illicit discharge detection, construction site and post-construction runoff control, and pollution prevention. Local governments must develop mechanisms to meet these requirements, which often include development of stormwater management programs. Staff must be hired to create, manage, and enforce these programs and a dedicating funding source must be in place.

The enforcement aspect of new stormwater regulations is a challenge in the region. State regulations focus on restrictions, but are unclear as to how to monitor their effectiveness and how to ensure they are enforced. Enforcement of the regulations already in place in the region gives regulators the ability to measure their effectiveness. Without implementing regulations as they were intended, existing regulations could be deemed ineffective and additional regulations could be imposed upon the region.

Enforcement strategies and tools as well as compliance programs (including compliance assistance, compliance incentives, compliance monitoring, and enforcement) need to be developed to ensure effectiveness of the existing regulations. Because stormwater runoff does not recognize political or physical boundaries, the most successful strategies would be at the regional or watershed level.

Threats to Affordable Housing

Many local government representatives believe that the Coastal Stormwater Rules will pose a threat to affordable housing in the region. New rules that include reductions in impervious surface, excluding wetlands from impervious surface percentage calculations, and requirements for retention ponds increase the overall development costs for housing development. The rules require developers to purchase additional land to build the same number of units and result in additional permitting requirements and site work that increase costs. These costs are passed on to residents, creating burdens on the average property owner and in some instances rendering affordable housing projects infeasible. (Carteret Economic Development)

Details on housing affordability in the region can be found in the Housing Module.

Need

For the City of Jacksonville to support additional NPDES Phase II stormwater requirements, an entire stormwater department needs to be created to enforce stormwater ordinances and to provide public education and outreach, public involvement and participation, illicit discharge detection & elimination, construction site runoff control, post-construction runoff control, and pollution prevention.

Solid Waste

Challenges

Meeting Local Waste Reduction Goals

Every county in the region establishes waste reduction goals as part of its Solid Waste Plan. Many obstacles exist that make obtaining these reduction goals challenging. The region has a high level of tourism, vacation-related businesses, and part-time residents. These people and businesses generate a good deal of waste, but are not reflected in the population base. Therefore, disposal rates appear high in this region and disposal figures in their home counties appear lower.

In addition, the anticipated influx in military and related growth in the region will generate a high amount of construction and demolition (C&D) waste. Housing projects that include demolition and rebuilding of military housing on bases as well as construction of committed large-scale residential developments will increase C&D waste in the region.

Increased budget constraints make recycling programs and other waste reduction efforts a very political issue; however, recycling is the most effective way of reducing the solid waste stream into landfills. (Coastal Regional Solid Waste Management Authority) Recycling is offered in all counties, either by drop-off at convenience sites or transfer stations or through weekly curbside pickup. The region can improve recycling efforts by instituting more school recycling programs, expanding the types of recyclables that can be collected at convenience sites, transfer stations, and landfills, and by reducing the improper disposal of waste.

Needs

The systems in place in the region for solid waste management are working effectively. The facilities at a regional level, with the exception of the Onslow County Landfill, will be sufficient well beyond the planning horizon for the plan.

Onslow County has been evaluating several options for future solid waste management. These include construction of a new county landfill, transitioning solid waste management to a private contractor, establishing an agreement with Sampson County, and mandating recycling. Although the county landfill has capacity for approximately another ten years, siting and construction of an additional landfill or developing a transfer station at the existing landfill takes time. The county needs to undertake the studies to determine future disposal methods now to ensure options remain available. (Personal Interview with Lionell Midget, April 22, 2009).

Telecommunications

Challenges

Because internet service is not a regulated utility, providers can choose where they extend service. Providers are looking to extend service to those areas that make the most economic sense, which are typically populated urban areas. The region as a whole is a very rural one, with an overall population density of less than 250 people a square mile. Densities are even lower in outlying and unincorporated areas. The percentages of residents with internet availability in many areas of the region are below state averages. Without investment in ICT, the region will struggle to compete with other areas of the state in retaining young people, ensuring public safety, increasing educational opportunities, and promoting economic development. (The e-NC Authority)

In particular, marines and their families moving into the region and living off base expect high-speed internet service. The accompanying vendors and business owners that support the military also require high-speed internet service to function competitively and operate efficiently. ICT is an influencing factor in people's decisions about where to live or locate their business. In addition, the region's proximity to the coast makes it very susceptible to hurricanes and tropical storms. Connectivity and inter-county operability are imperative to communications and overall public safety during periods of emergency. (Booz/Allen/Hamilton)

Needs

Although connectivity has improved in the region, largely due to e-NC Authority grants, five of seven counties in the region have connectivity below state averages. Funding is the main way to entice providers in the region to extend services. Two funding sources available for ICT projects are described below:

Federal

Under President Obama's stimulus package, $7.2 billion was allocated to broadband grant and loan programs. The majority of the funds, $4.7 million, will be distributed through the Broadband Technology Opportunities Program run by the Commerce Department's National Telecommunications and Information Administration (NTIA), and $2.5 million will be distributed through the Agriculture Department, with particular emphasis to broadband deployment in rural areas. This funding for broadband programs enables providers who have already invested in their communities to undertake infrastructure improvements necessary to offer more advanced broadband services. (CNET.com)

State

The e-NC Authority was established in August 2000 by the NC General Assembly as part of a state initiative to link all North Carolinians to the Internet. As part of this task, the e-NC Authority awards e-NC Authority grants to service providers to extend service in rural areas of the state. These grants are offered for service extension in the counties with the lowest percentages of households with access and must be matched by the service provider.

In the last two years, three counties in the region – Jones, Duplin, and Pamlico – have benefited from these grants. The grants, which made extensions possible in six counties, totaled $945,185. (The e-NC Authority

Recommended Strategies and Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help the region solve their infrastructure problems. In addition, responsible parties are identified, as well as the time frame for the need in short term (urgent by 2011), near term (less than 10 years), or long term. The needs are prioritized based on urgency in the above table. In general, the primary needs are with sewer, then water (the former needs also include reclaimed water), stormwater, solid waste, and telecommunications. This prioritization represents short-term and near-term needs which must be accomplished for military growth to continue in the MGTF Region during the planning period ending in 2011.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Sewer	Northwest Service Area WWTP Expansion	ONWASA	$18.9M	Urgent	This infrastructure project will expand wastewater treatment capacity in the Northwest Service Area of Onslow County where significant military growth is anticipated and where existing facilities are operating at 80-90% of capacity (approaching moratorium status)
Sewer	Havelock/New Bern Regional Sewer Connectivity	Cities of Havelock and New Bern	$21.1M	Urgent	This infrastructure project will provide upgrades to the Township 7 sewer collection system to allow 500,000 gpd of wastewater to be diverted from the City of Havelock's WWTP which is at capacity to the City of New Bern's WWTP. Additionally, this parallel sewer collection line and force main will allow for developments along Hwy 70 between the two municipalities to be served with public sewer. Extensive growth is planned and developing for this portion of Craven County. Currently, there is not available capacity in existing infrastructure south of the Trent River.
Sewer	Piney Green Interceptor	City of Jacksonville/ ONWASA	$7.5M	Urgent	Several housing projects are anticipated in and around the main gate for MCBCL. To allow for this anticipated development that will be mostly attributed to military growth, the installation of a wastewater collection main along Piney Green Road from the Hunters Creek pump station to the

Table 5.5.1 - Recommended Strategies and Actions Table

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
					intersection of Piney Green and Country Club Roads is necessary. The project will also provide a means to take some failing septic tanks and private package plants off-line and put these subdivisions onto the public sewer system.
Sewer	Maysville Sewer Treatment Expansion	Town of Maysville	$5M	Near term	The Town's current 180,000 gpd WWTP needs to be expanded to 360,000 gpd to meet current and future needs based on two additional developments in the Town. The land application site for the existing WWTP is near capacity, so the proposed plant expansions will alter the wastewater effluent from being land applied to using rapid sand infiltration ponds.
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.
Water	Dixon Region Water Improvements	ONWASA	$2.2M	Urgent	Based on military growth, CCPCUA rule reductions, and saltwater intrusion, additional water supply is needed in the Dixon region which serves the highly growing US 17 area in Onslow County. This project includes 2 wells in the Castle Hayne aquifer and 9,900 LF of raw water line and will ultimately add a minimum of 500,000 gpd in water supply to the Dixon region.
Water	Jacksonville Water Treatment Plant	City of Jacksonville	$45M	Urgent	Based on CCPCUA rules, the City of Jacksonville will lose 2 MG in water supply by 2013. For the planning period ending in 2011, additional water supply will be needed to serve military growth and to replace the 1MG already lost to the CCPCUA rules in the City of Jacksonville service area. Jacksonville has designed a 4 MG WTP with corresponding raw water lines and Castle Hayne wells to meet water supply needs.

Table 5.5.2 - Recommended Strategies and Actions Table

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water	Scott's Hill-Rocky Point Water Treatment	Pender County	$18M	Urgent	By 2010, Pender County is expected to exceed 2 MG in water usage, which is 100% of treatment capacity . Additional water treatment is needed in Pender County based on current demands and demand allocations totaling 5.8 MGD, which is 3.8 MGD more water than current plant construction capacity. The plant will need to be expanded to 6MGD.
Water	Maysville Water Treatment and Storage Expansion	Town of Maysville	$1.5M	Near term	The Town's current water storage capacity provides enough storage and fire flow for the current residents but does not allow for any additional expansion. Due to the Town's location, it is anticipated that growth will occur in Maysville exceeding industry standards for water storage for fire flow. The construction of an additional storage tank will alleviate this fire flow issue. By 2013, it is anticipated that the Town's redundant groundwater well will be inoperable due to CCPCUA rules, so an additional groundwater supply well is needed to serve existing and future residents of Maysville.
Stormwater	Stormwater Compliance and Enforcement Strategy	Led by NCDENR		Near term	The State has imposed additional stormwater regulations on the region, but these regulations are focused on restrictions and not enforcement. The region, with guidance and support from NCDENR, should develop a stormwater compliance and enforcement strategy to ensure the effectiveness of the existing regulations.
Stormwater	Increase in Enforcement Personnel for Stormwater Management	City of Jacksonville	$3.35M	Urgent	Under NPDES Phase II Stormwater regulations, the City of Jacksonville created a stormwater ordinance which is required to be enforced for the proposed developments in the City and will be effective during the planning period ending in 2011. The City currently does not have personnel available to enforce this program. Funding of $1.1M for additional enforcement personnel is needed. Additionally, it is estimated that it will cost approximately $10,000-$20,000 per pond to bring existing ponds into compliance with these regulations. With approximately 153 ponds estimated to be non-compliant, costs to upgrade the ponds may total $2.25M. There is concern that many smaller entities will not have the funds to implement the required improvements, resulting in a violation of the City NPDES permit.

Table 5.5.3 - Recommended Strategies and Actions Table

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Solid Waste	Onslow County Landfill Expansion	Onslow County	N/A	Near term	Due to recent plant expansions, the Onslow County landfill has approximately 10 years remaining in capacity. Due to the extensive permitting process to site new landfill sites or to expand the existing landfill site, it is recommended that additional capacity options be studied at the 10-year mark, which is 2009.

Table 5.5.4 - Recommended Strategies and Actions Table

Funding Opportunities

Funding is available and varies based on the type of project being implemented and the state of the various funding sources at the time of the project initiation. The following is a summary of the potential funding sources and their applicability. There are several funding mechanisms that could be pursued:

- North Carolina's Clean Water Management Trust Fund (CWMTF)
- State Tribal Assistance Grant (STAG)
- Community Development Block Grants (CDBG)
  - Infrastructure assistance
  - Concentrated Needs assistance
- North Carolina Rural Center (NCRC)
  - Clean Water Partners Program
  - Economic Infrastructure Program
- United States Department of Agriculture (USDA) Rural Development grants
- NCDENR Public Water Supply (PWS) and State Revolving Fund (SRF) low-interest loans
- American Recovery and Reinvestment Act (ARRA) funding

The ARRA funding is often referred to as federal stimulus funding. This new program was initiated in January 2009. Several of the water and sewer projects identified in the Recommended Strategies matrix were submitted for ARRA funding, which is administered in North Carolina for water and sewer infrastructure by NCDENR. These projects were not identified for first round funding; however, they may be considered for funding with NCDENR's second round of ARRA stimulus funds.

Conclusion

For these recommended strategies and actions to be implemented, collaboration and support is needed from the counties, municipalities, water and sewer authorities, NCDENR, permitting agencies, and site plan reviewers to support the future needs of the MGTF Region. Not only should the support be unified, but it also should be active. Active participation with NCDENR will positively affect how the regulations in the MGTF Region can be modified to continue to protect the environment, but also respond to specific urgent needs. Active participation with federal and state agencies that provide

funding assistance for infrastructure is also key to the success of these projects. If these recommendations and strategies are implemented, the infrastructure providers in the MGTF Region will be able to meet the demands of regional growth and growth due to an increased presence of military in the region.

References

N.C. Division of Water Quality. Land Application Unit: Reclaimed Utilization Systems. http://h2o.enr.state.nc.us/lau/reclaimed.html.

North Carolina General Assembly. House Bill 643. http://www.ncga.state.nc.us/Sessions/2009/Bills/House/PDF/H643v1.pdf.

NCDENR Division of Water Resources. Central Coastal Plain Capacity Use Area Rules. http://www.ncwater.org/Permits_and_Registration/Capacity_Use/Central_Coastal_Plain/CCPCUA_rule_summary_FAQ.php.

N.C. Division of Water Quality. Stormwater Runoff and Nonpoint Source Pollution. http://h2o.enr.state.nc.us/Stormwater.html.

N.C. Division of Water Quality. Stormwater Unit: State Stormwater Management Program. http://h2o.enr.state.nc.us/su/state_sw.htm

N.C. Division of Water Quality. Coastal Stormwater: Revised Rule Effective Oct. 1, 2008. http://h2o.enr.state.nc.us/su/coastal.htm.

N.C. Division of Water Quality. Stormwater Unit: Neuse River Nutrient Sensitive Waters Management Strategy. http://h2o.enr.state.nc.us/su/Neuse_NSW_Management_Strategy.htm.

N.C. Division of Water Quality. Stormwater Unit: NPDES Phase II Stormwater Program. http://h2o.enr.state.nc.us/su/NPDES_Phase_II_Stormwater_Program.htm.

N.C. Division of Water Quality. Impervious Parking Legislation. http://h2o.enr.state.nc.us/su/parkingspaces.htm.

Randall, Mike. N.C. Division of Water Quality. Phone Interview. May 28, 2009.

Carteret Economic Development. Coastal Stormwater Rules and Affordable Housing. http://newsletter.carteretedc.com/2008/Volume%204/Housing.html.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

U.S. Environmental Protection Agency. Wastes. http://www.epa.gov/epawaste/index.htm.

N.C. Division of Waste Management. Solid Waste Rules and Regulations. http://www.wastenotnc.org/swhome/rules_regulations.asp.

The e-NC Authority. 2007 Connectivity Challenged Counties Report. http://www.e-nc.org/pdf/2007ConnChall_120308.pdf.

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/county.asp.

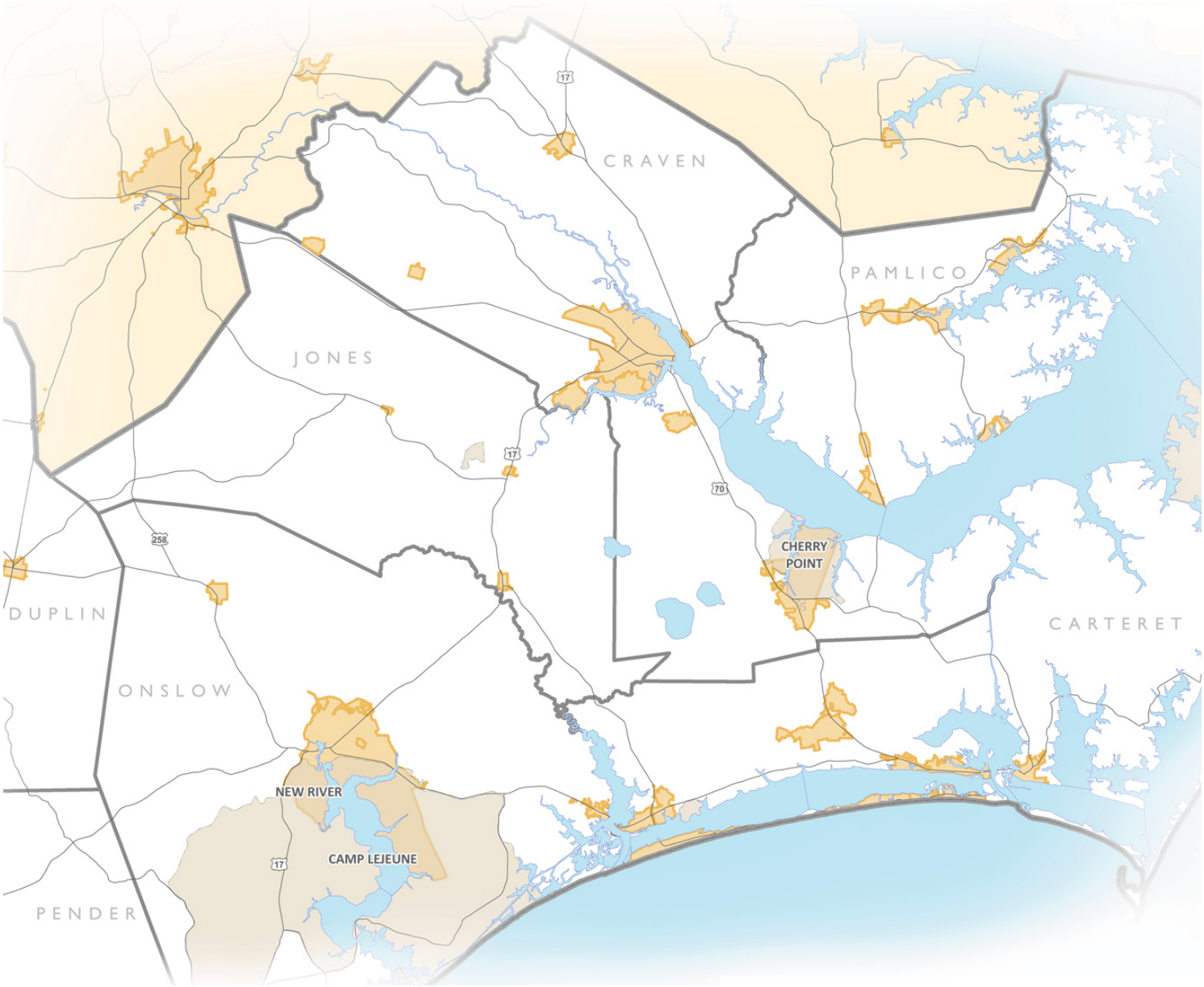
Edgar, Cary. The e-NC Authority. Phone Interview. April 20, 2009.

CNET. Stimulus bill includes $7.2 billion for broadband. http://news.cnet.com/8301-13578_3-10165726-38.html.

The Baller Herbst Report. Bigger Vision, Bolder Action, Brighter Future: Capturing the Promise of Broadband for North Carolina and America. http://www.e-nc.org/pdf/Broadband_report_composite.pdf.

Hardison, Allen. CRSWMA. Phone Interview. April 22, 2009.

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Medical, Health and Social Services

Medical, Health, and Social Services

Medical and Health Services

Introduction

There are presently significant health care needs in the North Carolina Military Growth Task Force (MGTF) Region that are exacerbated by regional population growth of approximately 65,000 persons[1] through 2011. Currently, Naval Hospital MCB Camp Lejeune and Halyburton Naval Health Clinic Cherry Point are the cornerstones of military health care in the region. Both military treatment facilities (MTFs), however, receive substantial support from the five community hospitals within the seven-county region, as well as the tertiary facilities located in New Hanover and Pitt Counties. Patients from this region also regularly travel to the Research Triangle region (Durham, Raleigh and Chapel Hill) for specialty services.

Stakeholders across the region have identified several key concerns that will likely persist, and even worsen, following the military population growth, including:

- Low TRICARE reimbursement
- Physician and other clinical professional shortages
- Insufficient behavioral health services

Background

Medical and health services for active-duty military, activated guard and reserve members, retired members of the uniformed services, their families, and survivors are covered under the TRICARE system. Where there are gaps in military health care services, TRICARE supplements those resources with a network of civilian health care providers.

There are three TRICARE coverage plans: TRICARE Prime, TRICARE Extra, and TRICARE Standard. All active-duty, guard and reserve service members are automatically enrolled in TRICARE Prime. Military dependents, however, may choose different coverage options to meet their needs. The majority of dependents in eastern North Carolina choose to enroll in TRICARE Prime, but others may use TRICARE Extra[2] or TRICARE Standard[3], or may choose not to enroll in TRICARE at all.

TRICARE Prime enrollees, who make up the majority of TRICARE enrollees, utilize MTFs[4] as their principal source of health care. The MGTF Region is served by two MTFs—Naval Hospital MCB Camp Lejeune and Naval Health Clinic Cherry Point. These facilities provide the medical homes for most TRICARE Prime enrollees in the region. However, due to staffing and resource concerns across the Department of Defense (DoD) facilities, all TRICARE patients are seen in priority order, and the number of TRICARE Prime patients who are assigned to Network providers due to capacity constraints at the MTFs has been steadily growing. As defined by DoD, prioritization for service is as follows:

1. Active-duty service members.
2. Active-duty family members or survivors who are enrolled in TRICARE Prime (Active-duty family members who are enrolled in TRICARE Plus fall into this category for primary care appointments only).
3. Retirees, their family members, and survivors who are enrolled in TRICARE Prime.
4. Active-duty family members who are NOT enrolled in TRICARE Prime (survivors of military sponsors who died on active duty who are not enrolled in TRICARE Prime are in this priority group). These beneficiaries may enroll in the

1 This figure Includes normal population growth of 25,153 and USMC-related population growth of 39,977.
2 TRICARE Extra is a preferred provider option that saves money. TRICARE Extra beneficiaries get their health care services from network providers. Please see http://www.military.com/benefits/tricare for more information
3 TRICARE Standard is a fee-for-service option. Please see http://www.military.com/benefits/tricare for more information.
4 Military treatment facilities are medical centers administered by the Department of Defense.

TRICARE Plus Program to receive primary care at an MTF (see that section for additional details).

5. Retirees, their family members, and survivors who are not enrolled in TRICARE Prime. These beneficiaries may enroll in TRICARE Plus (see that section for additional details).
6. All other eligible persons.

Primary care services for Marines and Sailors who are assigned to Marine Corps combatant units are provided by Navy physicians and ancillary support staff assigned to those units. When they select TRICARE Prime as their health care option, active-duty family members, military retirees, and retiree family members are also assigned to a primary care manager on base when capacity exists. If there is not enough capacity to treat these patients at an MTF, they are referred to a community physician for primary care management. Currently, 22 percent of TRICARE enrollees in the region are assigned to a network civilian primary care manager. Active-duty family members, retirees, and retiree family members who chose not to enroll in TRICARE Prime may seek care from community resources through the TRICARE Standard option.

Naval Hospital MCB Camp Lejeune and Naval Clinical Cherry Point also provide medical and surgical physician specialty services. If an appointment is not available for a specialty service at a DoD facility (because physicians have full patient loads or the specialty service does not exist at the MTF), the referral is forwarded to the regional TRICARE Managed Care Support Contractor. Health Net Federal Services is the contractor for the MGTF Region. Upon receiving a referral, Health Net Federal Services provides the beneficiary with the name, number, and authorization for care with a PRIME network provider in the civilian community. TRICARE Access Standards specify that specialty care be provided within a 60-minute drive-time of the patient's home and within 28 days of the initial referral. Beneficiaries are only reimbursed for travel if they must travel over 100 miles for services, which can create undue financial burdens for some patients traveling within the region for care.

In short, through the TRICARE system, military personnel, and their families rely heavily on both military and civilian providers. When military services are not available, community civilian services are necessary to support the deployment readiness of active-duty, reserve, and guard service members by directly providing care to service members and serving the health care needs of their dependents. As a result, shortages in services available in the civilian community have a substantial impact on military families.

The following sections outline the existing conditions in the region, including the supply of services and existing regional concerns, as well as an assessment of the needs created or exacerbated by the addition of approximately 40,000 persons to the region following USMC growth.

Existing Conditions

The MGTF Region faces many of the same issues that are currently being highlighted on the national stage as a result of the Obama Administration's focus on health care reform: physician and dentist shortages, insufficient behavioral health services, and decreasing reimbursement from government and commercial payers as a result of cost control efforts. As described below, each of these issues is felt more acutely in this region as a result of the disproportionate number of military families (both active duty and retired) living within the seven counties in the MGTF Region, particularly as it relates to TRICARE payment to both physicians and hospital-based outpatient services. The following sections outline the supply of key medical and health services in the region, in addition to existing concerns related to those services.

Department of Defense Health Services

The region is served by two MTFs, Naval Hospital MCB Camp Lejeune and Naval Health Clinic Cherry Point. As outlined above, these facilities are the primary sources of medical care for military service members and their families. Naval Hospital MCB Camp Lejeune is a full-service community hospital with medical/surgical, intensive care, psychiatric, and obstetrical inpatient units. In 2008, the Naval Hospital provided 15,707 acute care bed days in its 53 acute care beds. In addition, the facility has 12 inpatient psychiatric beds which operated at 42-percent occupancy in 2008. Until October 1, 2007, MCAS Cherry Point was served by a full-service community hospital as well. That facility was closed, however,

as a result of BRAC 2005 Commission decisions. The base is now served by an independent clinic with primary care and specialty physician services. In addition, the clinic provides limited outpatient surgery and imaging services.

Although these facilities provide primary care management at all times, the availability of medical and surgical specialty services often fluctuates as military physicians are relocated to other bases or deployed. Further, although each base has identified specific specialty needs, national provider shortages in the Navy medicine and civilian sectors often inhibit the ability to fill those positions. At this time, neither facility has extensive sub-specialty services, but both facilities have many specialties with only one physician. If a specialty is not available at either MTF, referrals are made to community providers through Health Net Federal Services. The Naval Hospital and the Naval Clinic rely heavily on community providers in the surrounding region to meet the needs of TRICARE beneficiaries.

Currently, there are 142,803 persons eligible for TRICARE in the seven-county region, representing roughly one-third of the total population. Of those that are eligible, 75.3 percent are enrolled in TRICARE PRIME. The remaining population likely uses other forms of insurance through spouses' employment or employment following retirement from the military.

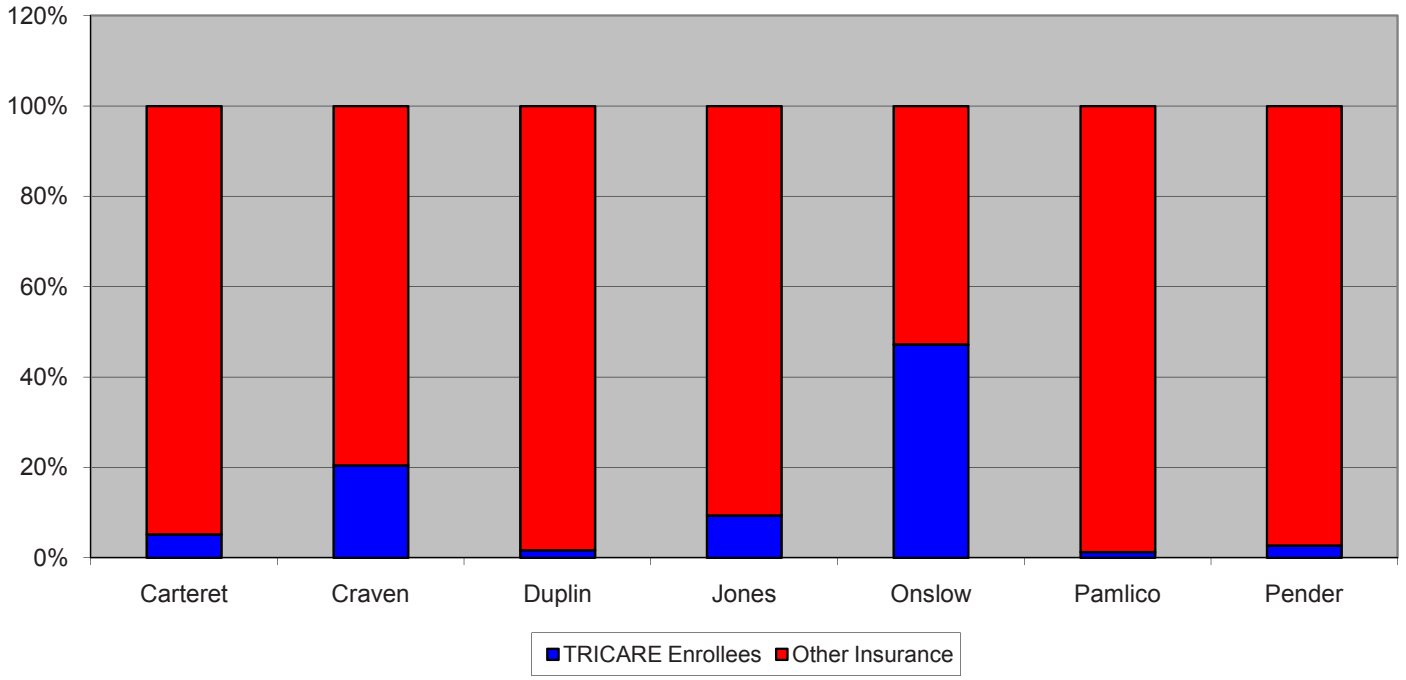


Figure 6.1 - Regional Payor Mix

TRICARE enrollees account for approximately 20 percent of the population in Craven County and nearly half of the population in Onslow County.

TRICARE reimbursement rates are modeled after Medicare maximum allowable charges; however, regional contractors have the purview to negotiate lower payment rates. TRICARE Network providers are typically reimbursed at rates lower than Medicare, and in some cases, are reimbursed at rates lower than Medicaid, once negotiated discounts are applied. As a result of low reimbursement, the large number of TRICARE enrollees has an impact on the financial status of both physicians and hospitals throughout the region in general and, in Onslow and Craven Counties in particular, given their military population density.

The regional TRICARE Managed Care Support Contractor (Health Net Federal Services) has implemented significant TRICARE system enhancements to ease providers' operational burdens of caring for TRICARE beneficiaries. These enhancements include the ability to submit referrals and authorizations electronically and to determine which services need authorization through an electronic decision tool on the www.healthnetfederalservices.com website. The www.MYTRICARE.com website allows providers to check patient eligibility, confirm Primary Care Manager, check claim status, print Explanation of Benefits,

and check authorizations and referrals in real-time. In addition, Health Net will implement claims payment enhancements for providers who submit claims electronically and choose to receive payments and remittance electronically (EFT). Presently, electronic filers have check runs three times a week. Providers who use EFT will receive check runs five times a week. These electronic solutions are more efficient and are designed to reduce provider overhead, improve cash flow and enhance practice efficiency. As a result of these system enhancements, the turnaround time for TRICARE claims in the MGTF Region from receipt to paid date is just seven business days 99.9 percent of the time.

Despite cost-cutting measures, TRICARE reimbursement levels for physician and non-physician providers and facility-based outpatient services remain lower than other payers.[5] Low reimbursement deters (1) non-network providers from participation in the TRICARE Network and (2) network providers from increasing the sizes of their TRICARE patient panels. Due to the importance of TRICARE beneficiaries to the MGTF Region, it is imperative that TRICARE reimbursement rates for physician and non-physician providers and facility-based outpatient services are increased to optimize beneficiaries' access to medical services. This issue is affecting existing beneficiaries in the region, and will continue to affect the growing military population if appropriate action is not taken.

Outpatient services provided by hospitals are billed under a separate methodology than inpatient services. Section 4523 of the Balanced Budget Act of 1997 (BBA) provided authority for Centers for Medicare and Medicaid Services (CMS) to implement a prospective payment system (PPS) under Medicare for hospital outpatient services. The new system went into effect for Medicare beneficiaries on August 1, 2000. Under 10 U.S.C. 1079 (h) and 1079 (j) (2), TRICARE was mandated to adopt Medicare's reimbursement rules when practicable starting on May 1, 2009.[6] Under TRICARE OPPS, hospital outpatient services are paid on a rate-per-service basis that varies according to the Ambulatory Payment Classification (APC) group to which the services are assigned. In December 2008, the DoD issued its final rule on TRICARE OPPS, cutting payments to hospitals for outpatient services provided to TRICARE patients (73 FR 74945). The reductions will total an estimated $460 million nationwide, according to a regulatory impact analysis included in the rule.

Veterans Affairs

The MGTF Region is served primarily by four Veterans Affairs Community Based Outpatient Clinics (CBOCs) located in Jacksonville, Morehead City, Wilmington, and Greenville. These facilities provide the following outpatient physician services:

5 It is important to stress that low TRICARE reimbursement in the MGTF Region affects physician and non-physician providers and hospital outpatient services, not inpatient facility services. For inpatient facility care only in hospitals designated as sole community hospitals, TRICARE reimbursement is based on billed charges, not Diagnosis-Related Groups (DRGs). This billing methodology provides a significant financial benefit to hospitals with the sole community hospital designation. Three of the hospitals in the MGTF Region (Onslow Memorial Hospital, Carteret General Hospital, and CarolinaEast Regional Medical Center) are designated as sole community hospitals.

6 Although this rule was temporarily delayed to allow for additional public comment, the rule was ultimately upheld on May 5, 2009.

Location	Services Provided
Jacksonville	• Primary Care • Mental Health
Morehead City	• Primary Care • Mental Health • Dental
Wilmington	• Primary Care • Optometry • Mental Health • Dental • Diagnostic Imaging
Greenville	• Primary Care • Diabetes Care • Dietician • Mental Health

Table 6.1

Source: Department of Veterans Affairs

Most specialty physician services can be accessed at this time using telemedicine services or by traveling to one of North Carolina's VA Medical Centers; however, in 2011 an expanded CBOC will open in Wilmington and provide specialty services in house. The Greenville CBOC is expected to expand over the next several years as well. Historically, the CBOCs in eastern North Carolina have accommodated steady growth in utilization. There is no need for additional CBOCs at this time.

Patients often travel to the Durham Veterans Administration (VA) Medical Center or the Fayetteville VA Medical Center for inpatient and specialty physician care. Free daily transportation services are provided from the Jacksonville CBOC to the Fayetteville VA Medical Center and from the Morehead City CBOC to the Durham VA Medical Center by a network of volunteer drivers. The MGTF Region will likely continue to be served by local outpatient clinics for the foreseeable future, as these facilities are currently meeting the inpatient needs for the VA patients in the region.

Health Care Providers[7]

Naval Hospital MCB Camp Lejeune and Naval Health Clinic Cherry Point provide the following specialty physician clinics on base.

	NHCL	NHCCP
Family Medicine	X	X
Internal Medicine	X	X
OB/GYN	X	X
Pediatrics	X	X
Aerospace Medicine		X
Anesthesiology	X	
Cardiology	X	
Chiropractics	X	X
Dental	X	
Dermatology	X	
Emergency Medicine	X	
Ear, Nose, and Throat	X	X
Gastroenterology	X	
Laboratory	X	X
Neurology	X	
Neuropsychology	X	
Occupational Health	X	X
Ophthalmology/Optometry	X	X
Oral/Maxillofacial Surgery	X	
Orthopedics	X	X
Pain Management	X	
Pediatric Dentistry	X	
Pharmacy	X	X
Physical Therapy	X	X
Pulmonology	X	
Preventive Medicine	X	X
Psychiatry	X	
Psychology	X	X
Radiology	X	X
Sports Medicine	X	X
Substance Abuse	X	
Urology	X	

Table 6.2

Source: Naval Hospital Camp Lejeune and Naval Health Clinic Cherry Point

7 Health care providers include physicians and physician extenders such as physician's assistants, nurse practitioners, clinical social workers, and psychologists.

These clinics are typically the first sources of service for enrolled, active-duty military, retirees, and their families. If an appointment for a specialty service is not available at a DoD facility (due to full patient loads or lack of specialty services at the MTF), the referral is forwarded to Health Net Federal Services, which provides the beneficiary with the name, number, and authorization for care with a TRICARE Prime network provider.

The MGTF Region is served by approximately 580 full-time equivalent (FTE) health care providers, including physicians and extenders, located in the community, at MTFs, and at VA CBOCs, as shown in the table **below**.

County	Civilian Community		MTF		VA CBOC		TOTAL
	Physician	Extender	Physician	Extender	Physician	Extender	
Carteret	68.1	17.0	-	-	3.0	6.5	**94.6**
Craven	185.0	18.0	13.0	3.4	-	-	**221.4**
Duplin	22.1	7.7	-	-	-	-	**29.8**
Jones	17.5	2.5	-	-	-	-	**20.0**
Onslow	54.0	6.5	88.5	27.75	3.0	0.25	**180.0**
Pamlico	4.0	1.5	-	-	-	-	**5.5**
Pender	27.0	2.0	-	-	-	-	**29.0**
Total	**377.7**	**55.2**	**101.5**	**31**	**6**	**7**	**580.3**

Table 6.3

Source: Health Net Federal Services, regional providers, Naval Hospital Camp Lejeune, Naval Health Clinic Cherry Point, and Department of Veterans Affairs.

The totals above include nearly 259 FTE primary care providers, 83 FTE medical specialists, 85 FTE surgical specialty providers, and 35 FTE behavioral health providers. Of the community physicians listed in the table, approximately 87 percent are in the TRICARE Prime network. Absent the USMC related growth of approximately 65,000 persons, there is a need for an additional 60 FTE primary care providers, 92 FTE medical specialists, 66 FTE surgical specialists, and 27 FTE behavioral health providers. Please see each of the county modules for a more detailed description of local health care provider needs.

In addition, the region is served by 168 dentists, as shown in the table **below**.

	Dentists	*Current Dentists Per 10,000 Population*
Carteret	37	5.8
Craven	42	4.4
Duplin	10	1.9
Jones	1	1.0
Onslow	63	3.8
Pamlico	5	3.9
Pender	10	2.0
Total	**168**	

Table 6.4

Source: Cecil G. Sheps Center for Health Services Research

In North Carolina, there are 4.4 dentists per 10,000 residents. Applying this dentists-to-population ratio yields a current need for approximately 52 additional dentists across the region.

Behavioral Health

Military families face unique pressures, above and beyond those challenges faced by the civilian population, that increase their need to access behavioral health services. As outlined in a 2007 report by the American Psychological Association (APA),[8] each member of a military family (including the deployed service member, children, significant others, and spouses left at home) experiences significant stress during deployments. For many, this is one of the most stressful situations they will face in their lifetimes.

8 The Psychological Needs of the U.S. Military Service Members and Their Families: A Preliminary Report, Available at http://www.apa.org/releases/MilitaryDeploymentTaskForceReport.pdf.

8 Includes abuse of prescription drugs, which has become a significant issue in the region.

Families face a series of emotional changes during the pre-deployment, deployment, and reunion processes. Spouses and significant others left behind often experience increased responsibility for everyday tasks such as child care and household maintenance, as well as feelings of sadness, anxiety, and loneliness. For many this can be an overwhelming time period, especially considering that many military families are located away from their extended family support networks. Such stressful conditions put these families at high risk for mental health and substance abuse problems.

It has been reported that as many as one quarter of all returning service members struggle with psychological injuries. According to the APA, a majority of those deployed to Iraq and Afghanistan report exposure to multiple life-changing stressors and have difficulty re-acclimating into civilian life. One such stressor, deployment, may occur more than once. Throughout Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), military units have routinely undergone second, third, and fourth redeployments into combat zones. As a result, families not only face the stress of multiple deployments, but also the anxiety associated with uncertainty about possible redeployments. In particular, Marines and families stationed at both MCB Camp Lejeune and MCAS Cherry Point are experiencing increased anxiety as more service members are deployed to Afghanistan from these bases. As a result of the unique characteristics of military families, the need for behavioral health support in military communities such as the MGTF Region is unquestionable and essential to deployment readiness.

In addition to the behavioral health needs of active-duty military families, the needs of retirees and non-military persons are increasing as well, placing additional stress on the system. Each of the regional behavioral health stakeholders interviewed during this process noted that due to the extensive media attention given to OEF and OIF, providers have experienced an increase in the number of Vietnam veterans seeking behavioral health services for the first time over the past several years. This is likely due to latent Post Traumatic Stress Disorders (PTSD). Further, non-military families are seeking services at higher rates as a result of increased financial pressures. If the economy remains uncertain or unstable, providers expect that this trend will continue.

The level of coordination between health care providers in the region is generally high; however, coordination between military and civilian providers in the behavioral health sector is lacking. Currently, there is confusion as to what services can be provided by civilian providers and which services must be provided at a MTF. Through the working group process of the Military Growth Task Force, providers have begun working together to better communicate rules and regulations regarding behavioral health treatment for TRICARE beneficiaries. As the military presence in the region increases, this coordination will be invaluable toward adequately providing regional behavioral health services.

Local Management Entity

Local Management Entities (LMEs) are agencies of local government which are responsible for managing, coordinating, facilitating, and monitoring the provision of mental health, developmental disabilities, and substance abuse services (MH/DD/SAS) in the catchment area served. LME responsibilities include offering consumers 24/7/365 access to MH/DD/SAS, developing and overseeing providers, and handling consumer complaints and grievances. The following LMEs manage community behavioral health services in this region:

Local Management Entity	*MGTF Counties Served*	*Non-MGTF Counties Served*
Onslow Carteret Behavioral Healthcare Services	Onslow Carteret	N/A
East Carolina Behavioral Health	Craven Jones Pamlico	Beaufort Bertie Gates Hertford Pitt Northampton
Eastpointe	Duplin	Lenoir Sampson Wayne
Southeastern Center of MH/DD/SAS	Pender	New Hanover Brunswick

Table 6.5

Source: 2009 State Medical Facilities Plan

LMEs were developed as part of the 2001 mental health reform movement in North Carolina, which mandated that Area Authorities divest of direct service provision and become LMEs. Across the state, LMEs are at varying levels adapting to managing, rather than providing services. This transition has not been without challenges and has certainly placed strains on the behavioral health system.

Despite these challenges, the regional LMEs remain passionate about providing access to critical behavioral health services for military families. Some counties in the region have identified a need for additional inpatient psychiatric capacity to meet the needs of the local civilian community and military populations, but in ALL counties there is a need for additional outpatient services. The East Carolina Behavioral Health LME is currently participating in two pilot telemedicine projects. When behavioral health providers are not available locally in person, providers can be available via telemedicine from surrounding communities. These services may be a promising alternative to provide additional behavioral health clinician coverage in the region. Due to their costs and reimbursement limitations, however, grant funding would likely be needed to adequately fund services on a large scale.

The General Assembly recently issued a directive to all North Carolina LMEs identifying two target populations for behavioral health services: Adult Mental Health Veteran and Family (AMVET) and Child Mental Health Veteran and Family (CMVET). LMEs and providers have been asked to assist military families with accessing all appropriate federal benefits that may be available to them through the Department of Veterans Affairs and the Department of Defense. If persons in these target populations are not eligible for federal benefits, they may now qualify for State service benefits. This new definition is expected to further enhance services provided to military families.

Providers

There are currently 35 behavioral health providers in the region, including psychiatrists, psychologists, licensed social workers, and counselors. Although non-physician providers are essential to the provision of behavioral health services,

they cannot entirely mitigate the need for physician providers. The need for additional providers—both psychiatrists and non-physician providers—is substantial.

Absent military population growth, there is a need for 28 additional psychiatric providers in the region by 2011. These providers are the cornerstone of behavioral health services in the region. When patients have easy access to outpatient therapeutic services, their chances of needing interventional and crisis services in the future decrease. Although the shortage of behavioral health providers is partially a result of shortages in the mental health field universally, it is also likely attributable to factors outlined earlier in this module relating to TRICARE reimbursement rates. Enhanced TRICARE reimbursement for physician and non-physician behavioral health providers would likely have a significant impact on mental health provider recruitment and retention in the region.

Inpatient Psychiatric and Crisis Services

Inpatient behavioral health services are provided at three locations in the region: Brynn Marr Hospital (Onslow County), Duplin General Hospital (Duplin County), and CarolinaEast Medical Center (Craven County), as shown in **Figure 6.1** on the next page.

The facilities provide a total of 47 adult psychiatric beds, 26 adolescent psychiatric beds, and 12 adult substance abuse beds.

	Psychiatric Beds		Substance Abuse Beds	
	0-17	*18+*	*0-17*	*18+*
Brynn Marr Hospital	26	4	0	12
Duplin General Hospital	0	20	0	0
CarolinaEast Medical Center	0	23	0	0
Total	**26**	**47**	**0**	**12**

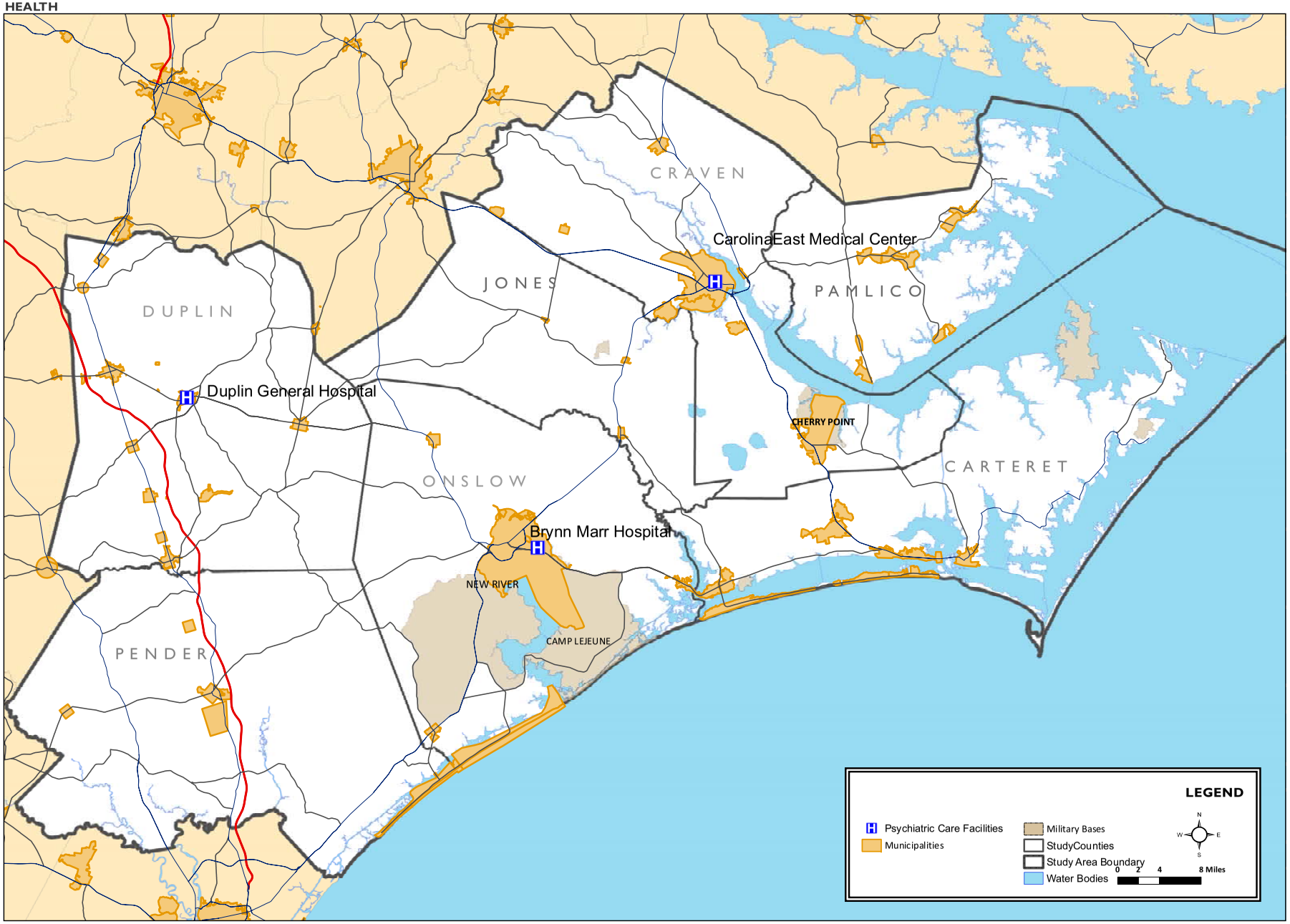
Table 6.6

Source: 2009 Hospital License Renewal Applications

Patients in this region also utilize psychiatric services in surrounding counties, including Pitt (Pitt County Memorial Hospital), New Hanover (New Hanover Regional Medical Center), and Beaufort (Beaufort County Hospital). Each of these facilities is located in a county that shares a local management entity with counties in the RGMP region. In addition, patients from the seven-county region are treated in state psychiatric hospitals, primarily Cherry and Dorothea Dix Hospitals, located in Goldsboro and Raleigh, respectively.

The region is currently in desperate need of additional inpatient and crisis capacity, in addition to more psychiatric providers. Many of the region's inpatient psychiatric providers are operating at well over optimal capacity[9] (the inpatient psychiatric beds at CarolinaEast Medical Center and Duplin General Hospital were at 78.6- and 85.4-percent occupancy, respectively, in FY 2008). Even without military growth, there is a need for approximately 10 inpatient adult psychiatric beds by 2011. In addition, local hospitals report that they have experienced an increase in psychiatric patients in their emergency departments. Due to a shortage of inpatient capacity and difficulty obtaining beds at state psychiatric hospitals, these patients are often held for days in emergency room bays. Waiting times in the emergency department have reached 110 hours for inpatient beds in some local hospitals, which is not only unacceptable for patient care, but also overwhelming to emergency department resources. Each of the LMEs in the region has identified crisis services (both mobile and facility based) as an existing and continuing need.

9 As defined by the North Carolina State Medical Facilities Plan, optimal occupancy for psychiatric beds is 75 percent.



PSYCHIACTRIC HEALTH CARE FACILITIES Figure 6.1

Licensed psychiatric care providers in the region

Prevention Programs

Although there are programs in the region, such as the Coastal Coalition for Substance Abuse Prevention, that are actively working to reduce the need for behavioral health services by developing preventive programs, there is an existing need for more prevention work in the region. These programs will effectively mitigate the need for additional interventional and crisis services and the need will only increase following military growth in the region.

Inpatient Acute Care

The MGTF Region is served by five community hospitals—one with approximately 300 beds[10], two with 100-200 beds[11], two with fewer than 100 beds[12]—as well as the Naval Hospital located at MCB Camp Lejeune.

The three larger community hospitals have historically served the majority of their local community's acute hospital needs, and the smaller facilities have primarily served lower acuity patients. Each of the larger hospitals (in Carteret, Craven and Onslow Counties) is, to date, governed and operated independently, and maintains clinical affiliations with tertiary and/or teaching hospitals, as appropriate. The smaller facilities, Duplin General and Pender Memorial, have formed affiliations with University Health Systems of eastern North Carolina and New Hanover Regional Medical Center, respectively. Acute referrals (tertiary and quaternary) are typically referred to Pitt County Memorial Hospital in Greenville, New Hanover Regional Medical Center in Wilmington, or one of the hospitals in the Triangle, based on severity of the patient's illness or injury and established referral relationships. In addition, veterans are often referred to the Veterans Affairs Medical Centers in Durham and Fayetteville. Two counties, Jones and Pamlico, do not have acute care hospitals.

	Acute Care Beds
Duplin	61
Carteret	135
Craven	270
Jones	-
Onslow*	215
Pender	43
Pamlico	-
Total	**724**

Table 6.7 (Table does not include skilled nursing, psychiatry, substance abuse, or inpatient rehabilitation beds.)

*Onslow County supply includes Onslow Memorial Hospital (162 acute care beds) and the Naval Hospital at Camp Lejeune (53 acute care beds).

Source: *2009 State Medical Facilities Plan* and Hospital License Renewal Applicatiions.

Due to the lack of specialty physicians in the region, patients from the region often go outside of these seven counties for inpatient acute care services. Out-migration ranges from 24.4 percent of patient days in Craven County to 100 percent in Jones and Pamlico Counties. Until specialty physician services are added in the region—which will mitigate the need for patients to leave the region for care—there will be no need for additional acute care capacity. Currently, there are no inpatient acute care capacity constraints.

Inpatient Rehabilitation

The MGTF Region is served by 20 inpatient rehabilitation beds[13], located at CarolinaEast Medical Center in Craven County. Patients originating in the seven-county region also often utilize New Hanover Regional Medical Center and Pitt County Memorial Hospital for inpatient rehabilitation services.

Rehabilitation services in the seven-county region are centralized in Craven County at CarolinaEast Medical Center's 20-bed unit. CarolinaEast Medical Center's inpatient rehabilitation unit is currently operating at 45.8-percent occupancy and has sufficient capacity to treat additional patients in the region. As stated previously, patients from the MGTF Region most frequently access inpatient rehabilitation services at CarolinaEast Medical Center, Pitt County

10 CarolinaEast Medical Center is currently licensed for 313 beds, and 37 beds are under construction and will be available for use in the fall of 2009, increasing the number of licensed beds to 350.
11 Carteret General Hospital and Onslow Memorial Hospital.
12 Duplin General Hospital and Pender Memorial Hospital.
13 Please note this does not include rehabilitation beds located in nursing facilities.

ACUTE HEALTH CARE FACILITIES Figure 6.2

Licensed acute care providers in the region

Memorial Hospital, and New Hanover Regional Medical Center. In addition, some patients travel to the Triangle for these services.

Assuming no military population growth, the projected 2011 inpatient rehabilitation visits in the region indicate a need for 10 additional inpatient rehabilitation beds. Given the physician and capital needs required to develop a new inpatient rehabilitation service, however, it is unlikely that a new program will be developed in the near future. In addition, CarolinaEast Medical Center currently maintains sufficient capacity to serve additional inpatient rehabilitation patients for the foreseeable future.

Outpatient Services

In addition to physician services, outpatient services are available in the region at the following facilities.

Facility Name	County
Outpatient Rehabilitation	
Carteret General Hospital^	Carteret
Craven Regional Medical Center‡	Craven
Onslow Memorial Hospital‡	Onslow
Naval Hospital Camp Lejeune	Onslow
Diagnostic Imaging Centers*	
Atlantic Diagnostic	Carteret
Carteret General Hospital	Carteret
Coastal Carolina Health Care, P.A.	Craven
Craven Regional Medical Center	Craven
Naval Health Clinic Cherry Point	Craven
Duplin General Hospital	Duplin
Atlantic Diagnostic	Duplin
Jacksonville Diagnostic Imaging/ Coastal Diagnostic MedQuest	Onslow
Naval Hospital Camp Lejeune	Onslow
Onslow Memorial Hospital	Onslow
Pender Memorial Hospital	Pender
Ambulatory Surgery Centers	
Carteret Surgery Center	Carteret
Naval Health Clinic Cherry Point	Craven
Naval Hospital Camp Lejeune	Onslow
SurgiCare of Jacksonville	Onslow
Urgent Care Centers	
Beachcare Urgent Care Center	Carteret
Urgent Care of Morehead City	Carteret
CCHC Urgent Care	Craven
ECIM	Craven
Naval Health Clinic Cherry Point	Craven
Wallace Urgent Care	Duplin
Pediatric Urgent Care	Onslow
Family Urgent Care	Onslow
MedCare	Onslow
Surf City Urgent Care	Onslow
Nova Urgent Care	Pamlico

Table 6.8

^ Cardiac Rehabilitation Only

± Includes outpatient cardiac rehabilitation program.

* Please note that this includes major diagnostic imaging centers, specifically those with either mobile or fixed MRI offices. This list is not exhaustive and does not include sevices provided at physician offices.

Source: *2009 State Medical Facilities Plan* and www.yellowpages.com

The services listed above are predominantly sufficient to meet the current needs of the regional population. The *2009 State Medical Facilities Plan* has identified a need for one additional MRI in Onslow County. Applications for the MRI are currently under review.

Regional Coordination

There is a high level of coordination and cooperation between military and civilian health care providers. Whereas many regions of the country with large military populations often find it difficult for community providers and DoD facilities to work together, the MGTF Region has discovered that communication between facilities is essential to providing optimal care. The relationship between military and civilian providers has been developed over time and relies on regular communication from the MTFs regarding changing physician capacity and coordination through the regional Health Net representatives. Although coordination is particularly strong relative to primary care and specialty physician services, as noted previously, coordination continues to evolve, if not improve, in the behavioral health sector.

Needs Assessment

Department of Defense Health Services

MILITARY TREATMENT FACILITIES

Naval Hospital MCB Camp Lejeune and Naval Health Clinic Cherry Point have been active participants in the planning processes regarding the plus-up in population at each of the local installations. However, even with advanced planning, both facilities continue to need additional physicians, particularly medical and surgical specialists. Ideally, these slots could be filled by naval medicine physicians, nurse practitioners, and physician assistants who receive orders to serve at either facility, but there is a national shortage of naval healthcare professionals in some specialties, and unique military missions require assignment to operational units and overseas locations on a higher priority than stateside locales. In addition, uniformed providers are periodically pulled from these facilities to support operational forces deployed outside the United States. As a result, civil service or contract civilian providers are being used to augment the uniformed staff, and both facilities have positions that they are seeking to fill with civilian providers. Unfortunately, as with the civilian community at large, both military facilities experience challenges recruiting civilian physicians and other providers to the region, resulting in a situation in which both the military facilities and local civilian health care organizations compete for the same scarce assets. Reimbursement mechanisms, as noted below, perceived quality of life concerns near the installations, and the overall difficulty traveling throughout the region all contribute to the challenges associated with recruitment of healthcare professionals. As such, implementation of the recommendations submitted by the transportation and quality of life working groups have the potential to greatly enhance recruitment efforts and resulting staffing outcomes at the MTFs.

TRICARE

As described above, TRICARE reimbursement will remain one of the most significant health care issues facing the MGTF Region following the influx of military growth. Low TRICARE reimbursement, coupled with the rising overhead of operating medical practices, is leading many providers to limit the number of new TRICARE patients they accept in their practices. Thus, it will be increasingly difficult for TRICARE patients to obtain an appointment—either for primary, specialty, or behavioral health care—in their local communities. In many cases, TRICARE patients already travel to medical practices outside of this region to obtain some of their medical care—particularly specialty medical and surgical care—in a timely manner. It is anticipated that additional limitation of the TRICARE patient panels, or even withdrawal of providers from the TRICARE network, will increase over the next five years as the economy improves and regional civilian population growth resumes to levels seen between 2000 and 2007. Providers prefer to serve civilian patients because they typically have commercial insurance plans that offer higher reimbursement than TRICARE and other government payers. Currently, TRICARE patients are using capacity in physician offices that could be allocated to better-paying civilian patients.

Health care providers in the region are already experiencing declining revenue and are initiating cost cutting measures, thereby limiting their ability to make necessary investments in quality care, such as workforce development, health

information technology, and medical equipment. A 2007 American Medical Association study found that 54 percent of physicians would have to reduce staff and 67 percent would defer purchasing information technology if Medicare payments were cut. TRICARE reimbursement is linked to Medicare reimbursement. As such, it is reasonable to believe that a reduction in TRICARE reimbursement would have a similar effect. If TRICARE reimbursement is not enhanced, TRICARE beneficiaries in the MGTF Region will continue to find it difficult to access appropriate health care services locally and in a timely manner.

Veterans Affairs

Military population growth in the region is not expected to have an impact on Veterans Affairs services. The current capacity is sufficient.

Health Care Providers

At present, there is a large physician shortage across the region. USMC related growth will further increase those needs. Regional population growth will result in a need for more than 73 FTE primary care providers, 100 FTE medical specialists, 73 FTE surgical providers, and 60 dentists. Please see the county modules for more details regarding each of these needs.

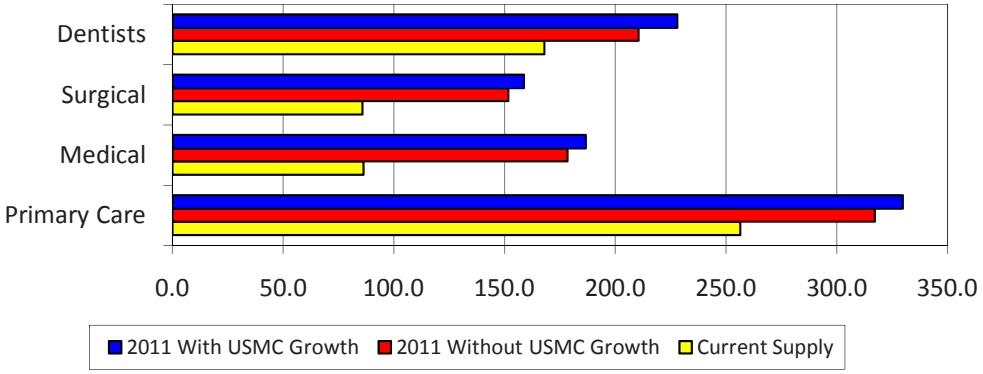


Figure 6.2

Source: Health Net Federal Services, regional providers and HPS Demand Model.

Behavioral Health

As active-duty troops return from abroad, the current shortage of mental health and substance abuse services will become more apparent, especially since, as is well documented, behavioral health problems are even more acute with deployed and returning service members and their families.

Providers

The MGTF Region is already facing a significant shortage of behavioral health providers, and following USMC population growth, twice as many providers as currently exist will be needed. Recruitment of these providers is essential to supporting the needs of the military population and maintaining deployment readiness for active-duty service members.

Inpatient Behavioral Health Services

Following military population growth, a surplus of substance abuse and adolescent psychiatry beds will remain in the region; however, there will be a need for 16 additional adult psychiatric beds, as shown in the chart **below**.[14]

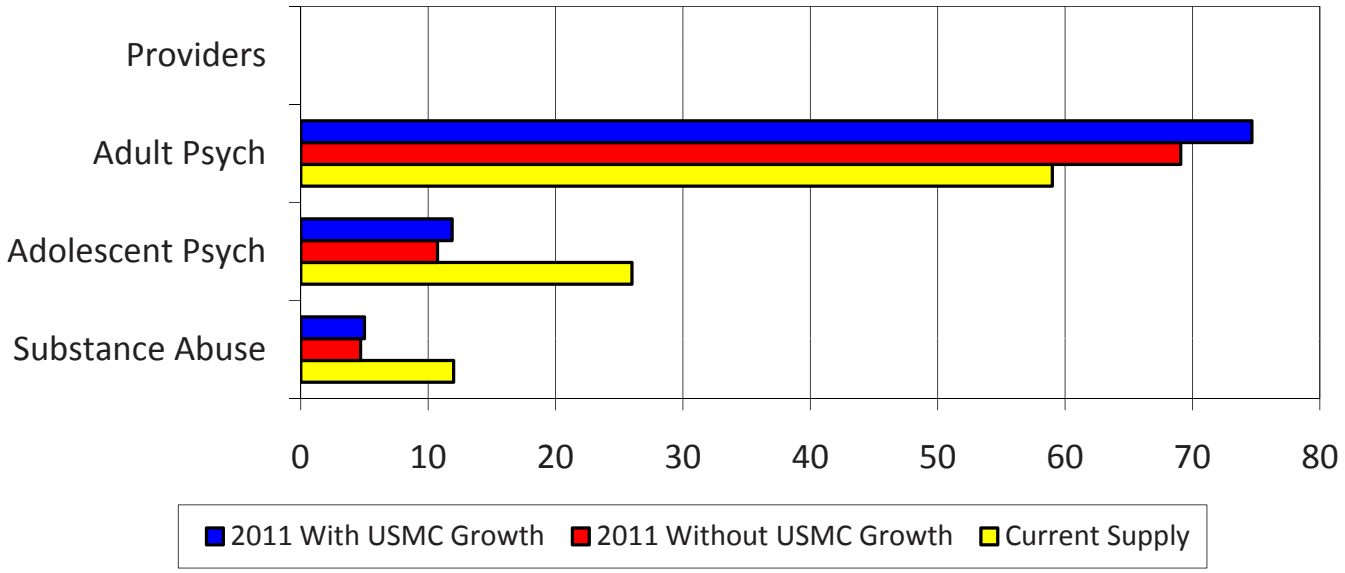


Figure 6.3 - Behavioral Health FTEs and Beds

The *2009 State Medical Facilities Plan has identified the need for 12 additional adult psychiatric beds in the Onslow-Carteret County region; however, additional beds will be needed in the region to support military population growth. The beds needed as a result of military population growth should be allocated to an existing inpatient psychiatric facility, likely to Brynn Marr Hospital in Onslow County, which currently has capacity constraints for adult psychiatric services.*

Inpatient Acute Care

If each facility in the MGTF Region treated all patients originating in its home county, the region would have a need for just fewer than 300 beds following the growth in the military population. As stated previously, however, out-migration in each of the seven counties ranges from 24.4 percent in Craven County to 100 percent in Pamlico and Jones Counties. The out-migration from each of these counties is likely a function of the lack of medical and surgical specialists practicing in the region. Patients often travel to New Hanover and Pitt Counties, as well as the Research Triangle, to receive these services because they are not available locally. Until physician needs are met, there will be no need for additional inpatient services.

Although the military population growth will result in the need for 56 additional beds beyond the needs of normal population growth, there is still more than sufficient capacity to meet the inpatient acute care needs of the region's population, as shown in the graph **below**.

14 Please note that the Mental Health Licensure and Certification Section of the NC Division of Health Service Regulation views adult psychiatric beds, adolescent psychiatric beds, and substance abuse beds separately. Patients from one unit cannot be treated in another unit.

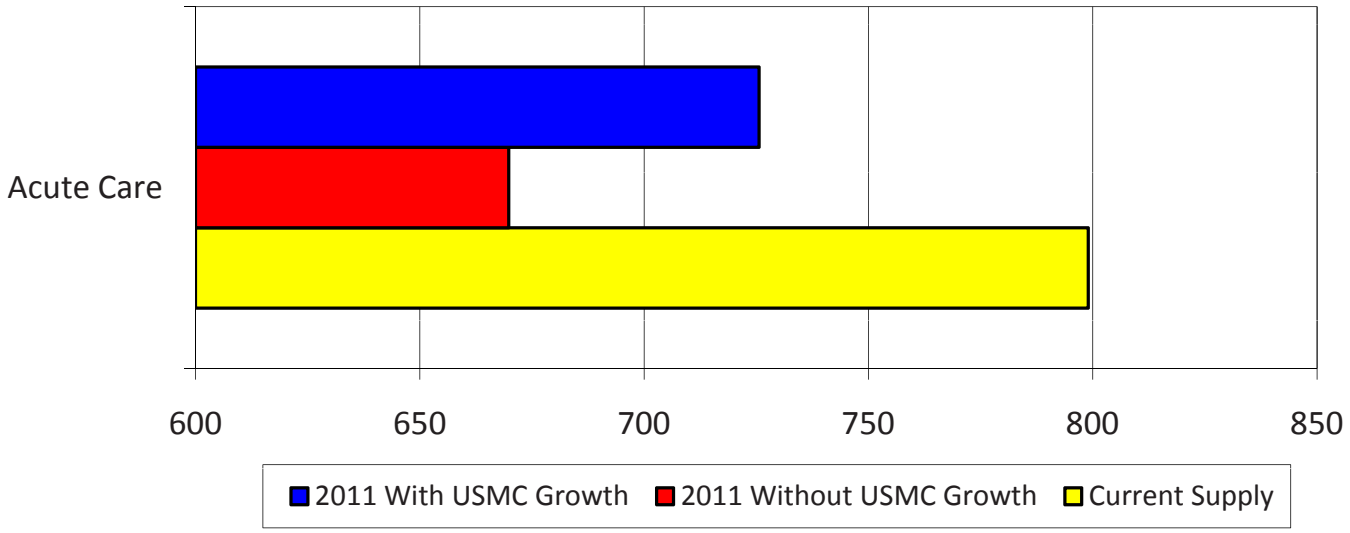


Figure 6.4 - Inpatient Acute Care Beds

Inpatient Rehabilitation

The growth of the military population will result in the need for two additional inpatient rehabilitation beds, totaling a current 12-bed deficit, as shown in the chart **below**.

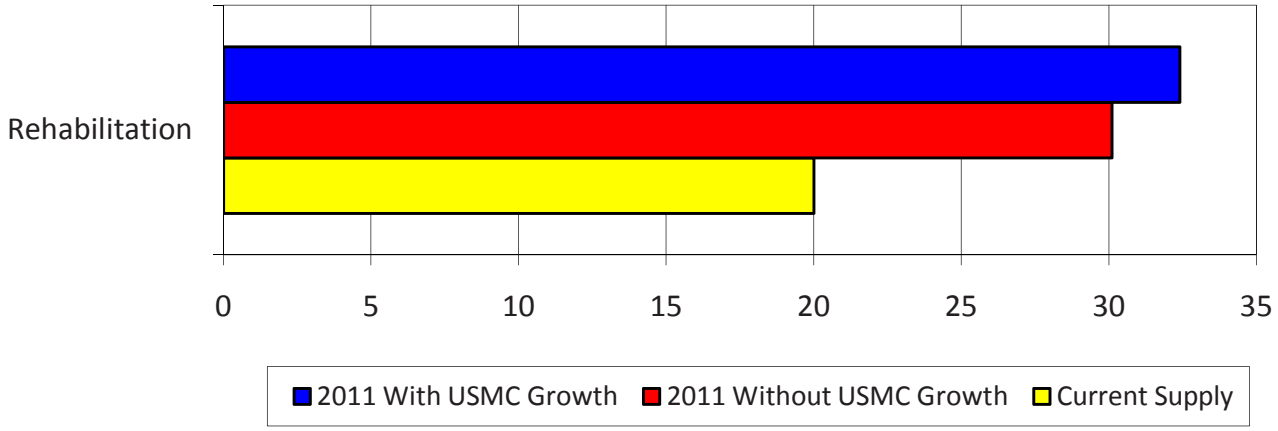


Figure 6.5 - Inpatient Rehabilitation Beds

As stated previously, inpatient rehabilitation patients are appropriately being treated at CarolinaEast Regional Medical Center, augmented by access to services in Pitt and New Hanover Counties at this time. As such, the need for additional capacity is likely already being met outside of the seven-county region.

Outpatient Services

Military population growth will have no impact on the need for diagnostic centers, ambulatory surgery centers, and urgent care centers. There will be a need for additional outpatient rehabilitation services, however, to support additional inpatient rehabilitation services. These services are largely dependent on the availability of health care providers, and are based on the physician demand model. There is an existing physician shortage throughout the region that will be exacerbated

by USMC growth. Until regional physician needs are met, the ability to develop additional outpatient services will be hampered.

Regional Coordination

As stated above, while regional coordination is effective overall, there is a need for greater communication between DoD facilities, Health Net Federal Service, and civilian providers regarding the provision of behavioral health services to military personnel. As the behavioral health needs of the population continue to increase, civilian providers will increasingly be relied upon to deliver care. It is imperative that providers be familiar with the services they can and cannot provide, as well as any restrictions on the how services are to be provided, as soon as possible.

Recommended Strategies and Actions

Action 1: Continue to pursue TRICARE Locality Waiver

Rationale

Local health care providers are currently working toward obtaining a Locality Waiver from the Department of Defense (DoD), which will effectively increase TRICARE reimbursement for physician and non-physician providers serving TRICARE beneficiaries. Low TRICARE reimbursement is already a key concern for providers in the region, and the growth of the TRICARE eligible population in the region will only intensify this concern going forward. Failure to increase TRICARE reimbursement will likely discourage current non-network providers from participation and cause current network providers to limit their panels or withdraw from the network in the future.

Responsible Party

Local health care providers and Health Net Federal Services will continue to complete the Locality Waiver for submission, and local legislators are encouraged to lobby for the support of its passage following submission.

Funding

None requested

Action 2: Pursue private grant funding targeted at covering professional school debt in exchange for service in a region with a high TRICARE population

Rationale

Recent medical school graduates have virtually no financial incentive to practice in an area with a significant TRICARE population. The physicians in the MGTF Region overall are aging, raising concerns about future provider supply in the region. It is imperative that incentives be put in place to attract younger physicians to the region. The region faces similar concerns related to dentists.

Federal and State loan repayment programs exist to incentivize physicians and dentists to practice in rural and health professional shortage areas for a stated period of time (two to four years). However, only portions of some counties in the MGTF Region are eligible for these types of grants. In particular, Onslow County, which has the highest physician shortage, is not eligible for this type of funding. The addition of requirements to State and Federal loan repayment programs for heavily populated TRICARE areas is not a likely funding resource because of existing commitments to rural communities. Private foundations (such as The Duke Endowment and the Robert Wood Johnson Foundation) provide grants targeted

at improving the health of communities. In addition, many foundations seek to develop programs that can be replicated in other locations. TRICARE physician recruitment grants could be replicated in other large TRICARE populations in North Carolina, as well as in other states.

The proposed grants should mirror North Carolina loan repayment programs, which offer $70,000 to a physician in exchange for four years of service. In addition, these programs include tax stipends to help offset the provider's increased tax liability.

Responsible Party

Local hospital and physician leadership, in conjunction with the Military Growth Task Force.

Funding

In order to address approximately one-fourth of the regional health care provider shortage (to start), the MGTF Region needs approximately 85 providers. At $70,000 per provider, this requires grant funding of $5,950,000.

Action 3: Hold a military/civilian behavioral health round table to clarify roles and responsibilities in caring for TRICARE beneficiaries

Rationale

Civilian behavioral health providers have expressed confusion regarding their ability to care for military patients. Within the next six months, providers should convene to clarify the role of civilian providers in caring for military patients. Because many patients prefer to be seen off base, it is important that outcomes of this round table are shared with TRICARE beneficiaries.

Responsible Party

Regional LMEs, Naval Hospital MCB Camp Lejeune, and Naval Health Clinic Cherry Point leadership

Funding

None requested

Action 4: Pursue the use of telemedicine services to supplement specialty physician needs, including behavioral health needs

Rationale

Although specialty physician resources are not available locally, they are available in surrounding regions. Both the VA and East Carolina Behavioral Health have had recent success using telemedicine to provide physician services to the local community.

The Distance Learning, Telemedicine, and Broadband provision of the American Recovery Reinvestment Act (ARRA "Stimulus Bill") provides $2.5 billion to the USDA for grants, loans, and loan guarantees to increase broadband infrastructure (thereby allowing telemedicine to be a possibility in rural areas). The grants are available to areas in which 75 percent of the area does not have sufficient access to high speed broadband service. In addition, ARRA included a $19-billion provision for Health Information Technology (HIT) which primarily focused on the development of EMR, but could include telemedicine. In addition, several grants have been developed primarily for the purpose of encouraging the development of these services.

Responsible Party

Regional Hospital and LME Leadership, in conjunction with the Military Growth Task Force

Funding

The specific telemedicine needs of each MGTF Region county vary. Please see county modules for specific financial requirements.

Action 5: Establish a campaign in partnership with the North Carolina Office of Rural Health and the North Carolina Community Health Center Association to encourage physicians in rural areas to accept TRICARE reimbursement

Rationale

Some physicians in rural areas continue to be unaware of the administrative improvements made to filing a claim to Health Net Federal Services. Simply educating these physicians about these improvements should encourage additional physicians to participate in the TRICARE network.

Responsible Party

Regional physician champions, in partnership with the North Carolina Office of Rural Health and the North Carolina Community Health Center Association.

Funding

None requested.

Action 6: Continue to lobby for increased funding to mental health and substance abuse programs

Rationale

Despite budget deficits at both the state and federal levels, funding for behavioral health programs is more important now than ever. There are many programs in place that are actively seeking to alleviate behavioral health concerns; however, current funding levels are simply not sufficient to meet the increasing demand for services. As such, funding must be maintained, if not increased, for behavioral health services. Further, East Carolina Behavioral Health LME is already receiving single-stream funding. This funding method should be expanded to each LME to encourage better utilization of state funding for direct service provision.

Action 7: Revise health care provider licensure and certification laws regarding reciprocity between states

Rationale

The shortage of health care provider is the most pressing need facing the region. Often, the spouses of military members are health care providers, but have difficulty obtaining licensure and certification in North Carolina. As such, many choose to change fields or not work at all. By reducing the challenges to obtaining licensure and certification, more of these professionals may choose to practice in the region.

Responsible Party

Military Growth Task Force of North Carolina's Eastern Region

Funding

None requested.

Conclusion

Military growth in the MGTF Region will exacerbate and create needs regarding TRICARE reimbursement, physician recruitment and retention, inpatient and outpatient behavioral health services, and dentist recruitment. Although many of these issues have been present in the region for a long period of time, employing creative strategies such as a TRICARE Locality Waiver and the use of telemedicine services, can effectively improve regional medical and health services in both the short and long term. Please see each county model for further discussion of each of these issues.

Social Services

Introduction

Compared to the civilian population, active-duty Marines and their families face unique challenges that increase their need for social services, provided on base by Marine and Family Services,[15] and off base by county-level Departments of Social Services. Military families often experience frequent relocations between installations, leaving families in a constant state of transition. Such moves tend to result in the military family being located away from their extended family support network. Recently, active-duty Marines have experienced multiple deployments as a result of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). These long periods of separation during deployment and the anticipation of redeployment have added stress to Marines and their families. Finally, the Marines located at MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River are primarily junior-enlisted service members under the age of 26, and the projected military growth at these bases is expected to mirror the same demographic trends. The age and experience level of these Marines is widely recognized to further increase social service resource needs both on and off base.

The growth in the military populations at MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River is not expected to create a need for any new services. Both Marine and Family Services and the county-level Departments of Social Services have the appropriate services in place. Growth in population at all three bases, however, is expected to strain the financial and personnel resources used to support those programs. Marine and Family Services programs expect increased demand on all services as a result of population growth, but foresee particular increases with Marine and Family Readiness, Day Care, Individual and Family Counseling, and Family Advocacy programs. Most of the Departments of Social Services in the surrounding counties expect an overall minimal impact on resources, but expect that services such as Child Welfare (including Child Protective Services), Day Care, and Food and Nutritional Services (FNS) will experience greater resource pressures due to military population growth.

Background

Marines and their families access social services through two primary avenues:

1. On base through Marine and Family Services programs, and
2. Off base through county-level Departments of Social Services

Marine and Family Services is a division of the department of Marine Corps Community Services (MCCS) that provides a variety of services to strengthen the military community at each Marine installation throughout the country. Marine and Family Services programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or visits to the Marine and Family Services offices located on MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River. Marines and their family members can access services voluntarily, or via referral to social services by a Commander or another division of military services, such as a health care provider. Marines are briefed on available services during the required base orientation, *Welcome Aboard,* upon arrival at any Marine installation. Services and special events are advertised on the base television channel and flyers around base, including at the commissary, shops, and restaurants.

Marines and their families, particularly those living off base, also access social services through County Departments of Social Services (County DSS). These services can be accessed by phone, Internet, or in-person at the County DSS offices, located in the county seat. Although the Marine and Family Services Division is intended to be the sole source of social services for Marines and their family members, county-level services may be accessed due to their proximity to the family's home, and/or if a domestic violence situation requires DSS participation. Further, some active duty Marines may choose to access community services rather than use of social services at Marine and Family Services.

15 A division of the department of Marine Corps Community Services (MCCS).

Military service members have unique characteristics that increase their need to access social services. The Marines at MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River are generally junior-enlisted Marines between the ages of 18 and 26, and the additional Marines relocating to the region are expected to follow a similar demographic trend. Many of these Marines and their families are without local support networks due to frequent relocations between installations and separation from extended families. Support networks provide multiple levels of support, including emotional, instrumental and informational support. These networks are important to young families who may have never lived on their own before. Without support networks, Marines and their spouses are vulnerable to becoming overwhelmed by the numerous challenges of military life, including extended absences during deployment and the effects of injuries incurred in war zones, including Traumatic brain injuries (TBI), Post Traumatic Stress Disorder (PTSD), and combat stress. In addition, during deployment military spouses must cope with managing household and child responsibilities alone, because there is no one to step in and provide instrumental support and respite from daily tasks. Further, families without support networks might not have persons who help them navigate available social services and other resources. Thus, they may only access public assistance when they are in crisis, rather than utilizing preventative services.

The age range of the Marine demographic associated with MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River also affects the types of social services needed to support this population. Because many of the Marines and their spouses are between the ages of 18 and 26, they are often experiencing independent living for the first time. Independent living requires skills such as financial and household management that young Marines may not have yet fully developed, increasing the need for assistance for social services. Unfortunately, young Marines and their spouses are also not as likely to know how to request assistance from social services. Without this support, adapting to independent living while learning to cope with the stresses of military life and family responsibilities can be overwhelming. In addition, junior-enlisted Marines are often in a lower salary range, increasing their potential to need services such as food assistance, particularly if they have several children. They also might not be able to afford day care or private transportation, which limits the military spouse's ability to find employment outside of the home.

For all of these reasons, military families use social service resources at higher rates than civilian populations do. Programs available through Marine and Family Services on base are utilized at high rates, and are experiencing resources stress; programs particularly affected include Marine and Family Readiness, Child Development, Individual and Family Counseling, and Family Advocacy programs. Programs used by military families through the Departments of Social Services in the surrounding counties include Child Welfare (including Child Protective Services), Day Care, and Food and Nutritional Services (FNS) programs. The resources used to support each of these programs are expected to be strained following military population growth. Please see the following section of this module for a discussion of the current social services available in the region and existing capacity constraints.

Existing Conditions

As discussed previously, military families, and particularly junior-ranking military families, utilize social service programs at higher rates than civilian populations do. As a result, many of the social services programs that exist in the region are currently being utilized at or above capacity.

Marine and Family Services

Marine and Family Services at MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River provide social service programs to address the challenges that military service members and their families face. While all programs discussed in the previous section are used at high rates, Marine and Family Readiness, Day Care, Individual and Family Counseling, and Family Advocacy programs are experiencing significant resource stresses.

The central aim of all Marine and Family Services is to support mission readiness: to strengthen the individual Marine and his or her family for mental and emotional fitness to allow the Marine to be fully prepared for optimal performance during mission deployment. To this end, Marine and Family Services offers a range of social services support programs, including parent and spouse support, education opportunities, child abuse/neglect interventions, special needs programs, substance abuse prevention and counseling, and individual and family counseling. Active and retired Marines, as well

as their legal spouses and dependents, are eligible to access Marine and Family Services. Due to its integration into the military structure, staff coordination with official military channels, and staff understanding of military life, Marine and Family Services is able to address social service needs within the context of military culture.

Marine and Family Readiness

Deployment readiness is central to all Marine and Family Services as it strives to strengthen and support Marines, their families, and the military community. To ensure that Marines are mission-ready, Marine and Family Services provides classes, workshops, and counseling to mentally prepare the service member and his or her family for deployment, through the following programs:

- *Lifeskills* courses provide workshops on a wide range of topics crucial to healthy individuals, marriages, and families.
- *Lifestyle, Insights, Networking, Knowledge, and Skills (L.I.N.K.S.)* program provides military members, spouses, and children with mentoring and guidance through Marine and Family Services staff, chaplains, Marine Corps Retention Services, and volunteer military spouses.
- *Family OverComing Under Stress (FOCUS)* program assists families with techniques and services to cope with the stress that results from serving in the military and being deployed during times of war.
- *Chaplain's Religious Enrichment Development Operation (CREDO)* is a weekend retreat program for military members and their families on topics such as personal growth, character development, team building, and ethical leadership. Workshops are also offered to address issues such as marriage enrichment and spiritual growth.
- *New Parent Support Program (NPSP)* provides education and training for new parents including parenting, baby safety and play times.

As discussed previously, deployment puts a strain upon the Marines and their families and, in particular, their spouses, who must manage household and child responsibilities on their own. These services are essential to helping prevent and identify potential crises before they require intervention. These Marine and family readiness programs address issues relating to deployment, and are currently operating at capacity, as the demand for these services has increased with increased deployments in support of OIF and OEF.

Child Development Centers

Although day care/child development conditions, needs, and recommendations are addressed in the Education Module as part of the RGMP, child development plays a central role in the need for, and delivery of, social services. Access is particularly crucial to the military spouse as it provides increased opportunities for employment outside the home, time to care for personal needs (such as routine medical appointments), community involvement, and opportunities to pursue continued training and education. The need for child development is most acute when a service member is deployed, leaving all household and family responsibilities to one spouse. For all of these reasons, access to affordable child development options is critical, because it allows military families—in particular military spouses—to be more financially independent, maintain physical and mental health, and develop professional skills. In turn, these opportunities often lead to a decreased need for other social services such as food assistance, counseling, and child welfare services.

Marine and Family Services has a range of child development options for children from six weeks to 14 years of age. Currently the demand for child development at both MCB Camp Lejeune and MCAS Cherry Point is greater than current program capacity. Advance reservations are required and slots often fill up weeks in advance, making last-minute or urgent day care needs a challenge. Weekday child development is available during the day but not during second and third-shift times, limiting employment options for military spouses and single parents. Child care is sometimes available off base, but

availability is limited and is often unaffordable for most military families.

Exceptional Family Member Program

The Exceptional Family Member Program (EFMP) provides for families who have children with special needs. EFMP staff provides placement coordination, family support, and forty hours of monthly respite care. Both MCB Camp Lejeune and MCAS Cherry Point's Exceptional Family Member Programs have been growing quickly over the past few years, but are currently operating at capacity levels that present barriers to providing optimal care. In addition, many families in the EFMP program are experiencing challenges with accessing local health services for their exceptional family members. Many specialty services are available only in the Triangle at Duke University Hospital or the University of North Carolina Hospitals. Accessing services at these facilities requires an all-day trip, which places burdens on parents and children alike. Because no transportation services are available to these facilities, parents must take a day off of work to travel to the Triangle, and may also have to pull other children out of school for the day because they do not have before- or after-school day care options. Furthermore, although TRICARE reimburses families the trip, payment is made well after the trip is made. For some families, even paying the initial cost of gas and parking is a financial hardship.

Counseling Services & Family Advocacy

Marine and Family Services provide individual and family counseling, as well as victim advocacy, to address challenges that individuals and families are experiencing. Counseling services are experiencing an increase in demand for individual and family counseling and therapy as a result of Marine experiences in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). In addition, the recent shift of focus and surge of troops to Afghanistan has resulted in increased anxiety for Marines and family members. While risks of deployment in Iraq have been largely understood by the military, and anticipated by Marines and their families, Afghanistan is a new environment, and the full impact of this shift is yet to be realized. This uncertainty has added anxiety for both Marines and their families, and thus has the potential to affect counseling needs.

Marine and Family Services counseling services are meant to address short-term counseling needs such as child/parent and spouse relationship issues. Long-term mental health needs such as TBI, PTSD, and combat stress are provided for in the Marine or community medical facilities by psychologists and psychiatrists. Regardless of the length of counseling needs, these issues often have an effect on marriages and families, because combat experiences and deployment transition can lead to family relationship strains and even domestic violence and child abuse.

Demand for mental health services is greater than current capacity. Due to difficulties accessing appointments, many mental health issues remain un-treated, placing additional stress on the Marine and his or her family. Mental health needs are fully addressed in the medical and health section above.

Substance Abuse

Substance abuse becomes a particular concern during times of deployment as Marines and their families cope with the stress of separation from family, and experiences of war. The substance abuse program aims to prevent substance abuse and treat Marines and their families with substance abuse issues. The program offers preventative educational programs for military members and works closely with Command structures to recognize and intervene in any potential case of substance abuse. When cases of suspected substance abuse do emerge, the program provides screenings and assessments, and refers Marines and family members to appropriate treatment options. Marine and Family Services provides substance abuse counseling and coordinates with in- and out-patient medical services.

Additional Marine and Family Services

Other Marine and Family Services programs expect a less significant impact due to the demographics of expected Marines, including the following programs:

- *Food Assistance* – While most Marine families do not qualify for food assistance based upon their income

and family size, financial counselors screen eligibility and provide referrals when appropriate. The military provides assistance through the Family Subsistence Supplemental Allowance (FSSA), a program that provides additional income dedicated to food purchases. Marine and Family Services staff also refer eligible Marines to Food and Nutritional Services (FNS), commonly known as "food stamps," accessed through County DSS offices, and to Women Infant Children (WIC), a Department of Agriculture program for pregnant, post-partum, and breastfeeding women, and children under the age of five, to meet crucial nutrition needs.

- *Relocation & Transition Assistance* – When Marines and their families are arriving at, or departing from, MCB Camp Lejeune, MCAS Cherry Point, or MCAS New River, Marine and Family Services staff assist them with information and logistical support to facilitate a smooth move. Information on housing, schools, and available resources is provided to new Marines and their families. When a Marine is departing from the military, similar assistance is available, including resume preparation, employment assistance, and training on accessing civilian services.
- *Lifelong Learning* – In order to provide Marines and their spouses with the opportunities for personal and professional development, this program provides and facilitates access to continued education and occupational training. Career and educational counseling, testing, online classes, and referrals to local educational centers are available.
- *Retired Affairs Office* – Retired Marines are eligible for continued support and assistance, provided at this office. Staff assists retired Marines with information regarding benefits available, including health care, education, casualty assistance, VA disability compensation, and social security.

OneSource

Military OneSource is a resource contracted through the Department of Defense for military members and their families, intended to supplement existing military support services through the Internet or by phone. Military OneSource complements Military and Family Services, providing a central location for information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs. OneSource offers counseling sessions over the phone and online, and refers to local counselors for in-person counseling. Local counselors in the communities surrounding MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River, however, often have limited availability, and waiting lists are frequent and wait times lengthy.

Departments of Social Services

North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[16] County Departments of Social Services (County DSS) provide social services that fall into two categories:

- *Social Work Services* for children, families, and adults. This includes programs such as Child Protective Services, Family Preservation and Support Services, Foster Care Placement, Adoption Services, Recruitment and Licensing of Foster Homes, Adult Day Care, In-Home Aide Services, and Services for the Blind.
- *Economic Services* programs help low-income families obtain work opportunities, and assist them with health care coverage, and food and energy assistance. These programs include Child Support Enforcement, food and energy assistance, transportation services, and Work First Family Assistance, the North Carolina Temporary Assistance for Needy Families (TANF) program.

16 North Carolina Department of Social Services, available at http://www.ncdhhs.gov/dss/about/

As discussed previously, while Marine and Family Services are meant to be the primary avenue by which military members and their families access services, military families that live off base, and particularly those who are less knowledgeable about military resources, can access social service programs through the County DSS. In particular, the military population uses Child Welfare, and especially Child Protective Services, Day Care, and to a lesser extent, Food and Nutritional Services (FNS), commonly known as "food stamps." In addition, affordable transportation is a current need for both military and civilian populations that greatly impacts access to social services.

While County DSS expect these programs used by military populations to experience increased demand as a result of the military growth, the military impact will be compounded by the increase County DSS services are currently experiencing as a result of current economic conditions. All counties in the MGTF Region have experienced an increase in demand for their services, stretching thin funds and staff capacity. In addition, in many counties, a new demographic of the civilian population is seeking social services through DSS, as middle-class individuals are losing employment and, therefore, a means for self-sufficiency. Serving this demographic requires increased resources from DSS staff, because many of these individuals are accessing social services for the first time and are unfamiliar with the DSS system and procedures. With County DSS capacity already stretched in the current economic climate, adding Marine populations will further exacerbate already-existing funding, staff, and facility capacity challenges.

Military and civilian populations access DSS services by phone, Internet, or in-person at the County DSS office. Each county has a central DSS office located in the county seat, as presented below:

County	County Department of Social Services Location
Carteret	Beaufort
Craven	New Bern
Duplin	Kenansville
Jones	Trenton
Onslow	Jacksonville
Pamlico	Bayboro
Pender	Burgaw

Table 6.9

Source: Department of Social Services for each county

Day Care

As discussed previously, while day care is addressed in the Education Workgroup, it plays a central role in the need and delivery of social services. Access to day care is important for the family unit but, in particular, provides increased opportunities for military spouses. Affordable and reliable day care is a critical need for military families, and this need has increased with the deployments to OIF and OEF. Access to affordable day care allows military families, and in particular military spouses, to be more financially independent, maintain physical and mental health, and develop professional skills, reducing the need for other social services such as FNS, individual and family counseling, and child protective services.

Public day care is funded through, and administered by, County Departments of Social Services in order to provide free and/or subsidized child day care for low-income families. These services are often designed for short-term care, such as respite care, or for child care help for a medical appointment or other short-term need. All County DSS offices in the region expressed that the demand for affordable day care is higher than their current capacity, and that many families are placed on waiting lists for available slots. Although they have the facilities to increase day care capacity, funding for staff and administration to support increasing day care slots is not available.

Child care for children between the ages of five to 12 is designated as after-school care, while children under the age of five receive all-day care. The following table outlines current day care need by county for after-school care for children aged five to 12 for the military and civilian population:

County	Child Care Enrolment 2007	Expected Child Care Enrolment due to Normal Population Growth - 2011
Onslow	865	1,062
Craven	618	701
Pender	302	358
Duplin	524	565
Carteret	174	186
Pamlico	108	110
Jones	43	45
Total	**2,634**	**3,027**

Table 6.10

Source: Education Committee of Military Growth Task Force of North Carolina's Eastern Region

The following table outlines current and anticipated day care need by county for all children under the age of 15:

County	Child Care Enrolment 2007	Expected Child Care Enrolment due to Normal Population Growth - 2011
Onslow	3,403	4,178
Craven	2,242	2,542
Carteret	1,216	1,298
Duplin	1,732	1,868
Pender	1,066	1,263
Jones	178	188
Pamlico	317	323
Total	**10,154**	**11,660**

Table 6.11

Source: Education Committee of Military Growth Task Force of North Carolina's Eastern Region

Child Welfare

Military families, particularly junior-enlisted military families, use DSS child welfare services at higher rates than civilian populations. Onslow County reports that military families account for 45 percent of the county's child welfare utilization,

when the military population represents only 29 percent of the Onslow County population. This higher use rate is due to factors discussed previously, including lack of support networks due to frequent moves and separation from extended families. Without support networks, these military parents and their spouses are more easily overwhelmed by the numerous stresses of military life, including extended absences during deployment and injuries incurred during deployment. Many military families around MCB Camp Lejeune and MCAS Cherry Point are also young and have young children. As discussed previously, these younger military parents are often still learning life skills and coping methods to deal with the life challenges they face. Families living in the civilian community often feel isolated from the military population, and might perceive that the civilian population does not understand the unique challenges they face in military life. Finally, they might not be knowledgeable about on-base services and resources, or not be able to access those services, exacerbating their sense of isolation.

All of these factors lead to military families' requiring a disproportionate amount of child welfare services at the County DSS level, particularly child protective services. Child abuse and child neglect cases exist at high rates in the military community, and military families often constitute some of the most severe cases. County DSS also involves military families in its programs to prevent child abuse and neglect, including parenting classes and Smart Start, a program that provides child care and early childhood development while engaging parents to support positive parent-child relationships.

County DSS offices are responsible for providing the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.

Transportation

While many counties have some form of public transportation, availability is limited and most public transportation systems are not structured for flexible and daily use. Geographic access is also a challenge—much of North Carolina's Military Growth Task Force Region is rural, and DSS offices are located in the county seats in the county centers, sometimes far from the military population. Private transportation is sometimes available but not affordable for most community members. The following systems comprise the public transportation options in the seven-country region:

- CARTS – serves Craven, Pamlico, and Jones County with 32 vehicles, but access and routes are limited and reservations are required within two days of travel.
- Onslow United Transit System (OUTS) - serves Onslow County residents with 16 vehicles. OUTS requires advanced reservations to schedule a pick-up and offers rides from 7am until 9pm.
- Jacksonville Transit – a public bus line serving MCB Camp Lejeune and Jacksonville proper. Routes are limited, however, and do not adequately meet the needs of many military families who do not have private transportation.

Many junior-ranking military families do not have more than one car, and a lack of public transportation for these families, particularly those living off base, has a major impact on their ability to access services. This presents particular challenges because many social services available on base and at County DSS offices are best accessed in-person. Lack of transportation can also add to feelings of isolation for military families, particularly those living off base, who are often far from extended family and lack support networks.

Food and Nutritional Services

As previously discussed, many junior-ranking Marines have lower incomes, and a few are eligible for food assistance. County DSS offices offer food assistance through Food and Nutritional Services (FNS), based upon family size and income. Assistance allows eligible families to purchase food at local participating stores.

Additional Department of Social Services Programs

County DSS offices also support a number of other programs not frequently used by military populations. These programs include:

- *Crisis Intervention* – helps low-income households that have heating or cooling-related emergencies to reduce the risk of health or safety problems as well as the risk of eviction.
- *Work First* – is North Carolina's Temporary Assistance for Needy Families (TANF), providing temporary assistance to needy families and supporting their ability for self-sufficiency.
- *Adult & Family Services* – supports disabled adults with a range of services including guardianship, transportation to medical facilities, services for the blind, and adult care home monitoring.
- *Refugee assistance* – assists newly-arrived refugees with enrolling children into schools, and facilitates self-sufficiency through assistance with obtaining employment and learning local resource networks.
- *Pregnancy Services* – supports low-income individuals with support for unplanned pregnancies, and addresses medical, social, education, and psychological issues.

Coordination

Marine and Family Services & Departments of Social Services

Overall, County DSS offices and the military report limited need to coordinate in the delivery of social services. In cases of child abuse, however, coordination between County DSS and military staff is essential. If the offender is a military service member, his or her commanding officer is notified and the service member may be removed from the home temporarily and/or placed in custody on base. This coordination is particularly important because military families often do not have extended families in the area, and without the removal of the offender, County DSS would need to find temporary housing for the victims following allegations of child abuse. With the removal of the offender through the military discipline system, the child can remain in the home while follow-up investigation and counseling is conducted. Please note that spousal abuse cases are not handled by DSS.

Regional providers

Social service providers in North Carolina's Military Growth Task Force Region, both on and off base, express that increased coordination is needed in order to provide continuity of care to the military and civilian population. However, providers are currently operating at, or above, capacity due to the economic crisis and the growing needs of the military population due to OIF and OEF, and do not have the necessary resources to develop and maintain this coordination with other providers. In addition, key stakeholders express that even many social service professionals need increased knowledge of other social services available in their communities. While there have been attempts in the past to develop a regional resource directory, to date no extensive resource is available.

Needs Assessment

Marine and Family Services and County DSS

The military community already uses public social services at higher rates than does the civilian population, especially younger, junior-enlisted service members and their families. The military population growth in the region is expected to have similar demographic characteristics. These families often have young children, and are still learning life and coping skills to address the challenges they face and the stresses of military life. With current wartime deployments to OEF and OIF, stresses on military service members and their families are increasing, as are injuries and mental health conditions such as traumatic brain injuries (TBIs) and post-traumatic stress disorder (PTSD) cases, all adding to the need for additional

social service capacity.

Marines that are part of the influx are expected to increase social service demand at both on-base and off-base public services. However, *the influx is not expected to create needs for new service; rather, the increased military population is expected to exacerbate resource needs already present both on base at Marine and Family Services and off base through County DSS services.* Marine and Family Services on base at MCB Camp Lejeune and MCAS Cherry Point expect all services to experience increased demand, and also expect Day Care, Individual and Family Counseling, Family Advocacy, and Lifelong Learning programs to be particularly affected by the military growth. County DSS increased demand is expected for Child Welfare, including Child Protective Services, Day Care, and FNS programs. Current barriers to access for the Marine population—particularly transportation and knowledge of available resources—are also expected to be exacerbated by military growth.

The majority of County DSS's expect only slight increases in military population. However. Onslow County, home to MCB Camp Lejeune, is expecting the greatest impact with over 27,000 Marines and their dependents. Craven County, home to MCAS Cherry Point, is expecting the second largest impact, with over 7,500 Marines expected. Marine and Family Services Programs at MCB Camp Lejeune and MCAS Cherry Point are expecting a significant impact as a result of the influx. Expected program effects and needed resources are outlined in the table below:

Provider	Expected Impact	Greatest Expected Program Impact			Expected Resource Needs
		Child Welfare	Day Care	Food Assistance	
Marine and Family Services	Significant	☑	☑		Significant
Onslow DSS	Significant	☑	☑		Significant
Carteret DSS	Small	☑	☑		Medium
Craven DSS	Small	☑			Medium
Duplin DSS	Moderate	☑	☑	☑	Medium
Jones DSS	Small	☑		☑	Medium
Pender DSS	Small	☑			Medium
Pamlico DSS	None				None

Table 6.12

Source: Interviews with each County Department of Social Service Director and Marine and Family Services at Camp Lejeune and MCAS Cherry Point

Transportation and Geographic Access

As previously discussed, access to affordable public transportation and increasing geographic access is a major need for both the civilian and military populations throughout North Carolina's Military Growth Task Force Region. In particular, needs include:

- Increased access for military families living off base to access social services in their own communities.
- Transportation that can be accessed daily and without advance reservations.
- Increased geographic access, including increased access to services such as satellite offices.

Day Care

Access to affordable day care is currently a pressing need, and the increased military population is expected to further increase the demand for day care. As previously discussed, County DSS offices already have the necessary facilities to increase child care availability, but lack the necessary funding to provide adequate staff and administrative support. Marine and Family Services has on-base facilities, but demand exceeds capacity, as evidenced by the fact that both bases have a substantial number of children on the child care waiting lists. MCAS Cherry Point is currently constructing a third facility in two stages, adding 90 slots in the first phase at the end of 2009, and adding 200 slots in the second phase in 2015. Marine and Family Services provides referrals to other providers off base, but not enough off-base providers are available to meet current demand.

The following child care needs reflect a current situation that will be exacerbated by military growth:

- Expanded day care slots and qualified staff to support this capacity
- Expanded day care slots and capacity for children with special needs, such as extreme ADHD
- Increased day care availability at second and third shift times. Access to day care at these times would greatly increase military spouses' ability to find employment outside the home, increasing financial independence and decreasing needs for other social services, such as FNS.
- Increased access to respite care, particularly for single parents, military spouses whose spouses are deployed, and parents with children with special needs.
- Increased day care slot availability for parents needing urgent or last-minute day care options, particularly for single parents or military spouses whose spouses are deployed.
- The following chart presents the additional child care slots needed, as compared to current enrollment, and 2011 expected enrollment under normal population growth.

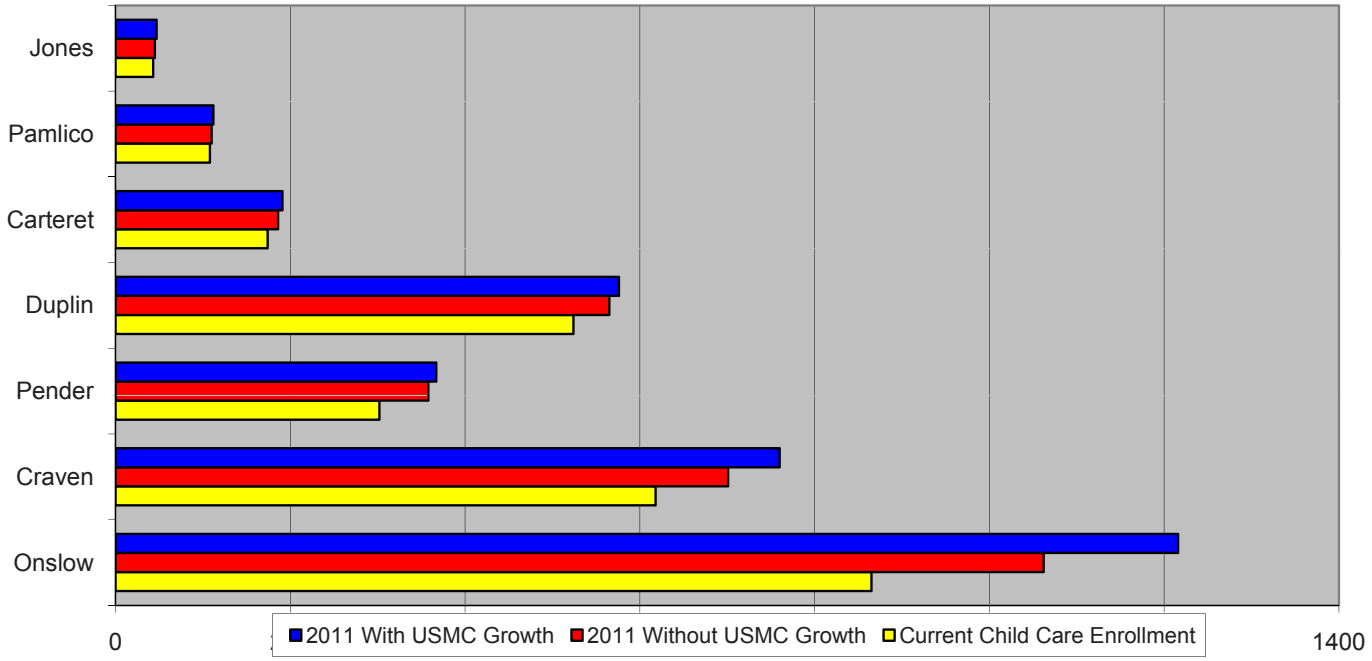


Figure 6.6 - Additional Child Care Needs

Child Welfare

Child welfare services through County DSS and Marine and Family Services are expected to experience a significant increase in demand as a result of the military growth. As previously discussed, military families, and particularly Marines of the expected demographic group (younger, junior-enlisted military families), use child welfare services at high rates and often account for some of the most severe cases. Addressing issues that cause this demographic group to need child protective services through preventative programs, as well as increasing resources to respond to child neglect and abuse cases, are significant needs recognized by regional social services stakeholders. These preventative and response programs, staff, and systems are in place, but will need increased funding and targeted initiatives to address expected upcoming need. In particular:

- Increased capacity for preventative programs through Marine and Family Services and County DSS that are currently in place and will need increased funding. These preventative programs include classes, workshops, and counseling on topics such as parenting, anger management, positive communication, and healthy relationships.
- Increased capacity for targeted programs that address specific needs for the expected Marine demographic groups, including recognizing and addressing mental health conditions incurred during combat, addressing relationship and family challenges before/after deployment, and life and coping skills for military spouses during deployment.
- Increased capacity is needed for preventative initiatives that aim to decrease the sense of physical and cultural isolation that many off-base military families feel. This would increase the well-being of these families and decrease their need for child protective services, including mentoring programs for military spouses and youth, as well as support groups.
- Increased knowledge about services available to military families, in particular those living off base. While military service members do receive information about Marine and Family Services as part of their base orientation, many military service members and their families do not know how to access available resources.
- Increased capacity for child protective services for both Marine and Family Services and County DSS. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly, and that adequate follow up (counseling, legal coordination, coordination with military officials) is thorough and timely.

Food Assistance

Because the expected demographics of military influx include large numbers of junior-enlisted service members, programs that provide food assistance are expected to experience an increase in demand. Most Marine salaries do not qualify their families to receive the Family Subsistence Supplemental Allowance or the Women Infant Children program. However, the FNS program is expected to be moderately affected.

Counseling & Family Advocacy

Counseling resources are currently in place to meet the needs of Marines and their families, who are facing challenges in areas such as pre- and post-deployment family transitions, anger management, positive communication, and healthy relationships. The need for increased counseling services capacity is also linked to a need for increased mental health services provided through the health system. Unmet need for mental health treatment spills over into Marine and Family Services counseling, family advocacy, and child protective services. Increased overall capacity for all mental health services is needed—clinical and non-clinical, as well as counseling services. Specifically, counseling and family advocacy program needs include:

- Increased capacity for counseling services for Marines and families members

- Increased continuity of care between the medical services and Marine and Family Services would address both the mental health condition and any social service spillover into family issues that require counseling or the intervention of family advocacy services.
- Increased capacity for family advocacy programs, to ensure timely and appropriate response to acute families issues, including domestic violence, child abuse, and child neglect.

Exceptional Family Member Program

Both MCB Camp Lejeune and MCAS Cherry Point's Exceptional Family Member programs are operating at full capacity, and additional resources are needed even at current program levels. EFMP program needs include:

- Increased capacity in terms of staff and facilities to provide respite care.
- Increased staff capacity to provide EFMP program support.
- Resources to assist families who must travel to Durham or Chapel Hill to access appropriate medical services, in particular day care for EFMP siblings, and up-front payment to pay for gas and parking.

Recommended Strategies and Actions

Action 1: Increase Marine and military family knowledge of available social services, both on base and in the community.

Rationale

Many Marines and their families do not have a clear understanding of where or how to access social services. Mental health services are particularly unclear because these issues are addressed by both the medical system and Marine and Family Services.

Supporting activities

Utilize media, including public service announcements, to educate the military community, particularly those living off base, about social services that are available. These announcements should be available in places military members frequent, such as the PX. In addition, links to the Marine and Family Services webpage at each installation should be provided on websites that are frequently accessed by newcomers to the region.

Target education to individuals in the off-base community, who have the opportunity to become aware of Marine or family issues, and can provide referrals to Marine and Family Services. Target this education at those with whom military families already interact with as part of daily life including school teachers, school counselors and clergy.

Funding

Funding for media and educational campaigns. Points of contact at MCAS Cherry Point for further discussion of funding through MCAS Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury, and Director of Marine and Family Services, Vera Campbell. Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson, and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 2: Increase coordination and knowledge among local providers, and between civilian and military staff.

Rationale

Currently, coordination among local providers is limited, resulting in duplicated efforts and a loss of opportunity to share program successes. In addition, little or no resources currently exist that can inform social services providers or the public on availability of resources and efforts in the region. Finally, increasing coordination between social service providers on and off base will allow opportunities to educate civilian providers about the particular needs of military populations.

Supporting activities

Designate part-time Marine and Family Services staff members at both MCAS Cherry Point and MCB Camp Lejeune as community liaisons, with the responsibility of coordinating with County DSS officials and other community organizations such as non-profits, churches, and schools. A major focus of these individuals' tasks should be to develop a *social service resource*—a central location for information about on- and off-base resources for those wishing to access social services. This resource should include information from the full range of service providers, including health sector providers and community groups, and should be widely distributed to these professionals, military, and community members.

Educate community social service providers, including County DSS staff, on issues that discharged military face when entering the civilian population. Increase coordination between the military, County DSS, and the discharged individual to ensure a smoother transition to civilian life.

Funding

Depending on current Marine and Family Services staff availability, each installation might require an additional part-time employee to serve as a community liaison. Points of contact at MCAS Cherry Point for further discussion of funding through MCAS Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury and Director of Marine and Family Services, Vera Campbell. Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson, and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 3: Increase access to services by addressing limited mobility and geographic access challenges.

Rationale

The lack of public transportation, the rural nature of many counties, and the locations of social service offices results in many military families encountering challenges in accessing services. Families accessing services for children or spouses with special needs must travel to Greenville or the Triangle at considerable cost.

Supporting activities

Reduce or eliminate geographic access barriers by bringing services to military communities off base. This can be achieved by forming community action teams through County DSS and Marine and Family Services. These action teams can serve military families at accessible locations throughout the surrounding counties, such as community facilities, schools, and churches. Preventative programs such as workshops could be particularly successful in these venues, and, child care could be provided on-site. The appropriateness of providing services requiring confidentiality, such as individual or family counseling, will depend on the capacity of the community facility.

Provide a public transportation option to EFMP families to Greenville and Chapel Hill. Purchase a multi-passenger van that will have scheduled travel once a week to each of the two major destinations of EFMP families, including Greenville and the Triangle. This van could be shared between the installations or considered for other uses on the remaining three week days. For example, the van could be used to provide transportation to Marine and Family Services programs or events, or be used to transport the community action teams described above.

Funding

The EFMP transportation option is estimated at $22,900 for the initial cost of one multi-passenger van, and approximately $38,000 in operating costs per year for MCB Camp Lejeune and $37,200 in operating costs for MCAS Cherry Point. (These operating costs each assume that the van is in operation two days a week)

Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson, and Chief Financial Officer of Marine Corps Community Services, Michael Smith. Points of contact at MCAS Cherry Point for further discussion of funding through MCAS Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury, and Director of Marine and Family Services, Vera Campbell.

Action 4: Increase preventative program capacity through MCAS Marine and Family Services and County DSS offices.

Rationale

Many military families access services at a point of crisis, addressing causal issues through preventative programs can reduce the need for emergency services.

Supporting activities

Target military members most at risk for needing emergency social services, such as young and junior-enlisted military families with young children.

Provide local, accessible outreach programs to the military community residing off base in the counties surrounding MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River.

Increase the number of qualified staff to serve these programs. Maximize clinical staff capacity through increasing administrative support.

Funding

Administration support through the State budgeting process for the Department of Social Services. Points of contact at MCAS Cherry Point for further discussion of funding through MCAS Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury, and Director of Marine and Family Services, Vera Campbell. Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson, and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 5: Increase program capacity for child welfare, particularly child protective services.

Rationale

Due to the expected demographic of the military population, substantial increases are expected in child abuse and neglect cases, requiring immediate intervention.

Supporting activities

Allocate additional funding for County DSS and Marine and Family Services to address the increase in child welfare resources

due to the expected population growth.

Funding

Funding for increased capacity through the State budgeting process for the Department of Social Services. Points of contact at MCAS Cherry Point for further discussion of funding through MCAS Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury, and Director of Marine and Family Services, Vera Campbell. Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson, and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 6: Increase program capacity for day care, on and off base.

Rationale

Much of the expected Marine population is under the age of 26 and many have young families; increased capacity for day care will address this need, as well as provide increased opportunities for military spouses to pursue employment outside the home, increasing self-sufficiency.

Supporting activities

Allocate additional funding for County DSS and Marine and Family Services to meet current and expected program demand for quality and accessible child day care.

Allocate additional funding to increase the capacity of providers who provide child day care for children with special needs.

Funding

Funding for increased capacity for County DSS through the State budgeting process for the Department of Social Services.

Increased facility space for Marine and Family Services. Points of contact at MCAS Cherry Point for further discussion of funding through MCAS Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury, and Director of Marine and Family Services, Vera Campbell. Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson, and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 7: Increase access to mental health services and improve the continuity of care between the medical and counseling services. (Recommendations to more fully address these needs are found in the medical and health section above.)

Rationale

Increased mental health services are needed as a result of OEF and OIF, and capacity is necessary to address this current and expected need. Coordination between medical services and counseling services will address mental health issues in a more comprehensive manner.

Supporting activities

Increase the number of mental health providers accepting TRICARE, in particular through increasing TRICARE reimbursement and streamlining the TRICARE certification process.

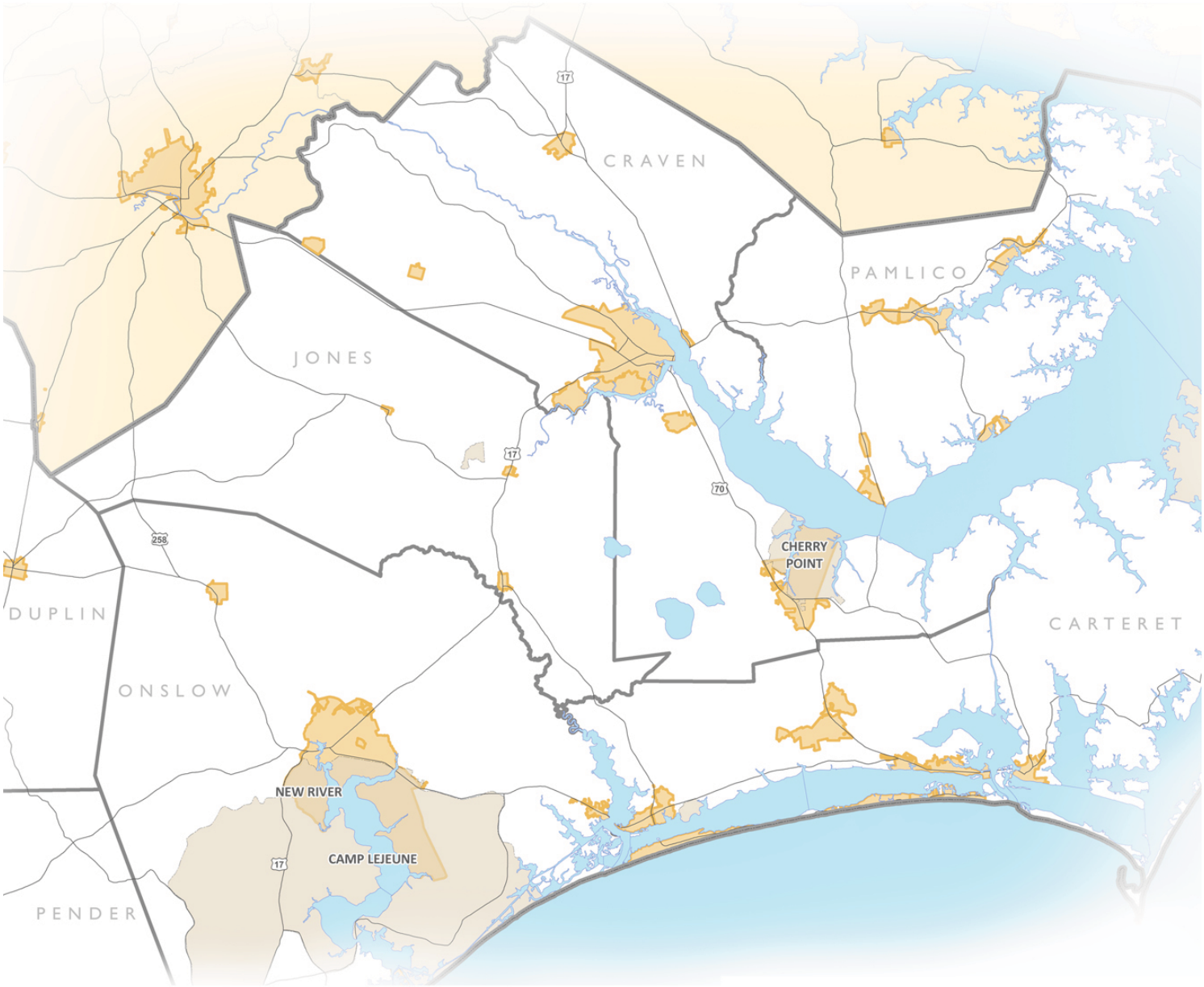
Increase access to local providers, either on base or within a reasonable driving distance.

Funding

Administrative support. Please refer to the mental health recommendations in the Medical and Health section above for full details.

Conclusion

The influx of Marine populations to MCB Camp Lejeune, MCAS Cherry Point, MCAS New River, and North Carolina's Military Growth Task Force Region is expected to increase demand for social services both on and off base. The demographics of the expected Marine population growth—mainly under the age of 26 and junior-enlisted—are expected to need higher levels of social services support. Marine and Family Services expects increased demand across all programs, and in particular, impacts on Marine and Family Readiness, Child Development, Individual and Family Counseling, and Family Advocacy. Departments of Social Services are experiencing increased demand due to the economic climate, and expect Child Welfare, including Child Protective Services, Day Care, and Food and Nutritional Services (FNS) programs, to be impacted. Both preventative and interventional programs are already in place to meet this need, but increased capacity for these programs is needed to meet demand. In addition, increased coordination among both military and civilian social service providers in the region, as well as with other services such as education, transportation, and health care, is needed to effectively address the specific needs of the military population.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Public Safety and Emergency Services

Public Safety and Emergency Services

Introduction

As population growth resulting from the Grow the Force Initiative continues to affect the Military Growth Task Force (MGTF) Region, responding to new threats and increased service demands poses new difficulties for the region's public safety and emergency services (PS/ES) sector. The rapid population growth associated with this initiative increases the vulnerability of the population at large to myriad hazards, from hurricanes and other natural disasters to increased emergency response times resulting from overburdened PS/ES staff. The effects of military-induced growth are likely to be exacerbated by changes in troop deployment patterns at eastern North Carolina's Marine Corps installations. Deployments and redeployments may cause rapid changes in the region's population, making short-term flexibility in PS/ES essential. The return of large numbers of troops from multiple or extended tours in the Middle East presents complications concerning their readjustment to life away from combat, compounding the already difficult mission of those in the PS/ES sector.

Public Safety and Emergency Services comprise all resources dedicated to preventing hazardous events and protecting the public from the effects of those events. While an array of local, state, and federal agencies address specific components of PS/ES, mutual interests and the necessity of cooperation create strong links among them. For the purposes of this plan, the PS/ES sector comprises six components: Emergency Management, Emergency Medical Services, Fire Prevention and Suppression Services, Law Enforcement, Courts, and Public Health. How these components function at a regional level and how their coordination and effectiveness may be enhanced is the primary focus of this module.

Background

Preliminary Impact Statement

In October 2008, the Military Growth Task Force produced a Preliminary Impact Statement (PIA) that analyzed the overall effects of military growth in the region on a range of issues that are important to the communities in the seven-county MGTF Region. The PIA identified the four most pressing issues facing the regional PS/ES sector and analyzed how military growth is exacerbating existing challenges. As identified in the PIA, these challenges were identified as:

Communications interoperability

Manpower (to include staffing levels, recruitment and retention, and training of personnel)

Access to facilities and equipment

Increase in vehicle-related accidents[17]

This module builds on the analysis provided in the PIA by: 1) further elaborating on the greatest challenges identified in the PIA; 2) addressing the tasks outlined in the PIA; and 3) describing any military growth-related issues not identified in the preliminary effort.

Emergency Management

Emergency management is comprised of all aspects of large-scale disaster preparedness, response, and recovery. The first line of defense in emergency management involves preparing the public for response to a variety of disastrous events, both natural and man-made. When disasters occur, those in the emergency management sector respond by coordinating evacuations, directing decontamination efforts, and helping to support citizens displaced by such events.

17 This issue is addressed in the Transportation module of the plan.

Disaster preparedness and response is difficult by nature due to the unpredictability of disastrous events. The timing and intensity of disastrous weather events or terrorist acts are not predictable in the long term, and the accuracy of any predictions is limited. Estimating the timing, intensity, or location of disastrous events is similarly difficult. Due to these factors, the strongest basis for emergency management services is a coordinated, flexible, and reactive foundation of first responders, coupled with an educated, prepared citizenry. The tie that binds these first responders – law enforcement, emergency medical services, and fire services – in any emergency event is an interoperable communications infrastructure, an issue discussed at length in this module.

Organization of Emergency Management Sector

State and Regional

The emergency management component of North Carolina's PS/ES sector is robust in terms of support and cooperation at all levels of government. At the state level, emergency management is overseen by the North Carolina Department of Crime Control and Public Safety's Division of Emergency Management (NC DEM). NC DEM is charged with directing and coordinating emergency responses at the state level. When local emergency responders are unable to cope with the scale of emergency events, the DEM activates State Emergency Response Teams (SERT). Comprised of state agencies, non-profit groups, and volunteers, SERTs remotely coordinate responses to emergencies via the state Emergency Operations Center (EOC), and through teams dispatched directly to the location of the emergency. The EOC is functionally the nucleus of statewide emergency responses, providing a central location for the state's executive branch, SERT agencies, and federal entities, to coordinate the distribution of resources during emergency events.

The North Carolina DEM is geographically divided into three branches, which are overseen by managers (eastern, central, and western), and further divided into 15 Operational Areas, which are overseen by area coordinators. All of the counties in the MGTF Region fall under the Eastern Branch. Craven, Carteret, and Pamlico Counties are all in Area Three, while Duplin, Onslow, Jones, and Pender Counties are in Area Four.

The North Carolina Hazardous Materials (HAZMAT) Regional Response Teams (RRT) are another vital component of the state's emergency management sector. RRTs are geographically distributed throughout the state to respond to large-scale HAZMAT emergencies. They also provide training to help educate and coordinate local emergency responders during HAZMAT events. The Military Growth Task Force Region is served by two RRTs: Duplin, Onslow, Pender Counties and the southern portion of Carteret County are within RRT District 2 – Wilmington, while Craven, Jones, Pamlico Counties and the northern portion of Carteret County are served by RRT District 1 – Williamston.

County and Municipal

Each county in the MGTF Region has an emergency coordinator. Emergency coordinators manage the counties' first responders and public safety agencies and, when necessary, work with area coordinators during larger-scale emergencies.

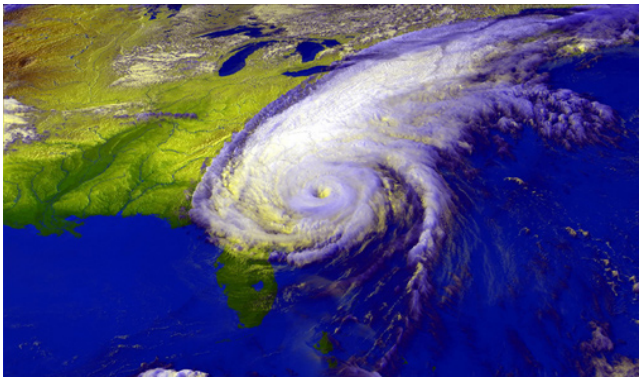
First responder departments at the county level, such as sheriff's offices, also serve a vital role in managing emergencies. The on-the-ground foundation of emergency management is provided by county and municipal first responders. These first responders are further described in the Emergency Medical Services (EMS), Fire Services, and Law Enforcement sections of this module.

Voice Interoperability Plan for Emergency Responders

In 1995, the Criminal Justice Information Network (CJIN) of the North Carolina Department of Crime Control and Public Safety (DCC&PS) commissioned a study that recommended the establishment of a statewide interoperable communications system among all first responders and public safety agencies. The realization of this recommendation was the establishment of an 800 MHz system, the Voice Interoperability Plan for Emergency Responders (VIPER).

Following the September 11, 2001 terrorist attacks in New York City and Northern Virginia, CJIN commissioned a revalidation study in 2002 that confirmed the necessity of a system like VIPER for PS/ES coordination during disasters and public

emergencies. Due to the wide availability of 800 MHz frequencies and their existing use among many metropolitan public safety agencies and the North Carolina State Highway Patrol, an 800 MHz solution was again recommended (NC DEM 2008).



The CJIN VIPER Plan was developed with a two-pronged approach. The short-term tactical phase, completed in 2005, was a temporary approach aimed at shoring up emergency communications with mobile assets in areas that were deemed to be the most vulnerable. The longer-term strategic phase aims to create a statewide 800 MHz trunked radio system for emergency responders across the state, and to enhance cooperation among agencies through new mutual aid agreements. A detailed plan for the strategic phase was completed in 2004, but due to high costs and the complexities of full implementation, it remains incomplete. The completed VIPER plan would utilize an 800MHz Motorola SmartZone system with 238 remote voice radio transmitter sites. As of 2008, 92 such sites were operational (NC CJIN 2009).

Whether departments utilize a VIPER system or devise a similar system to achieve interoperability, the costs associated with the transition should be considered a long-term investment aimed at increasing the effectiveness and efficiency of first responders. Sharing information during emergencies can indicate to various departments which resources have arrived at the scene of a crisis, and what needs remain to be met. It can also decrease response times by determining which department or agency is in the best position to respond to an event. For example, if traffic or weather impedes the ability of one EMS department to respond to the scene of an accident, perhaps a more distant but better positioned department could take its place. Such increased efficiencies are said to have a “force multiplier” effect, reducing the manpower strain on personnel already spread thin due to ever-increasing demand for services.

Emergency Management Mutual Aid and Assistance Agreement

In 2009, NC DEM adopted a revised mutual aid agreement (MAA), titled North Carolina Statewide Emergency Management Mutual Aid and Assistance Agreement. The parties of the agreement include NC DEM and its subsidiaries, and a number of counties and municipalities. The agreement was adopted pursuant to Chapter 166A of the North Carolina General Statutes, titled the North Carolina Emergency Management Act, which provides guidelines for entities taking part in MAAs for reciprocal emergency management aid and assistance. Such guidelines include procedures for requesting assistance, resource and capability assessments, reimbursement for services, and immunity for involved parties acting in good faith. The agreement is aimed at facilitating cooperation and the sharing of resources among municipalities with potential to mutually enhance effectiveness when responding to emergencies. Signatories of the agreement include each of the seven counties in the MGTF Region and the 40 municipalities within them.

Types of Events

NC DEM classifies emergency management responses into eight primary categories: Natural Hazards, Terrorist Events, Manmade/Technological Hazards, Fixed Nuclear Facility (FNF) Radiological Events, Non-FNF Radiological Events, Search and Rescue (SAR) Events, Fire Events, and Citizen Complaints.

Natural Hazards

Natural hazards, primarily disastrous weather events, are by far the most common threat facing the state’s emergency management sector. North Carolina is one of three states in the country that are most prone to hurricanes. In 2008, 16 major named storms, including eight hurricanes and five major hurricanes (Category 3 or higher), affected the state. The state was fortunate to incur relatively minor damages, mostly resulting from major rainfall and beach erosion. Current patterns indicate that the state is likely to face more, stronger hurricanes in the coming years than has been the historical norm.

Hurricanes are historically the most common natural disasters that affect eastern North Carolina. In 2008, 97 disastrous weather events were reported in the MGTF Region, comprising about 35 percent of all reported events for the year. The NC DEM provides literature to state residents aimed at preparing for and responding to disastrous weather events. In the case of evacuations, a system of Hurricane Evacuation Routes is instated to help move threatened populations en masse to areas less threatened by severe weather.

See **Figure 7.1**: Emergency Operations and Hurricane Evacuation Routes on the following page.

Terrorist Events

The U.S. Department of Homeland Security (DHS) Advisory System issues threat levels approximating the likelihood of terrorist attacks based on a number of factors, including intelligence, political climate, and vulnerability. The threat level has remained at Elevated (Yellow) since 2006 for sites within the U.S. and all domestic flights. If a terrorism-related event were to occur in North Carolina, the response would be coordinated through the state EOC.

Manmade/Technological Hazards

Manmade and technological hazards primarily include events that threaten to expose citizens to hazardous materials (HAZMAT). Such events could include fuel spills, overturned tankers, accidental release of harmful chemicals or other materials, or the malicious shipment of unidentified materials, such as suspicious powders delivered through the mail. While the effects of single HAZMAT events are seldom as far-reaching as severe weather events, they are the most commonly reported events in the eastern region.

Fixed Nuclear Facility Radiological Events

The NC EOC coordinates with the state's three nuclear facilities to maintain communication for the contingency of FNF events. There are no FNFs in the region.

Non-Fixed Nuclear Facility Radiological Events

This category includes all events related to radiological materials that are unrelated to FNFs. Reported events are rare, with none reported in the region in recent years.

Search and Rescue Events

SAR events include searches for missing persons, high-risk rescues, and aircraft accidents. Due to the maritime geography of parts of the region, SAR events are infrequent, with only a handful typically reported each year for the MGTF Region.

Fire Events

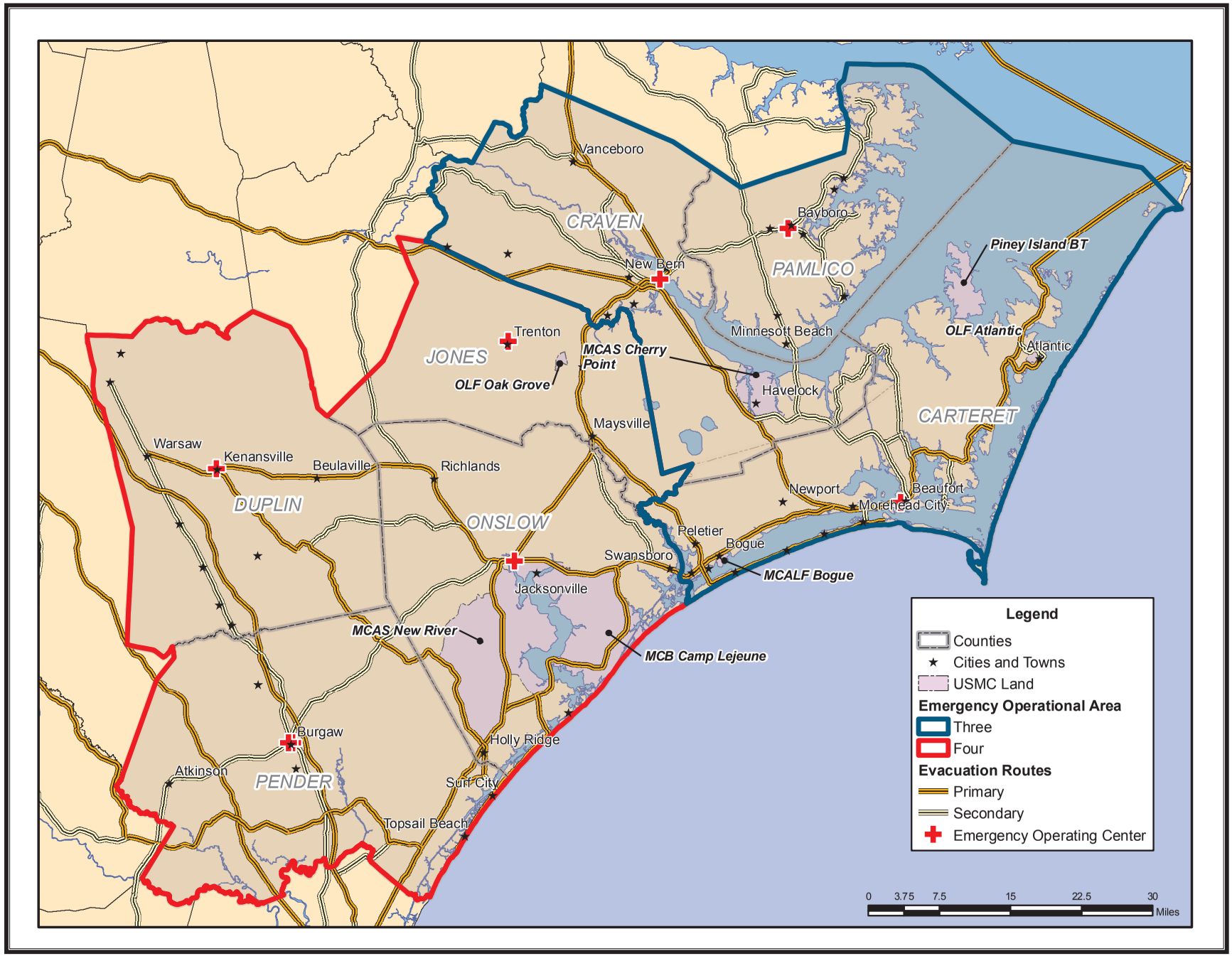
The vast majority of fire events, such as structure fires, forest fires, and tire fires, are managed at the local level. Only the most destructive fires tend to be reported to the state.

Citizen Complaints

Citizen complaints are often provoked by occurrences of illegal dumping, unexplained odors, or suspicion of contamination events. Because only the most significant complaints are dealt with at the state level, only 10 such events were reported between Operational Areas Three and Four in 2008.

Emergency Medical and Fire Suppression Services

Efficient and robust emergency medical and fire services are vital to the region's PS/ES sector. EMS and fire service providers need adequate information and well-trained personnel to ensure quick responses to emergency situations. Beyond the



EMERGENCY OPERATIONS AND HURRICANE EVACUATION ROUTES **Figure 7.1**

size of the force, all personnel require access to functioning, reliable, modern equipment to safely and effectively deal with crises.

EMS departments and fire departments throughout the region use a variety of funding and management mechanisms. Some departments are managed at the county level, and others are managed by individual municipalities. Oftentimes, EMS and fire departments are administratively grouped together because they regularly respond to the same events. In some cases, fire and/or EMS departments are administratively grouped with law enforcement agencies as well.

Regional

No regional agency oversees fire prevention and suppression. However, a number of mutual aid agreements exist among the various county and municipal fire departments to help ensure prompt, properly equipped responses.

Emergency Response Task Forces

The Military-Civilian Task Force for Emergency Response (MCTFER) was established in 1998, subsequent to a poorly coordinated response to a helicopter crash in Onslow County. MCTFER, consisting of military and civilian response agencies from the county and its five municipalities, aims to improve public safety in Onslow County by coordinating emergency management and response resources between the base and the community. Through mutual aid agreements, letters of support, and letters of intent, the county's emergency services agencies have facilitated coordinated, efficient response efforts to local disaster events.

MCTFER is an especially valuable tool because of its low costs and obvious benefits. Training integration between local, state, and federal entities has enhanced operational readiness. Furthermore, new efficiencies in training, coordination, and preparation have a force multiplier effect, rendering the partnership a valuable long-term investment.

MCTFER holds annual emergency exercises, during which the member agencies respond to a simulated emergency; past examples include chemical attacks, hostage situations, and high-risk rescues. During these events, the county and base alternate lead planning roles, allowing each to monitor its capacity to head disaster responses or provide support.

In recognition of the fact that disasters that affect Onslow County are often regional in scope, MCTFER has held "Regional Response" exercises aimed at coordinating disaster response on a larger scale. Involving as many as 1,000 responders from 75 different agencies representing 10 eastern North Carolina counties, these drills are a model for regional emergency preparedness within the MGTF Region (Brill and Goodman, 2003). Coordinating such drills more frequently would be mutually beneficial to each county in the region, ensuring cooperative preparedness and readying newly hired emergency responders for coordination during regional disasters. The Crystal Coast Disaster Coalition (CCDC) is made up of Craven, Carteret, Jones, Pamlico, and Beaufort Counties. The CCDC works and exercises together often, meets monthly, and executes mutual aid daily.

Law Enforcement

As emergency first responders, the mission of law enforcement officers is equally dependent upon an adequate, well-trained staff with access to the equipment to coordinate large-scale responses to emergencies. Furthermore, law enforcement officers are tasked with maintaining a safe environment for the region's citizens on a day-to-day basis. From ensuring traffic safety to responding quickly to crimes or calls of distress, the law enforcement sector requires a large, flexible, well-trained, properly equipped staff at all times.

State and Regional

The North Carolina State Highway Patrol serves the region through a number of district offices. Troop A serves the counties of Craven (District VI), Pamlico (District VI), Jones (District VII), and Carteret (District VIII). Troop B serves the counties of

Onslow (District III), Duplin (District IV), and Pender (District IV). No regional agency exists to oversee or coordinate among eastern North Carolina's law enforcement agencies.

County and Municipal

Every county in the MGTF Region has a sheriff's office and at least one municipal police department. Onslow County maintains the largest police force, with 125 staff working for the sheriff's office. An additional 115 personnel are employed by the Jacksonville Police Department (PD). Twenty-six individual municipalities in the region also maintain their own PDs.

Courts

The courts provide an essential function in the PS/ES sector by adjudicating disputes among citizens and dispensing justice to those convicted of crimes.

District Court

The great majority of local criminal and civil cases are handled by North Carolina's district courts, also known as "trial courts." District courts try cases in four categories: civil, criminal, juvenile, and magisterial. District courts are located in the county seat of each county in the state. Other cities and towns may have their own district courts as authorized by the North Carolina General Assembly.

District courts hear civil cases related to domestic disputes and claims of less than $10,000. Criminal cases involving misdemeanors and infractions are also tried in district court, always without a jury. Jurisdiction over juvenile cases involves all cases in which the defendant is under the age of 16, and special cases involving defendants between the ages of 16 and 18. Magisterial jurisdiction covers a number of small-scale criminal and civil cases. Waivers of trial for minor infractions, and guilty pleas for minor misdemeanors and traffic violations, are handled by magistrates. Magistrates are also permitted to try small claims of less than $5,000.

For electoral and administrative purposes, North Carolina is divided into several district court districts. In the MGTF Region, Carteret, Craven, and Pamlico Counties fall under District 3B; Duplin, Jones, and Onslow Counties are in District 4; and Pender County is in District 5.

The number of district court judgeships in each county is determined by geography and population. Generally, recommendations made through the North Carolina Administrative Office of the Courts (AOC) determine the number of judgeships necessary to meet the needs of a certain county. It is the responsibility of each county to provide the salary, facilities, and equipment for each new judgeship.

Superior Court

North Carolina's Superior Courts try all felony criminal cases, civil cases exceeding $10,000, and misdemeanor and infraction appeals from district courts. A 12-person jury hears all criminal cases. Civil cases typically are handled without a jury. Like district courts, superior courts sit in the county seat of each county.

North Carolina's Superior Court is divided into eight divisions comprising 46 districts. Districts serve electoral and administrative purposes. Districts are sometimes further divided into electoral sub-districts, as denoted by a letter following the district number; subdivided districts remain a single entity for administrative purposes. Superior court judges rotate among districts within the same division every six months, a system designed to discourage any favoritism that may develop out of permanent judgeships in a judge's hometown. The seven counties in the MGTF Region all fall within the second division as follows: Carteret, Craven, and Jones Counties are located in District 3B; Onslow County is in District 4B; Duplin and Jones Counties are in District 4A; and Pender County is in District 5.

Public Health

The Public Health section of the PS/ES module primarily deals with environmental health issues. Such issues center on the capacity within the region to ensure that facilities and establishments frequented by the public are safe and sanitary. This is primarily achieved through the issuance of permits for certain businesses, and frequent safety and sanitation inspections aimed at ensuring compliance with certain public health standards. [Medical and health services are thoroughly addressed in the Medical, Health, and Social Services Module of this plan.]

Existing Conditions

Because approximately half of the expected growth resulting from the Grow the Force Initiative has already occurred, existing conditions do not equate to baseline conditions preceding military-induced growth. One of the many challenges of executing a comprehensive Regional Growth Management Plan (RGMP) is parsing out which changes would have occurred independently of the initiative, and which are truly attributable to military growth.

Emergency Management

Changes resulting from the Grow the Force initiative increase the importance of a robust emergency management system in a number of ways. Increases in regional population simply mean that there are more people in the region to protect. Subsequently, regional coordination becomes more difficult with a larger, more widely distributed population, especially when increasing demand outpaces service capabilities. Third, the increase in force size at the affected installations renders them higher-value targets for terrorist attacks, necessitating increased vigilance.

Natural Disasters

The term "natural disaster" is somewhat misleading. Because the intensity of disastrous effects of certain natural events is somewhat dependent on human activity, natural disasters are functions of both the vulnerability of a human population and the intensity of the disastrous event. Therefore, any rapid, unanticipated increase in a region's population increases the likelihood that severe weather or other natural events will cause a natural disaster. In the MGTF Region, natural disasters are most commonly associated with intense tropical cyclones such as hurricanes. In the coming years, three factors will compound the likelihood of a natural disaster's occurring in the region: population growth, increased storm intensity, and budgetary shortfalls.

Growth in the region's population alone, including that resulting from the Grow the Force initiative and normal expected growth independent of military activity, will increase the vulnerability of the region's population in a number of interrelated ways. Most simply, a larger population means more people are threatened by natural disasters. Emergency management tasks such as coordinating evacuations and ensuring adequate shelter space for evacuees become more cumbersome with each new citizen in the region. When such growth is imposed over a short period of time, as can be the case with military realignment and growth efforts, the region's emergency management sector is forced to adapt with whatever resources it has available, often to the detriment of the overall safety of the population.

The occurrence of, and intensity of, tropical cyclones affecting North Carolina has been trending upwards in the past decade. Due to the region's geography, the MGTF Region is at especially high risk for storm damage. With the exception of Duplin County, portions of every county in the region fall within the storm surge areas for major (Category Four and Five) hurricanes, including more than half of the land area of Carteret and Pamlico Counties (NC DEM 2007). Twelve to 16 major named storms are forecasted for the 2009 season, with two to five likely to develop into major hurricanes. Though this marks a decrease in activity from the last two seasons, it remains significantly above historical averages; between 1950 and 2000, the number of named storms averaged 9.6 per season, and the number of major hurricanes averaged 2.3 per season (Gray and Klotzbach 2005). The intensity of storms has also increased greatly, with the number of Category Four and Category Five storms doubling since the 1970s.

The primary limiting factor in the region's ability to conduct effective emergency management during natural disasters is a simple lack of funding. Like many other states across the country, North Carolina has faced 0.5-percent budget cut in fiscal

year (FY) 2009. How this will affect emergency management efforts at the state level remains to be seen. Shortcomings among local responders in equipment, facilities, and manpower have already increased the vulnerability of the region to natural disasters, the true effects of which will not be fully understood until a natural disaster occurs.

HAZMAT Responses

Statewide cuts in HAZMAT response funding would have a disproportionate impact on the MGTF Region. Whereas HAZMAT responses comprised 27 percent of all events reported to the state EOC in 2008, that figure climbed to 37 percent in the MGTF Region. With a rapidly expanding regional population, the frequency of HAZMAT events and the size of the population threatened by such events are likely to increase. The importance of maintaining RRTs to the public safety of the counties in the MGTF Region cannot be overstated.

Terrorist Attacks

Though unprecedented and highly unlikely to occur in the region, the contingency of a terrorist attack on one of the region's military targets should be taken into consideration. Increased troop levels and operations at Marine Corps installations increase the target value of these areas for terrorists and other hostile elements. These changes warrant heightened vigilance among emergency managers and first responders. They also increase the importance of interoperable communications at the state, regional, and local levels in anticipation of any such events.

Emergency Medical and Fire Suppression and Prevention Services

The ability of EMS and Fire departments in the region to meet current and future demands is already compromised by a number of factors. Departments are understaffed and under-equipped, issues that will only be exacerbated by expected growth in the region. Furthermore, the ability of these departments to coordinate amongst each other and with other first responders is extremely limited. As is the case with all first responders in the region, communications systems fall short of the level of interoperability necessary to ensure efficient response to crises requiring response by multiple departments, or those that occur at the far reaches of current service areas.

The region's fire and EMS departments' communications systems are a patchwork of low frequency band VHF systems, non-VIPER 800 MHz systems, and full-time, VIPER-compliant 800 MHz systems. Some departments utilize VIPER only on a part-time basis, with equipment shortfalls or reliability concerns preventing full-time utilization of the system. Currently, only Duplin and Pender Counties have plans in the short term to utilize the VIPER system full time, the implementation of which is pending. Other departments expressed a desire to transition to VIPER-compliant systems, utilizing the network during regional emergencies while maintaining available low-band licenses for day-to-day operations.

County	Communications Systems	Funding for Fire and EMS Departments	Status of Communications Interoperability
Carteret	UHF / VHF, 800 MHz	Tax District	Communications interoperability is reliable among agencies within the county. VIPER use is limited by unavailability of compliant consoles; utilized part-time for special events.
Craven	VHF, 400 MHz, 800 MHz	Tax District, County Funding, Grants	No true communications interoperability. Interagency communication achieved through patching and use of mutual aid channels. VIPER use extremely limited.
Duplin	VHF (Fire), 800 MHz (EMS)	County Funding	Currently utilizing VIPER full-time among EMS and LEOs. Transition to 800 MHz for Fire is underway.
Jones	VHF	County Funding	County in need of upgrade of radio communications systems from VHF to 800 MHz, including portable / mobile radio units. Need for communications operating center.
Onslow	VHF (Fire), 800 MHz (EMS)	County Funding	Transitioning fire to 800 MHz system would allow for interoperable communications among 90% of county first responders. Funding has not yet been secured.
Pamlico	VHF	Tax District, County Funding, Grants	Interoperability achieved locally through patching. Use of VIPER system extremely limited.
Pender	VHF, 800 MHz	Tax District	Transitioning to VIPER as primary communication system. To be completed by fall of 2009.

Table 7.1 - Fire and Emergency Services Communications Systems and Funding Streams

Even short of implementing the VIPER system, some departments face major hurdles in achieving adequate communications interoperability. For interoperability compatibility, every radio in the system must have a common group of channels with standard channel names. These radios must therefore be equipped with a series of "Talk Groups," which are similar to channels in a conventional or "legacy" radio. The standardized Talk Groups for the VMN radios are set up in seven classifications. As previously mentioned, changes in FCC regulations will do away with a number of lower frequency bandwidths currently relied upon by many local agencies by 2013. Unless new sources of funding become available, this will put a number of departments in the difficult position of losing communication capacity while at the same time not being able to fund the transition to more sophisticated, higher bandwidth systems.

A number of EMS and fire service representatives mentioned difficulty in maintaining adequate, well-trained staffs. This is especially true for departments that rely partially or completely on volunteers. Increasingly, volunteers work traditional day jobs that are seen as less flexible to the demands of volunteer emergency responders. As a result, daytime calls are

more likely to face a lag in response times from volunteer fire and EMS departments.

Among fire departments, daytime lag periods pose a significant risk to community development. The Department of Interior Insurance Services Office (ISO) provides response data to insurance agencies to help gauge the community's capacity for fire protection. Failure to respond to two calls in a year, which includes any response time in excess of 12 minutes, can result in a Class 10 or "no protection" rating for a fire department. This can cause increases in homeowner's insurance of up to 35 percent. In short, on top of a public safety risk, current challenges to fire protection threaten to discourage new settlement in a certain area, perhaps even encouraging some to relocate.

Much of this difficulty is said to stem from problems with recruitment and retention of new personnel. PS/ES representatives stated that they have seen a decrease in the pool of qualified applicants in recent years, with a noted drop-off in the number of high school-aged volunteers. When new hires or volunteers come on board, the region's departments often have difficulty retaining them. Among paid departments, trained EMTs, paramedics, and firefighters often will leave for higher-paying jobs, leaving their former departments to foot the bill for both training and hiring replacements. Departments that rely on large numbers of volunteers face even greater problems as volunteers leave for paid positions after receiving training and certification. An investment of one or more years of training is then lost and must be started over by departments often in poor position to recoup such losses.

Law Enforcement

The law enforcement sector of the MGTF Region faces similar difficulties to those of fire and EMS departments, although the unique training and qualification demands of law enforcement also creates unique problems for these agencies.

Many police departments in the region are sorely understaffed. None of the sheriff's offices that submitted staffing data to the Military Growth Task Force meet the U.S. Justice Department's minimum standards for personnel. For example, the largest department in the region, the Onslow County Sheriff's Office, is said to need a new employee for each 438 people added to the county. Based on an estimated growth of 12,000 to date related to the Grow the Force initiative, the department should have expanded by 31 employees since 2007, a goal that has not yet been reached. While Onslow County is uniquely impacted in the region, necessary expansion of the department is likely to have regional consequences (see Attrition section below). This understaffing comes at a time when jail overcrowding and the number of court cases are on the rise.

Recruitment and retention of new law enforcement officers is a continuous problem cited by every department that participated in this analysis. Many departments in the region currently have vacancies and the capacity to fill them, but face a decreasing pool of qualified applicants. One problem that many believe needs to be addressed is the failure to complete background checks early in the recruitment process. Oftentimes, an applicant will satisfactorily complete the Basic Law Enforcement Training (BLET) course only to fail the background check after the fact. This is seen as a waste of resources among some in the law enforcement sector, believing rather that only qualified applicants should be taking the test in the first place. Some police departments have circumvented this process by hiring personnel prior to BLET certification.

Much like EMS and fire services, many law enforcement agencies in the MGTF Region identified communications interoperability as a major barrier to meeting service needs and cooperating regionally. However, many law enforcement representatives showed a degree of reticence when asked about the benefits of transitioning to VIPER. The experiences each department has had in utilizing VIPER have been mixed. Some departments reported that VIPER was effectively utilized on an as-needed basis, oftentimes when events demanded coordination among multiple law enforcement agencies. Others related less positive experiences with VIPER, criticizing a dearth of service areas in some parts of the MGTF Region. These negative experiences have led some departments to move forward with communications upgrade plans that ignore NC DCC&PS' VIPER recommendations.

Attrition

One frequently cited issue among EMS, Fire, and Law Enforcement agencies is a steady attrition of qualified personnel to higher-paying departments. This is somewhat expected among younger volunteers; some departments in the region actually use the prospect of free training and subsequent job opportunities to recruit volunteers out of high school. The

issue is more complicated, however, when local jurisdictions recruit from the regional training pool. Many committee members reported consistent problems with providing training for paid recruits, only to lose the investment when those recruits leave for another local agency. Some departments have tried to address the issue of "poaching" recruits by joining in agreements to look beyond the region for recruits, and to only recruit locally if other options are exhausted. Such agreements, however, were said to quickly collapse due to the small size of the recruiting pool even absent such restrictions. The greatest cost of this talent leakage is often borne by the smallest municipalities, where the damage is proportionately greater. After investing in training a recruit, they have effectively prepared him or her for a job with a better-funded agency that can avoid the cost of training altogether.

Recent privatization of law enforcement positions previously filled by Marines on local installations has complicated and exacerbated the issue of attrition. The installation departments often offer better compensation than their municipal and county counterparts. When privatization of these functions went into effect, the immediate result was a movement of jobs away from host towns and counties toward the installations. These host towns and counties then tapped the recruiting pool in surrounding counties and municipalities, creating a cycle of attrition that threatens departments throughout the region. As **Table 7.2** demonstrates, the affect on local law enforcement agencies has been highly variable; some reported no loss of staff to the Marine Corps, although the City of Havelock lost nearly a quarter of its force.

Department	Size of force	Staff lost due to privatization of LEOs on base	Percentage of total force lost
Carteret County SO	91	5	5.5%
Craven County SO*	Not available	Not available	Not available
Onslow County SO*	Not available	Not available	Not available
Havelock PD	29	7	24.1%
New Bern PD	146	3	2.1%
Jacksonville PD	115	9	7.8%
Morehead City	39	1	2.6%

Table7.2 - Attrition Rates of Local LEOs to Marine Corps Installations

*Note: Requested information was not received from Craven and Onslow County

Courts

The court system in the MGTF Region faces major challenges that are already showing signs of strain attributable to military and induced growth. Indeed, representatives of North Carolina District Court District 4 indicated that their department was short one to two district judges even prior to the current influx of military and related growth. District Four historically handles more caseloads than the other two district courts serving the MGTF Region. Between FY2000 and FY2008, over 930,000 cases were filed in District 4, versus 562,000 in District 3B and 857,000 in District 5. Approximately 48 percent of these are filed in Onslow County, although Craven County has seen a significant increase in cases as well--at least partically due to moving excess Onslow cases to Havelock. Since most of the military and induced growth is expected in District 4, and specifically Onslow County, current upward trends in demand for service are especially unsustainable.

As demonstrated in **Figure 7.2**, district courts in most counties have seen an uncharacteristic increase in civil court filings since 2007, when the Grow the Force initiative began. This is especially evident in Craven and Onslow Counties, the host counties to the three major Marine Corps installations in the region.

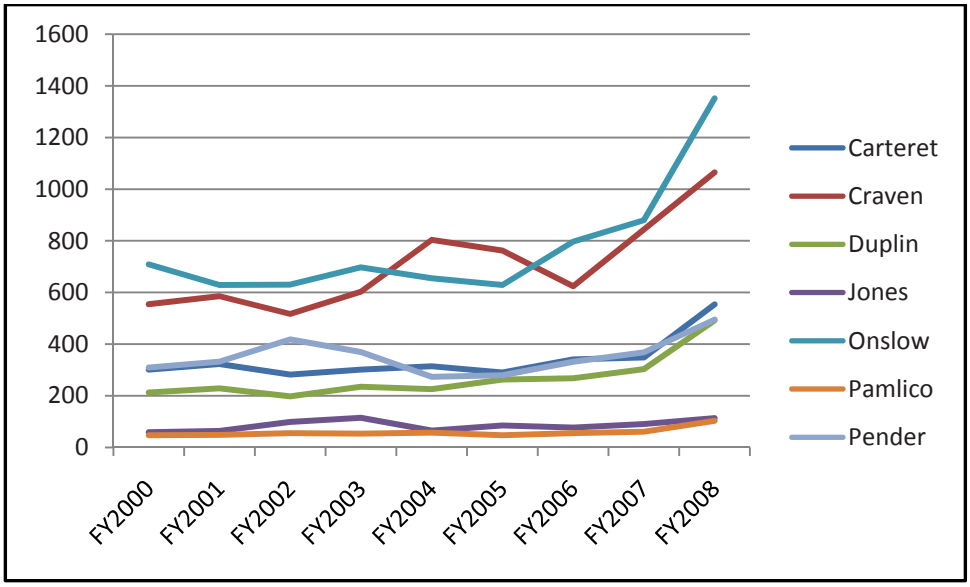


Figure 7.2 - Civil Caseloads by County in the MGTF Region, FY2002 - FY2008

Source: Organizational Development and Planning Division, NC AOC, 2009

Courts in the region have not seen an increase in staffing that is at all commensurate with growth. The Onslow County court, for example, has maintained remarkably steady staffing levels through the current growth. Since 2004, the court has added three-fourths of a staff assistant position to the Trial Court Administrator's Office and lost two deputy clerks of court; otherwise, staffing levels have been static for five years. State hiring freezes and salary cuts have further complicated staffing problems. Open positions will remain unfilled for the foreseeable future. Current employees have experienced a temporary salary cut of 0.5 percent, and are now forced to take compensatory time, rather than overtime pay, to reduce backlogs. However, with current staffing shortages, compensatory time is unavailable, creating a situation in which employees are forced to accomplish more without real compensation. The growth in caseloads in the region has contributed and will continue to contribute to jail overcrowding at a time when law enforcement staffs are understaffed.

Anecdotally, the situation in District 4 is dire in terms of staffing and facilities. Onslow County Clerk of the Court Betty Gurganus related to us that a lack of filing space has caused a spillover of court documents into hallways and administrative areas. Indeed, even if the department was able to hire additional staff, there would be no place for them. Representatives of other court districts also cited facility space as a desperate need; the amount of time and money necessary to plan the construction of new facilities is a greater hindrance to meeting service needs than is hiring new staff, which occurs in a relatively shorter timeframe.

Security remains a major concern for courts throughout the district. The state of security among counties in the MGTF Region is highly variable, although representatives from multiple county courts and sheriff's offices indicated that there is much room for improvement. Currently, only Onslow County utilizes cameras and screening devices; the screening devices are only used under certain circumstances because it lacks the personnel to operate the devices full time. Though these security shortcomings are, for the most part, a result of a lack of funding to update court security measures, the influx of population to the region only serves to heighten the need to employ upgrades as soon as possible.

Public Health

Due to the state of the economy, among other factors, environmental health departments have not seen the increase in demand for services felt elsewhere in the PS/ES sector. Little residential construction is taking place, and fewer businesses are being started, since the start of the current recession. Although representatives reported an anecdotal increase in facility inspections, sanitary inspections, and septic permits, the data does not provide compelling evidence that military-induced growth is straining environmental health agencies.

Needs Assessment

This assessment is based on the eastern North Carolina PIA, completed in October 2008, as well as a number of meetings, discussions, and questionnaires conducted between the PS/ES working group and a number of regional, county, and municipal representatives from the following departments and entities:

- Regional Emergency Management and Rescue
- Municipal and County Fire Services
- Municipal and County Emergency Medical Services
- County Public Health
- Municipal Police Departments
- Sheriff's Offices
- District Courts

Though some of the information presented is anecdotal, it is supported whenever possible by data contained here and in previous sections of the PS/ES module. In some cases, available data was limited by inconsistencies in the type and quality of data maintained by each department studied.

Because much of the anticipated growth in the MGTF Region has already occurred, these needs are based on a composite of existing needs and the remaining growth that is expected to occur through 2012 as a result of the Grow the Force Initiative. Whereas many components of the PS/ES sector expressed extant needs felt prior to the current military and related growth, it is vital for the safety of the entire region—military and civilian—that all current needs are met regardless of the origin of each deficiency.

A majority of the departments and agencies analyzed in this module expressed a need for additional resources to meet existing and future demands. Whereas inefficiencies exist in planning and coordination among the region's PS/ES agencies, the inability to provide adequate services increasingly results from a lack of funding and resources. It could be suggested that military growth in the region may provide for additional tax revenue to fund such services. However, the nature of the current military growth cycle is likely to cause a strain on resources that is disproportionate to generated tax revenue. Expected growth skews toward younger Marines who have lower salaries and less disposable income than their higher-ranking counterparts. Coupled with the political reality that local increases in taxes are highly unlikely, especially in the current economic climate, it becomes evident that the region's PS/ES sector will be forced meet increased operational requirements with fewer resources in the coming years.

Subsequent to our analysis of the PS/ES sector in the MGTF Region, we identified four major needs that affect the region's public safety. Though the urgency of these needs is not borne equally by each county, department, or agency in the region, it was determined that the inability to meet these needs could greatly compromise public safety on a regional scale. These needs were identified as:

- An integrated interoperable communications system among emergency managers and all first responders in the region;
- The capacity and funding to hire enough personnel to meet the growing demands for service across the region's PS/ES sector;
- Adequate facilities and equipment to enable PS/ES providers to provide safe, efficient, and well managed services;
- Safe, equipped, well-staffed, and technologically up-to-date courts to cope with rapidly increasing caseloads.

Some components of the PS/ES sector face greater challenges than others in meeting identified needs. Following is a discussion of the most pressing needs facing each.

Emergency Management

Regional and local emergency managers, more than others in the PS/ES sector, benefit from a strong infrastructure, robust long-term planning, and excellent funding from the state. Overall, emergency management is currently well prepared to deal with expected growth in the MGTF Region. In the coming years, the two issues that will pose threats to emergency operations in the MGTF Region are a potential decrease in state funding and a lack of coordination with first responders in the region.

As military and induced growth in the region increases both the likelihood of a regional disaster and the size and vulnerability of the population threatened by such an event, maintaining a reliable funding stream is vital to the region's public safety. As one of the more vulnerable regions in the state to both manmade and natural disasters, those in the PS/ES sector must remain vigilant advocates of emergency management funding from the state. Furthermore, counties and municipalities in the region should seek additional state and federal funding sources to help shore up the capabilities of local first responders, without whom emergency operations are not possible.

Communications Interoperability

Though NC DEM engages in contingency planning efforts for a range of emergencies, these plans are limited by the unpredictable nature of regional disasters, both natural and manmade. Emergency managers are capable of devising crisis scenarios and analyzing the likelihood of each, but the practicality of these planning efforts is extremely limited. The best preparation for any sort of regional crisis then will be a capable, flexible, coordinated system among emergency managers, first responders, and public health agencies. As was mentioned in more than one committee meeting, a lack of coordination and communication among these PS/ES components during Hurricane Katrina and the September 11, 2001 terrorist attacks was dangerously detrimental to emergency responses to these events.

Communications networks among the MGTF Region's first responders are currently a patchwork of systems with effectively little interoperations among departments. Despite limitations in even day-to-day communications within and among some departments, first responders in the region, according to one PS/ES committee member, simply "make it work" through the use of patches and emergency and events channels. Many first responders expressed frustration with the current systems, even absent some regional disaster, giving some indication about the limitations the system will face when such an event occurs.

Despite having concerns over the reliability of full-time VIPER utilization among some of the region's first responders, the PS/ES Committee was in general agreement that trunked, 800 MHz, P25 compliant radio systems are a need for the region's largest police, fire, and EMS agencies. A regional transition to this type of system would obviate the FCC-imposed loss of bandwidth expected by 2013 and allow local departments to utilize VIPER on an as-needed basis. The current patchwork of communications systems is cumbersome but adaptable under normal circumstances. In the event of a real regional disaster, the stumbles caused by relying on such a system could put large swathes of the region's population at risk of great harm.

Beyond communications interoperability capabilities, coordination among emergency managers, first responders, and public health officials can be greatly improved through coordinated training and contingency exercises. For example, an event that imagines a regional disaster scenario would allow those involved in emergency response to identify and address gaps in coordination. Such training events should engage emergency managers, county and municipal first responders (including volunteer fire and EMS agencies), as well as emergency medical staff and other public health staff. While regional response events have been conducted sporadically under the direction of the Onslow County Military-Civilian Task Force for Emergency Response (MCTFER), annual drills involving all responders and emergency managers in the MGTF Region would help keep departments and newly hired employees apprised of state of regional disaster preparedness.

A number of factors in emergency management fall outside the scope of the PS/ES module, but are addressed in other modules in the plan. However, they bear mentioning here simply to demonstrate the levels of coordination needed to

ensure that the MGTF Region is prepared for a regional-scale disaster. Increases in traffic add to emergency response times, clogging roads and threatening to gridlock traffic during emergency response coordination. This is especially true around the main gates of the major Marine Corps installations in the region; backed-up traffic already causes delays of up to two hours during rush hour at Marine Boulevard in Jacksonville. Were the base to be evacuated during a regional crisis, traffic volumes would be even greater in these areas, posing major challenges to the movement of masses out of the region. Another issue is the capacity of medical facilities to handle widespread casualties resulting from disasters or medical pandemics. As is described in the Medical, Health, and Social Services module of the plan, some of the region's medical facilities already face strains that would likely be insurmountable in the event of a regional disaster.

Personnel

Personnel needs were expressed by nearly every department interviewed in the MGTF Region. This fundamental need is a function of exhausted funds throughout the region, greatly limiting the ability to meet substantial increases in service needs. Beyond that, issues with recruitment and retention compromise a number of departments, over and above the current funding limitations.

The induced personnel need resulting from military and related growth will be incurred unevenly across the region. Looking at commonly accepted standards for necessary staff levels for law enforcement, EMS, and fire departments that are based on service area population, military growth will strain departments in Onslow and Craven Counties significantly more than others. The following table addresses induced personnel needs resulting only from expected military-related growth between 2007 and 2012. Needs are shown to vary by county and agency, depending on personnel levels at the onset of the current growth and ability to maintain staff commensurate with natural growth.

Law Enforcement Officers			
County	Anticipated mil-induced growth	Target per 1000 residents*	Induced Need
Carteret	1602	2.6	4.2
Craven	7843	2.6	20.4
Duplin	982	2.8	2.7
Jones	370	2.8	1.0
Onslow	27702	2.6	72.0
Pamlico	212	2.8	0.6
Pender	1267	2.8	3.5
		Total	104.5
Firefighters			
County	Anticipated mil-induced growth	Target per 1000 residents**	Induced Need
Carteret	1602	1.65	2.6
Craven	7843	1.65	12.9
Duplin	982	1.65	1.6
Jones	370	1.65	0.6
Onslow	27702	1.65	45.7
Pamlico	212	1.65	0.3
Pender	1267	1.65	2.1
		Total	66.0
EMTs/Paramedics			
County	Anticipated mil-induced growth	Target per 1000 residents***	Induced Need
Carteret	1602	0.14	0.2
Craven	7843	0.14	1.1
Duplin	982	0.14	0.1
Jones	370	0.14	0.1
Onslow	27702	0.14	3.9
Pamlico	212	0.14	0.0
Pender	1267	0.14	0.2
		Total	5.6

Table 7.3 - Personnel Needs Induced by Grow-the-Force, Direct and Indirect

*** Department of Justice 2004; ** International Association of Firefighters; *****

Beyond a simple lack of staff positions, many departments reported more complicated issues related to recruitment, training, and retention. Among EMS and fire departments, recruitment and retention is seen as the primary challenge in maintaining service levels. Changes in the makeup of volunteer forces and a shrinking volunteer pool pose great challenges to meeting current demands. The most pressing need for these departments is to shore up recruiting efforts and incentivize

volunteering opportunities.

Equipment and Facilities

Regardless of each department's perception of VIPER, a lack of regional coordination on communication systems upgrades will cause missed opportunities to increase interoperability. Therefore, law enforcement agencies in the region should take a standardized, regional approach to communications upgrades plans based on the use of P25-compliant, trunked 800 MHz systems. Each department should determine whether or not utilizing VIPER is best for them, but a general movement towards regionally interoperable systems would greatly improve communications and cooperation capacity among disparate law enforcement agencies.

Courts

Because District 4 is the busiest court district in the region and the one bearing the brunt of pressures induced by military and related growth, this analysis focuses on the needs of these court systems. Anecdotal evidence provided through discussions with District 4 representatives suggests that District 3B and District 5 face some of the same difficulties as District 4, namely in the state of security measures at court facilities. Current growth trends, however, are creating an untenable situation throughout District 4, where demand is greatly outpacing personnel levels and facility space. Due to disproportionate stationing of new troops at MCB Camp Lejeune, Onslow County's court system is feeling these strains more acutely than surrounding areas.

In addition to a historical need for one new district judgeship, District 4 representatives indicated that four to five more judges are needed to meet current service demands. Based on AOC standards, Onslow County alone is statistically short one district court judge and two magistrates due to growth in the county since the beginning of 2007. Each judgeship has a parallel need for at least one deputy clerk.

As described in the "Existing Conditions" section of this module, District 4's court facilities are already beyond capacity. The most urgent need for these courts is to resolve current capacity issues. Beyond that, facilities needs parallel personnel needs. As one court representative put it, "Even if we could hire more staff, we wouldn't have a place to put them." Therefore, it is prudent that courts in the region begin planning court facility upgrades that match increased demands for services. Generally speaking, each additional district court judgeship will require an additional courtroom and judge's chambers. Each new employee will require office space, a computer, basic office equipment, and storage space.

Court facility security is a major concern throughout the region. County courts currently utilize different levels of security. Court security can only be achieved through a combination of up-to-date security equipment and adequate, trained staff to man this equipment and monitor courtrooms. In order to ensure the safety and security of courts, each court facility should utilize security cameras and some sort of electronic screening device for those entering the court room. Each courtroom should employ two bailiffs per session, and an additional three bailiffs are needed to operate screening devices.

Public Health

County health departments in the region reported a number of needs that are likely to be intensified by military and related growth 2012. The majority of these needs is associated with medical and social services, and is likewise addressed in the Medical and Health Services module of the plan. Anecdotal reports suggest that increases in caseloads have been felt in Onslow and Jones Counties, including sanitary inspections of public facilities. Environmental Health inspections are said to be lagging behind demands in some areas due to a lengthy accreditation process for inspectors. No data was available to corroborate these anecdotal reports, although the most basic need will be to increase personnel levels and facility space in areas experiencing the most military-related growth. In Onslow County, for example, the immediate need is to undo the current hiring freeze, allowing the Health Department to backfill four positions. Beyond that, Health Department officials in the county estimate that positions and facilities are needed for up to seven additional environmental health employees.

Recommended Strategies and Actions

Action 1: Transition all law enforcement, EMS, and fire departments to 800MHZ, P25-Compliant trunked radio systems.

Rationale

Nearly 15 years have passed since NC DCC&PS first recommended an 800MHz solution (VIPER) to ensure communications interoperability among first responders and regional, state, and federal emergency managers. Since then, the September 11, 2001 terrorist attacks and Hurricane Katrina have served as grim reminders of the consequences of poor communication during regional disasters. Because the Grow the Force initiative and normal growth in the region increase the vulnerability of the region to large-scale disasters, interoperable communications become increasingly important. As streamlined communications increase the efficiency of emergency responders, the region's departments will see a "force multiplier" effect. Furthermore, upcoming changes in FCC bandwidth regulations will make many UHF and VHF systems obsolete. The circumstances suggest that a transition to 800 MHz systems is the most reasonable long-term investment.

Supporting activities

Develop county-level coordination among sheriff's offices, municipal PDs, EMS departments, fire departments, and emergency managers. Ensure that any communication system transitions are in the best interest of regional interoperability.

Communicate to regional and state emergency management officials the effects of current growth on the vulnerability of the population at large in the region.

Funding

The cost for fielding such a system is estimated at $20 million for the region. Potential sources of funding are:

- State appropriations
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 2: Establish a regional, Internet-based networking system (such as i-Info) to facilitate the sharing of information among law enforcement, EMS, and fire service agencies.

Rationale

In spite of the disparities in available funding, resources, and equipment among the region's first responders, the interdependence of the region's agencies will be brought to the forefront when a regional disaster occurs. Sharing information on available resources and equipment and capabilities will help agencies support one another. Lacking true regional interoperability in communications, this real-time information sharing creates situational awareness and planning coordination among first responders.

Supporting activities

Plan regular regional meetings among first responders to discuss the state of emergency response, identifying regional strengths and weaknesses, concerns, and areas of potential collaboration. Decide what information can and should be

shared based on usefulness, omitting unnecessary and sensitive information.

Encourage counties and departments to budget for the licenses and computer capability to run such programs based on the rationale included herein.

Funding

County and municipality

Action 3: Conduct annual regional response drills to test the current state of cooperation and communication interoperability in the MGTF Region. Engage all emergency managers and responders in the region and coordinate with MCTFR, the state EOC, and FEMA representatives.

Rationale

Without contingency drills, the true state of cooperation and communications interoperability among first responders in the region will not be fully understood until it is too late. Running drills simulating a variety of regional disaster scenarios will help identify the true capability gaps among the region's first responders, allowing departments to direct resources and training accordingly.

Supporting activities

Work with FEMA officers and regional emergency managers to develop the most likely regional disaster scenarios and the best way to simulate such scenarios.

Utilize the results of these drills to produce a regional emergency management gap analysis, helping to optimize the allocation of resources at the regional, county, and municipal levels.

Investigate expansion of MCTFER membership or the establishment of a new emergency response partnership encompassing PS/ES agencies throughout the MGTF Region.

Funding

State appropriations

Federal Hazard Mitigation Funds

OEA

Action 3: Increase the recruitment and training of qualified personnel, institutionalizing interest at a younger age.

Rationale

A systematic decline in qualified recruit pools was reported by law enforcement agencies, EMS departments, and fire departments. Overall, a decrease in interest among high school and college students in pursuing jobs in these fields or committing time to volunteering was seen as a major barrier to recruiting the next generation of emergency responders. Partnerships with educational institutions may open up additional funding opportunities for emergency response agencies.

Supporting activities

Work with local high schools to develop Law Enforcement, Fire, and EMS recruitment and training programs. Explore the possibility of reciprocal benefits, including allowing students to claim class credits for time spent training and volunteering.

Such programs could be presented to students as an opportunity to learn and gain experiences outside of traditional classrooms.

Produce literature explaining the educational benefits available to fire and EMS volunteers, including college scholarship opportunities. Explore new scholarship opportunities with North Carolina state universities to incentivize student volunteerism.

Increase the number of qualified staff to serve these programs. Maximize these clinical staff through increasing administrative support.

Funding

Matching funds between school districts and individual departments

OEA community development funding

Action 4: Develop new interagency agreements aimed at mitigating the effects of drawing from lower-paying departments as a recruiting tool.

Rationale

As explained previously in this module, lower paying departments often bear a disproportionate share of the costs associated with attrition patterns among young volunteers and officers. Although some attempts have been made to discourage agencies from recruiting from other departments in the region, they have not been successful. The previous approach, which primarily involved setting grace periods to discourage "poaching" among departments, was considered by many to be ill conceived and cumbersome. A new approach, in which the recruiting department bears some of the training costs, would allow lower-paying departments to recoup the costs associated with losing recently trained rookies.

Supporting activities

Hold summits between regional department heads of law enforcement, EMS, and fire services.

Discuss the state of attrition in the region and develop an agreement in which any department engaging in intraregional recruiting reimburses some training costs to the department from which it is recruiting.

Funding

Low associated costs, likely to be borne by all participating departments.

Action 5: Initiate measures to update and expand court facilities to ensure quality of service and enhance the safety of court personnel.

Rationale

A county's capacity for maintaining the safety of its citizens from criminal elements is a function of both effective law enforcement and an adequate, functioning court system. Inefficiencies in the functioning of courts cause backlogs that lead to much greater problems: increases in the amount of time those accused of crimes spend in jail before going to court, greater strain on jail facilities, inefficiencies in processing basic civil disputes, etc.

Supporting activities

Upgrade security measures at court facilities throughout the region. Employ the use of security monitors and electronic screening devices.

Initiate planning for new courtrooms, offices, and associated facilities. Though the funding may not be in place to begin construction, preparation could greatly expedite these upgrades when the possibility arises.

Funding

OEA community development funds

Action 6: Seek professional grant writing positions to seek PS/ES funding for each county and larger municipalities.

Rationale

Although few of the region's counties and municipalities have the funds to add a staff position, a full-time grant writer would be likely to pay for itself by securing additional funds for PS/ES agencies. Whereas many departments may lack the time or expertise to find new funding opportunities, creating a position that focuses solely on tracking grants could prove to be an effective way to overcome current funding deficits.

Supporting activities

Seek an end to hiring freezes, backfilling positions lost to provide some immediate relief to strained departments.

Initiate planning for new courtrooms, offices, and associated facilities. Though the funding may not be in place to begin construction, preparation could greatly expedite these upgrades when the possibility arises.

Funding

Salary to be provided by county or municipality

Conclusions

The PS/ES sector in the North Carolina Military Growth Task Force region faces substantial challenges in meeting service needs and ensuring preparedness in the coming years. There are a number of extant deficiencies; growth resulting from Grow the Force has caused some of these deficiencies and greatly exacerbated others. The Military Growth Task Force has broadly characterized the region's urgent needs into four categories: manpower, facilities and equipment, vehicle-related accidents, and communications interoperability.

Manpower and resource deficiencies are largely a reflection of the state of funding throughout the region. Though many specific needs can be identified by each department, the PS/ES sector will continue to fall behind the power curve until sufficient, renewable funding streams are secured. Despite the fact that this plan suggests outside funding sources, in all likelihood the counties and municipalities in the region will ultimately bear a great majority of the costs associated with maintaining PS/ES agencies. Therefore, it is best to approach alternate funding sources as a short-term stimulus until more sustainable revenue streams are developed.

In some cases, however, counties and municipalities have tools at their disposal to help mitigate the stressful effects of military growth on the provision of PS/ES services. Absent the technical capacity to ensure full communications interoperability among the region's first responders, shared information and annual regional response drills can help identify gaps in operational coordination capabilities. Such preparatory actions may prove to have a significant "force multiplier" effect in cases of mutual emergency response.

Finally, the trends identified in this module suggest that state and federal entities should focus more attention on the capabilities of PS/ES agencies in the region. Military and related growth is essentially imposed on the region and localities are forced to adapt, whether or not they have the capabilities. The increased military presence and increased population here increase the vulnerability of citizens throughout the region in a number of ways, from day-to-day crime and safety issues to contingencies of regional natural disasters and even terrorist attacks. From a public safety and emergency management perspective, fairness dictates that the state and federal government should direct resources to the MGTF Region proportionate to the new challenges confronting the region's counties and municipalities.

The events of September 11, 2001 and Hurricane Katrina provided an important lesson in emergency management: that the cost of disaster preparedness now is a fraction of the costs borne after a poorly managed disaster event. Considering a number of climatic, geographic, and geopolitical factors, the potential for a regional disaster is now less a question of "if" than a question of "when." Simply put, regional PS/ES sector in its current state is not prepared to adequately address such a contingency.

References

Brill, Lori A. and Mark Goodman. 2003. Corps Competencies. Homeland1 News, May 15.

http://www.homeland1.com/homeland-security-products/emergency-preparedness-response/articles/410881-corps-competencies/

Gray, William and Philip Klotzbach. Extended Range Forecase of Atlantic Seasonal Hurricane Activity and U.S. Landfall Strike Probability for 2006. Colorado State University.

http://hurricane.atmos.colostate.edu/forecasts/2005/dec2005/

Kay, Lindell. 2009. Growing Population Taxes Onslow County Sheriff's Department. Eastern North Carolina Today, May 21.

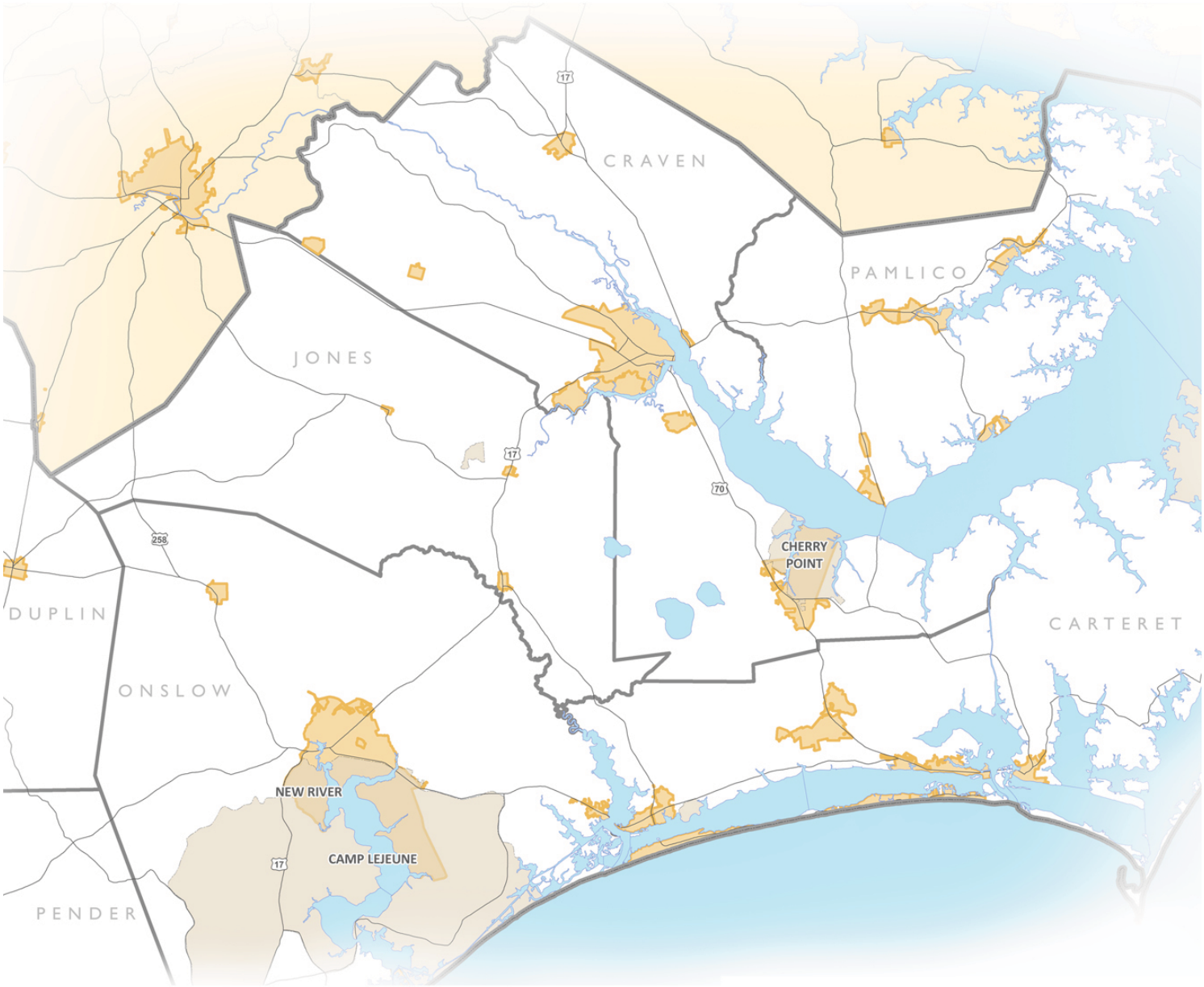
North Carolina Administrative Office of the Courts (NC AOC). 2009. Court Caseload Data for North Carolina Counties FY 1988 – 2008. Organizational Development and Planning Region.

North Carolina Department of Emergency Management. 2007. North Carolina Coastal Region Evacuation and Sheltering Operating Guide. North Carolina Department of Crime Control and Public Safety.

NC DEM. 2008. Voice Interoperability Plan for Emergency Responders (VIPER). North Carolina Department of Crime Control and Public Safety.

http://www.nccrimecontrol.org/index2.cfm?a=000003,000693,000702,000707

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

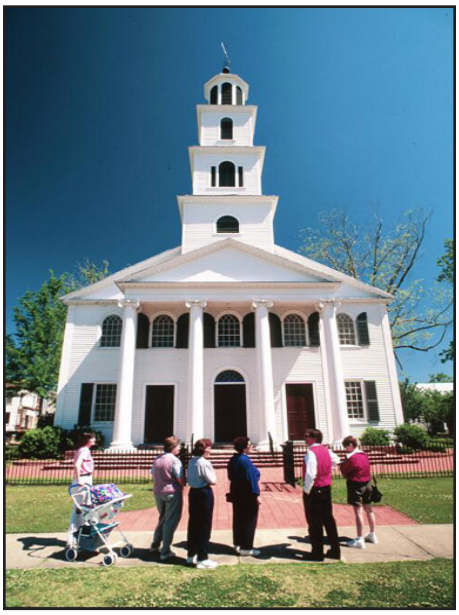
October 2009

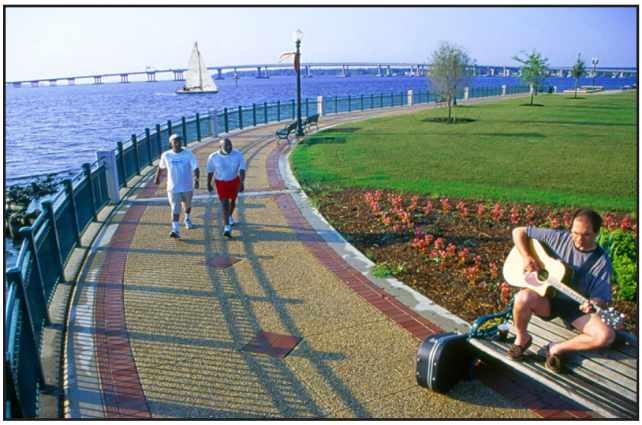
Quality of Life

Quality of Life

Introduction

Quality of Life (QOL) is central to eastern North Carolina, which boasts a strong environmental, rural, historical, and tourist setting. The term "Quality of Life" itself refers to factors that lead to subjective definitions of a "good life" (Costanza et al. 2007). Economic developers and civic leaders are very aware of the importance of QOL to an area's desirability—in influencing business location decisions, attracting and retaining top business and professional talent, and attracting higher-income retirees. Various "Places Rated" guides include information on QOL factors such as climate, economic vibrancy, housing quality, health care, crime rate, transportation, and education facilities—topics that are discussed in other modules in the Regional Military Growth Plan (RMGP). The guides also consider amenities such as recreation, historical heritage, arts and cultural opportunities, and shopping and restaurants as they rate areas' relative desirability. For example, the 25th anniversary edition of "Places Rated Almanac" rates metropolitan areas on the ambience factors of "good restaurants, bookstores and reading, visible history, lively arts calendar, and people." The Jacksonville, NC metro area ranked 330th out of 379 metro areas in the nation on these ambience factors (Places Rated Almanac 2007). To provide some context for the Jacksonville metro area in comparison to other similar metro areas in the state, other locations were ranked as follows: Durham (15), Raleigh-Cary (27), Wilmington (151), and Fayetteville (320).





This module addresses several key QOL factors: parks and recreation (including sports venues); water access and associated parking; arts and cultural amenities; hotels and meeting space; and retail shopping opportunities. Specifically, this module will:

- Identify the services and facilities that are provided at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point, including, but not limited to libraries, cultural resources and facilities for arts and entertainment, parks and recreation facilities, open space, and water access.
- Determine which additional services and facilities are needed to accommodate military-related growth in the region, while taking into consideration the ages of military personnel and their dependents; and determine where those services and facilities should be located to provide the greatest benefit to the region.
- Identify opportunities for regional cooperation.
- Identify opportunities for public/private ventures to meet the identified needs.
- Conduct an inventory of hotel, motel, and bed & breakfast beds.
- Conduct an inventory of existing meeting, convention, and special activity space, noting capacities and uses of the space.
- Determine the number and location of hotel, motel, and bed & breakfast beds needed to accommodate

projected population growth in the region.

- Determine the number, location, size, and type of meeting, convention, and special activity space needed to accommodate projected population growth in the region.
- Make recommendations for correcting shortfalls in needed hotel, motel, and bed & breakfast beds.
- Make recommendations for correcting shortfalls in needed meeting, convention, and special activity space.

In summary, the module first examines existing facilities in the MGTF Region and current plans to accommodate population growth for a variety of quality of life factors identified by the Military Growth Task Force. The module further identifies military growth-induced demands that have been placed on specific QOL focus areas, discusses key QOL needs for the region as a whole, and presents recommendations to effectively address those needs.

Background

North Carolina's Military Growth Task Force (MGTF) Region has a temperate climate and a wealth of natural resources, making outdoor recreation a major contributor to the region's quality of life. Some of the major attractions that draw tourists to the region are the beaches and golfing opportunities. The history of the region lends itself to a variety of historical and cultural amenities. The Cape Lookout National Seashore is located within the region, and the outer banks of North Carolina are a major attraction in the state. The region also has a network of inland waterways and rivers, allowing for a significant amount of outdoor water recreation. Also located within the region is the Croatan National Forest, which has 157,000 acres of wilderness area for hiking, camping, biking, paddling, and other outdoor recreation opportunities. Hoffman Forest also provides 80,000 acres of protected open space in the region.

Anticipated Growth

Between 2007 and 2011, an anticipated 39,977 persons are expected to move to the MGTF Region as a result of Marine Corps-related growth (which includes USMC forces, dependents, and indirect induced growth). This growth is in addition to the "baseline," or normal, projected population growth of 25,153 persons that is expected during this period in the region. **Figure 8.1** shows the anticipated growth and distribution during this time period.

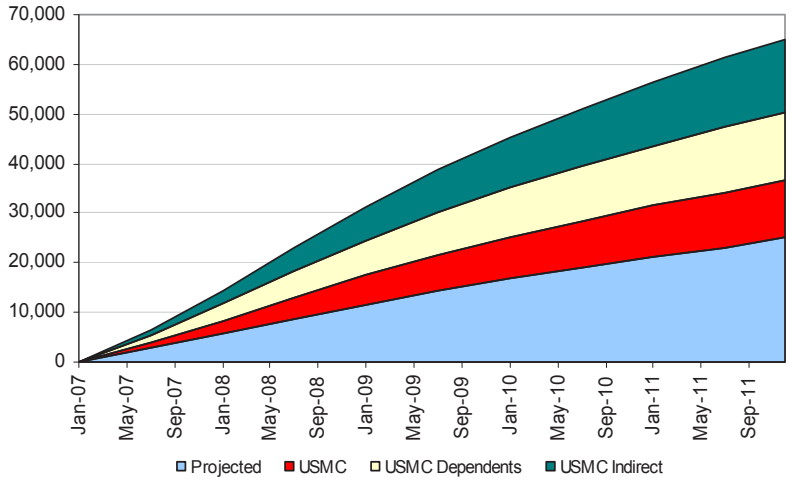


Figure 8.1 - Natural Projected Population Growth and USMC-Related Population Growth Impact

Source: North Carolina Office of State Budget and Management, *County/State Annual Population Totals, June 2008*; and Marstel-Day, February 2009.

Within the seven-county region, the increased population is anticipated to be dispersed in patterns similar to those of the present USMC-related population. Because MCB Camp Lejeune will receive the greatest number of new military personnel of the three installations, the majority of new residents are expected to locate in Onslow County. A breakdown of population impacts by county is shown in **Table 8.1.**

	Active Duty & Civilian	Total Dependents	Direct Impact	Indirect Impact	Total Impact	Natural Increase	Total Change
Carteret	199	237	436	1166	1602	2276	3878
Craven	2136	2681	4818	3025	7843	3715	11557
Duplin	34	51	84	898	982	3022	4004
Jones	70	86	155	370	370	125	494
Onslow	8873	10292	19165	27702	27702	8371	36073
Pamlico	1	1	2	212	212	-2	210
Pender	164	153	317	1267	1267	7648	8914
MGTF Region	11477	13500	24977	15000	39977	15153	65130

Table 8.1 - Population Impacts by County

Source: USMC Dependent Residential Database by Base, and Marstel-day, 2009

Existing Conditions

Parks and Recreation and Sports Venues

The following section presents an analysis of existing and planned on-base parks and recreational facilities, and other parks and recreational facilities in the MGTF Region. [Please refer to Appendix N for further comparative information.]

On-Base Facilities

MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point each offer various recreational opportunities to active-duty Marines, dependents, retirees, and civilian employees. Because MCB Camp Lejeune and MCAS New River are so close in proximity, they often share amenities. Facilities on each of the three installation are often available for use by those stationed at the other two installations, and the public is often invited on base for events throughout the year. A summary of available recreational activities at each installation follows:

MCB Camp Lejeune

MCB Camp Lejeune, the largest Marine Corps base on the East Coast, offers a large number of recreational amenities. The base has two major recreation areas and a beach. Brewster Recreation Area offers 122 acres with campsites, an outdoor recreation center, a canoe and kayak launch, recreation areas, picnic areas, and staff cabins. The Oak Grove Recreation Center (a Marine Corps outlying air field outside Pollocksville, NC) also offers campsites, picnic pavilions, and boat launching. Onslow Beach, more than seven miles of undeveloped barrier beach, is available, with tent and RV campsites as well as other lodging facilities available for rental. MCB Camp Lejeune also offers a range of fishing opportunities (ocean front, inlet, and fresh water), and has 13 ponds and two marinas. Hunting is also available on base in three designated hunting sites.

In addition to these outdoor recreation areas, MCB Camp Lejeune also offers the following facilities: six recreation centers; seven fitness centers; various outdoor athletic fields; a racquetball court; several basketball courts; a climbing wall; a skeet range; an archery range; three indoor pools; two outdoor pools; two golf courses; a paintball facility; a bowling alley; two movie theaters; and a dive shop. There is also an Armed Services YMCA on MCB Camp Lejeune.

According to MCIEAST Marine Corps Community Services (MCCS), MCB Camp Lejeune recreation facilities are currently

sufficient to meet the demands of base residents. Some of the base's green space and playing fields have been used for the construction of new barracks, though this is not expected to have a major negative impact on the base's available recreational opportunities. Two new gyms are planned at MCB Camp Lejeune, but are not yet under construction.

MCAS New River

Beach and water access are an important part of MCAS New River's recreation program. The air station has a full marina with equipment available for rent. Two campgrounds with a total of nine campsites exist on the base. MCAS New River also has two fitness centers with various exercise equipment, racquetball courts, basketball courts, two pools, an outdoor roller hockey skating rink, a bowling alley, and a movie theater.

MCAS Cherry Point

MCAS Cherry Point also has a range of recreational areas and fields, including a multipurpose athletic field, an indoor hockey rink, beach volleyball courts, softball fields, a golf course, an indoor pool, and two outdoor pools. The base has four gym facilities with exercise equipment and classes, a bowling center, and a movie theater. There are three marinas on base with rentals, four campsites, and 10 picnic areas.

MCAS Cherry Point's recreational amenities are generally sufficient, but one gym (Devil Dog gym) is at full capacity. Both an RV campground and a new gym have been planned for MCAS Cherry Point, but construction for these amenities has not yet begun.

Off-Base Facilities

Within the seven-county MGTF Region, a wealth of outdoor recreational opportunities exists. The coastal areas offer many inland waterways for recreational purposes, and several counties have a system of canoe paddle trails through local creeks and rivers. There are several county- and city-run recreation centers that offer a wide range of outdoor recreation options and a limited range of indoor recreation options. The region as a whole, however, is underserved by the number of sports fields and gymnasiums that are available throughout the counties for recreational programs. [A breakdown of specific recreational facilities and sports venues by county can be found in the county modules of the Regional Growth Management Plan (RGMP).]

A current trend within counties is to use public school gymnasiums to satisfy indoor recreation needs, although this may not be practical in the long term as county and school populations increase. There is often too much competition between schools for use of facilities, and there are often conflicts resulting from schools reserving the fields for county-sponsored recreational programming. It is unrealistic to assume that school fields will be sufficient to make up for a shortage of county athletic facilities; therefore, school fields are not included in this analysis.

There are presently no public swimming pools in the MGTF Region. There are several private swimming pools and YMCA pools, but the lack of public pools has previously been cited as a need for the region. Several counties' Parks and Recreation Department comprehensive plans cite the gap, but the fact remains that the costs and liability of building and maintaining swimming pools are often prohibitive. Some comprehensive plans suggest splash pads as viable alternatives to swimming pools, if necessary. Because swimming pools are often very costly, parks and recreation departments throughout the region have indicated that they would prefer to prioritize other athletic fields, gymnasiums, and facilities before offering public pools in their communities.

Water Access and Parking

The following section of the module presents an analysis of existing and planned water access and parking facilities on base

and in the MGTF Region. [Please refer to Appendix O for further comparative information.]

On-Base Facilities

MCB Camp Lejeune and MCAS New River

MCB Camp Lejeune and MCAS New River jointly offer 12 boat launch sites, including three marinas (one at MCAS New River and two at MCB Camp Lejeune). Parking at the MCAS New River marina is close to capacity, with some overflow parking on the roads during busy times. The MCB Camp Lejeune marinas have adequate parking.

MCAS Cherry Point

MCAS Cherry Point has three marinas with boat ramps and water access. Parking is considered to be at maximum capacity at the Slocum Marina, but adequate at the other marinas.

Onslow Beach

Onslow Beach, located on MCB Camp Lejeune, is available to active-duty Marines from MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point, with preferential reservations available (reservations are also available to other active-duty, retirees, reservists, and civilian employees). The beach has five access points, an area designated for 4-wheel-drive vehicles, and a fishing pier. The beach has ample parking for those who rent lodging or campsites, or visit the beach. At the present time, the beach access and parking is sufficient for visitors to Onslow Beach; parking areas only tend to be overcrowded during special events.

Off-Base Facilities

The ocean and inland waterways are very important to the way of life in the counties in the Military Growth Task Region. The beach is a huge tourist draw each year, and access to water has a great impact on the region's quality of life. Of the seven counties, only Jones and Duplin Counties do not have access to the ocean or a sound, though both counties do have rivers flowing through them that provide water for recreational enjoyment. There are a total of 32 boat ramps, 38 canoe/kayak launches, and 63 beach access points throughout the region. [A detailed breakdown by county of beach and water access, and associated parking, can be found in the County Modules of the RGMP. A list of the water-access facilities can be found in Appendix O.]

Insufficient parking at water-access locations is a chronic issue throughout the region. Waterfront property is difficult to acquire because it is considered prime real estate, and when it is acquired, it often has too limited space to provide adequate parking.

Some counties have also encountered problems with Department of Transportation (DOT) regulations for canoe/kayak launches. Often these launches are located at bridges, and because the DOT is responsible for bridge and road repairs, counties often encounter changes in regulations that make canoe/kayak launches impossible.

Arts and Culture

Arts and cultural amenities examined in this module include libraries, youth programs, museums, cultural events and venues, and historic areas. An analysis of existing and planned arts and cultural amenities on base, as well as in the rest of the region, is presented in this section. Although the new military and dependent populations moving to the area will

have access to all of the facilities on base, public facilities in the region will also be important for use by both military and non-military residents. Military families who live off base are expected to visit libraries, museums, and events outside of the base whenever it is more convenient for them. The bases also provide a number of events for military families and the general public, many of which take place during the summer. [Please refer to Appendix P for further comparative information. A detailed breakdown of arts and cultural facilities by county can be found in the County modules of the RMGP.]

On-Base Facilities

MCB Camp Lejeune

MCB Camp Lejeune has three libraries—the Harriotte B. Smith Library, Camp Johnson Library, and the John A. Lejeune Education Center Research and Study Center. The base also has two community centers that offer various classes and events throughout the year.

MCAS New River

MCAS New River has a library on base, the Station Library, as well as an outdoor concert site that can seat approximately 6,500 people. The concert site is used for theater plays, in addition to musical concerts. Some of its events, including its summer concert series, are open to the public.

There are currently plans to build a library and an education center on the base in 2013, as well as a new theater. These new facilities likely will help to reduce the demand on current facilities, and offset increased demand due to future military-related growth near the base.

MCAS Cherry Point

MCAS Cherry Point has one library, the Station Library, and a community center and various youth programs.

General

The Museum of the Marine is under construction, though funds are still being raised to complete the project. The museum plans to eventually include a Vietnam Memorial.

Off-Base Facilities

There are 26 public libraries in the seven-county region, totaling 142,618 square feet. In five counties, Carteret, Craven, Duplin, Onslow, and Pender, the county libraries have a shortfall in library space, based on state per capita library space standards. Jones and Pamlico Counties have a surplus of library space, but it should be noted that the library in Pamlico County is located in a high school, which limits its parking and use to county residents only. Jones County has sufficient library space but lacks sufficient library computer access and other modern amenities. All library systems in the region are struggling to provide enough computers for their users, especially since computer areas take up space that would otherwise be used for collections or reading areas. As libraries have become more like community centers, with computers, meeting space, and public events, adequate space has become an increasing concern.

The region also has approximately 40 museums and cultural/historical attractions. Museums, in particular, provide a cultural context for visitors, which is very important in defining a regional identity. This can be especially helpful to military families, who move often, and thus have the opportunity to educate their children about a range of cultures from different regions.

While regional arts and cultural leaders believe that there are a sufficient number of general museums in the region, some have identified the need for additional children's museums and activities in the region. The cost of such museums and other cultural venues is also an important consideration for many young families, including military families, in the region.

Because of the rural nature of the MGTF Region, farms have become a popular cultural attraction for families. Agri-Cultural Tourism allows families and schools to educate children on working farms, and also helps to provide cultural context for residents of the region.

There are approximately 30 annual festivals that occur in the region, as well as various concert series, theater performances, and other events that are organized through local arts, cultural, and events centers. Though no need for additional festivals or other events has been expressed, there has been a need expressed for a larger indoor venue than currently exists in the region, one that could support large concerts and public radio programs. The largest indoor musical venues in the area currently are the New Bern Convention Center and the Crystal Coast Convention Center, although convention centers are not believed to provide an ideal acoustic environment for concerts.

The region has a total of eight movie theaters, but they are all located in Onslow, Craven, and Carteret Counties. Consequently, residents of Duplin, Jones, Pamlico, and Pender Counties need to travel outside their counties to view a movie.

Not surprisingly, residents within the MGTF Region usually travel to Wilmington, Raleigh, or Greenville to attend concerts or other large events. Many families also travel to these larger cities to take their children to museums and other cultural venues, simply because the region does not presently offer many child-friendly activities.

Hotels and Meeting Space

The following section presents an analysis of existing and planned hotels and meeting spaces in the region, both on base and off base. [Please refer to Appendix Q for further comparative information.]

On-Base Facilities

MCB Camp Lejeune

The Hospitality Inn at MCB Camp Lejeune has 90 guest rooms for temporary lodging. The Inn typically averages a 98-percent annual occupancy (Booz Allen Hamilton 2008, 88). An addition is planned for the Inn, but construction has not yet begun.

Also within the MCB Camp Lejeune/MCAS New River complex, there are five bachelor officer quarters (BOQ): Paradise Point, Camp Geiger, MCAS New River, Courthouse Bay, and Camp Johnson.

The two community centers on base have rooms available for meetings, parties, and social gatherings for a minimal rental fee.

MCAS New River

Within the MCB Camp Lejeune/MCAS New River complex, there are five bachelor officer quarters (BOQ): Paradise Point, Camp Geiger, MCAS New River, Courthouse Bay, and Camp Johnson.

MCAS Cherry Point

The lodging accommodations at MCAS Cherry Point are limited to the Transient Officers' Quarters and Transient Enlisted Quarters (no temporary lodging facilities). The 178 Bachelor Officer Quarter rooms on base average an 83-percent annual occupancy rate (Booz Allen Hamilton 2008, 89).

Off-Base Facilities

The hotel facilities surveyed for this plan only include lodging that is typically used by military travelers, which does not include facilities such as bed and breakfasts and vacation home rentals. [A detailed breakdown of hotels and meeting space by county can be found in QOL the County modules, and in Appendix Q.]

A total of 114 hotels exist in the seven-county region, most of which are economy venues that are older and lacking in amenities. There are few upscale lodging choices in the area.

Shopping Opportunities

Generally speaking, the MGTF Region has enough lower-end shopping opportunities to support its current population. It has been argued by some that the quality of these stores and restaurants, however, is simply not up to the standard desired by many area residents. The region only has lower-end shopping alternatives, and many of its citizens typically choose to travel to Raleigh, Greenville, or Wilmington to gain access to better shopping venues.

Needs Assessment

Parks and Recreation and Sports Venues

There is evidence to indicate that crime rates frequently drop, specifically among juveniles, when open space and recreational opportunities are improved (Trust for Public Land 1994). The cost of keeping one teenager in juvenile detention for a year is approximately $30,000—money that could be better spent on recreational opportunities that would help prevent juvenile delinquency. There are also studies that show a relationship between organized athletic programs and lower rates of delinquent activity, specifically among working-class and lower-income boys (Mulvey et al. 1993). As cities across the country are experiencing rising crime rates, investment in parks and recreation (not just in police and jails) is important for the security and stability of cities. According to the U.S. Department of Justice's Office of Juvenile Justice and Delinquency Prevention, North Carolina's juvenile (aged 0-17) population is expected to increase by 13.3 percent between 2005 and 2015.

Several counties in the MGTF Region already face challenges in accommodating demand for parks and recreation facilities and opportunities, and the increase in population due to military growth will likely have a significant impact on the use and availability of current venues within the region. The seven counties have a reasonable number of outdoor venues, but they lack enough indoor facilities needed to host activities during fall and winter months, or in the event of inclement weather.

Local residents have also expressed concern that the development of trails is not consistently provided in accordance with new housing development (Booz Allen Hamilton 2008, 90). Because walking for leisure is commonly listed as a top recreational activity in the region, local quality-of-life advocates have indicated the need for more trail development in proximity to housing development. Several counties' Parks and Recreation Department comprehensive plans also have indicated a desire for additional trails and greenways that would link housing with schools, shopping, and other activity centers.

Given that the majority of new Marines coming to the region as part of military growth are single, attention is needed to provide recreational opportunities suitable for young, single people. These may include longer and more challenging running and biking amenities, increased availability of outdoor recreation, and appropriate sports opportunities. Changes in recreational programming may be necessary to provide activities at times and places that are suitable for young singles.

This module identifies the current gaps in recreational and sports venues, and projects where those gaps will likely result from an increase in population due to military growth. The facilities required to support an increase of approximately 41,000 people to the region (military plus induced growth) are shown in **Table 8.2**.

Facilities	State Standard	*Total (40,000 people)*	Carteret County (1,602 people)	Craven County (7,843 people)	Duplin County (982 people)	Jones County (370 people)	Onslow County (27,702 people)	Pamlico County (212 people)	Pender County (1,267 people)
Baseball Fields	1/8,000	***5***	-	1	-	-	4	-	-
Soccer Fields	1/6,000	***7***	1	1	-	-	5	-	-
Softball Fields	1/4,000	***10***	1	2	-	-	7	-	-
Tennis Courts	1/1,200	***34***	1	6	1	1	23	1	1
Outdoor Swimming	1/14,000	***3***	-	1	-	-	2	-	-
Community Centers	1/14,000	***3***	-	1	-	-	2	-	-

Table 8.2 - Sports Venue Facilities Needed To Support Military-Induced Growth (Total and by County)

Although some standards for sports venues have been established by the state, the Statewide Comprehensive Outdoor Recreation Plan (SCORP) no longer recommends using population-based standards to express recreation needs, a position that is supported by the National Recreation and Park Association (North Carolina State Comprehensive Outdoor Recreation Plan 2008, III-6). This is largely because each county and community has unique characteristics and preferences, and because the Plan adheres to the belief that each community's needs should be determined by the preferences of its citizens, its existing recreation resources and levels of tourism, and the characteristics that make it unique (for example, eastern North Carolina naturally attracts more beach- and water-based recreation and less mountain-based recreation than does Western North Carolina).

In addition to recreational facilities, there will be a need for additional parks and open space in the region. **Table 8.3** shows state standards per 1000 people for parks and the park acreage needed by each county.

County	Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
Carteret	1,602	10-13 acres	16 acres	32-160 acres
Craven	7,843	47-63 acres	78 acres	157-784 acres
Duplin	982	6-8 acres	10 acres	20-98 acres
Jones	370	2-3 acres	4 acres	7-37 acres
Onslow	27,702	166-222 acres	277 acres	554-2,270 acres
Pamlico	212	1-2 acres	2 acres	4-21 acres
Pender	1,267	8-10 acres	13 acres	25-127 acres
TOTAL	**39,978**	**240-320 acres**	**400 acres**	**800-3,998 acres**

Table 8.3 - Parks Needed To Support Military-Induced Growth (By County)

Water Access and Parking

Off-Base Facilities

The beaches within the seven-county region are a very popular recreational attraction for residents and visitors alike. Pender, Onslow, and Carteret Counties have the most beachfront available in the region, and thus have specific concerns regarding the availability of both parking and beach due to private ownership. When tourists from outside the region travel to the beaches, a shortage of parking near the beaches ultimately creates a problem for full-time and seasonal residents.

The region currently has public beaches, private beaches, and restricted beaches (for example, those on military installations). The growing number of private beaches has restricted beach access for the rest of the population.

North Carolina shorefront access policies outline access guidelines for the 20 coastal counties in the state. The state also strongly urges the use of land that may be susceptible to severe erosion, and thus prevented from being developed. In such cases, it would be most useful to use the properties for public access if the land is donated, acquired, or improved.

The state acknowledges that local governments have the lead responsibility for selecting public access sites within their jurisdictions based on identified needs stated in local waterfront access plans.

The state encourages the following guidelines for beach access sites:

- Local[18]/Neighborhood[19] Access Sites: one per block in the community
- Regional Access Sites[20]: one per locality or one per four miles (whichever yields the most public access)
- Multi-Regional Access Sites[21]: one per barrier island or one per 10 miles (whichever yields the most public access)

The state encourages the following guidelines for public waterfront access:

- Local Access Sites: one per block
- Neighborhood Access Sites: one per 50 dwelling units
- Regional Access Sites: one per local government jurisdiction
- Multi-Regional Access Site: one per coastal county (parking should be based on seasonal population estimates)

Each of these access site projects, land acquisitions, or reconstruction projects on existing, damaged, or aging facilities is eligible for state grants (based on some other criteria such as demand, funding, sites, etc.). The state emphasizes that the primary purpose of the public access program is for pedestrian access, including parking. Boating and fishing facilities may be funded, as long as pedestrian access is the primary objective of the proposed project.

While there are no population-based standards for water access sites or parking, the need for additional water access and parking has been identified in the counties' CAMA plans and Parks and Recreation Comprehensive Plans. The combination of summer tourism, the normal influx of seasonal residents and vacationers, and an additional 41,000 new residents by 2011, will likely cause parking and water access to be issues for the region for the foreseeable future.

18 Local Access Sites offer minimal facilities or none at all. They are typically used by pedestrians who reside within a few hundred miles of the site, and are often only a dune crossover or pier. Vehicle parking is generally not provided, but bicycle racks may be provided.

19 Neighborhood Access Sites offer parking (typically 5-25 spaces), a dune crossover or pier, litter receptacles, and public access signs. They are typically used by individuals within the immediate subdivision or vicinity of the site. Restrooms may be installed.

20 Regional Access Sites typically provide 25-80 parking spaces, restrooms, dune crossover, pier, foot showers, litter receptacles, and public access signs. They normally serve the public from throughout an island or community, including day visitors. Wherever possible, one-half acre of open space is placed at these sites for buffering, nature study, etc.

21 Multi-Regional Access Sites are larger than regional access sites but smaller than a state park. They typically are constructed with the involvement and support of state and local government agencies. They have parking for 80-200 vehicles, restrooms with indoor showers, and concession stands. Wherever possible, two acres of open space is provided for buffering, nature study, etc.

Military-induced growth will likely bring some additional housing to the region, which will require communities to maintain the state-encouraged guidelines for beach and public waterfront access.

Lands that have been condemned due to flooding may be an important resource in gaining land for waterfront access sites, as well as open water near areas currently restricted due to military training.

Arts and Culture

Arts and cultural activities tend to be concentrated in Jacksonville and New Bern, which are considered regional arts and culture hubs (Booz Allen Hamilton 2008, 93). An increase in population will require more arts and cultural programs and facilities across the region. Although there are many summer festivals, concerts, fairs, and other events currently offered in the region, much like the situation with parks and recreation, there are few year-round activities for arts and cultural programs. There are no large indoor concert venues in the region, forcing residents to travel to Wilmington, Raleigh, or Greenville to attend concerts and other large, indoor cultural events.

Museums contribute significantly to arts and culture in the MGTF Region, but no need for additional museums for adults has been expressed. The desire for more child-oriented museums has been expressed, however, to provide families with small children more options for family-friendly cultural enrichment and entertainment. Studies conducted recently within the region have revealed a need for children's museums in both Craven and Onslow Counties (specifically, New Bern and Jacksonville). A feasibility study recently conducted for a Jacksonville Children's Museum identified the need for such a museum, and further noted that Jacksonville's primary strength is that it is a military town where the population is young and growing. A similar study done in New Bern recommended that a children's museum be built in conjunction with the New Bern Fireman's Museum. The Onslow County Museum has included children's programming in its long-term plan, but presently there are few such examples of programming in the region. The new North Carolina History Education Center at Tryon Palace will include exhibits for children, and will also offer free admission. Despite these efforts, however, the addition of military personnel and their dependents to the region will likely only intensify the need for more children's museum space.

A need for *affordable* cultural attractions was also identified, which is especially important for young Marine and civilian families.

Libraries are also primary examples of the arts and cultural amenities in the region. Libraries are very important to a community, and library representatives have indicated that many Marines and their families participate in library activities and use local library amenities. Necessary library square footage is estimated at 0.65 SF per capita, as established by the North Carolina Public Library Directors Association. An additional 41,000 people would require an additional 26,650 square feet of library space within the seven-county region. The Onslow County Public Library Facilities Long Range Master Plan – Phase 2 Final Report, notes that within the past 15 years, library planners and institutions have begun to recommend 1.0 SF per capita, which would result in the need for 41,000 square feet of library space to accommodate the increase in population. **Table 8.4** lists the square footage that would be needed in each county for both of the per capita space standards.

County	Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
Carteret	1,602	1,041 SF	1,602 SF
Craven	7,843	5,098 SF	7,843 SF
Duplin	982	639 SF	982 SF
Jones	370	240 SF	370 SF
Onslow	27,702	18,006 SF	27,702 SF
Pamlico	212	138 SF	212 SF
Pender	1,267	824 SF	1,267 SF
TOTAL	**39,978**	**25,987 SF**	**37,978 SF**

Table 8.4 - Library Space Needed To Support Military-Induced Growth (By County)

In addition to square footage needs for the region's libraries, importance should be placed on library programs, computer access, collections, and parking, to ensure that the region's libraries are state-of-the-art, fully functional, and able to meet all of the community's needs. Libraries are increasingly becoming community centers that require a considerable amount of space for community programs, events, and activities. Table 8.5 shows library needs (in addition to space), including public computers (not to include online catalogue systems), collections, user seating, programming and meeting space, and parking (Barton 2008, 27).

County	Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items / capita)	User Seating (2.5 seats/1000 residents)	Programming/ Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF) – based on lower SF estimates in Table 5
Carteret	1,602	1	3,204	4	5	5
Craven	7,843	4	15,686	20	26	26
Duplin	982	0.5	1.964	2.5	3	3
Jones	370	0	740	1	1	1
Onslow	27,702	14	55,404	69	92	90
Pamlico	212	0	424	0.5	1	1
Pender	1,267	1	2,534	3	4	4
TOTAL	**39,978**	**20.5**	**79,956**	**100**	**132**	**130**

Table 8.5 - Additional Library Needs to Support Military-Induced Growth (By County)

Hotels and Meeting Space

The projected increase in military personnel and related population likely will have a significant impact on the use of hotels rooms and meeting facilities, especially as base accommodations are currently reaching capacity. Hotels in Jacksonville primarily serve MCB Camp Lejeune and MCAS New River, and Havelock and New Bern hotels typically accommodate military travelers to MCAS Cherry Point. Other large hotel clusters in the region are located in Morehead City and Atlantic Beach, both within Carteret County, but travelers to these hotels are typically leisure travelers who are not necessarily associated with the military.

Current capacity meets demand, but the increase in military personnel has the potential to increase demand. In addition, increased corporate, group, and leisure travel resulting from projected normal, non-military growth, as well as the introduction of new business to the area, may strain current hotel capacity further. Even without the military growth, performance trends indicate that there will continue to be significant growth in the region (Booz Allen Hamilton 2008, 92).

Another challenge in the region pertains to the quality of existing hotel accommodations. Most of the hotels are budget hotels, which tend to be older and of lower quality, and offer fewer amenities. There are presently no higher-end hotels with full amenities in the region.

It is reasonable to assume that the demand for hotels in the region will be met as it grows. Because the region is a popular tourist destination, hotels are typically built as they are needed, but the quality of hotels and amenities offered (restaurants, meeting space, exercise facilities, indoor pools) should be improved if possible.

Meeting space in the area is generally limited to small- and medium-sized venues. Carteret, Craven, Duplin, and Jones Counties each have a meeting venue that will accommodate 1,000 people (Duplin actually has two such venues). Pamlico County also has a facility that can accommodate up to 650 people, which is considered of sufficient size for the small county. However, neither Onslow nor Pender Counties have meeting facilities that can hold 500-1,000 people. The projected increase in military and government personnel in the region will undoubtedly result in an increased demand for meeting facilities, particularly in Onslow County. Because no meeting facilities on MCB Camp Lejeune, MCAS New River, or MCAS Cherry Point are expected to be expanded, meeting space will be needed adjacent to the bases. MCAS Cherry Point's meeting needs can be reasonably accommodated through the New Bern Convention Center, but an additional convention center or large meeting facility is needed in Onslow County (particularly in Jacksonville). The meeting facility in Onslow County should be large enough to accommodate at least 500-800 people, with an adjacent hotel and restaurant for convenience.

Shopping Opportunities

The only shopping destinations in the region are the Jacksonville and Twin Rivers Malls, and these venues are considered inadequate by many area residents. There is a great desire for additional shopping opportunities, ranging from better supermarkets to more diverse shops to simply more shops. Many people in the region choose to drive to Raleigh/Durham or Wilmington to shop, which leads to a detrimental retail leakage throughout the region.

MCB Camp Lejeune, MCAS New River Air Station, and MCAS Cherry Point employ Marines who are coming from all over the United States, as well as the rest of the world. It is certain that incoming Marines and their families, and DoD civilians and their families, will expect higher-end shopping alternatives than those currently available in the region.

The feasibility of new shopping opportunities to the region should be explored, possibly through a joint study in which each county would participate. A regional outlet center would be one possibility to help make the region a beach-and-shopping destination that would draw even more tourism and revenues to the region. There has also been a desire expressed for a shopping venue similar to Durham's The Street at Southpoint, which offers shopping, dining, and entertainment.

A study is needed to identify "retail leakage" in the region resulting from a lack of retail opportunities for higher-end shopping demanded by the population. There is a widely-held belief among local residents that the region does not meet the needs of the higher-income, widely-traveled population that is likely to make up a significant portion of the incoming families to the region. Higher-end clothing shops, supermarkets, bistros, bakeries, and restaurants have been cited as

the type of retail outlets that are lacking in the region, thus diminishing its overall quality of life. A retail leakage and gap analysis study would document the amount of sales revenue that is being foregone in the region for lack of such higher-end retail, and would provide the basis for forming a retail recruitment strategy to attract desired businesses. Such a retail gap analysis would identify the loss of dollars to the region by sectors, when buyers go elsewhere to purchase services, or simply go without the desired service. Such studies typically cost $100,000.

Recommended Strategies and Actions

Parks and Recreation

Recommendation 1: Create eleven new recreation complexes – two in Carteret County, two in Craven County, one in Duplin County, one in Jones County, three in Onslow County, one in Pamlico County, and one in Pender County.

A feasibility study to site the complexes, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of the complexes should be initiated in FY 11, with completion planned for FY 12. The estimated cost for each complex would be between $5M - $30M, depending on its size.

Rationale: The region is already lacking in the number of athletic fields it offers, based on state standards, and the military-induced growth will only place further stress on current recreational programs and facilities. Each county needs to either expand existing recreation facilities or build new facilities to include new sports fields and gymnasium.

Regional Cooperation Opportunities: While most of the new recreational complexes will need to be constructed at the county-level, there is the possibility of creating larger, regional recreation complexes that would be shared between several counties. These facilities would need to be constructed close to county borders, and would require a regional buy-in from several counties.

Public/Private Partnership Opportunities: There may also be opportunities for public/private partnerships between county parks and recreation departments, and private entities such as YMCAs or community colleges, which will be mutually beneficial for developing recreational complexes.

Recommendation 2: Build new parks and designate open space within the region: At least 240 acres of neighborhood parks; 400 acres of community parks; and 800 acres of district/metro parks. Costs of new parks will be dependent on the type, size, and cost of available land.

Rationale: The region is already lacking in available acreage of parks, based on state standards, and the military-induced growth will only place further stress on current parks and open space available to the public.

Regional Cooperation Opportunities: Larger District/Metro parks can be developed regionally, so that they are readily available for use by several counties. Parks such as the Croatan National Forest are used by people all across the region; thus, creating another large park area within the region would be beneficial.

There is also an opportunity to encourage regional cooperation by building a regional trail system(s) that would extend into multiple counties. There is even the possibility of developing a trail system in conjunction with the military bases, to provide additional recreational opportunities in conjunction with the military.

Parks and Recreation Funding

Below is a list of funds and grants that are available for parks and recreation projects.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: www.ils.unc.edu/parkproject/trails/home.htm

North Carolina Adopt-A-Trail Program – This grant is awarded annually to government agencies, non-profits, and private trail groups. 100-percent funding is available up to $5,000. Contact the Trails Program at: http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – A state program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php (Phone: 919-715-8699)

Land and Water Conservation Fund – A federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties that show higher relative needs, using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone: 202-343-9563).

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories that include acquisition, landscaping, bicycling, and pedestrian facilities. www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – This community grants program supports local health departments in North Carolina in their efforts to develop community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example - Carteret County Health Department, in collaboration with County Parks and Recreation and other community partners, will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project.) For more information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Harold H. Bate Foundation – Offers financial support to Craven, Pamlico, and Jones Counties. The foundation administers charitable gifts to enhance education, youth and recreation, and the quality of life of the three counties. Grants are not awarded for purposes ordinarily supported by tax funds, but may be used in public-private partnerships. Grants are also discouraged for services that the public sector "should be reasonably expected to provide." http://www.batefoundation.org/Grant_Guidelines.pdf OR http://www.batefoundation.org/index.html

Water Access

Recommendation 3: Create a regional paddle trail with added launch sites.

Rationale: Water-based recreation is very popular within the region, and there is a need for new water access points. Many rivers and streams within the region could be developed into a regional paddle trail at low cost. For example, Onslow County, Jones County, and Croatan National Forest recently developed a multi-county paddle trail. The project cost approximately $25,000 to design the trail with parking, maps, and brochures. Because the maintenance of the trail will be managed by volunteer groups, the $25,000 investment in the trail was all that was needed. Money for this project was received from tourism tax dollars.

Regional Cooperation: By creating a regional paddle trail, recreation and tourism will be shared by multiple counties. As interconnected rivers and streams flow throughout the region, developing one or more paddle trails that flow across county lines will help the region to become more cohesive.

Recommendation 4: Develop additional water access and parking throughout the region, especially on lands that have been condemned due to flooding. Parking should be expanded wherever possible at current water-access sites to ensure that maximum use is available to citizens.

- Maintain a dialogue with the military regarding access to open water near restricted areas used for military training, primarily in Carteret County but also including parts of Onslow and Pamlico Counties. Proactive communication channels need to be established to allow for continued use of open waters by the public without adversely affecting the military mission.
- Work with NCDOT to ensure that bridge launch sites will remain open with bridge construction and improvements.

Rationale: There will continue to be problems with enough water and beach access and associated parking as the regional population grows. Because water-front property is difficult to acquire, the region needs to be proactive in acquiring land as it becomes available, and to specifically look at land that has been condemned, to ensure that there are enough water access sites that meet CAMA guidelines.

Water Access Funding

Below is a list of funds and grants that are available for water access projects.

North Carolina Waterfront Access and Marine Industry (WAMI) Fund – Created by the North Carolina General Assembly to acquire waterfront properties or develop facilities, to provide, improve, or develop public and commercial waterfront access. In 2007, $20 million was approved, and in 2008, 13 sites were selected for funding.

North Carolina Public Beach and Coastal Waterfront Access Grant – Awarded to government agencies on a cost-share basis. For Tier 1 and 2 counties (Duplin, Pender, Onslow, Jones, and Pamlico), the local government match for acquisition must be at least 10 percent; for Tier 3, 15 percent. Grants for improvements to existing sites must be 25 percent for Tier 3 counties and 10 percent for Tier 1 and 2 counties. Counties must be among the 20 counties under CAMA. It is anticipated that for the FY09-10 year, as much as $3.5 million may be available in grants. Contact the Division of Coastal Management at: http://dcm2.enr.state.nc.us/Access/grants.htm

(*In 2005, Carteret County and municipalities received $261,000 in grant funds; Onslow municipalities received $45,500; and Pender (Topsail Island) received $2,060,000.)

Land and Water Conservation Fund – A federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties that show higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

Clean Water Management Trust Fund – The organization will fund projects that: 1) enhance or restore degraded waters; 2) protect unpolluted waters; and/or 3) contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits. www.cwmtf.net

Arts and Culture

Recommendation 5: Create additional library space (26,000-38,000 square feet regionally) and library programs and amenities (20 public computers, 80,000 new collection items, 100 seats, 130 programming/meeting space seats, and 130 new parking spaces regionally)

The cost for new library space is anticipated at $255 per square foot. This cost includes construction, related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, and testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, and copiers), contingency construction and uplift, and library collections (books for 50-percent fill rate and A/V materials).

Rationale: Libraries and their programs are an important low-cost activity for military families in the region. Most of the counties in the region are not up to state space standards, and all of the counties are lacking in the number of computers and other programs or amenities that they offer. Libraries are increasingly becoming like community centers, and because they provide a free resource, are very important to military families.

Arts and Culture Funding

Below is a list of funds and grants that are available for arts and culture projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries have either a 10-percent or greater poverty level in the Foundation-defined service area OR more than 3,000 persons living in poverty http://statelibrary.ncdcr.gov/gates/gates.html

Libraries that have been established as eligible by the Foundation include:

- ***Carteret County:***
  - Bogue Banks Public Library
  - Carteret County Public Library
  - Newport Public Library
  - Western Carteret Library
- ***Craven County:***
  - Cove City-Craven County Public Library
  - Havelock-Craven County Public Library
  - New Bern-Craven County Public Library
  - Vanceboro-Craven County Public Library
- ***Duplin County:***
  - Duplin County-Dorothy Wightman Library
  - Faison Branch Library (Emily Hill Library)
  - Florence Gallier Library
  - Phillip Leff Memorial Library

- ***Jones County:***
  Comfort Branch Library
  Maysville Public Library
  Pollocksville Public Library
  Trenton Public Library

- ***Onslow County:***
  Law Library
  Onslow County Public Library
  Richlands Public Library
  Sneads Ferry Branch Library
  Swansboro Branch Library

- ***Pamlico County:***
  Pamlico County Library

- ***Pender County:***
  Pender County Public Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. View available grants at: http://www.neh.gov/grants/index.html

National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. The National Endowment for the Arts is the nation's largest annual funder of the arts. Grant information available at http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – A North Carolina organization whose mission is to promote social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information available at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities by building up the capacity of nonprofits, and sponsors fundraising campaigns to built capital projects (libraries, museums, and community centers). http://www.kresge.org/index.aspx

Kellenberger Historical Foundation (based in Craven County)

Hotels and Meeting Space

Recommendation 6: Build a civic/cultural center in Onslow County (one that will accommodate 500-800 people). A feasibility study to site the civic/cultural center, determine appropriate size and functions, and identify public-private partnership financing opportunities should be undertaken in FY 10. Design and construction schedule should be initiated in FY 11.

Rationale: There is a widely recognized lack of meeting space to accommodate large groups in the vicinity of MCB Camp

Lejeune. The Marine base is a magnet for those who have some affiliation to the service (e.g. retiree groups), as well as those doing business with the Marines. It is expected that USMC and/or DoD-related conferences will increase as the base expands its mission and as military-induced growth proceeds. It can be expected that the shortage of meeting facilities for large groups will only worsen as the military-induced growth proceeds.

The civic/cultural center will provide much-needed space for large military-related and other gatherings, thereby enabling conferences, meetings, and cultural events to take place near MCB Camp Lejeune. The convention/cultural center could be expected to stimulate the growth of other businesses that provide ancillary services—for example, restaurants, bistros, higher end hotels.

Recommendation 7: Recruit higher-quality hotels with better amenities (including attached meeting space).

Rationale: Most counties in the region have large meeting spaces available, but they lack meeting space with attached hotels. The region should work to recruit full-service hotels that would offer meeting space, rather than hotels that do not offer restaurants, meeting facilities, etc.

Shopping Opportunities

Recommendation 8: Conduct a retail leakage study to identify the need for higher-end shopping in the region, and produce a strategy to attract the quality of shopping that is desired in the region.

The typical cost of such a study is $100,000. A retail leakage study to identify the magnitude of the need for higher-end shopping should be undertaken in FY 09. A strategy to attract appropriate shopping and retail services should be initiated in FY 10.

Rationale: Citizens of the region have to drive to Raleigh, Greenville, or Wilmington to shop at higher-quality stores than are currently available within the MGTF Region. To encourage local residents to shop within the seven-county region, which would provide convenience to citizens and tax dollars to the counties, higher-quality retail needs to be explored for the region.

Additional Regional Cooperation Opportunities

Regional cooperation is very important to the success of many of these recommendations. Through mutual grant or fund seeking, it may be easier for counties to seek regional support for funding projects. Co-signed grants demonstrate a larger enterprise, as well as support across county lines, and may increase the chances of successfully gaining resources.

A region-wide marketing approach would also be helpful in ensuring the vitality of the region. A regional identity would allow greater marketing of the area, which in turn could increase tourism, thereby helping to attract the higher-quality hotels, restaurants, and shops desired for the region. A regional "who we are" marketing project to attract people to the region would likely have a greater impact than marketing counties. A potential funding source for regional marketing:

North Carolina Department of Commerce Tourism Matching Funds – Assists local communities and non-profit tourism organizations with local and regional tourism marketing and development projects. Preferred marketing activities include: paid media advertising; cooperative regional marketing; shoulder and off-season promotions; group tour marketing; and strong travel sales materials accompanied by aggressive distribution plans. NC Department of Commerce's Division of Tourism, Film, and Sports Developments sets aside a matching grant fund to assist statewide, regional, and local destination marketing organizations and some governmental entities. Grants are based on economic tier ranking – as much as $7,500 per grant (one county dollar for four state dollars) for projects in Tier 1 and Tier 2 (Duplin, Jones, Onslow, Pamlico and Pender); Tier 3 counties (Carteret and Craven) can receive up to $3,500 at a 3-1 matching rate.

Conclusions

Quality of Life factors are just as important to a community's livelihood and appeal as are its setting, highways, commerce, safety, and employment base. The choice of a military spouse to remain in a military community during the deployment of the other spouse is largely dictated by the availability and quality of opportunities to enjoy recreation and social engagement outside of the home. These factors also influence a prospective job seeker or business owner's decision to locate in the area. Meaningful community activities also play a large role in providing safe activities for youth populations, thereby reducing juvenile delinquency and overall crime rates.

Eastern North Carolina already falls below state standards in most quality of life areas, including: numbers of athletic fields, park acreage, library space and computers, and community centers. Furthermore, water and beach access points are inadequate to support the current population, and will be woefully inadequate to support an additional 65,000 residents. Limited meeting space, hotel accommodations, diversity of retail shopping alternatives, and family-friendly cultural programming all diminish quality of life in the region, despite its natural beauty, rich history, and other cultural attributes.

Many of these needs must be addressed by local governments, through the multiple funding opportunities outlined in this plan. Other quality of life needs will be met by industry through addressing normal market demands. Moreover, however, leaders from all sectors in the region must acknowledge that these factors, more than any other, define the community's desirability both for its residents and visitors.

References

Booz Allen Hamilton. 2008. *Preliminary Impact Assessment: North Carolina's Eastern Region Military Growth Task Force.* October 2008.

Costanza, Robert, Brendan Fisher, Saleem Ali, Caroline Beer, Lynne Bond, Roelof Boumans, Nicholas L. Danigelis, Jennifer Dickinson, Carolyn Elliott, Joshua Farley, Diane Elliot Gayer, Linda MacDonald Glenn, Thomas Hudspeth, Dennis Mahoney, Laurence McCahill, Barbara McIntosh, Brian Reed, S. Abu Turab Rizui, Donna M. Rizzo, Thomas Simpatico, Robert Snapp. 2007. Quality of Life: An Approach Integrating Opportunities, Human Needs, and Subjective Well-Being. *Ecological Economics 61 (2007):* 267-276, http://www.uvm.edu/giee/publications/Costanza%20et%20al.%20QOL%202007.pdf (accessed March 26, 2009).

Craven-Pamlico-Carteret Regional Library. 2008. Five-Year Plan 2008-2013. Craven County, NC.

Helmke, Paul. 1999. Testimony on behalf of the United States Conference of Mayors before the Senate Environment and Public Works Committee on Perspectives of Local Governments on Livability, March 17, in Washington, D.C.

Mulvey, Edward P., Michael W. Arthur, and N. Dickon Reppucci. 1993. The Prevention of Juvenile Delinquency: A Review of the Research. *Clinical Psychology Review,* 1993.

North Carolina State Comprehensive Outdoor Recreation Plan. 2008. N.C. Department of Environment and Natural Resources, Parks and Recreation Division.

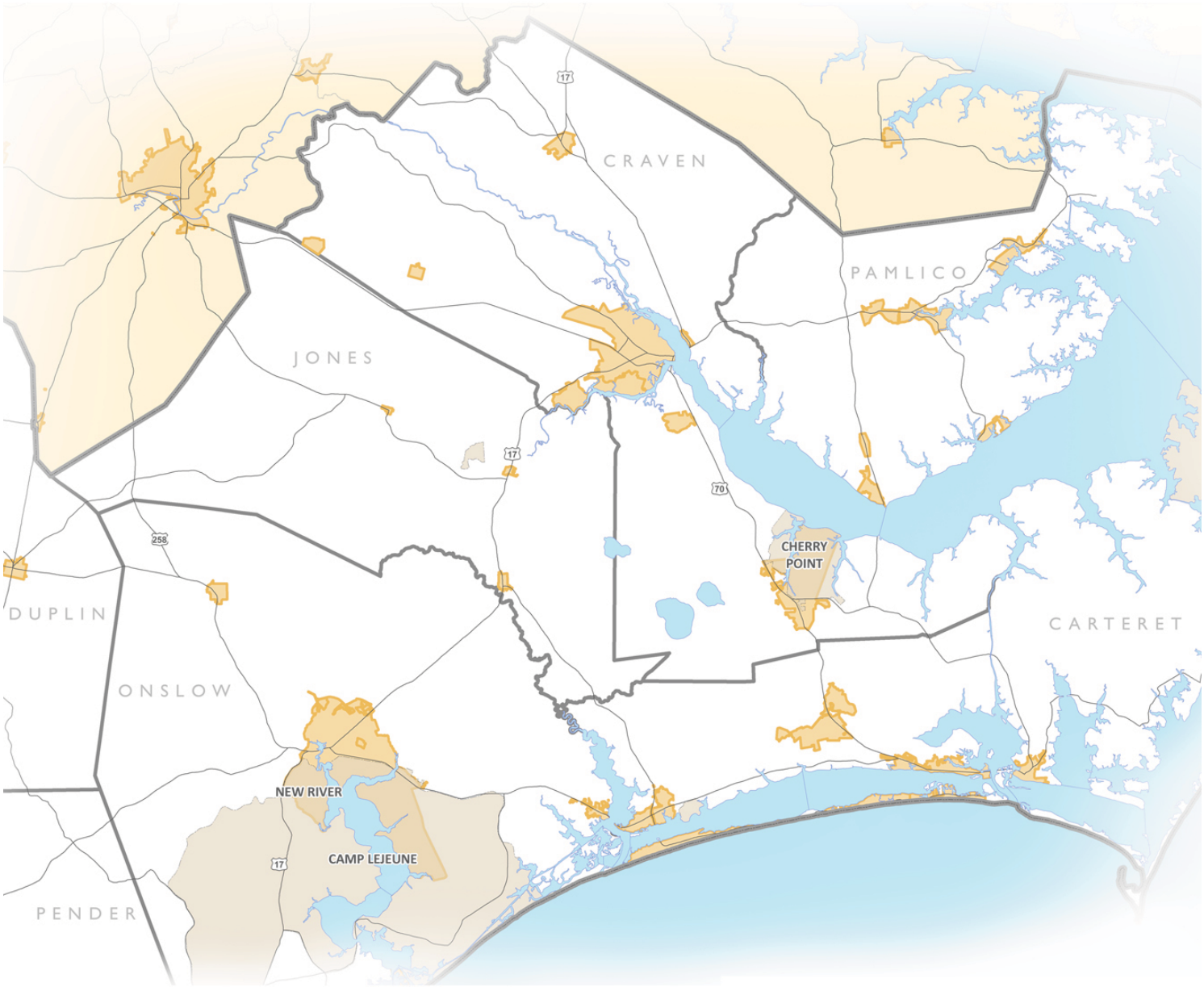
Pamlico Comprehensive System-Wide Master Plan. 2007. County of Pamlico Parks and Recreation Department. Bayboro, NC.

Places Rated Almanac 2007. Ambiance Rankings. Places Rated Books, LLC; 7th edition. http://www.placesratedbooks.com/downloads/books/pra/ambience-rankings.pdf. Accessed March 26, 2009.

Sperling's BestPlaces. North Carolina Counties. http://www.bestplaces.net/find/county.aspx?st=NC. Accessed April 24, 2009.

Trust for Public Land. 1994. Healing America's Cities: The Link Between Recreation and Crime Prevention. http://www.tpl.org/tier3_cdl.cfm?content_item_id=890&folder_id=728. Accessed March 2009.

Barton, Phillip. 2008. *Pender County Public Library Strategic Plan for Library Facilities.* Salisbury, NC.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Land Use and Compatibility

Land Use and Compatibility

Among the tasks of the Military Growth Management Plan was to evaluate progress on the Joint Land Use Study (JLUS) recommendations for the Onslow County / Camp Lejeune / MCAS New River JLUS as well as the Craven County / Carteret County / MCAS Cherry Point JLUS.

A JLUS is a community's effort to ensure that their land use plans are compatible with the mission of their military installation and those incompatible threats to the sustainment of that mission are foreseen and prevented through planning and development oversight. The study is funded by the Office of Economic Adjustment, Department of Defense and the military installation is an active and necessary partner in the process.

The Onslow County (Camp Lejeune) JLUS was concluded in February, 2003. In addition to the County, Camp Lejeune and MCAS New River, study participants included the City of Jacksonville and the Towns of Swansboro, Holly Ridge, North Topsail Beach and Richlands.

The Eastern Carolina JLUS was completed in November, 2002. Study participants included Craven County, Carteret County, MCAS Cherry Point, the City of Havelock, the Towns of Bogue, Atlantic, Emerald Isle, and the State of North Carolina.

Purpose and Intent of an AICUZ/RCUZ and JLUS

A series of land use studies were conducted to address current and potential land use conflicts between military and civilian communities in the eastern region of North Carolina. The studies examining land use issues related to military operations and related growth include two Joint Land Use Studies (JLUS) prepared for the Eastern Carolina Region and Onslow County. In addition, a series of Compatible Use studies were prepared for several airfields and military installations within the region. Using technical and financial assistance from the Office of Economic Adjustment[22], Joint Land Use Studies were created to encourage compatible land use planning between bases and surrounding communities in the Eastern Carolina and Onslow County regions. By bringing together communities and military bases, stakeholders developed recommendations to address current and future encroachment issues. For additional information on the JLUS program, see OEA's website at the following address: http://oea.gov/OEAWeb.nsf/Encroachment?readform.

The purpose of the Air Installations Compatible Use Zones (AICUZ) and the Range Compatible Use Zone (RCUZ) programs is to promote a pattern of development that is compatible with the noise and safety impacts created by aircraft and training operations. JLUS studies synthesize findings and technical data from Compatible Use Studies such as the Range Compatible Use Zone (RCUZ) and Air Installation Use Zone (AICUZ), and create a document with a set of recommendations, that ideally, is used and incorporated by local planning departments.

Compatible development is achieved via the implementation of recommendations and continuous intergovernmental collaboration. Both actions are crucial in preventing incompatible development adjacent to military installations. The status of JLUS program implementation for Onslow County and Eastern Carolina was ascertained through a series of interviews conducted during June, 2009 with Community Plans Liaison Officers for MCAS Cherry Point and Camp Lejeune and planners for the various counties and municipalities addressed in JLUS studies. Recommendations and findings related to the review of these studies are incorporated within appropriate sections of the Regional Growth Management Plan.

22 www.OEA.gov

Background on Regional Joint Land Use Studies

The Onslow County Joint Land Use Study[23] was prepared in February 2003 to address encroachment issues between communities in areas surrounding Camp Lejeune. The communities participating in this study included Onslow County, the City of Jacksonville, the Town of Holly Ridge, the Town of North Topsail Beach, the Town of Richlands, the Town of Swansboro, Marine Corps Base Camp Lejeune, and Marine Corps Air Station New River. The eight-month study culminated with the creation of approximately 18 recommendations, many of which require joint action between the community and installation. This joint action relies heavily on collaborative land use planning to address short- and long-term issues between the military and civilian communities in the areas surrounding Camp Lejeune in Onslow County.

The Eastern Carolina Joint Land Use Study[24] (ECJLUS) was prepared in November 2002 by the Eastern Carolina Council for Craven County, Carteret County, the City of Havelock, the Town of Emerald Isle and the Town of Bogue as well as MCAS Cherry Point, MCALF Bogue. These communities collaborated in a planning process to create a set of 32 recommendations to protect the need for urban and economic growth while insuring compatibility with the needs of MCAS Cherry Point and MCALF Bogue. In addition, the Department of Defense, Office of Economic Adjustment (OEA) provided technical assistance and funding for the study. Like the Onslow County JLUS, the Eastern Carolina JLUS relies heavily on joint action and collaborative planning.

To read the JLUS documents, see the websites below:

Camp Lejeune/MCAS New River: http://www.lejeune.usmc.mil/mcb/JLUS.pdf

MCAS Cherry Point: http://www.eccog.org/common/ewe/documents/ECJLUS_final_report.pdf

Summary of Implementation Efforts to Date

Progress on specific recommendations is recorded in a series of matrices and included as Appendix S. The following text summarizes the conclusions of interviews with planners and managers throughout the region on this specific topic. Onslow County Joint Land Use Study

Onslow County Joint Land Use Study

Onslow County is clearly committed to encroachment mitigation strategies in cooperation with MCB Camp Lejeune. The county has implemented a number of the recommendations from the 2003 Onslow County Joint Land Use Study through the adoption of an overlay zone and a new comprehensive and land use plan. Onslow County adopted Ordinance 710.2: Flight Path Overlay District (FPOD) in September 2006 to regulate land development within the AICUZ footprint. The FPOD regulates anything that may impair visibility during military training missions; it establishes height limitations and prohibits development that produces dust, smoke, and light and electromagnetic emissions. A map of the FPOD is available at the Onslow County Register of Deeds. While there is no standard disclosure form to inform potential buyers of property within the FPOD, real estate agents are required to disclose zoning before closing; Onslow County does not currently have a mechanism to enforce this requirement. Similarly, while noise attenuation measures in sensitive areas are encouraged, they are not required.

The newly adopted Coastal Area Management Act CAMA Land Use Plan recognizes the role that Camp Lejeune and MCAS New River play in the local economy. It voices a commitment from Onslow County to "work cooperatively…to determine those policies and actions that will strengthen the operational viability of the military while also enhancing the community at large" (Policy 160: CAMA Land Use Plan).[25] Onslow County also commits to reviewing its zoning code to determine whether buffer areas are appropriate to mitigate encroachment by incompatible uses; this process will be undertaken during the preparation of the Onslow County Unified Development Ordinance (FY 2009-2010). A message of cooperation and collaboration is clearly presented in both the CAMA Land Use Plan and the Comprehensive Plan.

23 http://www.lejeune.usmc.mil/mcb/JLUS.pdf
24 http://www.eccog.org/common/ewe/documents/ECJLUS_final_report.pdf
25 http://www.co.onslow.nc.us/planning/content.aspx?id=10238&terms=2008+cama

Onslow County has not, however, taken specific steps to limit residential density or other incompatible development around the Verona area and the Ellis Airport. The County's future land use map, which shows low-density residential development around the Base, will guide future development in Verona and other sensitive areas; there is no guarantee, however, that sensitive lands will not be rezoned in the future. Furthermore, no policies have been established to restrict sewer services to areas of existing, compatible development.[26]

City of Jacksonville

The City of Jacksonville has published several draft documents that highlight the importance of the goals set forth in the Onslow County JLUS, although no specific use restrictions for land adjacent to Camp Lejeune or New River MCAS have been adopted. There is a clear message of cooperation and a general recognition of the encroachment issues affecting the Base, but planning tools to address these issues have not been utilized.

The Jacksonville Unified Development Ordinance: Diagnosis/Annotated Outline (March 2008) stresses the need to establish land compatibility standards to ensure the preservation of military missions while accommodating growth of Jacksonville.[27] While drafting the Unified Development Ordinance, Jacksonville has committed to reviewing "the standards for provisions that negatively impact military operations."

The Draft 2007 CAMA Land Use Plan[28], which was submitted to the Division of Coastal Management for state review on February 20, 2009, and the Jacksonville Growth Management Element (July 2007)[29] both acknowledge the importance of protecting the military installations and suggest the following strategies:

- Adoption and enforcement of Air Installation Compatible Use Zones (AICUZ) and Installation Compatible Use Zones (ICUZ) compliant zoning regulations,
- Agriculture and open space preservation adjacent to critical operation areas such as firing ranges and flight lines,
- Airport overlay height restrictions,
- Targeting infrastructure improvements away from critical areas,
- State designation as an "Area of Critical Concern" which requires impact review for state projects,
- Federal Aviation Administration permitting of structures.

While these actions have not yet been implemented, the land use and growth management plans demonstrate the City's commitment to support the long-term viability of Camp Lejeune and MCAS New River. Several policies have been adopted to substantiate this commitment:

Support the long-term viability of Camp Lejeune and the New River MCAS ("military facilities") operations by supporting a framework for military-community partnerships and planning efforts which involve joint land use planning, facility and resource sharing, and public/private economic ventures.

Encourage development of an intergovernmental agreement between the City and military facilities to define land use compatibility issues and agree to resolve land use disputes through mutually acceptable techniques.

Establish long-range compatibility standards and land use regulations that preserve the military missions of Camp Lejeune and the New River MCAS while accommodating the growth of Jacksonville.

Consider impacts on current and future military facility activities as a component of the development review process.

26 Water and sewer services are now managed by a water authority, which determines where water/sewer lines will be placed.
27 http://www.ci.jacksonville.nc.us/opencms/export/download/Planning/Jacksonville_PRD_D-AO_3-24-08.pdf
28 http://www.ourplanningworks.com/docs/jacksonville/CAMA/State%20Review%20Draft/CAMA%20Plan%201-1-09.pdf
29 http://www.ci.jacksonville.nc.us/opencms/export/download/Planning/Growth-Management-Element-05-08-07.pdf

Town of Holly Ridge

The Town of Holly Ridge has not implemented the recommendations set forth in the Onslow County JLUS.

Town of North Topsail Beach

The Town of North Topsail Beach has not implemented the recommendations set forth in the Onslow County JLUS.

Town of Swansboro

The Town of Swansboro has not implemented the recommendations set forth in the Onslow County JLUS.

Town of Richlands

The Town of Richlands has not implemented the recommendations set forth in the Onslow County JLUS.

Marine Corps Base, Camp Lejeune

MCB Camp Lejeune has completed a majority of the military-led recommendations set forth in the 2003 Onslow County JLUS. The recommendations were focused around three themes: 1) noise impact mitigation, 2) military-community communication, and 3) continuing JLUS assessment. MCB Camp Lejeune has been particularly successful in addressing noise impacts and military-community communication.

To address noise/vibration impacts, MCB Camp Lejeune has largely moved the source of the complaints away from sensitive impact areas. For example, the SR-7 range in the Great Sandy Run Area (GSRA) was previously used for tank firing qualifications, a source of complaint for off-Base residents in the Verona area. The qualifications are now located at the SR-10 range in the interior of the Base. Similarly, the Snead's Ferry community was previously affected by demolition training in Engineer Training Areas (ETAs) along Courthouse Bay. MCB Camp Lejeune moved the ETA to the G-10 impact area in the interior of the base to minimize the noise/vibration impacts on Snead's Ferry. In addition to relocating ranges, MCB Camp Lejeune has, where feasible, redirected flight paths away from residential development and imposed operational blackouts on Sunday mornings and late at night. MCB Camp Lejeune is committed to managing noise and vibration impacts. Federal Readiness and Environmental Protection Initiative (REPI) funding has been used to purchase noise/aviation easements; federal funding for other noise attenuation measures is also being considered.

The military-community communication network is well-established and effective. A single point of contact for MCB Camp Lejeune has been distributed to websites and surrounding localities; this lessens confusion and ensures continuity in the communication structure. While no formal memoranda of agreement (MOA) exists to establish a continuous communication structure, military and community representatives are currently working towards creating a formal agreement. The Base currently advertises its planned operational training activities on websites, news releases, and permanent signs located along US-17 and NC-24. Joe Ramirez, the Community Plans and Liaison Officer for Camp Lejeune, is an ex-officio member of the Onslow County Planning Commission and, as such, provides regular updates regarding military training and potential encroachment issues.

The consistent assessment of the JLUS recommendations is necessary to analyze implementation progress and evaluate the need for continued action. Generally speaking, MCB Camp Lejeune has not engaged in self-evaluation regarding the JLUS except in an ad hoc fashion. The JLUS report should be formally revisited annually in an attempt to monitor progress.

Carteret County

Carteret County has implemented many of the recommendations found in the 2002 Eastern Carolina Joint Land Use Study (ECJLUS). In April 2009, the County adopted its updated Coastal Area Management Act (CAMA) Land Use Plan.[1] Carteret County's updated CAMA Land Use Plan creates regulations to guide growth away from underdeveloped areas, while their AICUZ overlay requires the mitigation of impacts associated with noise levels and accident potentials around Bogue Field. The overlay district, which is part of their zoning ordinance, mitigates impacts primarily through land use restrictions, density limitations, and disclosure requirements. The total number of parcels affected by the overlay district in 2005 was 1,340. Carteret County planners also address base compatibility issues along Highway 24 through planning and zoning. Much of the existing land uses are dedicated to low-density residential uses, however to increase compatibility with the base, the corridor is zoned exclusively for commercial uses. In regards to land conservation, the County makes efforts to preserve land via the use of the Down East Conservation Ordinance, which was enacted as a watershed protection measure.

Carteret County's CAMA Land Use Plan also manages the land use planning for nearly half of all unincorporated areas within Carteret County, including the Atlantic community, which participated in the ECJLUS process. The unincorporated Atlantic Township is in the eastern portion of Carteret County and has no professional staff dedicated to planning or development and, therefore, has not participated in the implementation of the ECJLUS recommendations.

To mitigate incompatible development, Carteret County fully supports and encourages the use of high sodium vapor lighting and the installation of noise attenuation features for building development within the overlay zones. Planners provide technical assistance for noise attenuation features and provide copies of the "New Construction Acoustical Design Guide" in their office. Carteret County also distributes maps outlining AICUZ zones and outreach materials as needed. The County has made planning materials related to the CAMA Land Use Plan and Zoning Ordinance, including maps and information, available on a website[30]. They routinely update these materials and are currently undertaking an effort to make them more accessible to the public. Since lenders and realtors are often unaware of disclosure requirements, Carteret also conducts training sessions on a regular basis to educate realtors and lenders about disclosure requirements.

The relationship between the base and the County is considered by both parties to be in great shape. There is extensive dialogue with the base through Carteret's Technical Review Committee and the ECJLUS Implementation Committee. Carteret's Technical Review Committee notifies the Base's Community Plans & Liaison Officer (CPLO) of any significant projects within the AICUZ boundaries. Carteret County participates in the ECJLUS Implementation Committee, which is still operational and meets every 3-6 months.

Craven County

Craven County has done a fair amount of work related to the implementation of ECJLUS recommendations. The County does not have countywide zoning or planning, but ensures compatibility with local installation operations, through the Marine Corps Air Station Zoning Ordinance of Craven County[31], adopted in 1989 and the Airport Height Control Ordinance[32], adopted in 2006. These two documents implement several land use control mechanisms to prevent incompatible development from occurring within Accident Potential Zones (APZs) and noise contour zones. It achieves this goal by regulating uses, imposing height limits and requiring noise attenuation standards based on noise levels. In 2004, the Air Station Zoning Ordinance was expanded to protect additional areas from uncontrolled growth. The Air Station Zoning Ordinance also requires disclosure when property is sold, leased, subdivided, and during the issuance of building permits.

Recommendations made in the ECJLUS require ongoing outreach and dialogue between the community, base, and residents. These three relationships appear to be doing well. Craven County relies on their website to distribute spatial information related to the AICUZ.[1] The County makes flyers and booklets available at the Craven County Government Office in New Bern that educates residents on AICUZ zones. The "New Construction Acoustical Design Guide" is also available at the

30 http://www.carteretcountygov.org/departments/planning_inspections.asp
31 http://www.cravencounty.com/departments/pln/documents/AICUZ_Ordinance.pdf
32 http://www.cravencounty.com/departments/pln/documents/ZoningandHeightControlOrdinance.pdf

Craven County Government Office. The base and local planning officials conduct workshops to demonstrate noise impacts. These well-attended demonstration events are greeted with great interest by local residents.

Craven County works to mitigate potential encroachment issues by targeting funds for land conservation and preservation specifically toward the acquisition of parcels adjacent to Cherry Point. A portion of the funds used for land acquisition originated from the North Carolina Coastal Land Trust. The County also intends to explore the public purchase of land and the use of conservation easements for properties with significant conservation value. In 2004, the County worked on a successful proposal to expand Havelock's Existing Territorial Jurisdiction (ETJ) so that Havelock may include the proposed Highway 70 Bypass in their Comprehensive Plan. The City of Havelock intends to incorporate land use regulations that are compatible with base operations to minimize potential impacts created by development.

City of Havelock

The City of Havelock has addressed a majority of the recommendations made in the Eastern Carolina Joint Land Use Study. Havelock achieved these goals by addressing land use compatibility issues, creating effective public outreach programs, and effectively coordinating with MCAS Cherry Point. Havelock updated its zoning ordinance in 2009 and created four overlay districts, ensuring a higher degree of compatibility in land use operations with the base. These four overlay districts incorporate land use controls that regulate uses based on noise levels as indicated by the noise contour map found in the JLUS. The overlay zoning districts also identify noise level reduction standards and minimum building design standards for noise attenuation. The overlay district also regulates the intensity and density of buildings within this district, mitigating future compatibility issues with MCAS Cherry Point.

As part of its mission to implement ECJLUS recommendations, the City also participates in the acquisition and management of critical properties and use easements that may pose significant encroachment problems. Havelock will incorporate appropriate land use regulations to minimize and prevent land uses that could affect aircraft operations within Havelock's proposed by-pass (NC-70) project. In addition to incorporating land use controls, the City of Havelock has written disclosure requirements for purchases, leases and other real estate transactions within AICUZ Noise Contour areas and Compatible Use areas. The failure to comply with disclosure, or the supplying of false information in a disclosure, according to their municipal ordinance, is considered a punishable violation. No other jurisdiction was as explicit in outlining penalties for non-compliance. The City has also advocated for a change in State Statutes to require disclosure of safety and noise hazards in land use records before any real estate transaction is finalized within AICUZ areas.

The public outreach component of Havelock's implementation of JLUS recommendations is also extensive. The City provides a wealth of outreach materials and technical assistance for residents. During the plan review process, Havelock planners encourage the use of cutoff and semi-cutoff high sodium vapor lighting within identified APZs. Havelock has also produced maps for residents of accident potential and high noise areas. The City makes these maps available at City Hall and on their website[33]. Signage within AICUZ areas, however, is not posted due to concerns of property value devaluation.

Emerald Isle

The Town of Emerald Isle is a small resort town that is largely built out, leaving little undeveloped land remaining. The Town has made modest efforts to implement ECJLUS recommendations, but has not produced any meaningful action. The Town has zoning and regulates land uses via its Coastal Area Management Act Land Use Plan. This Plan was adopted in 2004, which incorporated an AICUZ Overlay District for Bogue Field. Neither the CAMA Land Use Plan nor the Overlay District Ordinance creates any use restrictions based on accident potential zones or noise contours. Emerald Isle's Overlay District only requires disclosure of noise level/accident potential information only during the issuance of building permits, but not during the sale or lease of property. Information regarding the disclosure requirements and the AICUZ Overlay District is made available at City Hall and online[34].

33 http://www.havelocknc.us/WebDocuments/Maps/Maps/OfficialZoning_Map.pdf
34 http://www.emeraldisle-nc.org/pdfs/UDOwith051209amendments.pdf

Town of Bogue

The Director of Planning for the Town of Bogue emphasized the town is largely a "Resort Community" that relies on extensive use of glass in building design to capitalize on the scenic amenities of the area. As such, the Director acknowledges that they recommend noise attenuation requirements for development, but feels that they cannot require the standards because it would increase development and construction costs. The "New Construction Acoustical Design Guide" is made available at the Planning and Inspections counter. The issue of signage indicating APZ zones was discussed, however it was determined that signage would negatively affect property values.

The Town of Bogue's efforts to implement JLUS recommendations have been constrained by a lack of political will, strained relationships with the Community Plans Liaison Officer and limited fiscal and human resources. The Board of Commissioners has expressed interest in creating a comprehensive plan, requesting assistance from the Eastern Carolina Council, however fiscal and human resources are limited. Although the town lacks a comprehensive plan, they have addressed noise and safety concerns via the County of Carteret's adoption of an AICUZ overlay district. The total number of parcels affected by the overlay in the Town of Bogue was 443. Bogue's AICUZ overlay district, created by the County of Carteret, enables zoning to ensure compatible land uses within APZ. The Overlay district also requires disclosure of safety and noise hazards during real-estate transactions. The Town of Bogue creates land use regulations along Highway 24, a majority of which is low-primarily residential. However, the Board of Commissioners has expressed interest in transforming this corridor into a commercial corridor. This has resulted in zoning the Highway-24 Corridor exclusively for commercial uses, without the ability to rezone for residential.

Bogue's Planning Director makes an effort to inform the base of any proposed subdivisions, zoning change petitions or incompatible developments within the AICUZ boundaries. Bogue's Planning Director acknowledges that the current relationship with the military needs improvement, and expressed great interest in re-establishing the relationship between the base and the Town of Bogue.

Marine Corps Air Station Cherry Point

MCAS Cherry Point has completed a majority of the recommendations created in the 2002 Eastern Carolina JLUS. The intent of JLUS recommendations was to enhance the level of dialogue and coordination between the installation and communities, to ensure compatible land uses and to reduce noise impacts. Responses from communities adjacent to Cherry Point indicate relationships with base are generally healthy, enjoying a high level of coordination, communication and collaboration. These relationships allow the base to easily notify communities and residents of potential noise issues, minimizing the amount of noise complaints.

Cherry Point has excelled at creating and maintaining meaningful relationships with the community. Cherry Point and local communities believe that their relationship is better than it has ever been. Although noise complaints are nearly non-existent, both parties share information freely in an effort to mitigate any negative impacts associated with noise or development. Planners resoundingly stated that Cherry Point's Community Plans Liaison Officer did an excellent job of notifying communities of potential noise issues well ahead of time. In order to ensure seamless communication, Cherry Point's CPLO updates directories, as needed, to clearly identify appropriate contacts for noise complains and concerns. The Town of Bogue's Planning director indicated that the relationship with MCALF Bogue suffered from poor communication and infrequent collaboration. However, planners within most jurisdictions (including Bogue) engaged in communication efforts by notifying local installations via planning review committees of any proposed development projects that would create land use conflicts.

Cherry Point's efforts to address noise concerns have led to numerous studies and demonstrations regarding flight impacts. A study evaluating the feasibility of altering the runway alignment of Bogue Field has shown that noise levels would actually increase if the runway were to experience any alteration. The study, mentioned in a 2004 interview, stated that the current configuration produces the smallest land area that is disturbed by noise. Cherry Point also works constantly with local planning officials to create demonstration projects to show noise impacts with the assistance of a private consultant,

Wyle Labs. In late 2007, one such demonstration project compared noise levels in a properly insulated home to one lacking adequate insulation. These events are regarded as helpful to educate, create relationships and build upon a sense of good will between the base, local jurisdictions and adjacent communities. The base intends to repeat these demonstration projects every couple of years. This reduces the necessity to increase the frequency of noise rules training for locally based squadrons.

New Developments since JLUS

Recent changes and directives within the Marine Corps have the potential to increase the incidence of incompatible land use issues within the Eastern Carolina region. These changes include the introduction of the F-35 Joint Strike Fighter. In addition, the recent "Grow the Force" initiative will create immediate and significant growth at and around Camp Lejeune, MCAS New River and MCAS Cherry Point. The JLUS, AICUZ and RCUZ documents for the installations do not address the introduction of new aircraft or the increase of personnel. As such, if not addressed, these issues have the potential to worsen land use and encroachment issues within the region.

The Marine Corps will replace the AV-8B Harrier and F/A-18 Hornet with the short takeoff and vertical landing variant of the F-35 Joint Strike Fighter. Within MCAS Cherry Point/New River, the existing AICUZ noise contours reflects the operational use of AV-8B, EA-6B; KC-130 fixed wing aircraft. At Camp Lejeune, noise contours reflect the use of fixed winged aircraft: AV-8, AH-1, C-130, C-141; medium lift helicopters: CH-46, CH-53, UH-1; and the MV-22. Both of these studies do not take into account the introduction of the F-35, which has a larger noise footprint than both the EA-6B Prowler and AV-8B Harrier.

JLUS studies for the Craven, Carteret, and Onslow counties were published prior to the Marine Corps' "Grow the Force" initiative in 2007. Consequently, the two Joint Land Use Studies only assumed modest population growth rates of 10%-12% in their respective jurisdictions, or a total increase of approximately 25,000 new residents between the year 2000 and 2010. As a result, recommendations created to address encroachment and planning issues, based on modest growth scenarios, do not effectively address planning issues and challenges created by actual growth conditions. In reality, Eastern Carolina is experiencing unprecedented population growth within a relatively short period. According to MCIEAST, as of March 2009, a total population increase of 71,017 personnel and civilians has occurred in the region.

Recommendations

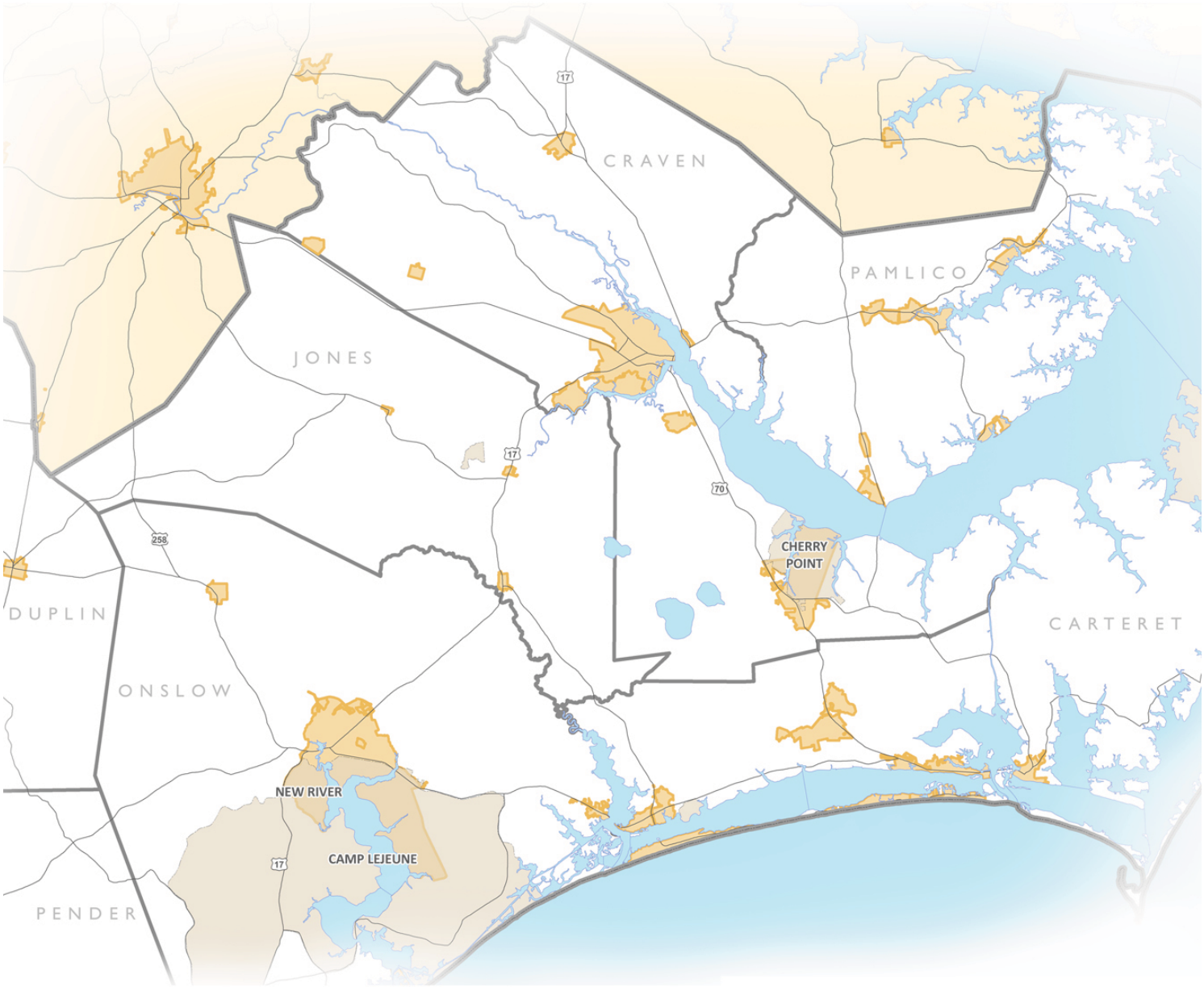
Given the successes on both JLUS efforts, as evidenced by the implementation of recommendations by primary host communities, and in recognition of regional developments since the initial effort, the following additional suggestions are offered:

Eastern Carolina JLUS

- That MCAS Cherry Point and the Town of Bogue participate in a planning charrette (facilitated by a third party) regarding land use planning and opportunities for working together on issues/needs of mutual interest.
- That MCAS Cherry Point and the Town of Emerald Isle participate in a planning charrette (facilitated by a third party) regarding land use planning and opportunities for working together on issues/needs of mutual interest.
- That OEA assist the City of Havelock with grant funding to facilitate a study of extra-territorial jurisdiction that examines the value of annexing currently unprotected land for the purposes of controlling incompatible growth.
- That OEA assist the City of Havelock with grant funding to facilitate a study of the potential for the City to create, implement and enforce a night sky ordinance.
- That MCAS Cherry Point and the City of Havelock participate in OEA's 'planner swap program"

- That OEA assist the City of Jacksonville with grant funding to facilitate a study of extra-territorial jurisdiction that examines the value of annexing currently unprotected land for the purposes of controlling incompatible growth.
- That OEA assist the City of Jacksonville and Onslow County with grant funding to facilitate a study of the potential for the City and Urban portions of the County to create, implement and enforce a Tucson-level night sky ordinance.
- That Onslow County adapt a Transfer of Development Rights and Purchase of Development Rights program in order to control sprawl as well as to limit incompatible development.

THIS PAGE INTENTIONALY LEFT BLANK.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Carteret County

Submitted to the:
North Carolina Eastern Region's
Military Growth Task Force

www.nceastmgtf.org

Marstel-Day, LLC

In Partnership with:

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

Housing

Carteret County occupies a unique position in the region. Its location, near both MCB Camp Lejeune and MCAS Cherry Point, ensures that there is an overwhelming demand for civilian and active-duty housing. Many military officials live in the western portion of the county, primarily Emerald Isle. As a coastal community, it also has one of the highest percentages of second home and/or seasonal rental housing stock. Civilian demand for new housing will total 1,503 households by 2011 and military demand for new housing will total 199 households. The following section examines the provision of adequate and affordable housing in the county with respect to incoming civilians and military personnel. It also includes an assessment of the needs and issues facing the county, with recommended strategies and actions.

Existing Conditions

Housing Supply

Housing supply impacts pricing and the competition for homes in the county. In 2007, there were 45,020 housing units reported for Carteret County. The preference for housing types and neighborhood styles varies across the county and the region. This section focuses on four general home categories prevalent in the county: for-sale homes, rental homes, manufactured homes, and second homes/seasonal rentals.

Housing unit estimates for the county were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this chapter was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the county include the impacts of cities and towns within it.

A summary of each general housing category follows.

Manufactured Homes

A manufactured home is built on an integral chassis in a factory, transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). One in four homes in Eastern North Carolina is a manufactured home.

In 2007, there were 11,569 manufactured homes in Carteret County. This represents 5.5 percent of all the housing units reported for the county.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

For-Sale Homes

For-sale homes are occupied by the owner of the unit. They are site-built homes, typically purchased using a mortgage. For-sale homes are the dominant housing type in the county.

In 2007, there were 15,769 occupied for-sale homes in the county. This represents 47 percent of all the housing units reported for the county.

For-sale homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (**see Appendix G**). Based on the foregoing, 1,615 for-sale homes are available for new residents coming to Carteret. The number of for-sale homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

For-sale housing in the county, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site-built home in the county is $144,792, which is nearly 51 percent below the state average ($278,943).

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time (usually one calendar year). In 2007, there were 4,829 occupied rental homes in the county. This represents 14 percent of all the housing units reported for the county.

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (**see Appendix G**). Based on the foregoing, 494 available rental homes were estimated for Carteret. These numbers were compared to the number of rental homes available in the region according to the Realtors' Multiple Listing Service data collected by the Housing Working Group. Based on that comparison, it was determined that these numbers were much higher than the MLS indicated. Key reasons for this discrepancy include that these numbers represent for-rent dwelling units at all price points, and the MLS service shows that almost no units are available below the $850 price-point.

Rents in the region were collected from an internet and telephone survey of apartments available in the seven counties. The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy at rental homes in the region was estimated at 92 percent based on US Census Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98 percent). These trends are reflected at the county level as well.

The magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases unless new units are constructed soon.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment property, hoping to retire to the home once it was paid off (National Association of Realtors, 2004). When asked why they bought a second home, respondents to the National Association of Realtors survey reported they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home because they had the extra money to spend.

The hottest reported markets for second homes are the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates.

In 2007, 10,884, or approximately 32 percent of the total housing units in Carteret County were listed as seasonal rental units.

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 1,577 dwelling units were approved in Carteret County between 2005 and 2009. Of these, 1,437 dwelling units were approved but not yet built in 2007. Almost all of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. The Committed Residential Development Database prepared by the ECC is included in the **Appendix G** of this report.

Cost of Homeownership

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the county.

Purchase Price

The median home value published in the American Community Survey for 2007 was used to estimate the purchase price of a home in the county. Median home price for Carteret County was $144,792.

Mortgage

A conventional, fixed-rate 30-year mortgage was assumed to estimate the typical monthly cost of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15 percent of the purchase price. No down payment was assumed for home loans to military families in order to be consistent with the terms of most VA loans. The loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

Property Taxes

The tax rate in unincorporated Carteret County is $0.23 per $100 of value.

Utilities

Utility costs were estimated from state and local sources. The average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners Insurance

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductible levels, and the insurance company providing the policy. The cost of homeowners insurance was estimated to be 0.75percent of the purchase price of the home.

Monthly Payment

The monthly payment to afford a home of median value in Carteret County was estimated to be $1,029.78 for civilians and $1,152.53 for military personnel.

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see Appendix D). Average rents assumed for the region are also assumed for the county and are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost-Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active-duty military personnel and their dependents buying homes, and active-duty military personnel and their dependents renting homes.

For all of these cases, for-sale homes and for-rent apartments were found to be affordable in Carteret County.

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the county. The demand for housing reflects both civilian and military growth. Anticipated demand for for-sale homes and rental homes in the region is as follows: civilian homeowners (1,151), civilian renters (352), military homeowners (71), and military renters (128).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as ‘built’ from the Committed Residential Development Database (2005-2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 1,615 for-sale homes and 494 rental homes. All manufactured homes and second homes/ seasonal rentals inventoried for the county were removed from available housing supply for the gap analysis.

By 2011, only 318 housing units of the currently available housing stock will remain available. This margin of surplus is not large enough to ensure long-term availability of housing. Completion of the yet to be built dwelling units in the committed residential development database prepared by the ECC will help facilitate provision of housing beyond the 2011 planning horizon.

Issues Facing the County

Although the cost-burden and housing gap analysis reveal that civilians and military personnel moving to the county can afford and find available housing, there are several critical issues that must be addressed in order to ensure that housing is affordable and available beyond the 2011 planning horizon. These issues were identified through stakeholder interviews and included:

- Lack of individual septic sewer or individual sewer package treatment plants
- Lack of infrastructure (roads, sewer) to support multi-family residential development
- Limited potable water system, which serves less than 1 percent of county
- Multiple private potable water providers (5)
- No housing authority or active nonprofits in the county to advocate for affordable housing issues
- Non-percolating soils extend over much of the undeveloped area, preventing residential development
- Zoning ordinance is partial and subdivision ordinance has not been updated since 2001
- Low density residential development is still allowed in military established AICUZ
- Rate increase in Beach Plan for coastal counties (effective May 2009) insures homeowners for wind and flood damage, but has significant impact on housing affordability.

In order to address these challenges, the county has made significant progress on long-term planning efforts. The county has implemented a planned conservation development option in the subdivision ordinance in order to promote cluster development. They have also planned for growth in "limited transition areas" that are served by central water. These areas include the Highway 24 corridor, north of Highway 58, North of Beaufort on Hwy 70 and 101, and Harkers Island. In addition to these limited transition areas, the county established the Down East Conservation Ordinance in response to large scale subdivision development in 2005.

Recommended Strategies and Actions

Critical to the success of the regional growth management plan, are the implementing actions of participating municipalities and counties. Carteret County should continue to plan for long term growth through implementation of county-wide zoning and its existing subdivision and conservation ordinances. Recommended strategies and actions to be pursued on behalf of the county could also include

- Implementing the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.
- Adopting adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region.
- Adopting policies or incentives that expedite the construction of new rental and affordable housing.

Additional recommended policies and actions are included in the regional chapter's draft Action Plan Matrix, which identifies recommended actions that extend beyond the responsibility of the county and municipalities within it.

Workforce

Existing Conditions

Carteret County has a labor force that has expanded from 29,530 in 2001 to almost 33,000 in 2009. Since 2002, employment growth has exceeded labor force growth and driven the unemployment rate down to 4.0 percent. However, over the past two years, estimated unemployment has more than doubled, rising from 1,335 to well over 3,000, and the unemployment rate[1] in the first three months of 2009 was between 9.5 and 10.4 percent.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	29,530	27,926	1,604	5.4
2002	30,193	28,414	1,779	5.9
2003	31,182	29,514	1,668	5.3
2004	31,812	30,327	1,485	4.7
2005	32,417	30,920	1,497	4.6
2006	33,028	31,669	1,359	4.1
2007	33,179	31,844	1,335	4.0
2008	32,703	30,908	1,795	5.5
J'09	32,402	29,210	3,192	9.9
F'09	32,753	29,348	3,405	10.4
M'09	32,888	29,765	3,123	9.5

Table 2.1 - Employment Trends in Carteret County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

Over the past two years, the county has seen a number of public notices of workforce job losses, as shown in the Announced Business Closings & Permanent Layoffs table. The two largest were in the fall of 2008—the Atlantic Veneer Corporation in Beaufort, which affected 67 employees, and Sandcastle Motors in Morehead City, which affected 18 employees.

Figure 2.1 - Employment Trends in Carteret County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

1 Seasonally unadjusted

NAICS Code	Date	Company	City	Product	Affected	Reason	Closing or Layoff
488310	Jan./March 2009	N.C. State Ports Authority	Morehead City	Port Authority	5	Economic Conditions	LY
445310	Jan./Feb 2009	Emerald Wine Market	Emerald Isle	Wine Store	-	Fire	CL
722110	Dec. 2008/Jan. 2009	El Zarape	Atlantic Beach	Restaurant	5	Fire	CL
445220	Dec. 2008/Jan. 2009	Willis Family Seafood	Salter Path	Seafood Market	2	Fire	CL
321211	Oct./Nov. 2008	Atlantic Veneer Corporation	Beaufort	Veneer	67	Declining Demand	LY
441120	Aug./Sept. 2008	Sandcastle Motors, Inc.	Morehead City	Auto Sales	18	Not Stated	CL
442110	Aug./Sept. 2008	PHD Phurniture	Morehead City	Furniture Store	-	Not Stated	CL
541810	Dec. 2007/Jan 2008	Diversity Advertising Inc.	Morehead City	Business services	2	Bankruptcy	CL
236115	Feb./March 2007	Chosen Homes	Newport	Not Stated	-	Bankruptcy	CL
531190	Jan./Feb. 2007	Willis Mobile Home Park No. 1	Morehead City	Mobile Home Park	1	Property Redevelopment	CL

Table 2.2 - Announced Business Closings & Permanent Layoffs - Carteret County, 2007-2009

Source: These data are derived from a statewide survey of newspaper accounts of closings and layoffs, and from information supplied to the Employment Security Commission and North Carolina by the employing units experiencing the closings/layoffs. The data are not comprehensive, and not evaluated for accuracy by the Employment Security Commission.

The county registered just over 23,000 private- and public-sector employees in 2007, an 8.4 percent increase over the level six years earlier in 2001. The county's largest industry employers in 2007 were: the retail trade industry, with 4,066 employees; the accommodation and food service industry, with 3,631 employees; and the construction industry, with 1,833 employees. All three industries showed strong growth in employment over the period.

The Top 25 Employers table provides a recent snapshot of the companies and organizations that employ the highest number of people in the county. As of the third quarter of 2008, only two organizations employed more than 500 employees, the Carteret County Board of Education and Carteret County General, both with employment levels that exceed 1,000.[2]

2 Primarily for business proprietary reasons, the Bureau of Labor Statistics does not release exact employment figures by the organizations, but rather just employment ranges.

		Establishments		Employees		Average Annual Pay	
		2001	2007	2001	2007	2001	2007
Total Covered		2,042	2,275	21,574	23,382	$21,778	$26,877
Private		1,934	2,179	17,218	18,659	$19,588	$24,608
11	Agriculture, forestry, fishing, and hunting	13	10	169	ND	$23,179	ND
21	Mining, quarrying, and extraction	NA	1	NA	ND	NA	ND
22	Utilities	5	4	129	116	$40,470	$45,406
23	Construction	311	371	1,367	1,833	$22,602	$29,374
31-3	Manufacturing	73	71	1,683	1,291	$21,631	$27,594
42	Wholesale trade	65	83	637	628	$26,677	$41,532
44-5	Retail Trade	413	379	3,864	4,066	$17,223	$21,318
48-9	Transportation and warehousing	48	35	316	359	$27,829	$35,073
51	Information	29	25	356	401	$28,552	$31,436
52	Finance and insurance	61	88	358	571	$33,990	$48,792
53	Real estate, rental, and leasing	104	128	576	568	$18,146	$24,834
54	Professional and technical services	150	173	731	824	$30,307	$34,653
55	Management of companies and enterprises	4	7	32	24	$36,772	$42,837
56	Administrative and waste services	85	93	776	1,011	$16,879	$19,578
61	Educational services	7	8	65	69	$21,683	$27,360
62	Health care and social assistance	116	154	1,522	1,756	$25,871	$31,356
71	Arts, entertainment, and recreation	55	56	632	579	$14,826	$16,941
72	Accommodation and food services	203	216	3,246	3,631	$11,155	$13,075
81	Other services, ex. public administration	192	150	759	712	$17,019	$20,399
99	Unclassified	NA	129	NA	142	NA	$30,217
Federal Government		27	27	266	282	$43,927	$56,168
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	NA	1	ND	2	NA	$18,282
48-9	Transportation and warehousing	10	15	114	101	$33,130	$43,133
52	Finance and insurance	-	-	-	-	-	-
54	Professional and technical services	5	3	102	95	$56,001	$76,780
61	Educational services	-	-	-	-	-	-
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	2	2	25	40	$40,011	$40,799
92	Public administration	10	6	26	44	$47,814	$57,485
State Government		32	24	948	1,025	$28,943	$34,456
48-9	Transportation and warehousing	ND	1	ND	ND	ND	ND
56	Administrative and waste services	ND	1	ND	ND	ND	ND
61	Educational services	ND	1	ND	ND	ND	ND
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	ND	1	ND	ND	ND	ND
92	Public administration	25	20	539	592	$31,337	$37,105
Local Government		50	45	3,143	3,417	$29,739	$34,584
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	ND	6	ND	ND	ND	ND
48-9	Transportation and warehousing	ND	1	ND	ND	ND	ND
51	Information	ND	4	ND	31	ND	$16,007
56	Administrative and waste services	ND	NA	ND	NA	ND	NA
61	Educational services	18	18	1,378	ND	$31,500	ND
62	Health care and social assistance	8	2	926	ND	$30,197	ND
81	Other services, ex. public administration	-	-	-	-	-	-
92	Public administration	12	13	775	978	$27,015	$30,109
99	Unclassified	NA	1	NA	1	NA	$30,000

Table 2.3 - Carteret County Employment and Pay - 2001 and 2007

Note: "NA" is Not Available, "ND" is Non-Disclosure, and "-" is not recorded.

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009.*

Rank	Company Name	Industry	Employment Range
1	Carteret County Board of Education	Education & Health Services	1,000+
2	Carteret County General	Education & Health Services	1,000+
3	Wal-Mart Associates, Inc.	Trade, Transportation, & Utilities	250-499
4	County of Carteret	Public Administration	250-499
5	State of North Carolina	Public Administration	250-499
6	Carteret Community College	Education & Health Services	250-499
7	SSA Security, Inc.	Professional & Business Services	250-499
8	Food Lion, LLC	Trade, Transportation, & Utilities	250-499
9	Atlantic Veneer Corporation	Manufacturing	250-499
10	Town of Morehead City	Public Administration	100-249
11	Lowe's Food Stores, Inc.	Trade, Transportation, & Utilities	100-249
12	Refrigerated Boxes	Manufacturing	100-249
13	Henry's Tackle, LLC	Trade, Transportation, & Utilities	100-249
14	North Carolina Department of Transportation	Public Administration	100-249
15	Festiva Resorts Services, Inc.	Professional & Business Services	100-249
16	Lowe's Home Centers, Inc.	Trade, Transportation, & Utilities	100-249
17	Sanitary Fish Market & Restaurant	Leisure & Hospitality	100-249
18	Veneer Technologies, Inc.	Manufacturing	100-249
19	Carteret Surgical Associates, P.A.	Education & Health Services	100-249
20	Professional Transit Management Office	Trade, Transportation, & Utilities	100-249
21	Bluewater Associates	Financial Activities	100-249
22	Duke University	Education & Health Services	100-249
23	Belk, Inc.	Trade, Transportation, & Utilities	100-249
24	Jarrett Bay Boat Works, Inc.	Manufacturing	100-249
25	Allegiance Security Group, LLC	Professional & Business Services	100-249

Table 2.4 - Top 25 Employers in Carteret County 2008-QIII

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009 (QCEW), Largest Employers; 2009*

The types of current jobs in the county provide another view of the workforce structure and the occupations that organizations have emphasized as important. Typically, the largest occupational categories are the ones where new job market entrants will also find greater employment opportunities. The Occupational Employment and Wages table shows that, in 2008, Office and Administrative Support workers led all other occupational groups in the county, accounting for 3,800 employees, followed by Food Preparation and Serving-Related workers with 3,580 employees. Specifically, the detailed occupational information shows that the most popular jobs in the county were: retail salespersons, waiters and waitresses, and cashiers.

Occupational Code	Employment by Occupational Group	Estimated Employment	Estimated Annual Wage-Median
00_0000	Total All Occupations	24,780	$23,407
11_0000	Management Occupations	890	$63,005
13_0000	Business and Financial Operations Occupations	700	$34,837
15_0000	Computer and Mathematical Occupations	90	$53,245
17_0000	Architecture and Engineering Occupations	280	$39,240
19_0000	Life, Physical, and Social Science Occupations	180	$42,347
21_0000	Community and Social Services Occupations	210	$36,494
23_0000	Legal Occupations	*	$45,038
25_0000	Education, Training, and Library Occupations	1,880	$34,437
27_0000	Arts, Design, Entertainment, Sports, and Media Occupations	130	$26,769
29_0000	Healthcare Practitioners and Technical Occupations	1,380	$43,342
31_0000	Healthcare Support Occupations	880	$20,284
33_0000	Protective Service Occupations	690	$20,860
35_0000	Food Preparation and Serving Related Occupations	3,580	$16,075
37_0000	Building & Grounds Cleaning & Maintenance Occupations	1,250	$19,367
39_0000	Personal Care and Service Occupations	500	$19,350
41_0000	Sales and Related Occupations	2,940	$19,039
43_0000	Office and Administrative Support Occupations	3,800	$23,844
47_0000	Construction and Extraction Occupations	1,580	$29,896
49_0000	Installation, Maintenance, and Repair Occupations	1,100	$28,394
51_0000	Production Occupations	*	$23,065
53_0000	Transportation and Material Moving Occupations	1,350	$18,912
	20 Top Occupations		
41_2031	Retail Salespersons	1,340	$18,264
35_3031	Waiters and Waitresses	830	$15,012
41_2011	Cashiers	750	$15,632
35_3021	Combined Food Preparation and Serving Workers, Inc.	580	$15,568
37_2012	Maids and Housekeeping Cleaners	530	$17,336
53_7062	Laborers & Freight, Stock & Material Movers, Hand	530	$18,916
47_2031	Carpenters	500	$29,241
25_9041	Teacher Assistants	470	$21,695
35_3011	Bartenders	460	$14,838
31_1011	Home Health Aides	430	$17,491
35_2014	Cooks, Restaurant	380	$21,298
43_6011	Executive Secretaries & Administrative Assistants	380	$31,938
43_9061	Office Clerks, General	360	$19,236
43_4171	Receptionists and Information Clerks	350	$22,242
43_6014	Secretaries, Except Legal, Medical, and Executive	350	$26,133
29_1111	Registered Nurses	340	$48,842
35_9021	Dishwashers	330	$15,204
41_1011	First-Line Supervisors/Managers of Retail Sales Work	330	$29,801
43_3031	Bookkeeping, Accounting, and Auditing Clerks	330	$26,626
43_5081	Stock Clerks and Order Fillers	330	$18,960

Table 2.5 - Occupational Employment and Wages in Carteret County - 2008

"*" is non disclosed; "-" is not reported

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009 (QCEW), Largest Employers; 2009*

The federal government has a presence in the county and the Direct Expenditures or Obligations tables lists the Fiscal Year (FY) 2007 monies transferred into the county. Both the USMC-related monies and the total Navy Department expenditures or obligations are listed, and show that, in FY 2007, over $20 million flowed into the county from the Navy Department, almost all in the form of retirement and disability payments to county residents.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	20,425	16,505
Grants	44	-
Procurements	527	-
Salaries & Wages	220	-
Total	**21,216**	**16,505**

Table 2.6 - Direct Expenditures or Obligations in Carteret County FY 2007 (in thousands of dollars)

Source: U.S. Census Bureau. Consolidated Federal Funds Report, Fiscal Year 2007.

Needs Assessment

The county is projected to grow in population by 2,276 persons from January 2007 to the end of December 2011. With the addition of 1,602 persons due to USMC directly- and indirectly-related impacts, the county will experience 1.2 percent growth over the five-year period. This influx is projected to add an additional demand for just over 1,500 new jobs.

Some of the current impediments to a fully-functioning workforce, low unemployment rates, and economic growth in the county include those listed in the Current Regional Issues section of the Regional Workforce Module, but also include those listed below:

- Relatively high housing costs and lack of suitable or available land in the county are restricting growth. This is compounded by other high costs, such as insurance, and both residential and commercial development will be dampened, and the workforce affected, by the lack of appropriate housing. Increasing Coastal Stormwater Regulations and other environmental rules are a major contributor to the increasing costs of land and development.
- The area has a number of younger residents who lack high school diplomas (or equivalency), have legal infractions on their records, or have a history of personal financial problems. This makes it difficult, if not impossible, for these residents to attain employment with employers who need security-clean employees for government contracts, public safety organizations such as law enforcement, or other security-conscious employers. Other employers will not risk hiring an employee without a high school degree because of potential unemployment and disability-related financial commitments.
- A large, indirect Navy Department contributor to the local economy comes in the form of 2,300 USMC active-duty and civilian personnel from the three bases who make Carteret their residence. However, the direct driver comes in the form of retirement and disability payments. The county would like to attract more retiring personnel, particularly younger retirees, but enough professional and relatively high-paying jobs are not available in the region.

Recommended Strategies and Actions

The county and the surrounding region have a number of tools available to mitigate the impacts of military growth on the workforce, while at the same time positioning the county and the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include, first and foremost, taking the following actions to increase the economic base of the region so that the new entrants find meaningful and productive employment that matches their skills and desired occupations:

- Acquiring and allocating resources to support and plan for a new Technology Center in the region and a new Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and

entrepreneurship.

- Emphasizing industrial clusters that will potentially be available at the two centers, and also at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.
- Supporting private and public efforts in neighboring counties encourage new and relocating businesses to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.
- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through several initiatives:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and others adults who guide and influence teenagers in the region.
- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.
- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before many other areas of the country and to plan for training and educational requirements of those future green jobs.
- Devoting immediate resources to increasing child care training, certification, and facilities. Not only will this action provide direct employment to child care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.
- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.
- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small and disadvantaged businesses.
- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.
- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.

Creating a more military-family-friendly workplace by offering flexible benefit packages, and having the added benefit of reducing the cost of labor to businesses.

Education

Existing Conditions

K-12

The estimated 2007 population of Carteret County is 63,238. Carteret County Public School System, with a 2008-09 K-12 enrollment of 8,245 students, is the 46th largest public school system in the state (North Carolina Department of Public Instruction, School Statistical Profile). The average annual growth in enrollment over the past five years is 1.5 percent (**Figure 3.1**), and the number of elementary-age students has been increasing each year since the 2005-06 school year. The annual resident live birth count averages 625 over the last 10 years, with a recent peak of 678 live births in 2006. (**Figure 3.2**) (North Carolina Department of Health and Human Services, State Center for Health Statistics).

A number of characteristics define the school district:

- The Carteret County Public School System has three high schools with a combined enrollment of 2,658 students. West Carteret High School is the largest in the county, with 1,199 enrolled. East Carteret High School is the smallest, with 618 enrolled. Croatan High School, with 841 enrolled, is the fastest growing high school in the county.
- There are four middle schools, with a combined enrollment of 1,703 students. The Broad Creek Middle School is the fastest growing in the county and is populated by the Bogue Sound and White Oak elementary schools. The Newport and Morehead City middle schools receive students from schools in Newport and Morehead City. Beaufort Middle is the only middle school in the East Carteret cluster, and it hosts students from the Beaufort Elementary School. Atlantic, Smyrna, and Harkers Island elementary schools host students up to 8th grade due to the low population density in their areas.
- Forty-four percent of the county's student enrollment is in the Kindergarten to the 5th grade range, 23 percent in the 6th to 8th grades, and 33 percent in the 9th to 12th grade range.
- During the 2008-09 school year, 439 students, or 5.3 percent of students enrolled in Carteret County Public School System were children connected to the military. This is an increase of 53 students from the 2007-08 school year; however, the increase may be attributed to a higher survey response rate than the previous year (Carteret County Schools Federal Impact Aid data).
- The per-pupil expenditure in Carteret County is $8,989 with 61 percent state funding, 9 percent federal funding, and 30 percent local funding. The per-pupil expenditure is slightly higher than the regional average of $8,758 (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).
- The Carteret County Public School System operates 97 school buses transporting 3,883 students at a cost of $551 per pupil. Forty-seven percent of Carteret County Public School students utilize school buses.
- The Carteret County Public School System employs 541 teachers and 130 teacher assistants.

Carteret County had five private schools with 387 students enrolled during the 2007-08 school year (2008 North Carolina Private School statistics, (http://www.ncdnpe.org/documents/hhh557.pdf). All five private schools are religiously affiliated. The largest private school is Gramercy Christian School in Newport with a K-12 program and 225 enrolled.

Cape Lookout Marine Science High School and Tiller School are the two charter schools in Carteret County. The Cape Lookout Marine Science High is in Morehead City and serves grades 9-12 with an enrollment of 107 students. The Tiller School in Beaufort serves K-5th grades with an enrollment of 132 students.

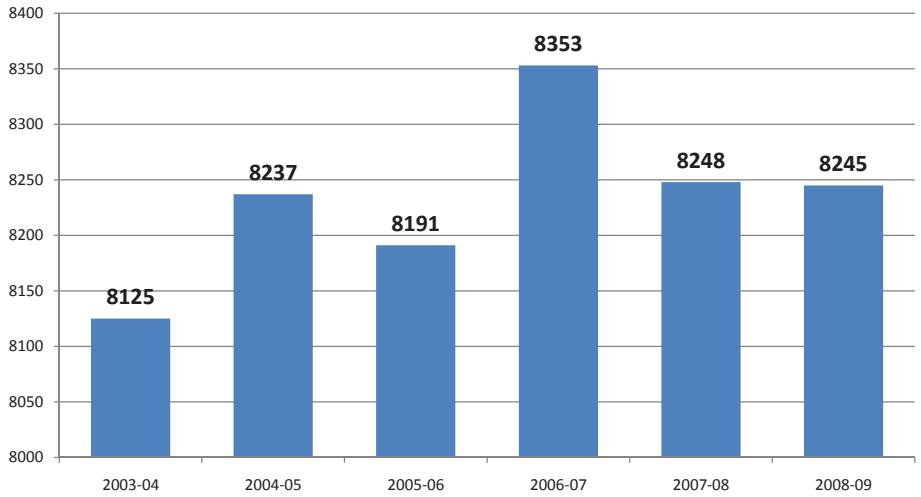


Figure 3.1 - Average Daily Membership

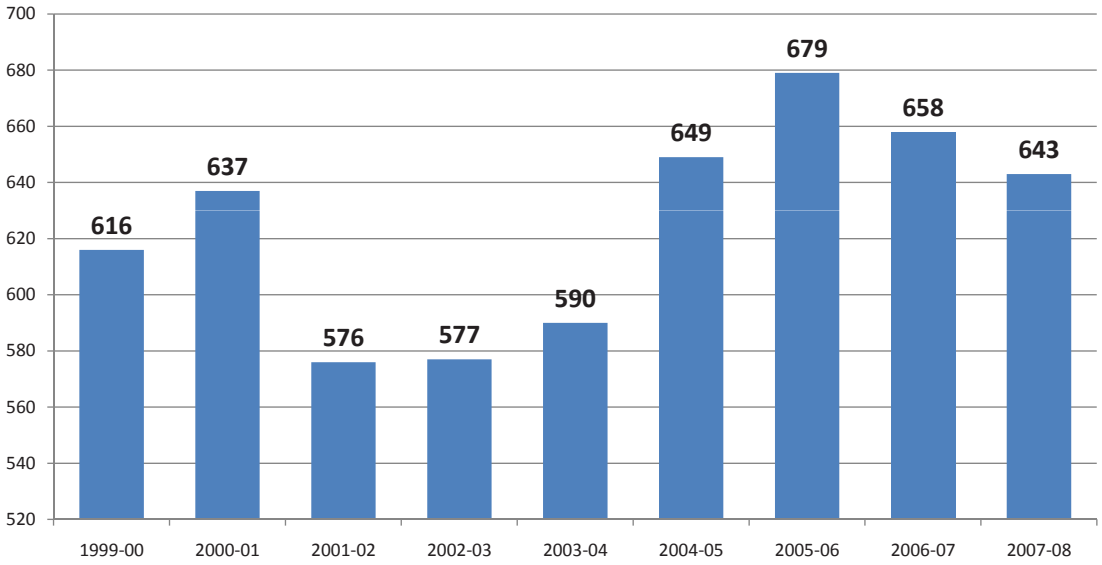


Figure 3.2 - Resident Live Births

The Western Carteret and Croatan school clusters have experienced the highest growth in recent years. The growth in the Western Carteret cluster (sandwiched between the East and Croatan clusters) can be attributed to the growth in the Newport area. The growth in the Croatan cluster is due to the recent growth in the White Oak area and is believed to be related to the growth at MCB Camp Lejeune. The East Carteret cluster has seen recent growth in Beaufort Elementary School. This growth is attributed to one housing development and the area growth rate will most likely be small in the coming years.

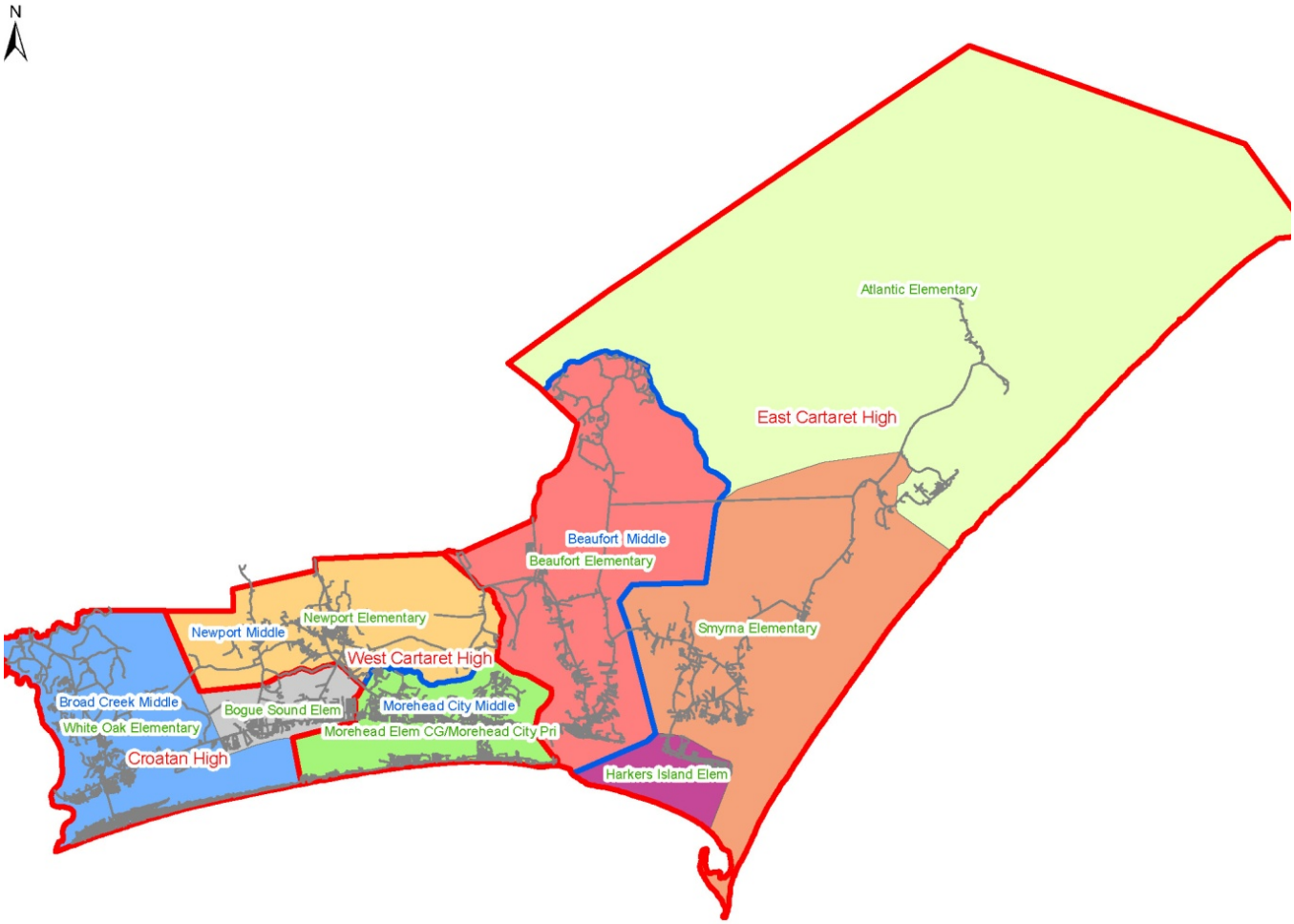


Figure 3.3 - Carteret County Public School System Cluster

Child Care

Carteret County has a total of 41 child development facilities with 24 centers and 17 homes. The 24 centers' total enrollment is 985 children and the 17 home-based child development facilities have 100 children enrolled. The county-wide combined child care enrollment is 1,085 children or 11 percent of the total population under the age of 15 (North Carolina Department of Health and Human Services, Child Care Statistical Report, March 2009). The county-wide number of child care slots as of April 2009 is 2,166 with a 50 percent utilization rate.

The child care centers employ a total of 194 employees ,and the annual employee turnover is approximately 46 employees, or 24 percent (Onslow County Partnership for Children, MGTF Workforce Module, Child Care Industry Data and Information). The recent economic downturn and job loss have forced some families to withdraw their children from child care facilities; thus, enrollment and the number of facilities is lower this year than in previous years.

Community College and Post-Secondary Education

Founded in 1963, Carteret Community College (CCC) is located in Morehead City and primarily serves Carteret County. The college offers a wide-range of educational, technical, and vocational programs. With more than 100 courses to choose from, students can pursue programs leading to a certificate, diploma or associate degree.

The CCC transfer curriculum is one of the most popular programs, and enables students to obtain an associate degree in arts or science and transfer to a four-year institution. Additionally, the college offers a variety of Corporate and Community Education courses to provide general education opportunities for upgrading job skills, gaining certification, and satisfying

personal interests. These courses are offered on a continual basis and include several pre-licensing courses, computer applications, desktop publishing, First Aid/CPR, emergency medical technician certification, and a variety of basic skills courses.

The student body consists of approximately 1,900 curriculum and 4,500 continuing education students (Carteret County Community College, Long Range Plan, 2007-2012). (Note: Data from the NC Community College System for the fall semester of 2008-2009 shows an enrollment of 1,673 curriculum students and 2,966 continuing education students, for a total of 4,499.) The college has 130 full-time and 248 part-time employees who provide quality education, training and support.

As a central part of the community, the college also works closely with numerous community agencies such as the Chamber of Commerce, Tourism Development Board, and the Economic Development Council to encourage economic growth in the area. One of the college's newest programs includes Hotel and Restaurant Management training to support the area's number one hospitality and tourism industry. Together with N.C. State University, the college also has the Center for Marine Sciences and Technology located on CCC property, which has allowed the college to expand its Associate in Science and Aquaculture Technology degree programs.

The CCC offers a comprehensive Boat Manufacturing program which includes composites certification, which trains employees for the boat manufacturing and marine trades industry. The training covers safety, types and uses of materials, and resins and gelcoat applications. The college has North Carolina's only dedicated marine trades training facility, North Carolina Marine Training and Education Center (NCMARTEC), supporting the training for the marine trades industry throughout the east coast.

The CCC offers distance learning opportunities through 95 percent of its curriculum programs. In addition to one degree that can be earned almost fully online (Associate's Degree in Arts), nearly all curriculum programs have online offerings in full, hybrid, and web-enhanced (i.e., partial) formats.

The college recently completed constructing two new buildings that will expand the Business Technologies, Health Science and Marine Technology programs.

Needs Assessment

K-12

Carteret County Public School System's enrollment is forecasted to grow between 50 to 360 students from 2007 to 2011 (**Figure 3.4**).

The White Oak Elementary School in the Croatan cluster will be favored by military-connected families due to its close

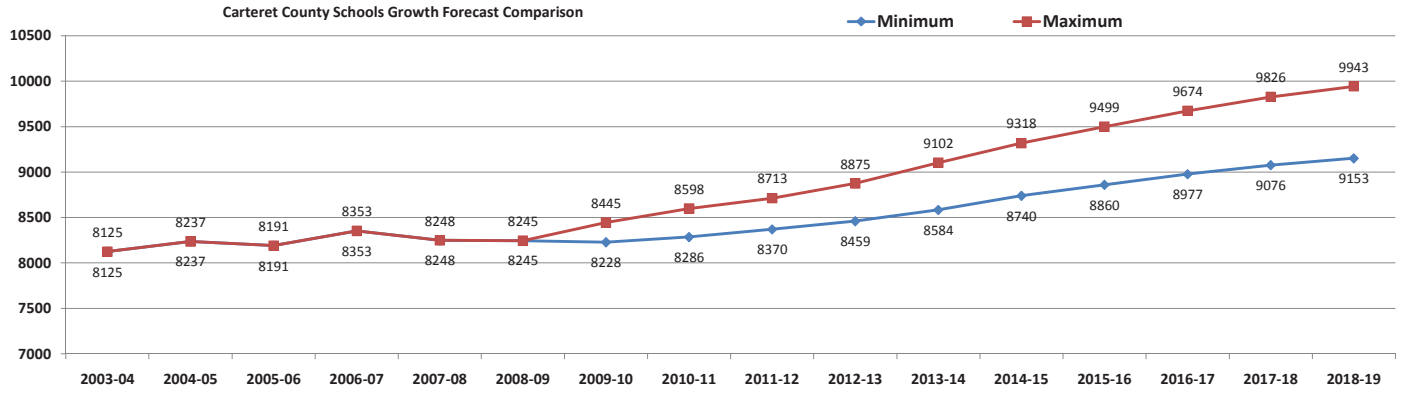


Figure 3.4 - Carteret County Public School System Growth Forecast Comparison

proximity to MCB Camp Lejeune. The school is currently under capacity but will soon be over capacity. During the 2008-09 school year, the Newport Elementary School was 102 students overcapacity with 11 mobile units for temporary classrooms. A new elementary school will be needed to relieve overcrowding for these two schools. The cost of building a new elementary school with a capacity of 650 students is approximately $17 to $20 million (North Carolina Department of Public Instruction, School Planning Section).

	Capacities	Month-2	Projected Month-2 ADM									
	2008-09	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Elementary Schools												
Atlantic ES (K-8)	180	131	131	131	131	131	131	131	131	131	131	131
Bogue Sound ES	550	446	457	469	472	473	486	497	508	507	512	518
Beaufort ES	600	484	512	541	548	552	584	612	638	637	648	664
Harkers Island ES (K-9)	220	166	166	166	166	166	166	166	166	166	166	166
Morehead ES CG	400	304	326	349	355	358	384	406	427	427	436	448
Morehead City Primary	700	644	644	644	644	644	644	644	644	644	644	644
Newport ES	680	782	793	805	808	809	822	833	844	843	848	854
Smyrna ES (K-8)	350	255	255	255	255	255	255	255	255	255	255	255
White Oak ES	675	626	665	706	716	721	766	805	842	840	856	878
Totals	**4355**	**3838**	**3948**	**4065**	**4095**	**4108**	**4239**	**4349**	**4455**	**4451**	**4496**	**4559**
Middle Schools												
Beaufort MS	350	244	263	288	315	343	343	330	315	357	385	406
Broad Creek MS	650	558	592	637	686	736	736	713	686	762	812	849
Morehead City MS	540	451	466	486	508	530	530	520	508	542	564	580
Newport MS	600	450	458	468	478	490	490	485	479	495	506	515
Totals	**2140**	**1703**	**1779**	**1880**	**1987**	**2099**	**2099**	**2049**	**1988**	**2156**	**2267**	**2350**
High Schools												
East Carteret HS	850	618	621	605	600	609	633	672	706	709	708	700
Croatan HS	850	841	847	818	808	825	868	938	999	1004	1003	989
West Carteret HS	1320	1199	1203	1184	1177	1188	1217	1264	1304	1308	1307	1298
Totals	**3020**	**2658**	**2671**	**2607**	**2585**	**2622**	**2718**	**2875**	**3009**	**3021**	**3018**	**2987**
Special/Alternative Schools												
Bridges Alternative		46	46	46	46	46	46	46	46	46	46	46
System Totals	**9515**	**8245**	**8445**	**8598**	**8713**	**8875**	**9102**	**9318**	**9499**	**9674**	**9826**	**9943**

Capacity Legend

< 95%	95% - 100%	100% - 105%	> 105%

Table 3.1 - Carteret County Public School System Out-of-Capacity Worksheet

Because of the historical and forecasted growth, both the Broad Creek Middle School and the Croatan High School have the potential to be over capacity in the near future. The forecasted over-capacities in these two schools are not exceedingly high and they are therefore candidates for campus expansions.

- A growth of 50 students (the minimum estimate with the military-induced growth) would require two new teachers and one new teacher assistant position, at an annual cost of approximately $156,000. The growth will also require adding one new school bus at a cost of $80,000.
- If as many as 360 new students arrive in Carteret County Public School System (the maximum estimate with the military-induced growth), 16 in new teachers and seven new teacher assistant positions may be required at an annual cost of $1.1 million. This growth would require adding three new school buses at a cost of $240,000.
- Just as in the rest of the region, recruiting and retaining qualified teaching staffs has been a tremendous challenge. It will be a high priority for Carteret County Public School System to work with the local and neighboring higher-education institutions to develop a high-quality teaching pool to support the growth.

Child Care

Carteret County's child care total enrollment is estimated to increase by over 100 children by 2011. The increase will raise the child care slots utilization from the current 50 percent to 55 percent.

At the current children to staff ratio of 5.7:1 in the county, during the period of 2007 to 2011 Carteret County child care work force will require an additional 18 staff to accommodate the estimated growth in enrollment of 100 children.

Community College and Post-Secondary Education

Average enrollment in curriculum, occupational extension and basic skills programs over the past five years showed a minimal growth for most programs. While the college is not planning to start any new programs that can be directly attributed to the growth of the area's military personnel, Carteret Community College does already offer programs that are expected to help support that growth.

Program Type	2007-08	2008-09	2009-2010	2010-11	2011-12	2012-2013
Curriculum	1404	1349	1323	1318	1308	1292
Occupational Extension	232	244	260	276	293	312
Basic Skills	144	137	128	118	108	102
TOTAL	**1780**	**1730**	**1711**	**1712**	**1709**	**1706**

Table 3.2 - Projected Enrollment Growth

The college offers the Motorcycle Safety - Basic Rider course that is in direct response to the area military bases' needs. Carteret Community College offers the 15-hour Basic Rider Course which provides an introduction to the fundamentals of safe, responsible motorcycling. This includes the knowledge and skills necessary to ride safely on the streets and highways. The college provides the motorcycles for the training. Due to space limitations the college can train only six students per class.

Recommended Strategies and Actions

K-12

In order to prepare for and manage the military-induced growth that will be coming to Carteret County, the county should continue improvements in the collection of the Federal Impact Aid survey among schools, as well as record and track the growth history at each school. The county should work with the US Department of Education to seek a higher level of Federal Impact Aid compensation.

In addition to seeking help from Federal Impact Aid, the county should work with policymakers on legislation such as the Military Children's School Investment Act and the Zero-Interest Loans program to finance construction projects. The county should also strive toward obtaining special funding from DoD to deal with the special burden imposed on Local Education Agencies (LEAs) due to the military growth.

The county should identify a site for a future elementary school between the White Oak and Newport elementary attendance areas, and assess capacity expansion potential for the Broad Creek Middle and Croatan High Schools. Carteret County should also develop a school project plan adhering to the OEA outline on project location, cost, attendances, and number of military-connected students to be enrolled in the new school.

Collaboration with local and neighboring higher-education institutions to develop a high-quality teaching pool to support the growth in enrollment is important for the county, as is community support on general obligation bonds to support the K-12 needs.

Child Care

Carteret County should work closely with the Carteret County Community College to increase the child care work force pool in the county. The county should also explore reciprocity licensure opportunities to attract qualified out-of-state or DoD child care workers.

Community College and Post-Secondary Education

Carteret should increase the Motorcycle training driving pad by 40,000 square feet at a cost of $160,000 which would allow the class size to double to 12 students. The county should request special funding from DoD to support the need to expand the training programs directly created and impacted by need and military growth.

Transportation

Introduction

The roadways that traverse Carteret County are essential to both county-wide transportation and regional transportation. US 70 stretches from northwestern Jones County through the heart of Craven County and terminates in northeastern Carteret County. NC 24 provides east-west mobility, connecting I-40 in Duplin County, Jacksonville in Onslow County, and Morehead City in Carteret County.

Existing Conditions

Roadway

The existing roadway system in Carteret County is composed of a network of different streets that perform specific roles. The classification of streets into "functional" categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character as well as operational features for the movement of vehicles.

Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridors (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The existing public street network in Carteret County is divided into several functional classifications, including arterials, collectors, and locals. The scope of the Regional Growth Management Plan emphasizes the operation of arterials based on NCDOT designation and necessary improvements to ensure the functionality of these corridors.

- **Arterials** provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distances. Arterials include facilities with full access control, such as freeways, as well as boulevards and major thoroughfares. Arterials usually connect to one another or to collector streets, and very few arterials connect to local streets. Arterials include freeway facilities such as:
  - **Freeways** provide the most mobility and least access (only at interchanges). NCDOT did not designate any corridors in Carteret County as a freeway.
  - **Principal arterials** typically have tightly controlled access and few, if any, individual site driveways. These arterials are typically intersected by expressways and freeways as well as minor arterials and other public streets. US 70 east of Smyrna is classified as a principal arterial.
  - **Minor arterials** primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. NC 58 (Fort Macon Rd) is classified as a minor arterial.
- **Collectors** typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater access flexibility with adjacent land uses, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-freeway/expressway arterials. Collector streets within Carteret County include NC 101 and US 70 west of Smyrna.

- **Locals** provide greater access and the least mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Most roads in the county are designated as local streets.

Volume, Congestion, and Safety

Traffic volumes in Carteret County are highest on its major corridors, including 32,000 vehicles per day on US 70 near NC 24 in Morehead City and 19,000 on NC 24 between NC 58 in Cape Carteret and US 70 in Morehead City. Another location with high traffic volume is US 70 north of Beaufort (9,400 vehicles per day). Traffic volume, however, does not account for roadway capacity, so a better assessment of congestion is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. As may be expected, the highest levels of congestion in Carteret County occur on US 70, NC 24, and NC 58 in Atlantic Beach.

Like congestion, traffic safety should be examined during the development of a transportation strategic plan. Between 2001 and 2005, an average of 1,231 crashes occurred in Carteret County. Slightly more than 42 percent of these crashes resulted in at least one injury, the second highest rate in the region and five percent higher than the state average. The crash rate (229.43 per 100 million vehicle miles traveled) is below the state average, but the average cost per crash ($11.85 per 100 vehicle miles traveled) is among the highest in the region and above the state average. Carteret County also has the region's highest percentage of crashes involving pedestrians (1.2 percent).

Needs Assessment

TIP Projects

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements. The seven-year document includes funding information and schedules for highway, bicycle, pedestrian, rail, and public transportation projects. One critical Carteret County priority identified by the Transportation Working Group is listed on the current (2009-2015) TIP; the project is detailed below. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have relatively low impact on the military while others will contribute a positive impact. Other recommendations developed by the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/Funding
R-3307	Widen, New Location	US 70	Beaufort in Carteret County	Radio Island to US 70 north of Beaufort near Olga Road	Multi-lanes part on new location	Planning/design in progress – Right-of-way in progress

Table 4.1 - TIP Projects in Carteret County

Modal

A transportation survey (10 February 2009 and 6 March 2009) helped identify system needs and priorities for Carteret County Area Transportation System (CCATS), the major public transit agency in the county. Results of the survey indicated that the majority of CCATS riders are Medicaid clients and senior citizens. Approximately 20 percent of riders use CCATS for health appointments.

The Carteret County Local Coordinated Plan (LCP) was adopted in March 2009 and identifies challenges and opportunities for CCATS. CCATS participates in the RouteMatch program through the Eastern Carolina Council (ECC), which enables transportation providers in surrounding counties to secure county residents a seat on a van traveling to beyond the region (e.g., to locations like Duke Medical Center or Wake Medical Hospital). Currently, CCATS operates 17 vehicles and operates Monday through Friday, 7:00am to 7:00pm. Existing public transit services are augmented by taxis in the region.

Recommended Strategies and Actions

The transportation network of Carteret County includes a variety of modes. Given the critical need to ensure that people, goods, and services move freely throughout the county and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected officials at the local, regional, and state levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the Transportation Improvement Program project listed above, as well as the TIP projects throughout the Military Growth Task Force (MGTF) Region. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position Carteret County to effectively manage future growth. Roadway projects are most critical to the county; other modes, such as rail, must be addressed from a regional perspective.

Roadway

US 70

The US 70 corridor is a major link in the state's transportation system and is designated a Strategic Highway Corridor. Today, it exists as a multi-lane facility that carries up to 47,000 vehicles per day. The cross-section and functionality of US 70 varies on its trek from Raleigh to Morehead City. The corridor alternates between a limited-access freeway and a regional arterial with frequent side streets and driveways. The high volume of traffic and unpredictable access has created a safety hazard for motorists, whether residents, tourists, or military personnel.

The significance of US 70 to the military and civilians is directly related to its distinction as the only east-west mobility corridor for the region. The Marine Corps utilizes US 70 for the transport of troops and equipment from Marine Corps Air Station (MCAS) Cherry Point to the Port of Morehead City, a major point of embarkation and debarkation. The highway is to the main route for travel between the beach towns of Carteret County and Raleigh and points west. In Morehead City, US 70 is the main arterial and serves the dual role of providing service to residential and commercial land uses while connecting NC 24 (and thus personnel and equipment from MCB Camp Lejeune) to port facilities. US 70 also serves as a major hurricane evacuation route.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
US 70 (southeast of Havelock)	Improve existing	Between Havelock and Morehead City in Craven and Carteret counties	Proposed Havelock Bypass to NC 101	17.5 miles	Improve existing divided highway through enhanced access management	Provide an enhanced route between Havelock and Morehead City; increase mobility for residents, tourists, troops, military equipment; Allow safe and quicker evacuation during emergencies; improve access between Cherry Point and the Port of Morehead City
US 70 (northeast of Beaufort)	Improve existing	Northeast of Beaufort in Carteret County	North Carteret Bypass to Olga Road	2.5 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced connection between Port of Morehead City and the North Carteret Bypass; create a primary route from Havelock and Cherry Point to Morehead City; Increase mobility for residents, tourists, troops, military equipment; allow safe and quicker evacuation during emergencies
North Carteret Bypass	New location	Between Havelock and Morehead City in Craven and Carteret Counties	Proposed Havelock Bypass to US 70 near Pleasant Drive in Carteret County	17.5 miles	Construct new freeway	Conform with the vision of Super 70, a unified effort to transform US 70 into a freeway from I-40 to the coast; increase mobility for residents, tourists, troops, military equipment; allow safer and quicker evacuation during emergencies; improve access between Cherry Point and the Port of Morehead City

Table 4.2 - U.S. 70 Corridor Roadway Recommendations

A plan has been developed by the US 70 Corridor Commission that recommends retrofitting US 70 to a freeway from Raleigh to Morehead City. Improving the corridor will enhance regional mobility, alleviate safety concerns, improve the efficiency of evacuations, and enhance east-west travel times for freight traffic as well as military use. The current TIP includes the Havelock Bypass, though this project remains unfunded. The following recommendations for US 70 assume the eventual completion of this critical project and supplement it to fulfill the vision of the Super 70 concept.

NC 24

Within the seven-county region, NC 24 connects Duplin, Onslow, and Carteret Counties. The roadway — a mixture of five-, six-, and seven-lane facilities with no control of access — is identified as an expressway in the Strategic Highway Corridor Concept Plan. In places, it carries up to 52,000 vehicles per day and is approaching its practical capacity in the non-municipal areas and over-capacity in urban areas. This volume is the result of several factors: (1) its use by the military to transport troops, machinery, and equipment between Jacksonville/MCB Camp Lejeune/ MCAS New River and the Port of Morehead City for embarkation and debarkation, (2) its use to access the MCAS Cherry Point via US 70, and (3) its use by local traffic to access residencies, businesses, and services, and (4) its use by tourists to access beach communities. NC 24 also serves as the primary deployment route from MCB Camp Lejeune to the Port of Morehead City.

The Transportation Working Group identified the section of NC 24 between US 17 in Jacksonville and US 70 in Morehead City as a high priority for access management enhancements to improve safety and mobility. Operational issues along NC 24 are exasperated during the summer months due to tourist traffic. The urgency for improvements to this particular stretch of NC 24 is not capacity-driven, but related more to the opportunity to protect the corridor. The time is now to properly plan land use and transportation decisions concurrently. The recommendations that follow aim to improve the safety and regional mobility of this strategic connection between I-40 and Morehead City.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 24 (northwest of Jacksonville)	Improve existing	Duplin and Onslow Counties	I-40 in Duplin County to NC 53 near Jacksonville in Onslow County	46 miles	Improve existing roadway—add shoulders, enhance access management and control the number of new signals	Improves safety for motorists traveling from I-40 to Jacksonville, Camp Lejeune, and New River
NC 24 (southeast of Jacksonville)	Needs improvement	Onslow and Carteret counties	US 17 in Jacksonville (Onslow County) to US 70 in Morehead City (Carteret County)	38.5 miles	Improve existing roadway—access management, add shoulders	Improves safety for motorists traveling between Jacksonville and Morehead City; improves safety and efficiency of transporting troops, machinery, and supplies between Jacksonville, Camp Lejeune, New River and the Port of Morehead City

Table 4.3 - NC 24 Corridor Roadway Recommendations

Other Roadway Projects

Recommendations for both Strategic Highway Corridors within Carteret County are supplemented with improvements to other regionally-significant roadways. The collective result of the following recommendations is improved access and safety between the seven-county region's largest cities, NC ports, MCAS Cherry Point, and MCB Camp Lejeune.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 101 (between Havelock and Beaufort)	Improve existing	Between Havelock and Beaufort in Craven and Carteret Counties	Outer Banks Drive in Havelock to US 70 in Beaufort	19.5 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced connection between the Port of Morehead City and the North Carteret Bypass; Increase mobility for residents, troops, military equipment; improve access between Cherry Point and the Port of Morehead City
Lake Road/ Nine Mile Road	Improve existing	Southwest of Havelock in Craven and Carteret Counties	US 70 to NC 24	13 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced north-south route in the study area; improve access between Cherry Point/ Havelock and Jacksonville; increase mobility for residents, troops, military equipment

Table 4.4 - Other Roadway Projects

Modal

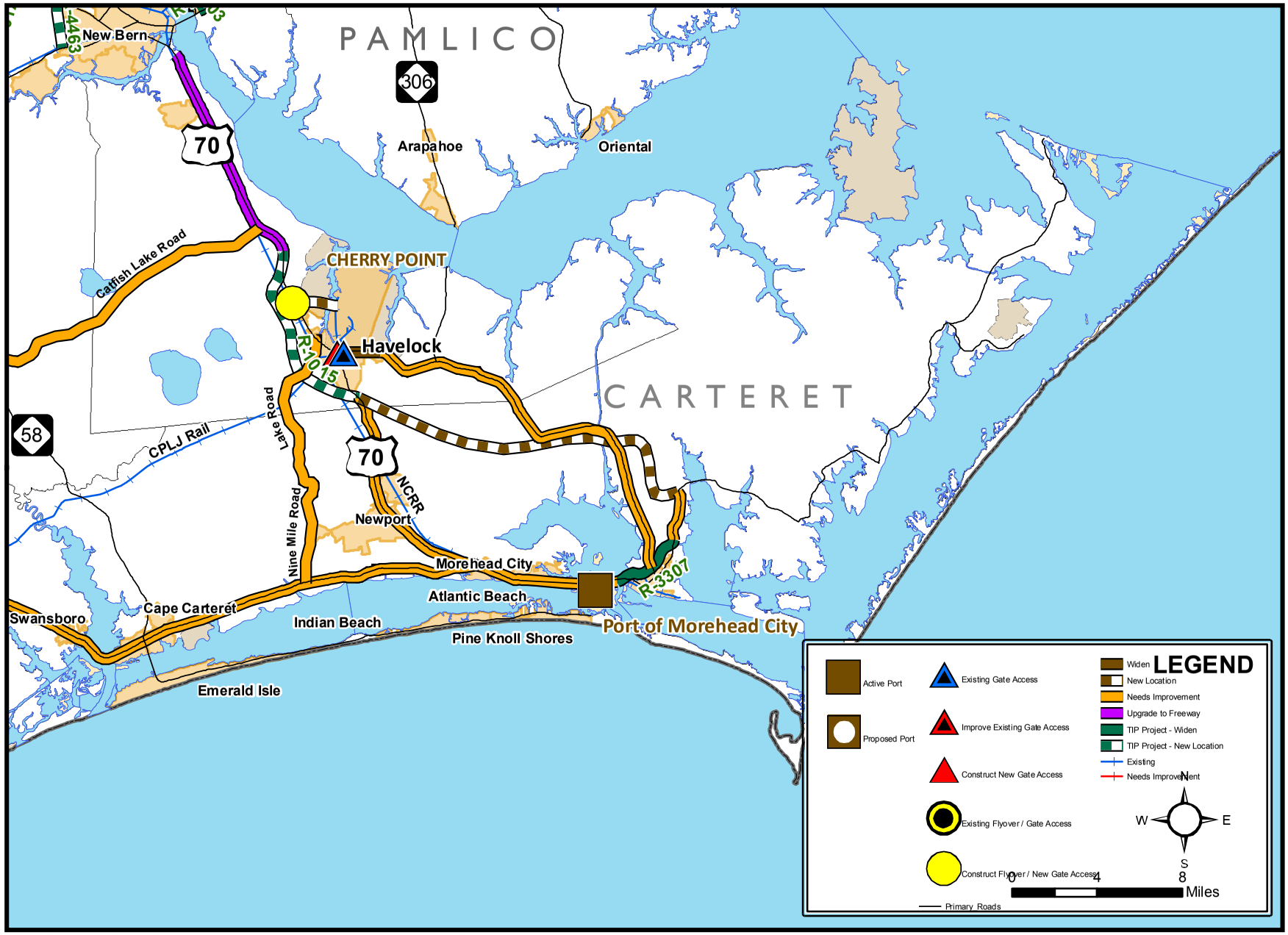
The highest scoring priorities identified during the Carteret Local Coordinated Plan workshop were the need for fixed routes, night/weekend/holiday services, more marketing and advertising, and lower costs to ride. In addition, the LCP listed the following as critical needs for public transit in Carteret County:

- Expand service frequency
- Extend service hours
- Institute formal/informal park and ride locations
- Connect to other transit services

Although each county is currently served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost-effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases, and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient

Across the region, there is an overwhelming demand for transit services to and from MCB Camp Lejeune and MCAS Cherry Point. Expansion of current transit services will allow greater mobility of younger-ranking marines as well as more residential to base connections. Although the ECC facilitates RouteMatch to coordinated intra-county public transit, it is underused and needs enhanced technical support.



ROADWAY AND RAIL RECOMMENDATIONS **Figure 4.1**
Carteret County

Infrastructure

Existing Conditions

Water

Potable water facilities in Carteret County are defined as the structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Utility Companies

Central water service is available in some areas of the County as shown in **Figure 5.1**. These central water providers include West Carteret Community Water Corporation, Harkers Island Water Sanitary District, North River Community Water System, Merrimon Community Water System, the Town of Atlantic Beach and Bogue Banks Water Corporation. The North River and Merrimon Community water systems are operated and maintained by Carteret County. Additionally, there are private providers within the County, and individual wells support several homes in Carteret County.

Water Supply and Treatment

The combined capacity for water facilities in the county is 9.6 millions of gallons per day (MGD) with an average daily use of 4.2 MGD, which equates to 44.8 percent of the available supply.

The town of Atlantic Beach can supply 1.7 MGD (in a 12-hour period) through six groundwater wells in the Castle Hayne aquifer and has an average daily use of 0.65 MGD, which equates to 38.2 percent of the available supply. The system includes six groundwater wells in the Castle Hayne aquifer as well as two elevated storage tanks and one ground storage tank that have a combined storage capacity of 1.5 million gallons (MG). The system's water treatment capacity is 2.5 MGD. The town's system fluctuates greatly with the summer peak season. Water demands can be as low as 482,000 gallons per day (gpd) during the winter months and as high as 1,645,000 gpd during the peak summer months. The town of Atlantic Beach's water system, at its peak in July 2002, reached a demand of 1.64 MG (65.8 percent of system capacity).

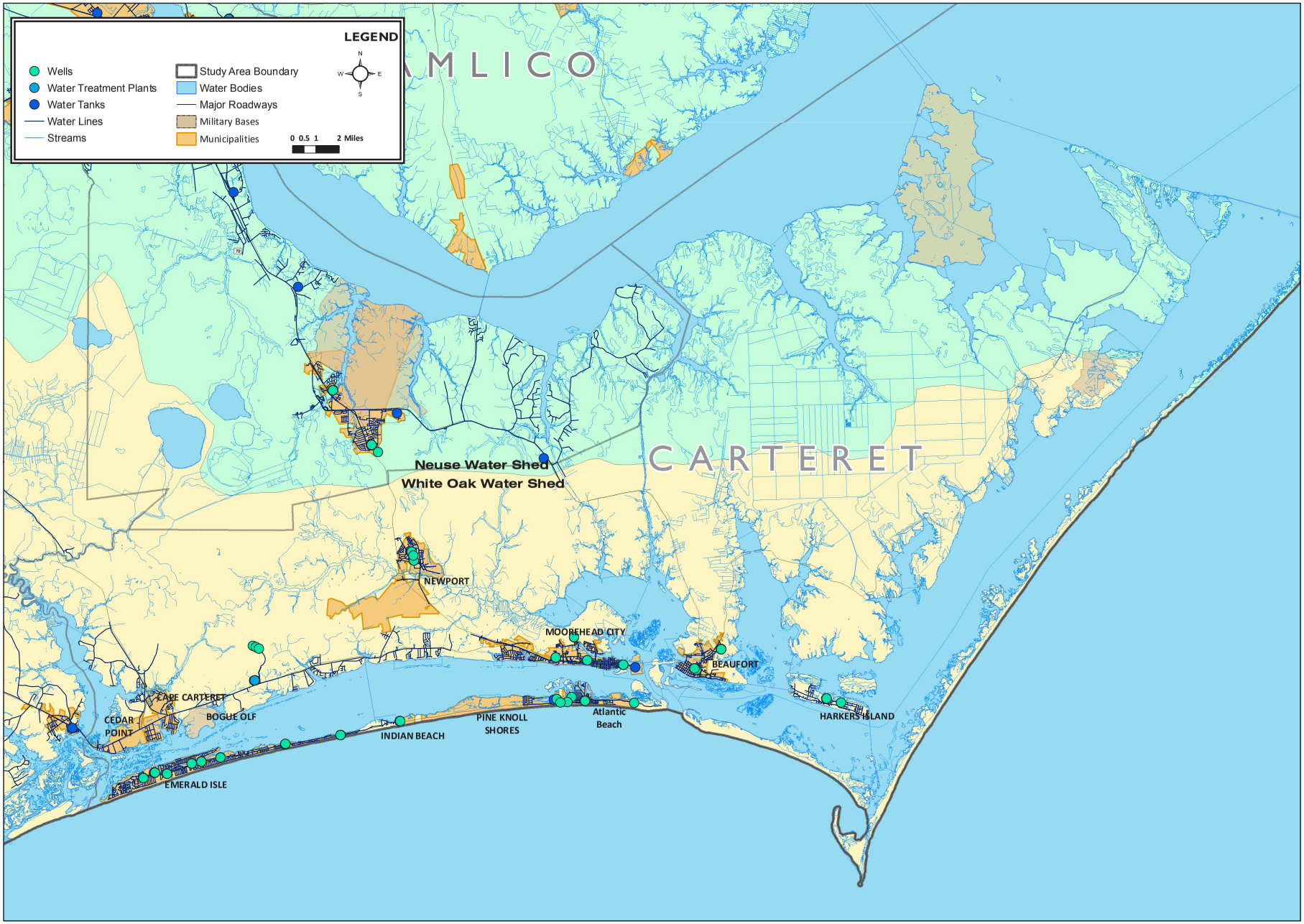
The town's water system average daily usage rates are 170 gpd for residential and 100 gpd for commercial land uses. As the town is nearly built-out and based on the town's Land Demand Forecast and Infrastructure Capacity, water capacity is not expected to be an issue with respect to military growth. Much of the citizenry of Atlantic Beach desire reduced density where possible, which may provide additional capacity in the future. The town estimates the addition of 100 housing units annually, which would equate to 500 units over the course of the planning period from 2007-2011. Throughout the planning period, additional water demands are not likely to exceed 50,000 gpd. Added to a peak day of 1.64 MG, the anticipated additional demand would result in a peak day of 1.69 MGD or 67.5 percent of system capacity.

The town of Morehead City can supply 2.55 MGD through five groundwater wells in the Castle Hayne aquifer and an average daily use of 1.178 MGD, which is 46.2 percent of the available supply. Using three storage tanks, the system has a combined storage of 1.5 MG. The town has plans for a sixth well, which would generate 0.576 MGD in additional supply in year 2010 for a total 3.126 MGD. As with many parts of coastal North Carolina, Morehead City's water usage fluctuates with the Season and serves a population of approximately 8,900 year-round compared to a projected population of 11,000 for the summer months of 2010. The town of Morehead City's projected water demands for 2010 are 1.346 MGD, which is 43 percent of the available 2010 supply (assuming the sixth well is built) and 52.8 percent of the available current supply.

West Carteret Water Corporation has an available supply of 1.6 MGD with an average daily use of 0.676 MGD, which equates to 42.3 percent. The system includes four groundwater wells located in the Croatan National Forest and two elevated storage tanks that have a combined storage capacity of 1.35 MG. The West Carteret Water Corporation service area is primarily within the White Oak Township along Highways 24 and 58.

Harkers Island Water Sanitary District has an available supply of 0.648 MGD with an average daily use of 0.137 MGD or 21.1 percent of the available supply. The system includes two groundwater wells and 0.25 MG in storage capacity and serves all of Harkers Island.

The North River Community Water System has an available supply of 0.342 MGD. The system includes two groundwater wells and 0.2 MG in storage capacity and serves the area north of the town of Beaufort.



CARTERET COUNTY WATER Figure 5.1

NORTH CAROLINA'S EASTERN REGION

The Merrimon Community Water System has an available supply of 0.064 MGD with an average daily use of 0.007 MGD, which equates to 11 percent of the available supply. The system includes one groundwater well and 0.01 MG of storage capacity. This water system is operated and maintained by Carteret County and serves only the community of Merrimon.

Bogue Banks Water Corporation has an available supply of 2.7 MGD with an average daily use of 1.48 MGD, which equates to 54.8 percent of the available supply. The system includes 11 wells as well as two elevated and four ground storage tanks that have a combine storage capacity of 3.2 MG. Generally, the area served by Bogue Banks Water Corporation is the town of Emerald Isle and Salter Path (Carteret County Land Use Plan Update, 2005).

Regulations

Carteret County is one of several eastern North Carolina counties subject to the Coastal Plain Capacity Use Area (CCPCUA) rules. These rules require regulated water users in the county (users pumping more than 100,000 gpd) to gradually limit withdrawals from the Black Creek aquifer over a 16 year period. Water providers in Carteret County are required to reduce withdrawals by 25 percent over the first six years (to August 2008), an additional 25 percent over the following five years (August 2008 to August 2013), and a further reduction 25 percent over the remaining five years (August 2013 to August 2018).

Additionally, regulated water users will be required to implement water conservation which may include:

- Conservation ordinances
- Leak detection programs
- Tiered rate structures to encourage conservation
- Plumbing retrofit programs
- Public education advocating water conservation measures

The North Carolina Department of the Environment and Natural Resources' (NCDENR's) Division of Water Resources monitors saltwater intrusion in the region through a series of monitoring wells that are sampled every three to four years. There are seven monitoring wells located in Carteret County.

Pending Regulations

Representative Russell Tucker (Duplin County) has introduced House Bill (HB) 643, which may provide a solution to groundwater contamination issues. By creating a salinity barrier between saltwater and groundwater the legislation could help protect Carteret County's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the RCMP infrastructure module.

Sanitary Sewer

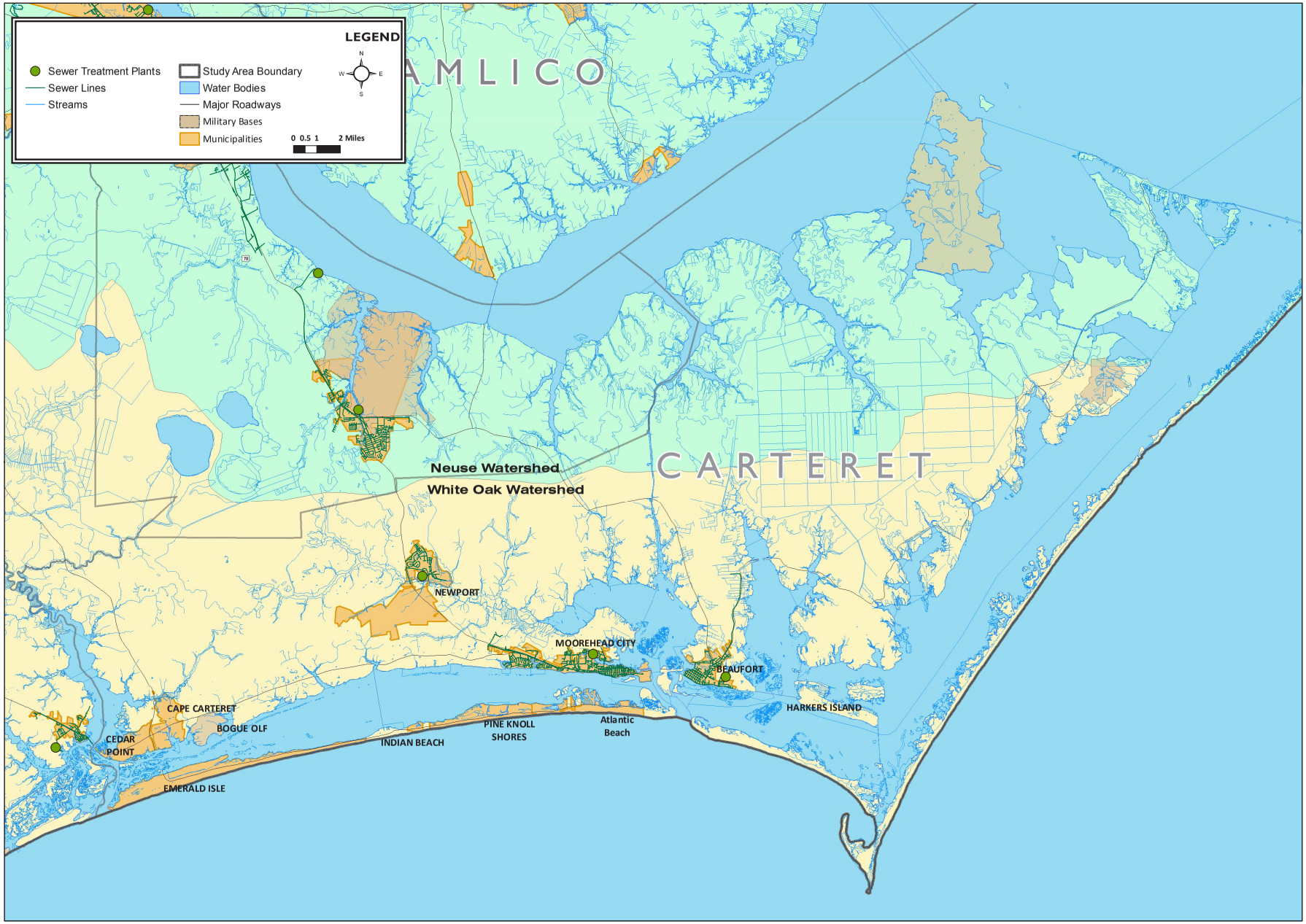
Sanitary sewer facilities are defined as structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems.

Wastewater Providers

Wastewater treatment providers in Carteret County include the town of Beaufort, the Marine Corps (at the Bogue and Atlantic Outlying Fields and BT-11), the town of Morehead City, and private companies operating package wastewater treatment plants (WWTPs). Individual private septic systems serve several homes in unincorporated Carteret County.

Wastewater Collection and Treatment

A combination of public and private WWTPs provide wastewater collection and treatment within Carteret County as shown in **Figure 5.2**.



CARTERET COUNTY SEWER Figure 5.2

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

The town of Beaufort's WWTP has a design capacity of 1.5 MGD, serves the town of Beaufort, and has a point discharge into Taylor's Creek for wastewater effluent disposal (Carteret County Land Use Plan Update, 2005).

The Marine Corps operates three small WWTPs in the county. The characteristics of these WWTPs are given in **Table 5.1**:

WWTP Facility	Permitted Capacity (gpd)	Method of Wastewater Effluent Disposal
Bogue Outlying Field	3,400	Land application via spray irrigation
Atlantic Field	2,000	Land application via spray irrigation
BT-11 Cherry Point	1,750	Land application via spray irrigation

Table 5.1 - Carteret County WWTP Characteristics

Private package WWTPs serve approximately 50 percent of the town of Atlantic Beach, which largely coincides with condominium developments. As of 2005, 10 package WWTPs were located in the town of Atlantic Beach. The remainder of the town is on private septic systems.

The town of Morehead City owns and operates a WWTP that discharges into the Calico Creek, which is in the White Oak River Watershed. This WWTP is permitted at 1.7 MGD but has a design capacity of 2.8 MGD. Plant upgrades for 2010 would increase the permitted capacity to 2.5 MGD. In the past, the town of Morehead City had inflow and infiltration issues that were very evident during major rain events. In 2003, the town began a $3 million sewer rehabilitation project to replace or repair 250 manholes and replace or slip-line five miles of sewer line. This project should result in a 265,000 gpd decrease in wastewater flows due to inflow and infiltration.

Private Package WWTPs

Several private package wastewater treatment plants are located throughout the county. Overall, Carteret County has a fairly decentralized wastewater treatment system.

While the town of Morehead City does not allow package WWTPs where existing sewer service is available and the town is able to serve the area, the town does allow these package WWTPs in locations where the town is unable to serve these communities and developments. In such a case, the developer is required to design the package WWTP in accordance with the town's regional sewer plans in the event that these package systems are tied into the town's sewer system in the future.

Septic Systems

For portions of the county where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work well with proper siting, design, installation, operation, and maintenance. However, poor soil conditions limit the installation of many new septic systems. Poor soil conditions result in an inability to percolate, rendering properties without access to sewer undevelopable. All new septic systems in the region require a permit from the Carteret County Health Department prior to construction. This could have a significant impact on growth in the county.

Regulations

Sewer providers in Carteret County are subject to the 80 percent/90 percent rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities) administered by NCDENR's Division of Water Quality. Details of these rules can be found in the RCMP infrastructure module. If either the 80 percent or 90 percent rules are not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system. To allow for military growth, it is important for the sewer providers in Carteret County to meet these 80 percent/90 percent requirements to avoid moratoriums.

Across Carteret County, several bodies of water are listed on the Clean Water Act's Section 303d Impaired Waters List (**see Table 5.2**). For many of these streams and rivers, total maximum daily loads (TMDLs) are developed such that the point discharge of wastewater effluent is not a feasible option. Additionally, the coastal portions of Carteret County have

AU Number	Stream Name
20-(18)a	White Oak River
20-(18)b	White Oak River
20-(18)c	White Oak River
20-22	Cales Creek
20-23	Hadnot Creek
20-23-1	Schoolhouse Branch
20-23-2	Steep Hill Branch
20-23-3	Caleb Branch (City Weeks Branch)
20-24	Godfry Branch
20-27	Hampton Bay
20-29	Pettiford Creek Bay
20-29-1	Pettiford Creek
20-29-1-1	Mill Creek
20-29-2	Starkey Creek
20-29-2-1	Mullet Gut
20-30	Dubling Creek
20-31	Boathouse Creek
20-36-(0.5)b	Bogue Sound (Including Intracoastal Waterway)
20-36-(0.5)c	Bogue Sound (Including Intracoastal Waterway)
20-36-(0.5)d	Bogue Sound (Including Intracoastal Waterway)
20-36-(8.5)b	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-(8.5)c	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-(8.5)d	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-(8.5)e	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-(8.5)f	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-(8.5)g	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)

AU Number	Stream Name
20-36-(8.5)h	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-(8.5)j	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-(8.5)k	Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)
20-36-10	Spooner Creek
20-36-13-1	Money Island Slough
20-36-13a	Money Island Bay
20-36-16	Fort Macon Creek
20-36-2	Hunting Island Creek
20-36-4-1	Sanders Creek
20-36-4a	Goose Creek
20-36-5	Archer Creek (Piney Cr.)
20-36-6	Sanders Creek
20-36-6-1	East Prong Sanders Cr.
20-36-6-1-1	Sikes Branch
20-36-7	Broad Creek
20-36-7-1	West Prong Broad Creek
20-36-7-1-1	Hannah Branch
20-36-7-1-1-1	Sandy Branch
20-36-7-1-2	Wolf Branch
20-36-7-2	East Prong Broad Creek
20-36-8	Gales Creek
20-36-8-1	East Prong Gales Creek
20-36-9	Jumping Run
21-(17)a	Newport River
21-(17)b	Newport River
21-(17)c	Newport River

Table 5.2.1 - Impaired Streams in Carteret County

AU Number	Stream Name
21-(17)e	Newport River
21-(17)f	Newport River
21-(17)g	Newport River
21-(17)h	Newport River
21-18	Little Creek Swamp
21-19	Mill Creek
21-20	Big Creek
21-21	Little Creek
21-22-1	Harlowe Canal
21-22-2	Alligator Creek
21-22a	Harlowe Creek
21-22b	Harlowe Creek
21-22c	Harlowe Creek
21-23	Oyster Creek
21-24-1	Eastman Creek
21-24-2a	Bell Creek
21-24-2b	Bell Creek
21-24a	Core Creek (Intracoastal Waterway Adams Creek Canal)
21-24b	Core Creek (Intracoastal Waterway Adams Creek Canal)
21-26	Russell Creek
21-27	Wading Creek
21-28	Gable Creek
21-29	Willis Creek
21-30	Crab Point Bay
21-35-(0.5)d	Back Sound
21-35-(0.5)e	Back Sound
21-35-(0.5)f	Back Sound
21-35-(1.5)c	Back Sound
21-35-1-1	Feltons Creek
21-35-1-10	Gibbs Creek
21-35-1-11-1	Turner Creek
21-35-1-11a	Davis Bay (Cheney Bay)
21-35-1-11b	Davis Bay (Cheney Bay)
21-35-1-12-1	Sleepy Creek
21-35-1-12-2	Whitehurst Creek
21-35-1-12-3b	Westmouth Bay
21-35-1-12b	The Straits
21-35-1-13	Brooks Creek
21-35-1-2	Deep Creek
21-35-1-3	Crabbing Creek
21-35-1-4	Lynch Creek

AU Number	Stream Name
21-35-1-5	Thomas Creek
21-35-1-6a	Fulcher Creek
21-35-1-6b	Fulcher Creek
21-35-1-7	Ward Creek
21-35-1-7-1	Gilliklin Creek
21-35-1-7-2	North Leopard Creek
21-35-1-7-3	South Leopard Creek
21-35-1-8	Newby Creek
21-35-1-9	Goose Bay
21-35-1a	North River
21-35-1b	North River
21-35-1c	North River
21-35-1d	North River
21-35-1e	North River
21-35-7-10-(5)	Nelson Bay
21-35-7-10-6	Lewis Creek
21-35-7-10-7	Pasture Creek
21-35-7-11	Willis Creek
21-35-7-18	Oyster Creek
21-35-7-22-1	Smyrna Creek
21-35-7-22-2	Ditch Cove
21-35-7-22-3	Broad Creek
21-35-7-22-4	Great Creek
21-35-7-22-5	Howland Creek
21-35-7-22-6	Williston Creek
21-35-7-22-7a	Wade Creek
21-35-7-22-7b	Wade Creek
21-35-7-22a	Jarrett Bay
21-35-7-22b	Jarrett Bay
21-35-7-22c	Jarrett Bay
21-35-7-24a	Middens Creek
21-35-7-3-1	Glover Creek
21-35-7-3-2	Annis Run
21-35-7-3-3-1	Cedar Creek
21-35-7-3-3a	Styron Creek
21-35-7-3b	Styron Bay
21-35-7b	Core Sound
21-35-7c	Core Sound
21-35-7d	Core Sound
27-123	Clubfoot Creek
27-123-1	Harlowe Canal

Table 5.2.2 - Impaired Streams in Carteret County

AU Number	Stream Name
27-128-1	Adams Creek Canal (Intracoastal Waterway)
27-128-3	Back Creek (Black Creek)
27-128-7	Dumpling Creek
27-128b	Adams Creek
27-128c	Adams Creek
27-135-1	West Fork South River
27-135-10	Eastman Creek
27-135-17a	Big Creek
27-135-18	Hardy Creek
27-135-2	East Fork South River
27-135-2-1	Rich Island Gut
27-135-3	Miry Gut
27-135-4	Elisha Creek
27-135-5	Neal Creek
27-135-6	Duck Creek
27-135-7	Buck Creek
27-135-8	Doe Creek
27-135-9	Southwest Creek
27-135a	South River
27-147.5c	Pamlico Sound
27-148-1-2	Golden Creek
27-149-1-1	Thorofare

Table 5.2.3 - Impaired Streams in Carteret County

Source: NC Division of Water Quality

brackish or saltwater surface waters, and the discharge of wastewater effluent in these surface waters is not allowed and is considered freshwater pollution into saltwater estuaries. Because of these sensitive surface waters, sewer providers have few options to discharge wastewater and historically opt for land application or spray irrigation.

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how WWTPs capable of producing reclaimed, water quality effluent can discharge effluent and will save space in land application facilities. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in ASR systems. Additional discussion on these rule changes along with HB 643 is included under the Reclaimed Water section of this portion of the plan.

Reclaimed Water

Providers and Capacity

Reclaimed water or "reuse water" is relatively new to the Military Growth Task Force (MGTF) Region and to the State of North Carolina; however, in Carteret County, there are several facilities permitted for reclaimed water. A list of NCDENR-approved facilities is shown in **Table 5.3** below (NCDENR 2009).

Based on these projects, Carteret County has the ability to produce 1.024 mgd of reclaimed water.

Carteret County has identified that the ability to use reclaimed water is a means of protecting the county's potable water supplies (Carteret County Comprehensive Plan, 2004).

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems. These regulations are described in detail in the RCMP infrastructure module.

Owner	Facility	Permitted Flow (gpd)
Carolina Water Service Inc of NC	Brandywine Bay WWTF	350,000
Beacon's Ranch Master Assoc. Inc	Beacons Ranch WWTF	135,000
NCDENR (Division of Aquariums)	NC Aquarium at Pine Knoll Shores WWTF	25,000
Town of Morehead City	Morehead City WWTP	30,000
Fmb of Atlantic Beach LLC	The Grove WWTF	120,000
R A North Development Inc	Cannonsgate at Bogue Sound WWTF	200,000
Bogue Watch LLC	Bogue Watch WWTF	150,000
Wal-Mart Stores East LP	Wal-Mart Supercenter Store #4573 WWTF	14,400

Table 5.3 - Facilities in Carteret County Permitted for Reclaimed Water

Pending Regulations

There are currently two pending regulatory changes that will alter the ways that reclaimed water can be used in the State of North Carolina and have significant impact on Carteret County: updated 15ANCAC Reclaimed Water Rules and HB 643 – Authorize Aquifer Storage of Reclaimed Water. Information on these pending regulations can be found in the RGMP infrastructure module.

Stormwater

Pollution associated with storm water runoff is the number one water quality problem in the region, and the state as a whole. As a result, several regulations have been initiated to manage stormwater. The regulations that apply in Carteret County are described below:

Stormwater Management Program (Coastal Stormwater Rules)

As with all coastal counties, Carteret County is subject to State Stormwater Management Program (Coastal Stormwater Rules) requirements. The program applies to all development in the county that disturbs one or more acres of land or requires a Coastal Area Management Act (CAMA) major permit. Recent amendments to the rules address coverage, low density thresholds, design storm requirements, wetlands and impervious surface calculations, and vegetative buffer size, especially as they apply to SA and ORW classified watersheds. (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/coastal.htm) Details on the program can be found in the RGMP infrastructure module.

CAMA Requirements

One of the CAMA requirements is to identify key issues and concerns that may affect the growth and natural environment in the county throughout the planning horizon. Residents in Carteret County listed water quality, storm water concerns, and engineered solutions to storm water problems as three of their top priorities.

In response, the county developed a series of policies to address stormwater concerns. These policies include the following: consider implementing a stormwater ordinance that includes controls for post-construction runoff for new development and redevelopment, conduct studies to determine ways to reduce impervious surfaces and implement building density and stormwater and erosion controls along the waterfront, encourage the use of low impact development, provide educational information to developers and property owners about steps that can be taken to reduce the volume and rate of stormwater runoff, develop a tree protection ordinance, and develop an inter-departmental water quality outreach/educational program geared towards elected and appointed officials, property owners, and citizens that aims to provide information to protect or improve water quality. (Carteret County Land Use Plan Update, 2005)

These strategies, incorporated into the adopted CAMA Plan, are the guiding policies for local stormwater management.

Solid Waste

Solid Waste Management

Solid waste management encompasses the collection, recycling, and disposal of solid waste generated by local residents and businesses.

Collection

Carteret County does not offer curbside trash collection. Residents living in the unincorporated areas of the county transport their solid waste to one of 12 convenience sites located throughout the county. These sites accept a variety of waste including construction and demolition (C&D) waste, household bulky items, white goods, and yard waste.

Recycling

Residents can also recycle aluminum cans at many of the convenience sites. Some sites also accept other recyclables including batteries and books. In addition to the items accepted at convenience sites, several businesses in the county offer recycling of aluminum scrap and siding, appliances, asphalt, and building materials. Finally, the county has an annual Household Hazardous Waste Collection Day for antifreeze and ballasts.

Disposal Facilities

Solid waste collected at the county's convenience sites is brought to the Newport Transfer Station located at 800 Hibbs Road in Newport, NC. This site accepts municipal solid waste, yard waste, C&D waste, and scrap tires. At the transfer station the waste is reloaded into large tractor-trailer trucks and transported to the Tuscarora Regional Landfill at 7400 Old Hwy 70 West in New Bern. This facility accepts inert debris as well as all of the waste accepted at the transfer station. Both facilities are operated by the Coastal Regional Solid Waste Management Authority (CRSWMA). The CRSWMA was formed in 1990 as a partnership between Carteret, Craven, and Pamlico counties. (Carteret County Solid Waste and Recycling. http://www.carteretcountygov.org/waste_recycle.asp)

Landfill Capacity

NCDENR publishes an annual solid waste report that details the remaining capacity for each of the state's landfills. According to the 2007-2008 Solid Waste Annual Report, 217,482.78 tons of solid waste was disposed of in the CRSWMA Regional Landfill between 2007 and 2008. The remaining capacity of the landfill is 1,213,771.43 tons (this total includes landfill volume constructed and permitted to operate). The total volume for the landfill site at final design is 9,058,533.64 tons. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 5.58 years of capacity remaining. If the landfill was built to its maximum design size, the landfill could continue operating for 41.65 years. Additionally, CRSWMA also purchased land contiguous to the existing landfill and identical in size. Although this land is not permitted, the overall remaining capacity of the landfill has roughly doubled to over 18 million tons. (N.C. Department of Environment and Natural Resources. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf)

Telecommunications

Carteret County exceeds the state average for internet connectivity. A total of 88.72 percent of the county has internet access, 5 percent higher than the state average of 83.33 percent. According to the e-NC Authority, Carteret County is a Rural, Tier 5 Community with a connectivity speed of between 10-25 megabits per second (Mbps).

Access Providers

Cable

Time Warner has the cable TV franchise in Carteret County. Time Warner provides cable modem access to 23 communities within Carteret County as well as the unincorporated areas of the county. In total, 81.64 percent of households have cable modem access.

Telcos

Embarq provides telephone service in the county. A total of 88.72 percent households have access to telephone service. Embarq provides DSL service in the majority of Atlantic, Beaufort, Emerald Isle, Morehead City, Newport and Swansboro exchanges and portions of Marshallberg exchange.

Satellite

Customers with clear views have access to Direcway & Starband high-speed Internet service.

Wireless

According to e-NC Authority, there is one wireless high-speed Internet access provider in Carteret County-Always Online. Always Online provides internet access to a limited number of customers in Carteret County. (The e-NC Authority http://www.e-nc.org/100_County_Report/Carteret.pdf)

Needs Assessment

The largest percentage of growth in Carteret County is projected to occur in the White Oak Township followed by areas of central Carteret County where public water and sewer is provided. Growth in the next 5-10 years is expected to occur along Highways 24, 58, 70, and 101 (north of Beaufort) and Harkers Island. Generally, the highest levels of military presence in Carteret County are in the Emerald Isle/Cape Carteret area due to the proximity to MCB Camp Lejeune (Carteret County

Land Use Plan Update, 2005).

Water

Challenges

On a regional level, Carteret County faces several challenges relating to water including meeting the requirements of the CCPCUA rules, combating saltwater intrusion, and having infrastructure in place to meet increasing water demands. These problems are described in the RGMP Infrastructure module. The CCPCUA affects the western portions of Carteret County where groundwater withdrawals have been identified as exceeding the recharge rates of the aquifer (Carteret County Comprehensive Plan, 2004). Centralized water providers such as the town of Morehead City and Atlantic Beach are currently unaffected by the CCPCUA because their wells are currently located in the Castle Hayne aquifer, which is not part of the mandatory restrictions over time.

Needs

Excess water capacity currently exists in Western Carteret County; however, due to CCPCUA rules, the usage and capacities should be continually monitored so that adequate planning can occur if additional wells are needed. The monitoring of saltwater intrusion in the county's aquifers should also continue. Some levels of saltwater have already been noted in USGS monitoring activities.

Carteret County also supports activities that protect the region's potable water supply including:

- Conservation ordinances to discourage watering on impervious surfaces and to require rain sensors on new irrigation systems
- Tiered rate structures to encourage water conservation and charge more intensive rates to higher water users (Carteret County Comprehensive Plan 2004).

Sewer

Challenges

Much of the area will continue to rely on package WWTPs and private septic systems to maintain current and future wastewater treatment until a centralized sewer system is constructed.

Large portions of the county are designated with wetlands; wastewater effluent disposal is therefore a challenge. The lack of a central sewer system does not afford the option of taking a failing private septic off-line to minimize environmental impacts. Currently, less than 5 percent of the septic systems in the county fail during rain or high water table events due to recent work over the past 10-15 years with the Health Department to address failing septic issues (Carteret County Comprehensive Plan, 2004). A centralized sewer system has been proposed but not implemented due to cost and environmental regulations. At the same time, poor soil conditions in some areas do not allow for septic systems.

Because much of the land in Carteret County is not suitable for septic systems, portions of the county will not develop until sewer is available to those areas. Wastewater collection systems would allow for the development of some of the land that cannot support septic systems and potentially, the development of other land at higher densities.

Needs

- Land suitable for spray irrigation is scarce due to extensive wetlands in Carteret County, expensive, and not conducive to economic development or tax-generating development. Alternative disposal methods for the county's wastewater effluent are necessary for growth to continue.
- The town of Atlantic Beach has identified a need for a 2.5-3.0 MGD WWTP should a centralized system be constructed.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For Carteret County, several accepted methods of beneficial use of reclaimed water, already employed elsewhere in coastal and neighboring states, could benefit both the water and sewer systems within Carteret County. The protection of existing groundwater sources from saltwater intrusion is of primary importance.

Currently, irrigation is the principle means of applying reclaimed water however, suitable land application sites are costly and scarce. Furthermore, using developable land for spray irrigation does little to help local economies and fails to provide a tax base to the jurisdictions where they are located.

Needs

Both the re-write of the current NCDENR reclaimed water regulations and the approval of the proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary for the expansion of reclaimed water usage within Craven County. The beneficial use of reclaimed water can decrease potable water demands positively impacting water needs in the region and could be used to protect Carteret County's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed NCAC updated regulations would allow reclaimed water to be treated as a valuable water resource allowing it to be applied to more end users. The expanded uses will also reduce the demand on land application sites.

Stormwater

Challenges

The biggest challenges facing the region for stormwater management are funding, enforcement, and threats to affordable housing. These challenges are also Carteret County's greatest challenges and are described in the FGMP Infrastructure Module.

Solid Waste

Challenges

Carteret County is one of three counties in the seven-county region involved in a partnership for solid waste management. Carteret County is a member of the Coastal Regional Solid Waste Management Authority (CRSWMA) and it has representation on a seven-member Board of Directors that governs the authority. As discussed in the Existing Conditions section above, CRSWMA recently purchased land to expand the existing landfill. This expansion will roughly double the capacity of the landfill. As a result, solid waste management will be ensured well beyond the planning horizon. (Personal Interview with Allen Hardison, Executive Director CRSWMA, April 22, 2009)

The county's focus will be on meeting its local waste reduction goal of 16 percent established in its 10-year Solid Waste Plan. (N.C. Department of Environment and Natural Resources. http://www.wastenotnc.org/swhome/swmplans.asp)

Telecommunications

Challenges

Carteret County exceeds the state average for internet connectivity. Where possible, the county should work with service providers to extend service to unserved, rural portions of the county.

Recommended Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help Carteret County solve its infrastructure problems. Additionally, responsible parties are identified as well as the time frame for the need in short term (urgent by 2011), near term (less than 10 years), or long term.

Funding opportunities for these strategies are detailed in the RGMP Infrastructure Module.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County .
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.

Table 5.4 - Recommended Actions Matrix

References

N.C. Division of Water Quality. Coastal Stormwater: Revised Rule Effective Oct. 1, 2008. http://h2o.enr.state.nc.us/su/coastal.htm.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/Carteret.pdf.

Carteret County with assistance provided by Kathy B. Vinson, AICP, 2005. *2005 Land Use Plan Update. Morehead City: Carteret County.*

Carteret County Board of Commissioners with administrative support by the Carteret County Economic Development Council, 2004. Carteret County – A Comprehensive Plan. Carteret County.

Carteret County. Solid Waste and Recycling. http://www.carteretcountygov.org/waste_recycle.asp.

N.C. Department of Environment and Natural Resources. Solid Waste Management Plans. http://www.wastenotnc.org/swhome/swmplans.asp.

Wilson, Nat. N.C. Department of Environment and Natural Resources. Email Message pertaining to saltwater intrusion monitoring wells. May, 28, 2009.

Medical, Health, and Social Services

Medical and Health Services

Existing Conditions

Department of Defense Health Services

There are no military treatment facilities located in Carteret County. Patients travel to Naval Health Clinic Cherry Point (NHCCP) for physician and outpatient services and to Naval Hospital Camp Lejeune (NHCL) if inpatient services in a Department of Defense Hospital are required. These facilities are approximately 30 and 60 miles away, respectively. As a result of the distance to a military treatment facility (MTF), TRICARE network providers play an important role in the medical care of military residents of Carteret County. At this time, approximately 84 percent of Carteret County physicians are TRICARE network providers.

	2008
Enrolled to a Military Treatment Facility Primary Care Manager	2,787
Enrolled to Network Civilian Primary Care Manager	504
Total Enrolled	**3,291**
Total Eligible	**5,425**

Table 6.1 - Carteret County TRICARE Enrollees

Source: Health Net Federal Services.

Only 3,291, or just over 60 percent, of Carteret County's 5,425 TRICARE-eligible residents are enrolled. Over 84 percent of those enrollees have a military treatment facility primary care manager.

Given Carteret County's base non-seasonal population of over 60,000, TRICARE covers just over five percent of residents.

Veterans Affairs

Veterans Affairs (VA) services in Carteret County are provided at a new Community-Based Outpatient Clinic (CBOC) located in Morehead City. The clinic employs two primary care physicians and two primary care nurse practitioners, and also has a robust mental health staff, including one psychiatrist, one psychologist, one mental health nurse practitioner and 2.5 FTE clinical social workers. In addition, the clinic provides an optometrist and two dentists. Additional CBOCs are located in Wilmington, Greenville, and Jacksonville and are accessible for patients in this region. The CBOC in Greenville provides a diabetic educator and a dietician and will expand over the next several years. No specific details regarding this expansion are currently available. The Wilmington CBOC will open an expanded facility in 2011 with additional specialty services, bringing many of these services to eastern North Carolina VA patients for the first time. For many Carteret County residents, the drive time to the Wilmington CBOC is shorter than the drive time to Fayetteville or Durham.

Free daily transportation to the Durham VA Medical Center is provided from the Morehead City CBOC. Currently, VA patients needing specialty and sub-specialty physician services are referred to this facility, which allows them to access the expertise of Duke University Medical Center physicians. Patients in Carteret County access inpatient VA services in Durham and Fayetteville. Due to the distance to these facilities, VA patients may be referred to a local community hospital if emergency services are needed.

Health Care Providers

In addition to the providers listed above at Morehead City CBOC, Carteret County has 47.8 FTE primary care providers, 11.7 FTE medical specialists, 18.4 FTE surgeons and 37 FTE dentists in the community.[3] Carteret County has existing physician shortages in nearly all specialties. Without USMC growth, which is expected to add over 1,600 persons to Carteret County, the county has a need for an additional 4.9 FTE primary care providers, 17.9 FTE medical specialists, and 9.9 FTE surgical providers. In addition, many of the physicians in Carteret County are aging and are expected to retire over the next 10 years.

In particular, Carteret County has needs for: allergists, cardiologists, dermatologists, gastroenterologists, nephrologists, neurologists, ophthalmologists, orthopedic surgeons, otolaryngologists, plastic surgeons, a pediatrician, and internists.

3 FTEs for primary care, medical specialists, and surgeons include physicians, as well as physician extenders such as nurse practitioners and physicians assistants.

Behavioral Health

Onslow Carteret Behavioral Healthcare Services (OCBHS) is the Local Management Entity covering Carteret County. The LME provides a central access center located on Memorial Drive in Jacksonville, as well as the following services:

- 24-hour crisis/emergency services
- Appointment scheduling
- 24-hour, non-hospital Detox Unit
- Alcohol and Drug Education Traffic School/Driving While Impaired
- Counseling
- Psychotherapy services
- Medication management

OCBHS also provides administrative services, appointment scheduling, screening and assessments, and medication management at its Family Services Center in Morehead City.

Carteret County currently has 4.5 FTE behavioral health providers, including psychiatrists, psychologists, clinical social workers, and licensed counselors. The sole psychiatrist in Carteret County does not participate in the TRICARE network, so TRICARE enrollees must seek psychiatric care in another county. Without USMC population growth, Carteret County has a substantial additional need for 5 FTE behavioral health providers, including at least one psychiatrist who will accept TRICARE.

There are no inpatient behavioral health services providers in Carteret County; county residents seeking these services primarily receive care at CarolinaEast Regional Medical Center in Craven County and at Brynn Marr Hospital in Jacksonville. These facilities provide the following number of beds:

Type of Bed	CarolinaEast	Brynn Marr
Adolescent Psychiatric (ages 0-17)	0	26
Adult Psychiatric (ages 18+)	23	4
Adult Substance Abuse (ages 18+)	0	12

Table 6.2 - Inpatient Psychiatric Beds

Source: 2009 Hospital License Renewal Applications.

Without USMC growth, there is a need for eight additional adult inpatient psychiatric beds in Carteret County alone. The *2009 State Medical Facilities Plan* also identified a need for 12 additional adult inpatient beds in the Onslow-Carteret region. Certificate of Need Applications for the 12 additional adult inpatient beds identified in the 2009 State Medical Facilities are expected to be submitted in August 2009 and the results of the regulatory review will be announced at the end of January 2010.

Without USMC growth, there is an additional need for one inpatient substance abuse bed and one inpatient adolescent psychiatric bed in Carteret County. As a result of the low level of demand for these services coupled with the shortage of behavioral health providers, it is unlikely that new inpatient substance abuse and inpatient adolescent programs will be developed in Carteret County in the foreseeable future.

Inpatient Acute Care

Inpatient acute care services are provided at Carteret General Hospital (CGH) in Carteret County. CGH has the following inpatient capacity:

Type of Bed	Number of Beds
Medical/Surgical	96
Pediatric	8
Obstetric	5
Progressive Care Unit	18
ICU	8
TOTAL	**135**

Table 6.3 - Carteret General Hospital Inpatient Beds

Source: Carteret General Hospital 2009 Hospital License Renewal Applications.

In fiscal year 2008, the acute care beds at CGH operated at 56.3 percent occupancy, and the hospital has sufficient capacity to serve additional patients over the next several years. CGH provides general surgery, cardiac rehabilitation, radiation therapy, obstetrics/gynecology, as well as intensive care services. In addition, the hospital offers diagnostic imaging services including CT, fixed MRI, ultrasound, and X-ray on an inpatient and outpatient basis. The hospital does not provide comprehensive cardiac or comprehensive oncology services. Although CGH's total bed complement appears to have sufficient capacity, the hospital is experiencing stress in its five-bed obstetrics unit. In fiscal year 2008, these beds operated at 91.6-percent occupancy. In addition, CGH's emergency department was originally built to support 38,000 emergency visits a year, and in recent years the hospital has surpassed this capacity.

The discontinuation of inpatient acute care services at Naval Health Clinic Cherry Point has had some impact on CGH, but it has not overwhelmed the hospital. CGH remains willing to pursue creative partnerships with the NHCCP, including allowing Naval physicians to practice at CGH as necessary.

Approximately 41 percent of patient care days for Carteret County residents are provided outside of the county. The majority of these patient days are provided at Pitt County Memorial Hospital, CarolinaEast Regional Medical Center, Duke University Medical Center, and Onslow Memorial Hospital.[4] These patients primarily leave because specialty physician services are simply not available within the county. If CGH was able to treat all Carteret County patient days, the county would have a need for approximately 21 additional inpatient beds. Until physician services are available in the county, however, a significant reduction of out-migration is unlikely.

Inpatient Rehabilitation Care

There are no providers of inpatient rehabilitation services in Carteret County; county residents primarily seek these services at Pitt County Memorial Hospital and CarolinaEast Regional Medical Center.

Hospital	County	Rehabilitation Beds
Pitt County Memorial Hospital	Pitt	75
CarolinaEast Regional Medical Center	Craven	20

Table 6.4 - Inpatient Rehabilitation Beds

Source: 2009 State Medical Facilities Plan.

There is no need for inpatient rehabilitation services in the county. Inpatient rehabilitation patients are treated in the facilities noted above in Pitt and Craven counties. In the *2009 State Medical Facilities Plan,* each of these facilities is projected to have a sufficient supply of rehabilitation beds to meet future, local needs. In addition, assuming no military population growth, Craven County is projected to have a surplus of rehabilitation beds as shown in the Craven County module. Thus, capacity at nearby existing providers will be sufficient to treat the needs of Carteret County residents.

4 Hospitals are listed in the order in which they treat Carteret County patients.

Outpatient Services

Facility Name	City
Outpatient Rehabilitation	
Carteret General Hospital^	Morehead City
Diagnostic Imaging Centers*	
Atlantic Diagnostic	Morehead City
Carteret General Hospital	Morehead City
Ambulatory Surgery Centers	
Carteret Surgery Center	Morehead City
Urgent Care Centers	
Beachcare Urgent Care Center	Morehead City
Urgent Care of Morehead City	Morehead City

Table 6.5 - Carteret County Outpatient Services
^Cardiac Rehabilitation Only
*Please note that this includes major diagnostic imaging centers, specifically those with either mobile or fixed MRI offices.
Source: 2009 State Medical Facilities Plan and yellowpages.com

Outpatient services in Carteret County are located in Morehead City as shown in the table below.

The services listed above are sufficient to meet the current needs of the county population.

Regional Coordination

Coordination between military and civilian providers has improved greatly over the past several years. Although services at Naval Hospital Camp Lejeune and Naval Health Clinic Cherry Point often fluctuate, these facilities, in conjunction with Health Net Federal Services, have made great strides toward giving community providers advanced notice of changes in capacity. This communication allows civilian providers to respond to needs prior to reaching excessive utilization levels at their own facilities and physician practices. CGH continues to develop ways to creatively partner with the military health system in order to more effectively meet the needs of Carteret County residents, including active-duty military, veterans, and civilians.

The Department of Veterans Affairs is currently working with Department of Defense facilities to complete pre-discharge examinations. These exams have historically been completed by DoD prior to discharge. Involving the VA physicians in this process, however, the VA can plan for future needs. NHCL is one of the first facilities to begin developing this partnership, and is serving as a model for other MTFs across North Carolina.

Needs Assessment

Department of Defense Health Services

As stated in the regional summary, TRICARE reimbursement is a current and future concern. Low TRICARE reimbursement coupled with the rising overhead of operating medical practices is leading many providers to limit the number of new TRICARE patients they accept in their practices. Thus, it will be increasingly difficult for TRICARE patients to obtain an appointment—either for primary, specialty, or behavioral health care—in their local communities. In many cases, TRICARE patients already travel to medical practices outside of this region to obtain some of their medical care—particularly specialty medical and surgical care—in a timely manner. It is anticipated that additional limitation of the TRICARE patient panels, or even withdrawal of providers from the TRICARE network, will increase over the next five years as the economy improves and regional civilian population growth resumes to levels experienced between 2000 and 2007. Providers prefer to serve civilian patients because they typically have commercial insurance plans that offer higher reimbursement than TRICARE and other government payers. Currently, TRICARE patients are using capacity in physician offices that could be allocated to better paying civilian patients.

Veterans Affairs

As stated in the regional summary, the current Veterans Affairs services are sufficient to meet current and projected needs in the MGTF Region, including Carteret County. Leadership at the VA has indicated that there are currently no plans to expand services in the region.

Health Care Providers

Carteret County has substantial existing physician needs that will be further exacerbated by military growth in the region. Following USMC growth, Carteret County will have a need for an additional 5.3 FTE primary care providers, 18.4 FTE medical specialists, and 10.3 FTE surgeons. The county is projected to have a surplus of family practice physicians and OB/GYNs, but a need for 4.3 FTE internists and one pediatrician. Much of the existing physician supply is aging and is expected to retire over the next 10 to 15 years. As such, these needs will only increase after 2011, with or without USMC growth.

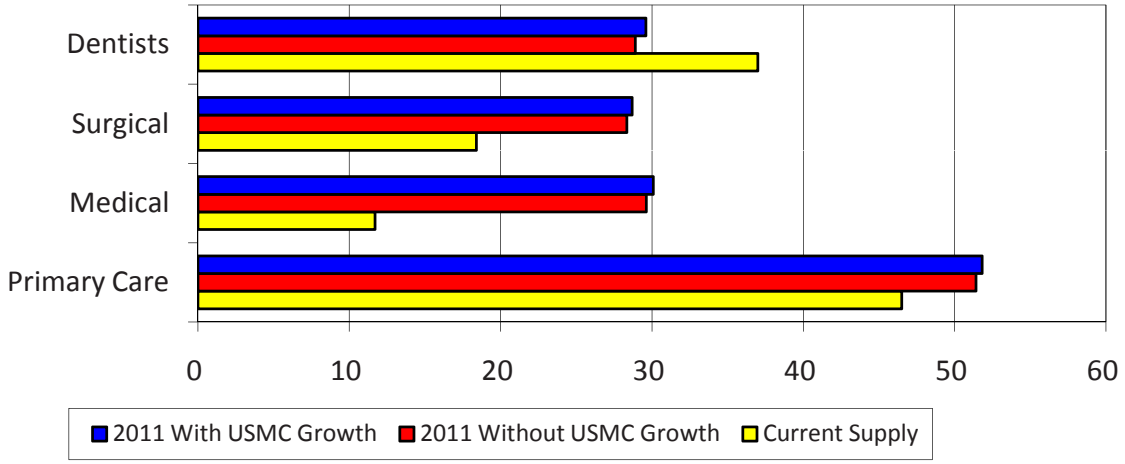


Figure 6.1 - Health Care Provider Needs (FIEs)

Source: Health Net Federal Services, regional providers and HPS Demand Model.

Carteret County has particularly acute needs for allergists, cardiologists, dermatologists, gastroenterologists, nephrologists, neurologists, ophthalmologists, orthopedic surgeons, otolaryngologists, plastic surgeons, pediatricians, and internists.

Behavioral Health

Following the projected growth in the military population, the projected 2011 behavioral health visits in the county indicate an additional need for 5.2 FTE behavioral health providers. Although extenders such as counselors and licensed social workers could meet some of these needs, there is also a need for additional psychiatrists.

As active-duty troops return from abroad and military forces relocate to the area as part of the BRAC process, the current need for additional adult inpatient psychiatric beds in the MGTF Region will increase, especially considering the well documented prevalence of behavioral health problems among deployed and returning soldiers and their families.

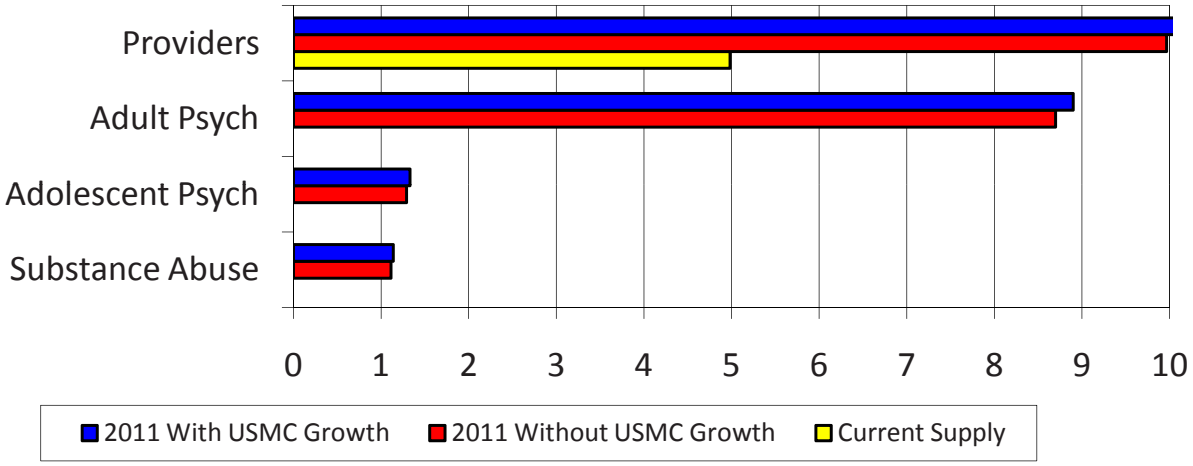


Figure 6.2 - Behavioral Health FTEs and Beds

Source: Health Net Federal Services, regional providers, 2009 Hospital License Renewal Applications, and HPS Demand Model.

The 2011 population of Carteret County could support the addition of nine adult inpatient psychiatric beds following USMC growth. Moreover, following the projected increase in the military population, the region as a whole will have a shortage of 16 inpatient adult psychiatric beds in 2011. As noted above, the *2009 State Medical Facilities Plan* identifies a need for 12 additional adult inpatient psychiatric beds in Onslow and Carteret Counties, and those beds are likely to be awarded in January 2010. Given the limited number of behavioral health providers and the lack of an existing inpatient psychiatric capacity, it is unlikely that adult inpatient psychiatric capacity will be added in Carteret County. Moreover, developing these services would require a substantial capital investment. Rather, existing providers in Craven and Onslow Counties should continue to serve Carteret County adult inpatient psychiatric patients and add capacity to meet the growing needs.

The growth in the military population will not significantly change the modest need for adolescent inpatient psychiatric and substance beds in Carteret County. The region after military growth is projected to have a surplus of adolescent inpatient psychiatric and substance abuse beds in 2011; therefore, capacity will be available in nearby counties.

Inpatient Acute Care

Due to the expected out-migration rates,[5] Carteret County will retain a sufficient supply of inpatient beds following USMC growth. CGH will have capacity to serve additional inpatients.

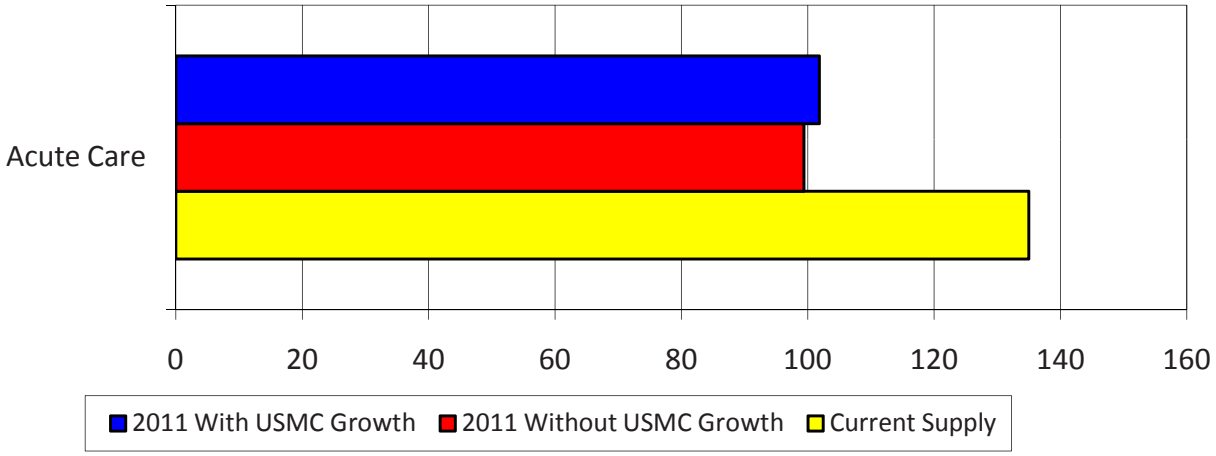


Figure 6.3 - Inpatient Acute Care Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model.

Inpatient Rehabilitation Care

The population of Carteret County in 2011 could support the addition of 3.6 inpatient rehabilitation beds following USMC growth.

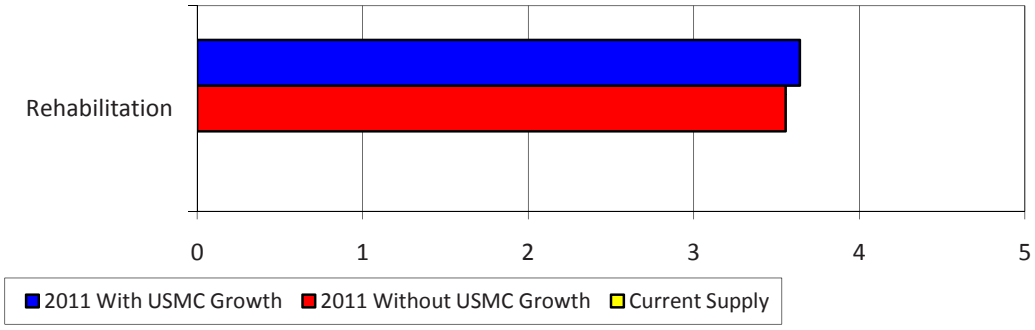


Figure 6.4 - Inpatient Rehabilitation Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model.

5 A function of historical outmigration rates.

As noted above, however, many patients are already appropriately receiving inpatient rehabilitation services in other counties. For the foreseeable future, Carteret County residents will access these services in neighboring counties where they are currently being appropriately treated.

Recommended Strategies and Actions

Each of the strategies listed in the regional module will have an impact on Carteret County, particularly the TRICARE Locality Waiver.

Action 1: Pursue regional partnerships for health care provider recruitment.

Rationale

Carteret County has a need for approximately 40 additional providers and this need will not be met within a short timeframe. As such, Carteret County providers will need to employ creative recruitment techniques to begin to slowly address the needs. One such technique is to jointly recruit providers in partnership with another provider in the region. Where appropriate, Carteret County providers, particularly Carteret General Hospital, should partner with other regional providers to recruit needed physicians to practice part-time in each county. In particular, nephrologists, cardiologists, and dermatologists are needed in other counties. By sharing recruitment expenses, needs could be met in multiple counties.

Responsible Party

Carteret General Hospital

Funding

None Requested

Action 2: Pursue private grant funding targeted at covering medical school debt in exchange for service in a region with a high TRICARE population.

Rationale

Recent medical school graduates have virtually no financial incentive to practice in an area with a significant TRICARE population. The physicians in Carteret County are aging, raising concerns about future provider supply in the region. As such, it is imperative that incentives are put in place to attract younger physicians to the region. The region faces similar concerns related to dentists.

Federal and state loan repayment programs exist to incentivize physicians and dentists to practice in rural and health professional shortage areas for a stated period of time (two to four years). The majority of Carteret County is not eligible for this type of funding. The addition of requirements to state and federal loan repayment programs for heavily populated TRICARE areas is not a likely funding resource because of existing commitments to rural communities. Private foundations (such as The Duke Endowment and the Robert Wood Johnson Foundation) provide grants targeted at improving the health of communities. In addition, foundations seek to develop programs that can be replicated in other locations. TRICARE physician recruitment grants could be replicated in other heavy TRICARE populations in North Carolina, as well as other states.

The proposed grants should mirror North Carolina loan repayment programs which offer $70,000 to a physician in exchange for four years of service. In addition, these programs include tax stipends to help offset the provider's increased tax liability.

Responsible Party

Carteret General Hospital and Carteret County physicians in partnership with the Military Growth Task Force.

Funding

In order to address approximately one-fourth of the Carteret County health care provider shortage, the county needs approximately 10 additional providers. At $70,000 per provider, this requires grant funding of $700,000. This may be part of a Carteret County-specific grant, or a regional grant.

Action 3: Continue to recruit physician extenders, in addition to physicians, to meet health professional shortages.

Rationale

Carteret County has a shortage of approximately 40 health care providers. In order to meet needs, physician extenders can perform many of the same tasks as physicians. Carteret County can rely more heavily on these individuals to compensate for existing gaps in services.

Responsible Party

Carteret General Hospital and Carteret County physician practices

Funding

None Requested

Action 4: Pursue grant funding for telemedicine services to compensate for physician shortages.

Rationale

Although many specialty physician resources are not available locally, they are available in surrounding regions. Both the VA and East Carolina Behavioral Health have had recent success using telemedicine to provide physician services to the local community. Currently, telemedicine programs are available through Carolinas HealthCare System in Charlotte, UNC Hospitals in Chapel Hill, and East Carolina University in Greenville. Carteret County providers should partner with these existing programs for service development.

Currently, the costs of these services are cost prohibitive to most Carteret County providers. Grant funding must be available to support their development.

Responsible Party

Carteret General Hospital and Carteret County physician practices

Funding

The costs for telemedicine services vary greatly depending on their use by physician practices or hospitals. Costs include the purchase of equipment (including a general view camera, a video otoscope, a video dermatoscope, and an electronic stethoscope) and the development of a network to support the telemedicine service.

As providers volunteer to develop telemedicine services, grant funding is available and those seeking funding can begin by contacting the Telemedicine Information Exchange at http://tie.telemed.org/funding/ and The Rural Assistance Center at http://www.raconline.org/funding/funding_topic_details.php?topic=Telehealth.

Social Services

Existing Conditions

Marine and Family Services

Marine and Family Services is a division of the department of Marine Corps Community Services (MCCS) and provides a variety of services to strengthen the military community at each marine installation throughout the country. Marine and Family Services programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or by visiting Marine and Family Services offices located on MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River. Marines and their family members can access services voluntarily or via referral to social services by a commander or a division of military services, such as a health care provider. Marines are briefed on available services during the required base orientation, *Welcome Aboard,* upon arrival at any Marine installation. Services and special events are advertised on the base television channel and on flyers around base, including at the commissary, shops, and restaurants.

MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River are approximately 25, 55 and 50 miles, respectively, from Beaufort, the seat of Carteret County. For a full description of Marine and Family Service Programs, please see the Regional Medical, Health, and Social Services module of the plan.

OneSource

Military OneSource is a resource contracted through the Department of Defense for military members and their families, intended to supplement existing military support services through the Internet or by phone. Military OneSource complements Military and Family Services, providing a central location for information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs, not long-term medical needs. OneSource offers counseling sessions over the phone and online, and refers to local counselors for in-person counseling. These services are ideal for Carteret County residents who live a significant distance from each of the local installations. However, local counselors in the communities surrounding MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River often have limited availability, and waiting lists are frequent and wait times lengthy.

Department of Social Services

Services Provided – County Department of Social Services

North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[6] All County Departments of Social Services (County DSS) provide the following social services; for a full description of DSS services please see the Regional Medical, Health, and Social Services Module.

- *Adult & Family Services* – supports disabled adults with a range of services such as guardianship, transportation to medical facilities, services for the blind, and adult care home monitoring.
- *Child Welfare* – covers the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.
- *Crisis Intervention* – helps low-income households with heating or cooling-related emergencies to reduce the risk of health or safety problems as well as the risk of eviction.
- *Day Care* – provides free and/or subsidized child day care for low-income families.
- *Food and Nutrition Services* -- offers food assistance to eligible families.
- *Pregnancy Services* – supports low-income individuals with support for unplanned pregnancies, addressing

medical, social, education, and psychological issues.

- *Refugee assistance* – assists newly-arrived refugees.
- *Senior Services* – offers meal assistance and health promotion activities to eligible adults over 60 years of age.
- *Work First* – provides temporary assistance to needy families and supports their ability for self-sufficiency.

Military and civilian populations in Carteret County access DSS services by phone, Internet, or in-person at the County DSS office, located in Beaufort.

As discussed previously, while Marine and Family Services is meant to be the primary avenue by which military members and their families access services, military families living off-base access social service programs through the County DSS. In particular, the military population uses Child Welfare, particularly Child Protective Services, Day Care, and to a lesser extent, Food and Nutritional Services (FNS), commonly known as "food stamps." In addition, affordable transportation is a current need for both military and civilian populations that greatly affects access to social services.

Child Welfare

As discussed at length in the Regional Medical, Health, and Social Services Module, military families, particularly younger, junior-enlisted military families, use DSS child welfare services at higher rates than civilian populations. This higher use rate is due to factors including lack of support networks due to frequent moves and separation from extended families. In addition, families living in the civilian community (such as those located in Carteret County) often feel isolated from the military population and might perceive that the civilian population does not understand the unique challenges they face. Finally, they might not be knowledgeable about on-base services and resources or not be able to access those services, thereby exacerbating their sense of isolation.

All of these factors lead to military families in Carteret County requiring a disproportionate amount of child welfare services as compared to the civilian population, particularly child protective services. Child abuse and child neglect cases exist at high rates among the military community, particularly among younger Marines who lack support networks. These younger Marines and their spouses often lack the knowledge and experience that enables them to seek out help and resources.

Please note that spousal abuse cases are not handled by DSS.

Day Care

Access to day care is important for the family unit and, in particular, provides increased opportunities for military spouses. Carteret County's current demand for affordable day care exceeds current capacity, and many families are placed on waiting lists for available slots. While the facilities to increase day care capacity exist, funding for staff and administration to support increasing day care slots is not available. Carteret County DSS also coordinates with Carteret County Partnership for Children for a range of childhood services, including Smart Start, aimed at addressing issues of child abuse and neglect. Carteret County Partnership for Children provides parental education and resources, child center development and professional development for child care staff, and child care referrals.

Food and Nutritional Services (FNS)

Few Marines utilize FNS programs through Carteret County DSS because most Marines do not qualify for these services. Qualification for FNS is based upon income and family size. In addition, Carteret County DSS reports that some Marines who do qualify for FNS programs are instead assisted through military food assistance programs.

Transportation

Carteret County does have a public transportation system but access is limited. Carteret County Area Transportation System (CCATS) transports all Carteret residents and visitors for pre-arranged trips. The service operates from 7 a.m. until 7 p.m. and trips must be scheduled at least 24 hours in advance. Base fares are $2.00 and additional distance adds $1.00 per zone.

---

6 North Carolina Department of Social Services, available at http://www.ncdhhs.gov/dss/about/

Coordination - Marine and Family Services & Department of Social Services

While Carteret County DSS office reports limited coordination in overall social service delivery, in cases of child abuse coordination between County DSS and military staff is substantial. If the offender is a military service member, his or her commanding officer is notified and the service member may be removed from the home temporarily and/or placed in custody on-base. This coordination is particularly important because military families often do not have extended families in the area, and without the removal of the offender, Carteret County DSS would need to find temporary housing for the victims following allegations of child abuse. With the removal of the offender through the military discipline system, the child can remain in the home while follow-up investigation and counseling are conducted. Carteret County and MCAS Cherry Point formalize this coordination of services in a Memorandum of Understanding.

Needs Assessment

Carteret County is expecting over 1,602 Marines and their families in the military population influx. While some of this population includes older, senior-ranking officers who tend not to utilize social services, Carteret County is expecting a portion of the growth to be a younger, junior-ranking demographic group that does utilize social services at higher rates. These younger Marines often have young children and are still learning life and coping skills to address the challenges they are facing and the stresses of military life. With current wartime deployments to OEF and OIF, stresses on military service members and their families are increasing, as are injuries and mental health conditions such as traumatic brain injuries (TBIs) and post-traumatic stress disorder (PTSD) cases, adding to the need for additional social service capacity.

The influx is not expected to create needs for new services; rather, the increased military population is expected to exacerbate resource needs already present at Carteret County DSS services. Specifically, Carteret County DSS expects the increase in population to have the most impact on Child Welfare programs. Current barriers to access for the expected Marine population are also expected to be exacerbated—particularly knowledge of available services and transportation.

Transportation

As previously discussed, access to affordable public transportation and increasing geographic access are major needs for both the civilian and military population throughout Carteret County. In particular, needs include:

- Increased access for military families living off-base to access social services in their own communities.
- Transportation that can be accessed daily and without advance reservations
- Increased geographical access including increasing options to access services, such as satellite offices.

Child Welfare

Carteret County DSS expects that Child Welfare services will experience the greatest increase in demand as a result of the military population growth. Resources to address issues that cause people to need child protective services through preventative programs, as well as resources to respond to child neglect and abuse cases, are a significant need for Carteret County. These preventative and response programs, staff, and systems are in place, but will need increased funding and targeted initiatives to address expected upcoming need. In particular:

- Increased capacity for preventative programs through Carteret County DSS that are currently in place and will need increased funding include Smart Start, classes, workshops, and counseling on topics including parenting, anger management, positive communication, and healthy relationships.
- Increased capacity for targeted outreach programs from Marine and Family Services on base to off-base residents in Carteret County. In particular, programs that address specific needs for the expected Marine demographics, including recognizing and addressing mental health conditions incurred during combat, addressing relationship and family challenges before/after deployment, and life and coping skills for military spouses during deployment.
- Increased capacity for preventative initiatives targeted to decrease the sense of physical and cultural isolation that many off-base military families feel. Reducing this isolation would increase the well-being of these families and

decrease their need for child protective services. Programs already in place that need additional capacity include mentoring programs for military spouses and youth as well as support groups.

- Increased knowledge about services available to military families, in particular those living off-base. Military service members do receive information about Marine and Family Services as part of their base orientation and Marine and Family Services advertises opportunities on-base. However, military spouses who do not go to bases frequently depend upon their Marine spouses for all information about available services.
- Increased capacity for child protective services Carteret County DSS. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly and that adequate follow up (counseling, legal coordination, coordination with military Command) is thorough and timely.

Day Care

Access to affordable day care is currently a need for the civilian and military population in Carteret County. Therefore, while the increased military population is expected to have a relatively minor impact on the demand for day care it will exacerbate already-existing day care needs. The following child care needs reflect current and expected needs as a result of the military population influx.

	Child Care Enrollment - 2007	Expected Child Care Enrollment due to Normal Population Growth - 2011	Additional Slots Expected Due to the Military Increase - 2011	Total Expected 2011Child Care Enrollment
Children aged 5-12	174	186	5	191
Children under 15 years old	1,215	1,216	38	1,336

Figure 6.6 - Carteret County Projected Child Care Enrollment

Source: Education Working Group, Military Growth Task Force.

Recommended Strategies and Actions

Carteret County needs will be met through the execution of regional strategies and actions in addition to those listed below.

Action 1: Increase access to services by addressing limited mobility.

Rationale

The lack of flexible public transportation in Carteret County results in many military families encountering challenges in accessing services.

Supporting activities

- Reduce or eliminate geographic access barriers by bringing services to military communities in Carteret County. This can be achieved by forming community action teams through Carteret County DSS and Marine and Family Services. These action teams can serve military families at accessible locations throughout Carteret County in locations such as community facilities, schools, and churches. Preventative workshops could particularly be successful in these venues, and child care could be provided on-site. The appropriateness of providing services requiring confidentiality, such as individual or family counseling, will depend on the capacity of the community facility.

Funding

- No funding requested

Action 2: Increase preventative program capacity through Marine and Family Services and increase outreach to the military community residing in Carteret County.

Rationale

Many military families access services at a point of crisis—addressing causal issues through preventative programs can reduce the need for emergency services. Military families living off-base often feel a sense of isolation and civilian services might not be equipped to address military-specific needs. Marine and Family Services' outreach could reduce this sense of isolation and address military-specific needs.

Supporting activities

- Target military members most at risk for needing emergency social services, such as young and junior-enlisted military families with young children.
- Provide local, accessible outreach programs to the military community residing in Carteret County.
- Utilize media, including public service announcements, to educate the military community residing in Carteret County, about Marine and Family Services programs and resources.

Funding

- Funding for increased program capacity and/or media and educational campaigns should be pursued through MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point Marine Corps Community Services budgeting processes.

Public Safety and Emergency Services

Existing Conditions

Carteret County's Public Safety and Emergency Services (PS/ES) sector is expecting a moderate level of impact from the current round of military and related growth at eastern North Carolina's Marine Corps installations. The county's location roughly between MCB Camp Lejeune and MCAS Cherry Point, its high quality recreational activities, and its other amenities are expected to attract significant numbers of new residents, despite the fact that Carteret is not a "host" county to any major installations.

Emergency Services

Inter-local Emergency Services Agency

Four western Carteret County towns are in the process of creating a coordinated, multi-municipality emergency service agency. This inter-local agency will serve the towns of Cape Carteret, Cedar Point, Pelletier, and Bogue. It will oversee fire, EMS, and law enforcement functions, with a focus on maintaining highway safety on routes 24 and 58, roads already widely used by military and beach tourists.

Situated roughly halfway between MCB Camp Lejeune and MCAS Cherry Point, this area is expecting to see significant growth during the Grow the Force timeframe of 2007 – 2012 due to its location and widespread availability of affordable land tracts. Cape Carteret estimates that 10 percent of its residents are retired or active-duty military. Although this agreement is likely to enhance efficiency and cooperation among these localities, the expanded range of the service area and new service requirements will induce additional personnel and equipment needs.

Community Development Issues

Carteret County is served by 23 fire departments, many of which face issues of maintaining adequate levels of service. The Insurance Services Office (ISO) of the Department of Insurance provides ratings to insurance companies based on a community's fire response capabilities which are in turn used to determine homeowner's insurance rates; a rating of one indicates the highest level of service, while a 10 indicates no service available. Two non-responses or two responses exceeding 12 minutes from the receipt of the initial service call can cause a rating of 10, and a subsequent insurance cost increase of up to 30 percent. Currently, Carteret County's municipal departments have ratings between four and six, while the volunteer departments have ratings between five and nine. Ratings are skewed toward the higher end, as indicated by a rating of nine for 16 of the 23 departments. The ability to maintain good ratings will only be further challenged by the current population growth patterns, with higher rated departments at risk of losing their ISO rating altogether.

Communications Interoperability

Carteret County's Fire, EMS, and Sheriff's Office all utilize VHF communications systems. Communications among the county's local emergency response departments is achieved through two VIPER radios in the EMS Command Vehicle, a system that has VHF and 800 MHz capabilities. Municipal police departments generally rely on mutual aid channels to communicate with outside agencies. Currently, VIPER is only used to coordinate agencies during special events, with no plans in place to transition to primary utilization of the system.

Law Enforcement

Carteret County Sheriff's Office

The Sheriff's Office currently employs 91 employees, with fewer than 1.5 sworn officers per 1000 population. This compares to an average of 2.6 nationally for counties classified as "metropolitan". This issue is exacerbated by attrition of officers due to the privatization of law enforcement functions at local Marine Corps installations; the department has lost four officers and anticipates losing another in the coming months due to this transition.

The Sheriff's Office has not been able to increase staff proportionate to recent increases in demands for service. Since 2006, the number of personnel in the department has increased by 11 percent, while calls for service have increased by 18 percent. The department recruits from local community college Basic Law Enforcement Training program and has been generally satisfied with the results. Nonetheless, budget shortages have prevented the department from employing staff at levels necessary to adequately meet demands for service.

Perhaps the greatest challenges facing the department involve outstanding equipment needs. The Sheriff's Office has reported equipment deficiencies that will cost over $1 million to overcome. These include mobile data computers for patrol cars, guns, non-lethal weapons, protective gear, vehicles, and radio needs. Without a major injection of funding to the department, these deficiencies will not be addressed in the foreseeable future.

Courts Security

Carteret County's courts face a number of challenges meeting security needs. Currently, the Sheriff's Office employs three full-time bailiffs that work three to four courts a day, with two or three reserve bailiffs to assist on the busiest days. In order to provide proper security, the court should realistically have two bailiffs per court in session. In a time of increasing case load, the court house lacks metal detectors or any other electronic screening device and currently some areas are monitored with security cameras. See Table 7.1, Civil Caseload in Carteret County, 2002-2008.

Needs Assessment

Communications Interoperability

In order to achieve communications interoperability among the county's first responders, all law enforcement, fire, and EMS departments should be updated to trunked, P25 Compliant, 800 MHz communication systems prior to the onset of FCC bandwidth limitations in 2013. The county's communications engineer would be able to convert tower sites from VHF to 800MHz for approximately $60,000 dollars, though nearly $1 million dollars would be needed to fully transition most first responders to a VIPER-compatible system.

Personnel and Equipment

Law Enforcement

The Sheriff's Office has related a need for 15 deputies, including 10 patrolmen and five detectives to meet current service demands at an average salary of $43,000 per year. Outstanding equipment needs include Mobile Data Computers for patrol cars, bulletproof vests, shotguns, rifles, riot gear, Tasers, Special Response Team equipment, tactical shields, patrol vehicles, undercover vehicles, specialty vehicles, handheld radios, All Terrain Vehicles, and a marine patrol vessel. Fulfilling these needs is anticipated to cost approximately $1 million.

Municipal departments are in need of additional personnel and related equipment. Cape Carteret Police Department will be adding between two and six officers, and patrol cars and equipment for each to its staff to meet growing needs associated with the new Inter-Local Agency. Morehead City PD has expressed a need for three additional sworn officers, related vehicles and equipment, and $75,000 worth of historical equipment deficiencies such as weapons, rapid response equipment, and related vehicles.

Courts

In order to provide adequate security, the Sheriff's Office will need to hire six additional bailiffs. The courts will also need an electronic scanning device, with three additional bailiffs to operate the system.

Facilities

Law Enforcement

Needs include office, training, evidence storage, equipment storage, and parking space to meet growing service demands.

Courts

Additional storage space is needed for court filings

Recommended Strategies and Actions

Action 1: Transition all fire, EMS, and law enforcement departments to

FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	% change 2006 - 2007	% change 2007 - 2008
301	323	282	301	314	290	341	348	554	2.1%	59.2%

Table 7.1 - Civil Caseload in Carteret County, FY2002-FY2007

800MHZ, P25-Compliant trunked radio systems.

Funding

- State appropriations
- Assistance to Firefighters Grant (FEMA)
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 2: Initiate measures to update and expand court facilities

Supporting activities

- Request the U.S. Marshal's Study on court facility needs, as has been completed in Onslow County's courts
- Initiate planning for new facilities based on study outcome

Funding

- OEA community development funding

Action 3: Seek additional funding to overcome personnel and equipment deficiencies among law enforcement departments

Funding

- Justice Assistance Grants (Governor's Crime Commission)
- National Criminal History Improvement Program Grants (Governor's Crime Commission)

Quality of Life

Existing Conditions

Parks and Recreation and Sports Venues

Carteret County's park and trail system has 15 trails for hiking, walking, and viewing scenery, totaling about 62 miles. There are also 500 linear miles of ocean and estuarine shoreline within the county, about one third of which is held in the county public domain. The 60 linear miles of Atlantic Ocean shoreline is a large tourist draw to the county.

The county's Parks and Recreation Department owns and maintains eight parks, one community center, one pier, one boat access point, and three beach access points within the county, though there are additional facilities and recreation sites maintained through municipalities and private groups. Overall within the county, there are 27 public park facilities totaling about 205 acres of land.

The Newport Babe Ruth Fields and Newport Multi-Purpose Fields offer eight acres of sports facilities.

The county also contains: three community centers in Morehead City, Emerald Isle, and Cedar Point; a wildlife visitor center; Fort Macon State Park; part of the Croatan National Forest; Cape Lookout National Seashore; the Roosevelt Natural Area; and Cedar Island National Wildlife Refuge.

In Atlantic Beach, "the Circle" is a big draw for tourists, with beach volleyball and other passive recreation activities.

The county-run parks offer amenities such as athletic fields (soccer, t-ball, softball, baseball, football, basketball, tennis, volleyball, horseshoes, and multipurpose), playgrounds, picnic facilities, and concessions.

Facilities	North Carolina Standard	# in Carteret	Recommended # based on 2007 population (63,360)	Over (+) and Under (-)
Baseball Fields	1/8000	10	8	+2
Soccer Fields	1/6000	19	11	+8
Softball Fields	1/4000	8	16	-8
Tennis Courts	1/1200	9	53	-44
Outdoor Swimming Pools	1/14,000	0	4	-4
Community Centers*	1/14,000	4	4	0

Figure 8.1 - Comparison of Recreation Facilities Managed by Carteret County Parks and Recreation Department and Havelock Parks and Recreation Department with State Standards (2006)

Note: Does not include public school, municipal, and military facilities, or privately-run facilities

To inform the Carteret County Parks and Recreation Master Plan and Shoreline Access Plan Update, a survey was sent out to county residents. The most requested changes to the existing county facilities included: more or improved water/beach access; new facilities in Newport; more parking; more or improved boat ramps; and a dog park.

Current Plans to Accommodate Baseline Future Growth, Remaining Residual Gaps

Carteret County's parks and recreation master plan update identified several parks that have potential for expansion: Eastern Park, Western Park, Swinson Park, West Beaufort Water Access, Straits Fishing Pier, South River Park, Freedom Park, and Mariners Park. The update also identified a dog park as a high-priority, unmet need and proposed a new district park in the Newport area.

Preliminary discussions have occurred pertaining to whether Morehead City can support a new YMCA.

Water Access and Parking

There are 17 boat access points within the county and 28 beach access points. [A listing of these access points can be found in Appendix C.] Among the county-run water and beach access points, the maximum space for parking is available and some parking is limited due to water quality restrictions. The county's Salter Path (30-35 parking spots) and West Beaufort (30 truck/trailer parking spots, three handicapped parking spots, and 14 single-vehicle parking spots) parking areas typically operate at capacity during peak usage times, and additional parking should be added wherever possible.

Local communities and municipalities provide many access points in their jurisdiction, but there is a need for additional regional access areas under county jurisdiction. Regional access areas typically hold 25-80 parking spaces and include restrooms.

CAMA guidelines say that there should be one regional access site for each jurisdiction, and there are 14 different jurisdictions along the county's shoreline. The county is underserved in this area.

The Carteret County Parks and Recreation Master Plan and Shoreline Access Plan Update surveyed county residents, and among the top five most requested changes to the existing county facilities were more or improved water/beach access, more parking, and more or improved boat ramps.

Current Plans to Accommodate Baseline Future Growth, Remaining Residual Gaps

The county has access points in progress at Cape Carteret/Cedar Point and at Radio Island, between Morehead City and Beaufort.

The county's Parks and Recreation Master Plan and Shoreline Access Plan Update includes as a priority improving and expanding beach and water access facilities aggressively, specifically working with individual municipalities.

The county is underserved in regional beach access, and regional needs have been identified in the parks and recreation shoreline access plan update as:

- Regional Boat Access Ramp for Bogue Sound between Morehead City and Cape Carteret
- Regional Access at Emerald Isle
- Regional Pedestrian Water Access Facility Down East
- Regional Water Access Ramp at Radio Island
- Regional Pedestrian Water Access in the South River/Merrimon Area
- Regional Boat Access Ramp in the South River/Merrimon Area

Arts and Culture

The Craven-Pamlico-Carteret Regional Library System operates nine libraries, four of which are located within Carteret County. The Carteret branches are located in Beaufort, Pine Knoll Shores, Cape Carteret, and Newport. Their square footage is listed below and compared to the state standard (State Library of North Carolina 2007, 17):

Carteret County Public Library (Beaufort):	7,500 SF
Western Carteret Library (Cape Carteret):	6,995 SF
Newport Public Library:	3,500 SF
Bogue Banks Public Library (Pine Knoll Shores):	3,256 SF
TOTAL:	21,251 SF

Based on the 2007 population of Carteret County (63,360) and the state recommendations for library square footage (0.65 per capita), the suggested area for libraries in Carteret County is 41,184. This shows a deficit of about 19,930 square feet in the county.

Carteret County has three additional libraries: Morehead City Library; Carteret Community College, which is an independent library; and the Down East Library in Smerna, which is run by a nonprofit organization. The additional library space provided by these three libraries may offset part or all of the library space deficit indicated above.

The Crystal Coast Civic Center, located in Morehead City, hosts various events and performances throughout the year.

Museums and other attractions in Carteret County include the North Carolina Maritime Museum, Fort Macon, the North Carolina Aquarium, The History Place, the Cape Lookout National Seashore Visitors Center, and the Core Sound Waterfowl Museum.

There are also several events and festivals that happen in Carteret County each year, including the American Chamber Music Festival, American Music Festival, North Carolina International ChoralFest, North Carolina KidFest, and North Carolina Seafood Festival.

The Arts Council of Carteret County also puts on an "Art from the Heart" annual event that includes Carteret, Craven, Pamlico, and Onslow Counties. They also sponsor the Big Rock Art Festival (in conjunction with the Big Rock Blue Marlin Tournament), which includes a two-day art festival. The Arts Council also has a summer art camp for youths.

Current Plans to Accommodate Baseline Future Growth, Remaining Residual Gaps

A new Carteret County Public Library facility is under construction in Beaufort, with the move-in date scheduled for July 2009. The facility is expected to be approximately 15,000 square feet, and will replace the existing library in Beaufort. This new library facility will decrease the library deficit.

A new site for a "Down East" Carteret County library has been identified in Smyrna, but the project is currently postponed due to the current economic situation (Craven-Pamlico-Carteret Regional Library 2008). The regional library's five-year plan includes moving Bogue Banks Public Library into a larger facility in 2009-2010 (possibly in a current condominium building), but the project has also been postponed due to the current economic climate.

The Craven-Pamlico-Carteret Regional Library is also raising funds to expand the current Western Carteret Library to include a larger children's area and a public meeting space (Craven-Pamlico-Carteret Regional Library 2008). The five-year plan outlines the expansion of this branch to take place 2010-2011.

Hotels and Meeting Space

Carteret County has 41 hotels/inns [listed in Appendix E], with approximately 3,000 beds available. There are some privately-owned condos that are available for rent by their owners, but these are not included in this analysis. The county estimates that the average overall occupancy rate for summer and winter is 85 percent for all hotels, motels, and condo rentals.

The Crystal Coast Civic Center, located in Morehead City, can accommodate groups of up to 1,000 people for seminars, conferences, reunions, weddings, banquets, tradeshows, and entertainment events.

Needs Assessment

Carteret County currently needs eight softball fields, 44 tennis courts, and four public outdoor swimming pools, and the military-induced growth will only add to demand for these. The natural population growth within the county will also increase the need for baseball and soccer fields, and community centers. **Table 8.2** below shows which facilities will be needed to meet the projected demand.

Facilities	State Standard	Carteret County (1,602 people)
Baseball Fields	1/8000	
Soccer Fields	1/6000	1
Softball Fields	1/4000	1
Tennis Courts	1/1200	1
Outdoor Swimming Pools	1/14,000	
Community Centers	1/14,000	

Table 8.2 - Sports Venue Facilites Needed To Support Military-Induced Growth in Carteret County

Since the county already has enough soccer fields for its current population, a new soccer field should not be a priority at this time, but recreational complexes with indoor and outdoor athletic facilities (specifically softball fields and tennis courts) are needed. In addition to athletic fields and venues, parks are needed to meet the demands of population growth. **Table 8.3** below shows which park types will be necessary due *just* to the military-induced growth.

Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
1,602	10-13 acres	16 acres	32-160 acres

Table 8.3 - Parks Needed to Support Military-Induced Growth in Carteret County

The county needs new water access sites in the following areas:

- Regional Access:
  - Down East/Stacy area
  - South River
  - Broad Creek
- Canoe/Kayak Launches:
  - Down East/Otway area (Ward's Creek)
  - Down East/Sea Level area
  - Newport area

The county also needs to assess available parking at each of its water access points and expand it wherever possible. The expansion of current parking at water access points will reduce the need for additional new water access, but will not eliminate it.

The lack of library space identified above will be exacerbated by additional military-induced growth. **Table 8.4** below shows the estimated square footage that will be needed within the county just due to military-induced growth.

Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
1,602	1,041 SF	1,602 SF

Table 8.4 - Library Space Needed to Support Military-Induced Growth In Carteret County

In addition to this lack of square footage, current library programs will also be strained; steps should be taken to increase available programs within the libraries. Computers,and Internet access in the libraries will need to be sufficiently maintained and/or increased to support the population, as will parking space for the library buildings (as shown in **Table 8.5** below).

Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items / capita)	User Seating (2.5 seats / 1000 residents)	Programming-Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF) – based on lower SF estimates in Table 4
1,602	1	3,204	4	5	5

Table 8.5 - Additional Library Needs to Support Military-Induced Growth in Carteret County

The county needs additional hotels, but because hotel construction is market-driven, attracting them may not be easily achieved. Hotels in Carteret County are currently occupied at approximately 85-percent capacity, and additional military-induced growth in the region will further challenge this limited hotel capacity. Alleviating any shortage of hotel space is critical to supporting the tourism, which is very important to the region.

Recommended Strategies and Actions

Recommendation 1: Build two new recreation complexes—one located in the East Beaufort/Down East area, and one located in Newport.

A feasibility study to site the complexes, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of complexes should be initiated in FY 11, with completion planned for FY 12. The estimated cost for each complex would be $5 million - $30 million, depending on its size.

Rationale

Carteret County is already lacking in the number of athletic fields it offers, based on state standards, and the military-induced growth will only place further stress on existing recreational programs and facilities. The county will need new or expanded recreation facilities that include new sports fields and gymnasiums.

Funding

Grants and other funding sources that are available for parks and recreation projects are listed below.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: www.ils.unc.edu/parkproject/trails/home.htm

North Carolina Adopt-A-Trail Program – Grant is awarded annually to government agencies, non-profits, and private trail groups. 100-percent funding is available up to $5,000. Contact the Trails Program at**:** http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – State program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php (919-715-8699).

Land and Water Conservation Fund – Federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone) 202-343-9563.

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories including acquisition, landscaping, bicycling, and pedestrian facilities**.** www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – Community grants program supports local health departments in NC in efforts to development community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example: Carteret County Health Department in collaboration with County Parks and Recreation and other community partners will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project. For information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Recommendation 2: Create new water access sites in the areas listed below, and expand parking at current water access sites wherever possible.

- Regional Access:
  - Down East/Stacy area
  - South River
  - Broad Creek
- Canoe/Kayak Launches:
  - Down East/Otway area (Ward's Creek)
  - Down East/Sea Level area
  - Newport area

Rationale

There will continually be problems with water and beach access, and associated parking, as the county population grows. Because water-front property is difficult to acquire, the county needs to be proactive in acquiring land as it becomes available, specifically looking at land that has been condemned to ensure that there are enough water access sites that meet CAMA guidelines.

Water Access Funding

Below is a list of funds and grants that are available for water access projects.

Funds and grants available for Water Access projects include:

North Carolina Waterfront Access and Marine Industry (WAMI) Fund – Created by the North Carolina General Assembly to acquire waterfront properties or develop facilities to provide, improve, or develop public and commercial waterfront access. In 2007, $20 million was approved, and in 2008, 13 sites were selected for funding.

North Carolina Public Beach and Coastal Waterfront Access Grant – Awarded to government agencies on a cost-share basis. For Tier 1 and 2 counties (Duplin, Pender, Onslow, Jones, and Pamlico Counties), the local government match for acquisition must be at least 10 percent; for Tier 3, 15 percent. Grant for improvements to existing sites must be 25 percent for Tier 3 counties and 10 percent for Tier 1 and 2 counties. Must be one of 20 counties under CAMA. It is anticipated that for the FY09-10 year, as much as $3.5 million may be available in grants. Contact the Division of Coastal Management at: http://dcm2.enr.state.nc.us/Access/grants.htm. [*In 2005, Carteret County and municipalities received $261,000 in grant funds, Onslow municipalities received $45,500, and Pender (Topsail Island) received $2,060,000.]

Land and Water Conservation Fund – Federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties that show higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

Clean Water Management Trust Fund – Will fund projects that: 1) enhance or restore degraded waters; 2) protect unpolluted waters; and/or 3) contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits. www.cwmtf.net

Recommendation 3: Establish additional libraries, library programs, and amenities as outlined above.

The anticipated cost for new library space is $255 per square foot. This cost includes construction and related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, copiers), contingency construction and uplift, and library collections (books for 50-percent fill rate and A/V materials).

Rationale

Libraries and their programs are an important, low-cost activity for military families in Carteret County. The county is not up to state space standards, and is lacking in the number of computers and other programs or amenities that it offers. Libraries are becoming increasingly like community centers, and as a free resource, are very important to military families.

Library Funding

Below is a list of funds and grants that are available for library projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries are located in counties that have either a 10-percent or greater poverty level in the Foundation-defined service area OR more than 3,000 persons living in poverty. http://statelibrary.ncdcr.gov/gates/gates.html Libraries in Carteret County that have been established as eligible by the Foundation include:

- Bogue Banks Public Library
- Carteret County Public Library
- Newport Pubic Library
- Western Carteret Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. For available grants, contact: http://www.neh.gov/grants/index.html

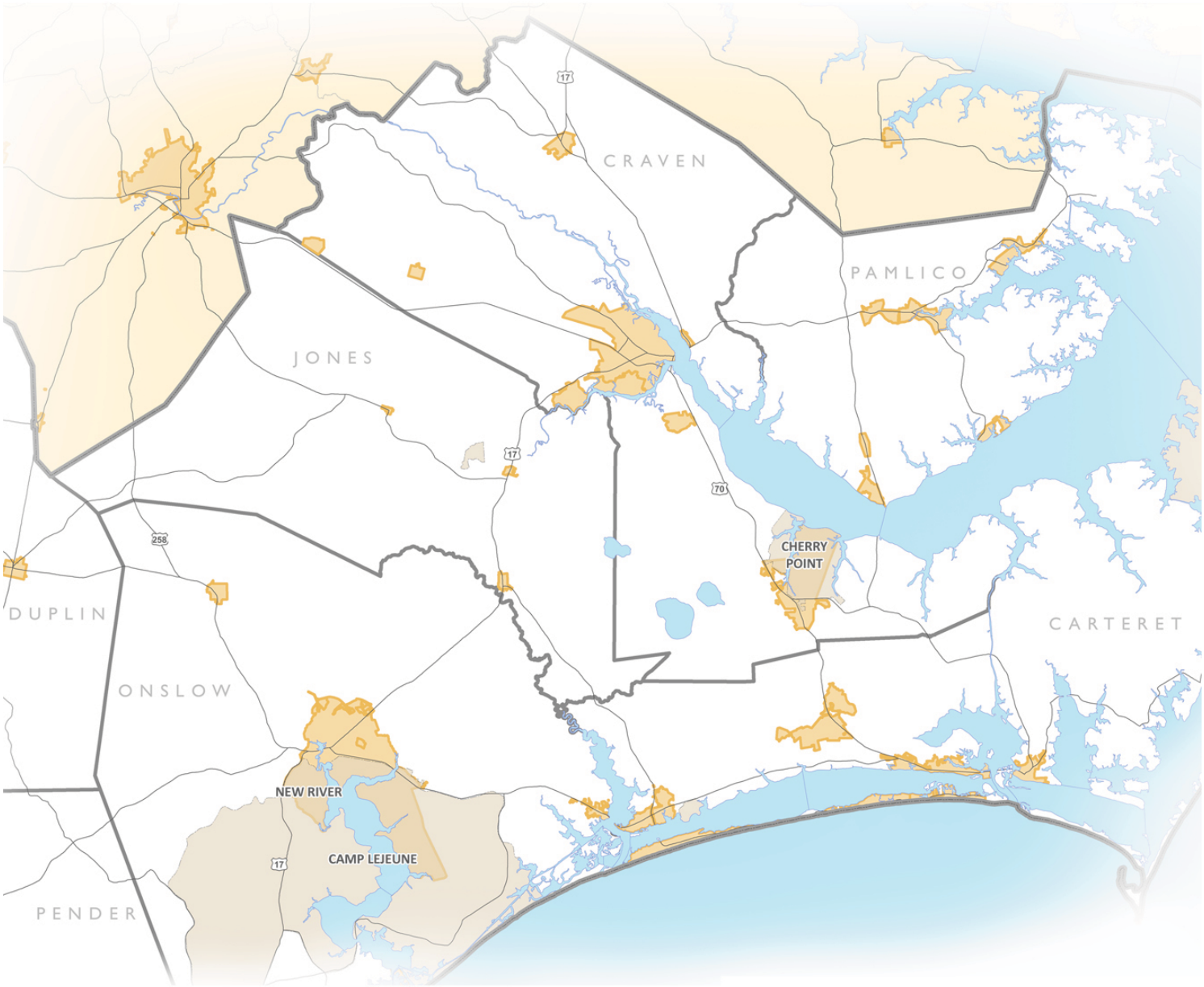
National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. Is the nation's largest funding agency for the Arts. For grant information, contact: http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – North Carolina organization whose mission is to promote the social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities through building up the capacity of nonprofits, historically, supports fundraising campaigns to build capital projects (e.g., libraries, museums, community centers). http://www.kresge.org/index.aspx

Kellenberger Historical Foundation (based in Craven County)

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Craven County

Submitted to the:
North Carolina Eastern Region's
Military Growth Task Force

www.nceastmgtf.org

Marstel-Day, LLC

In Partnership with:

Kimley-Horn and Associates, Inc.

URBAN RESOURCE GROUP
A DIVISION OF KIMLEY-HORN AND ASSOCIATES, INC.

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

Housing

Craven County is the host county for Marine Corps Air Station (MCAS) Cherry Point, and, as such, the provision of adequate and affordable housing is critical to both economic development and Marine Corps mission readiness. There is an overwhelming demand for civilian and active-duty housing, especially in Havelock. Outside of Havelock, Marines also choose to live in New Bern, Riverbend, and northwest Craven County. The transient Marine population has helped create a large rental market. There is a large and well-established subdivision base and many options for renting and buying. There are not very many apartments in the county, but there is a growing supply of duplexes and townhomes. Civilian demand for new housing will total 2,930 households by 2011 and military demand for new housing will total 449 households. The following section examines the provision of adequate and affordable housing in the county with respect to incoming civilians and military personnel. It also includes an assessment of the needs and issues facing the county, with recommended strategies and actions.

Existing Conditions

Housing Supply

Housing supply impacts pricing and the competition for homes in the county. In 2007, there were 43,163 housing units reported for Craven County. The preference for housing types and neighborhood styles varies across the county and the region. This section focuses on four general home categories prevalent in the county: for-sale homes, rental homes, manufactured homes, and second homes/seasonal rentals.

Housing unit estimates for the county were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this chapter was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the county include the impacts of cities and towns within it.

A summary of each general housing category follows.

Manufactured Homes

A manufactured home is built on an integral chassis in a factory, transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). One in four homes in Eastern North Carolina is a manufactured home.

In 2007, there were 7,755 manufactured homes in Craven County. This represents 3.7 percent of all the housing units reported for the county.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

For-Sale Homes

For-sale homes are occupied by the owner of the unit. They are site built homes, typically purchased using a mortgage. For-sale homes are the dominant housing type in the county.

In 2007, there were 21,423 occupied for-sale homes in the county. This represents 47 percent of all the housing units reported for the county.

For-sale homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see **Appendix G**). Based on the foregoing, 2,876 for-sale homes are available for new residents coming to Craven county. The number of for-sale homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

For-sale housing in the county, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site built home in the county is $124,803, which is more than 60% below the state average ($278,943).

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time (usually one calendar year). In 2007, there were 10,673 occupied rental homes in the county. This represents 30 percent of all the housing units reported for the county.

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see **Appendix G**). Based on the foregoing, 1,433 available rental homes were estimated for Craven. These numbers were compared to the number of rental homes available in the region according to the Realtors' Multiple Listing Service data collected by the Housing Working Group. Based on that comparison, it was determined that these numbers were much higher than the MLS indicated. Key reasons for this discrepancy include that these numbers represent for-rent dwelling units at all price points, and the MLS service shows that almost no units are available below the $850 price-point.

Rents in the region were collected from an internet and telephone survey of apartments available in the seven counties. The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy at rental homes in the region was estimated at 92 percent based on US Census Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98 percent). These trends are reflected at the county level as well.

The magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases unless new units are constructed soon.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment property, hoping to retire to the home once it was paid off (National Association of Realtors, 2004). When asked why they bought a second home, respondents to the National Association of Realtors survey reported they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home because they had the extra money to spend.

The hottest reported markets for second homes are the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates.

In 2007, 402, or approximately 1 percent of the total housing units in Craven County were listed as seasonal rental units.

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 5,866 dwelling units were approved in Craven County between 2005 and 2009. Of these, 4,467 dwelling units were approved but not yet built in 2007. All of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. The Committed Residential Development Database prepared by the ECC is included in the **Appendix G** of this report.

Military Housing

The Department of Defense allocates significant funding to provide adequate housing for bachelors and military families serving at MCAS Cherry Point. Information on housing supply and demand at this installation was summarized from the *2008 Housing Market Analysis Update* completed for MCAS Cherry Point.

Officer and enlisted personnel assigned to MCAS Cherry Point totaled 9,254 in 2008. Personnel are categorized by the military as accompanied (military family) or unaccompanied (bachelor) for estimating housing demand. Unaccompanied personnel rank E1 – E5 are assumed to live on base. Officer, warrant, and higher ranking enlisted (E6 – E9) personnel may live on- or off-base subject to local base housing policies adopted in accordance with the Marine Corps Housing Management Manual. Specifically, the Manual requires that "maximum practical occupancy of adequate (on-base) bachelor quarters be maintained at all times". Practical occupancy is defined as 95% for permanent personnel. Officials for MCAS Cherry Point report 3,544 service members live in on-base bachelor housing. Demand for bachelor housing is forecasted to increase to 3,710 in 2013.

Military families include a service member and his or her dependents. Accompanied personnel at MCAS Cherry Point represented 4,659 military families in 2008. Officials for the base report 1,689 families live on base. All of these families

are in privatized government housing. Neighborhoods on base include Binder Oaks, Grant's Landing, Lawson Village, Nugent Cove, and Slocum Village. Future plans for privatized government housing include the construction of 35 new units by 2013.

All other military families are expected to reside off-base. This trend toward moving military families off base is consistent with guidance from the Office of the Secretary of Defense (OSD) to rely primarily on private sector community housing to meet demand (Department of Defense, 2003). The 2008 Housing Market Analysis Update for MCAS Cherry Point estimates 2,970 families in 2008 and 4,365 families in 2013 will seek housing in the community.

The recent housing market analysis update estimates 34.9 percent of all military families living off-base own a home (1,627 families). By 2013, housing affordability for military families is expected to decline to 32.8% unless the basic allowance for housing (BAH) is increased. As housing becomes less affordable, many potential home buyers may decide to rent.

In 2008, 1,343 families assigned to MCAS Cherry Point lived in off-base rental housing. The 2008 Housing Market Analysis Update for MCAS Cherry Point forecasts 2,766 families will seek rental housing in 2013. Approximately 31 percent of the existing rental units in the housing market area were considered inadequate using US Marine Corps Standards. This includes 21.6 percent of the inventory that were manufactured homes and 9.4 percent of the inventory that were site built homes but inadequate in quality (2008 Housing Market Analysis Update, MCAS Cherry Point).

Military renters (both accompanied and unaccompanied personnel) assigned to MCAS Cherry Point compete with civilian households for adequate rental housing in the community. Any future shortfall in rental housing for military families will be influenced by the quantity, quality, and timing of adequate housing in the private sector.

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the county.

Purchase Price

The median home value published in the American Community Survey for 2007 was used to estimate the purchase price of a home in the county. Median home price for Craven County was $124,803.

Mortgage

A conventional, fixed-rate 30-year mortgage was assumed to estimate the typical monthly cost of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15% of the purchase price. No down payment was assumed for home loans to military families in order to be consistent with the terms of most VA loans. The loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

Property Taxes

The tax rate in Craven County is $01.115 per $100 of value. This rate represents the combination of municipal and unincorporated county rates.

Utilities

Utility costs were estimated from state and local sources. The average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners Insurance

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductible levels, and the insurance company providing the policy. The cost of homeowners insurance was estimated to be 0.75% of the purchase price of the home.

Monthly Payment

The monthly payment to afford a home of median value in Craven County was estimated to be $986.54 for civilians and $1,092.35 for military personnel.

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see Appendix). Average rents assumed for the region are also assumed for the county and are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost-Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active duty military personnel and their dependents buying homes, and active duty military personnel and their dependents renting homes.

For all of these cases, for-sale homes and for-rent apartments were found to be affordable in Craven County.

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the county. The demand for housing reflects both civilian and military growth. Anticipated demand for for-sale homes and rental homes in the county is as follows: civilian homeowners (1,956), civilian renters (974), military homeowners (159), and military renters (289).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as 'built' from the Committed Residential Development Database (2005-2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 2,876 for-sale homes and 1,433 rental homes. All manufactured homes and second homes/seasonal rentals inventoried for the county were removed from available housing supply for the gap analysis.

By 2011, only 930 housing units of the currently available housing stock will remain available. This margin of surplus is not large enough to ensure long-term availability of housing. Completion of the yet to be built dwelling units in the committed residential development database prepared by the ECC will help facilitate provision of housing beyond the 2011 planning horizon.

Issues Facing the County

Although the cost-burden and housing gap analysis reveal that civilians and military personnel moving to the county can afford and find available housing, there are several critical issues that must be addressed in order to ensure that housing is affordable and available beyond the 2011 planning horizon. These issues were identified through stakeholder interviews and included:

- Lack of coordination between sewer provision and location and timing of development (currently the county receives sewer service from the City of New Bern and decisions about extensions or provision of service are shared only at the time the development permit is issued)
- Lots must be 30,000 square feet or bigger when no sewer service is available—creating a large-lot, sprawling development pattern.
- Infrastructure is the biggest limiting factor for growth.

In order to address these challenges, the county has made significant progress on initiating long-term planning efforts, which include efforts to identify areas of growth and extend public services and infrastructure to these areas. Current planning initiatives include:

- Draft zoning ordinance for Townships 6 & 7, which have extensive roadway system and planning infrastructure improvements, in order to encourage commercial growth along the Hwy 70 corridor, and out toward the Industrial

Park.

- Extension of sewer lines beyond New Bern and Havelock to Dover, Cove City and portions of Trentwood, River Bend, and Vanceboro.
- County has a proactive board that encourages sustainable development.
- After zoning ordinance is adopted the county hopes to update its subdivision ordinance to promote the development of duplexes and townhomes.
- County has weekly communication and coordination with municipalities.

Recommended Strategies and Actions

Critical to the success of the regional growth management plan are the implementing actions of participating municipalities and counties. Craven County should continue to plan for long term growth through implementation of county-wide zoning and its existing subdivision ordinances. Recommended strategies and actions to be pursued on behalf of the county could also include

- Implementing the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.
- Adopting adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region.
- Adopting policies or incentives that expedite the construction of new rental and affordable housing.

Additional recommended policies and actions are included in the regional chapter's draft Action Plan Matrix, which identifies recommended actions that extend beyond the responsibility of the county and municipalities within it.

Workforce

Existing Conditions

Craven County has a labor force that has expanded from 38,409 in 2001 to over 43,000 in 2009. Since 2002, employment growth has exceeded labor force growth and drove the unemployment rate down to 4.3 percent. However, over the past two years estimated unemployment has more than doubled, rising from 1,839 to over 4,500, and the unemployment rate[1] in the first three months of 2009 was between 9.7 and 10.6 percent.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	38,409	36,207	2,202	5.7
2002	38,831	36,483	2,348	6.0
2003	39,940	37,643	2,297	5.8
2004	40,283	38,360	1,923	4.8
2005	41,007	39,087	1,920	4.7
2006	42,096	40,257	1,839	4.4
2007	43,168	41,316	1,852	4.3
2008	42,062	39,490	2,572	6.1
J'09	42,994	38,826	4,168	9.7
F'09	43,401	38,817	4,584	10.6
M'09	43,144	38,849	4,295	10.0

Table 2.1 - Employment Trends in Craven County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

Over the past two years, the county has seen a number of public notices of workforce job losses as shown in the Announced Business Closings & Permanent Layoffs table. The two largest were in the fall of 2008 and February 2009 at the Hatteras Yachts company (a division of Brunswick Corporation), which affected 292 and 321 employees, respectively.

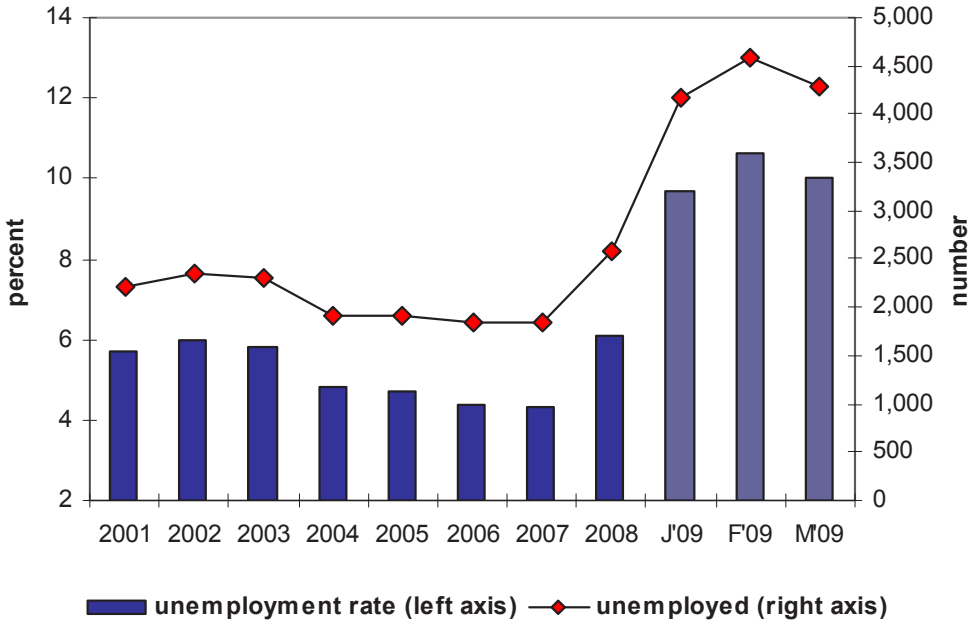


Figure 2.1 - Employment Trends in Craven County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

1 Seasonally Adjusted

NAICS Code	Date	Company	City	Product	Affected	Reason	Closing or Layoff
813990	March/April 2009	Fairfield Harbour	New Bern	Golfing/Boating Community	16	Amenities Staff Cuts	LY
999999	Feb./April 2009	Trent Performance	New Bern	Not Stated	-	Bankruptcy	CL
448140	Feb./March 2009	Goody's Family Clothing	New Bern	Clothing Store	32	Liquidation	CL
336612	Feb. 2009	Hatteras Yachts	New Bern	Boat Building	321	Restructuring	LY
813990	Nov. 2008/Jan. 2009	Harbour Pointe Golf Course	New Bern	Fairfield Harbour Course	-	Not Stated	CL
441110	Nov./Dec. 2008	New Bern Mazda Imports & Trucks	New Bern	Car Dealer	18	Slow Sales	CL
336612	Aug./Sept. 2008	Hatteras Yachts (Brunswick Corp.)	New Bern	Boat Manufacturing	292	Declining Demand	LY
448150	June/Aug. 2008	Venanzi's Men's Store, Inc.	New Bern	Clothing Store	2	Bankruptcy	CL
446110	April 2008	Bob Clark's, Inc.	Havelock	Gift Shop	-	Owner's Decision	CL
813990	March 2008/Jan. 2009	Shoreline Golf Course	New Bern	Fairfield Harbour Course	-	Under-performance	CL
812111	March/April 2008	Ronnie's Barber Shop	New Bern	Barber Shop	1	Property Sold	CL
722211	Feb/March 2008	Smithfield's Chicken 'N Bar-B-Q	New Bern	Restaurant	40	Renovation	CL
448310	Aug./Sept. 2007	Baxter Jewelry Store, Inc.	New Bern	Jewelry Store	6	Liquidation	CL
541810	July 2007	Littleton	New Bern	Advertising Agency	7	Consolidation	CL

Table 2.2 - Announced Business Closings & Permanent Layoffs - Craven County, 2007-2009

Source: These data are derived from a statewide survey of newspaper accounts of closings and layoffs, and from information supplied to the Employment Security Commission and North Carolina by the employing units experiencing the closings/ layoffs. The data are not comprehensive, and not evaluated for accuracy by the Employment Security Commission.

The county registered almost 42,000 private and public-sector employees in 2007, a 7.9 percent increase over the level six years earlier in 2001. The largest industry employers in 2007 were: the federal government, with 5,545 employees; the manufacturing industries, with 4,864 employees; and the health care and social assistance industry, with 4,461 employees. While the number of federal government jobs dropped by almost 500, the health care and social assistance industry showed strong growth in employment over the period of 44 percent, adding over 1,300 employees.

.

		Establishments		Employees		Average Annual Pay	
		2001	2007	2001	2007	2001	2007
Total Covered		**2,210**	**2,489**	**38,897**	**41,985**	**$28,604**	**$36,207**
Private		2,066	2,375	25,431	29,380	$25,410	$31,813
11	Agriculture, forestry, fishing, and hunting	57	53	465	376	$23,955	$29,451
21	Mining, quarrying, and extraction	3	5	11	51	$19,124	$46,045
22	Utilities	5	5	73	102	$51,914	$61,146
23	Construction	264	291	1,883	1,814	$32,046	$36,761
31-3	Manufacturing	84	74	4,610	4,864	$35,462	$43,298
42	Wholesale trade	83	91	860	950	$35,949	$40,176
44-5	Retail Trade	397	366	4,136	4,311	$18,651	$23,309
48-9	Transportation and warehousing	77	72	1,052	1,178	$21,881	$47,136
51	Information	31	40	706	557	$29,401	$40,235
52	Finance and insurance	108	111	673	771	$33,376	$49,181
53	Real estate, rental, and leasing	71	108	319	407	$20,979	$27,232
54	Professional and technical services	204	230	1,516	1,864	$33,618	$49,330
55	Management of companies and enterprises	5	9	72	122	$50,623	$45,061
56	Administrative and waste services	110	139	1,581	2,002	$16,128	$21,701
61	Educational services	11	19	162	202	$18,477	$27,489
62	Health care and social assistance	176	248	3,102	4,461	$30,481	$33,649
71	Arts, entertainment, and recreation	30	30	345	417	$14,601	$15,054
72	Accommodation and food services	154	164	2,872	3,730	$9,069	$11,934
81	Other services, ex. public administration	198	190	993	1,070	$17,684	$20,108
99	Unclassified	NA	131	NA	133	NA	$25,206
Federal Government		30	27	6,011	5,545	$42,952	$59,857
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	3	2	631	536	$15,061	$19,383
48-9	Transportation and warehousing	7	7	183	160	$39,002	$51,526
52	Finance and insurance	1	NA	NA	NA	NA	NA
54	Professional and technical services	NA	1	NA	22	NA	$67,941
61	Educational services	-	-	-	-	-	-
62	Health care and social assistance	1	1	119	122	$35,280	$55,423
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	18	16	5,078	4,705	$46,738	$64,829
State Government		39	27	1,993	1,469	$23,563	$31,237
48-9	Transportation and warehousing	-	-	-	-	-	-
56	Administrative and waste services	ND	1	ND	ND	ND	ND
61	Educational services	ND	2	ND	ND	ND	ND
62	Health care and social assistance	ND	1	ND	ND	ND	ND
71	Arts, entertainment, and recreation	ND	1	ND	ND	ND	ND
92	Public administration	33	22	1,299	838	$26,573	$36,489
Local Government		75	60	5,462	5,591	$29,525	$37,144
22	Utilities	ND	1	ND	ND	ND	ND
44-5	Retail Trade	7	5	31	25	$19,342	$16,578
48-9	Transportation and warehousing	ND	2	ND	ND	ND	ND
51	Information	4	4	58	54	$14,734	$18,993
56	Administrative and waste services	ND	1	ND	ND	ND	ND
61	Educational services	23	26	2,100	ND	$29,623	ND
62	Health care and social assistance	23	8	1,886	ND	$30,846	ND
81	Other services, ex. public administration	ND	2	ND	ND	ND	ND
92	Public administration	11	11	1,253	1,391	$28,917	$35,842
99	Unclassified	-	-	-	-	-	-

Table 2.3 - Craven County Employment and Pay - 2001 and 2007

Note: "NA" is Not Available, "ND" is Non-Disclosure, and "-" is not recorded.

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009.*

The Top 25 Employers table provides a recent snapshot of the companies and organizations that employ the highest number of people in the county. As of the third quarter of 2008, only three organizations employed more than 1,000 employees: the Department of Defense, Craven County Schools, and the Craven Regional Medical Center.[2] It is notable that the county has a number of other public-sector employers, including the County itself, the State of North Carolina, the City of New Bern, and MCAS Cherry Point MCCS, all with between 500 and 999 employees.

Rank	Company Name	Industry	Employment Range
1	Department of Defense	Public Administration	1,000+
2	Craven County Schools	Education & Health Services	1,000+
3	Craven Regional Medical Center	Education & Health Services	1,000+
4	BSH Home Appliances Corporation	Manufacturing	500-999
5	U.S. Marine Navassa	Manufacturing	500-999
6	Wal-Mart Associates, Inc.	Trade, Transportation, & Utilities	500-999
7	Moen, Inc.	Manufacturing	500-999
8	Craven County	Public Administration	500-999
9	State of North Carolina	Public Administration	500-999
10	City of New Bern	Public Administration	500-999
11	Cherry Point, MCCS	Trade, Transportation, & Utilities	500-999
12	Manpower Temporary Services	Professional & Business Services	500-999
13	Craven Community College	Education & Health Services	250-499
14	Weyerhaeuser Company (A Corp)	Manufacturing	250-499
15	McDonald's	Leisure & Hospitality	250-499
16	Food Lion, LLC	Trade, Transportation, & Utilities	250-499
17	Coastal Carolina Health Care, P.A.	Education & Health Services	250-499
18	Vertex Aerospace, LLC	Trade, Transportation, & Utilities	250-499
19	North Carolina Department of Transportation	Public Administration	250-499
20	RHA//Howell Care Center, Inc.	Education & Health Services	100-249
21	Carolina Telephone & Telegraph Company	Information	100-249
22	Temporary Employee Services, Inc.	Professional & Business Services	100-249
23	Sodexho School Services	Leisure & Hospitality	100-249
24	Trader Construction Company (A Corp)	Construction	100-249
25	U.S. Postal Service	Trade, Transportation, & Utilities	100-249

Table 2.4 - Top 25 Employers in Craven County 2008-QIII

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009 (QCEW), Largest Employers; 2009*

The occupational profile of current jobs in the county provides another view of the workforce structure and the occupations that organizations in the county have emphasized as important. In most cases, the largest occupational categories are the ones where new job market entrants will also find greater employment opportunities. The Occupational Employment and Wages table shows that, in 2008, Office and Administrative Support workers led all other occupational groups in the county, accounting for 5,510 employees, followed by Sales and Related workers with 4,170 employees. Specifically, the detailed occupational information in the lower half of the table shows that the most popular jobs in the county were: team assemblers (at manufacturing facilities), food preparers and servers, and retail salespersons.

2 Primarily for business proprietary reasons, the Bureau of Labor Statistics does not release exact employment figures by the organizations, but rather just employment ranges.

Occupational Code	Employment by Occupational Group	Estimated Employment	Estimated Annual Wage-Median
00_0000	Total All Occupations	38,100	$28,307
11_0000	Management Occupations	1,150	$70,916
13_0000	Business and Financial Operations Occupations	1,620	$54,560
15_0000	Computer and Mathematical Occupations	530	$51,524
17_0000	Architecture and Engineering Occupations	1,020	$65,467
19_0000	Life, Physical, and Social Science Occupations	150	$51,746
21_0000	Community and Social Services Occupations	510	$32,707
23_0000	Legal Occupations	460	$50,176
25_0000	Education, Training, and Library Occupations	2,000	$38,491
27_0000	Arts, Design, Entertainment, Sports, and Media Occupations	320	$28,945
29_0000	Healthcare Practitioners and Technical Occupations	2,140	$51,468
31_0000	Healthcare Support Occupations	1,410	$18,530
33_0000	Protective Service Occupations	580	$32,973
35_0000	Food Preparation and Serving Related Occupations	3,450	$15,202
37_0000	Building & Grounds Cleaning & Maintenance Occupations	1,130	$17,197
39_0000	Personal Care and Service Occupations	1,090	$17,483
41_0000	Sales and Related Occupations	4,170	$20,073
43_0000	Office and Administrative Support Occupations	5,510	$26,204
47_0000	Construction and Extraction Occupations	1,800	$33,232
49_0000	Installation, Maintenance, and Repair Occupations	2,910	$42,588
51_0000	Production Occupations	4,080	$27,095
53_0000	Transportation and Material Moving Occupations	2,010	$24,214
	20 Top Occupations		
51_2092	Team Assemblers	1,330	$27,747
35_3021	Combined Food Preparation and Serving Workers	1,190	$14,806
41_2031	Retail Salespersons	1,070	$19,288
41_2011	Cashiers	950	$14,882
31_1011	Home Health Aides	850	$15,985
29_1111	Registered Nurses	750	$52,245
35_3031	Waiters and Waitresses	700	$14,526
43_6014	Secretaries, Except Legal, Medical, and Executive	570	$27,092
43_9061	Office Clerks, General	570	$20,263
41_1011	First-Line Supervisors/Managers of Retail Sales Work	560	$26,937
43_5081	Stock Clerks and Order Fillers	540	$23,675
43_3031	Bookkeeping, Accounting, and Auditing Clerks	530	$27,939
37_2011	Janitors and Cleaners, Except Maids and Housekeeping	470	$17,009
41_4012	Sales Representatives, Wholesale and Manufacturing	470	$39,964
43_4171	Receptionists and Information Clerks	470	$20,659
13_1199	Business Operations Specialists, All Other	450	$60,038
25_9041	Teacher Assistants	440	$18,523
53_7062	Laborers & Freight, Stock & Material Movers, Hand	440	$18,868
39_9021	Personal and Home Care Aides	420	$17,012
11_1021	General and Operations Managers	390	$87,743

Table 2.5 - Occupational Employment and Wages in Craven County – 2008

"*" is non-disclosed; "-" is not reported.

Source: U.S. Department of Labor, Bureau of Labor Statistics. Occupational Employment Survey (OES), Occupational Employment and Wages, 2008.

The federal government has a presence in the county, and the Direct Expenditures or Obligations tables lists the Fiscal Year (FY) 2007 monies transferred into the county. Both the USMC-related monies and the total Navy Department expenditures or obligations are listed, and show that in FY 2007, over $679 million flowed into the county from the Navy Department, much in the form of USMC active-duty and Navy civilian salaries and wages of almost $500 million. In addition, during the fiscal year, there was $134 million in Navy contracts and procurements.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	48,205	38,887
Grants	-	-
Procurements	134,649	-
Salaries & Wages	496,951	288,040
Total	**679,805**	**326,927**

Table 2.6 - Direct Expenditures or Obligations in Craven County FY 2007 (in thousands of dollars)
Source: U.S. Census Bureau. Consolidated Federal Funds Report, Fiscal Year 2007

Needs Assessment

The county is projected to grow in population by 3,715 persons from January 2007 to the end of December 2011. With the addition of 7,843 persons due to the USMC direct and indirect impacts, the county will experience 2.3 percent growth over the five-year period. This influx is projected to add an additional demand for just over 4,000 new jobs.

Some of the current impediments to a fully-functioning workforce, low unemployment rates, and economic growth in the county include those listed in the Current Regional Issues section of the Regional Workforce Module, but also include those listed below:

- The current demand for highly-skilled employees far exceeds the number of candidates currently available to work. The shortage of engineers is acute, and the current gap may range from a low of 70 engineers to as many as 200 job vacancies. In addition, as companies begin to capture more government business from the military, particularly aviation-related opportunities, their requirements for highly-trained workers will expand.
- Transportation of employees to their jobs remains an issue (discussed in greater detail in the Transportation Module of the plan).
- Access to utilities for both residence and business growth also remains an issue (discussed in greater detail in the Infrastructure Module of the plan).

Recommended Strategies and Actions

The county and the surrounding region have a number of tools available to mitigate the impacts of military growth on the workforce, while at the same time positioning the county and the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include, first and foremost, taking the following actions to increase the economic base of the region so that the new entrants find meaningful and productive employment that matches their skills and desired occupations:

- Acquiring and allocating resources to support and plan for a new Technology Center in the region and a new Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and entrepreneurship.
- Emphasizing industrial clusters that will potentially be available at the two centers, and also at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.
- Supporting private and public efforts such as “Onward Onslow” that encourage new and relocating business to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.
- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through several initiatives:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and others adults who guide and influence teenagers in the region.
- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.
- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before many other areas of the country, and to plan for training and educational requirements of those future green jobs.
- Devoting immediate resources to increasing child care training, certification, and facilities. Not only will this action provide direct employment to child care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.
- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region through:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.
- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small- and disadvantaged businesses.
- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.
- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.
- Creating a more military-family-friendly workplace by offering flexible benefit packages, and having the added benefit of reducing the cost of labor to businesses.

Education

Existing Conditions

K-12 Education

Craven County's estimated 2007 population is 96,746. Craven County Schools, with a 2008-09 K-12 enrollment of 14,711 students, is the 26th largest public school system in the state (North Carolina Department of Public Instruction, School Statistical Profile). The average annual growth of enrollment over the past five years is 1 percent (**Figure 3.1**) with consistent growth in elementary-age school students. The annual resident live birth rate averages 1,600 over the last 10 years and

there have been slight increases in 2006 and 2007 (**Figure 3.2**) (North Carolina Department of Health and Human Services, State Center for Health Statistics).

Other characteristics of the school district are:

- There are three high schools with a combined enrollment of 4,085 students. The Craven County Early College High School has an enrollment of 144 students this year, and is expected to grow in the future.
- There are five middle schools: two feed into Havelock High, two feed into New Bern High and one feeds into West Craven High. The combined 2008-09 Month-2 Average Daily Membership (ADM) for the middle schools is 3,156 students.
- The fifteen elementary schools combined enrollment is 7,327 students. Five elementary schools feed to Havelock High, three elementary schools feed to West Craven and seven elementary schools feed to New Bern High.
- Fifty percent of the enrollment is in the Kindergarten to the 5th grade range, 22 percent in 6th to 8th grades and 28 percent in the 9th to 12th grade range.
- During the 2008-09 school year, 3,868 students, or 26 percent of students enrolled in Craven County Schools were children connected to the military. This is an increase of 117 students from the 2007-08 school year. There was a decrease of 44 military-connected students from school years 2006-07 to 2007-08 and a decrease of 150 military-connected students from 2005-06 to 2006-07 (Craven County Schools Federal Impact Aid data).
- The per-pupil expenditure in the county is $7,662 with 70 percent state funding, 14 percent federal funding, and 16 percent local funding. The per-pupil expenditure is lower than the regional average of $8,758 (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).
- The Craven County Schools operate 148 school buses transporting 7,721 students at a cost of $556 per pupil. Fifty-two percent of students utilize school buses.
- Craven County Schools employs 922 teachers and 288 teachers assistants.

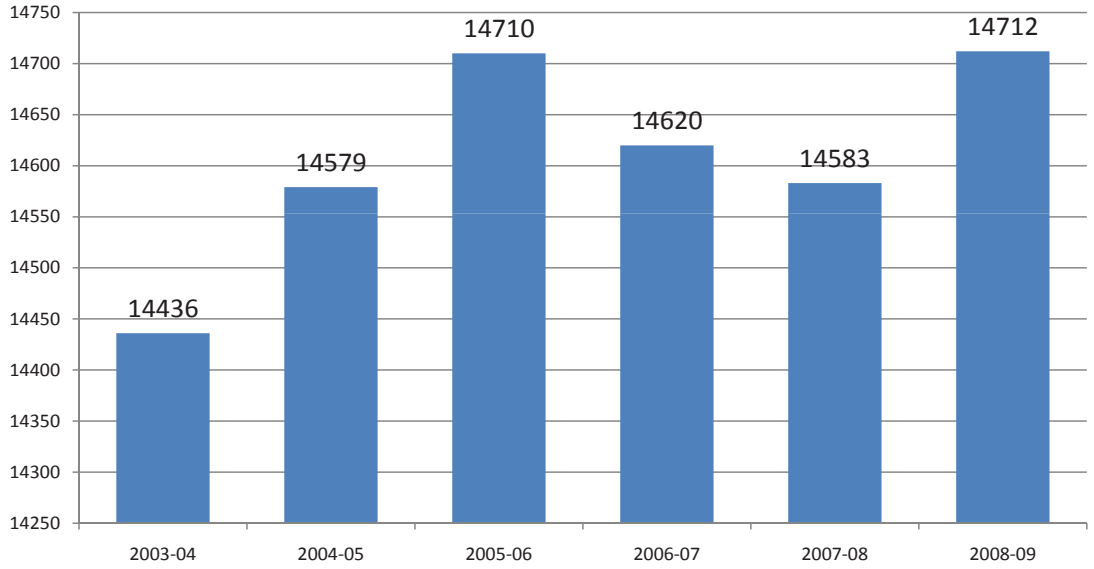


Figure 3.1 - Average Daily Membership

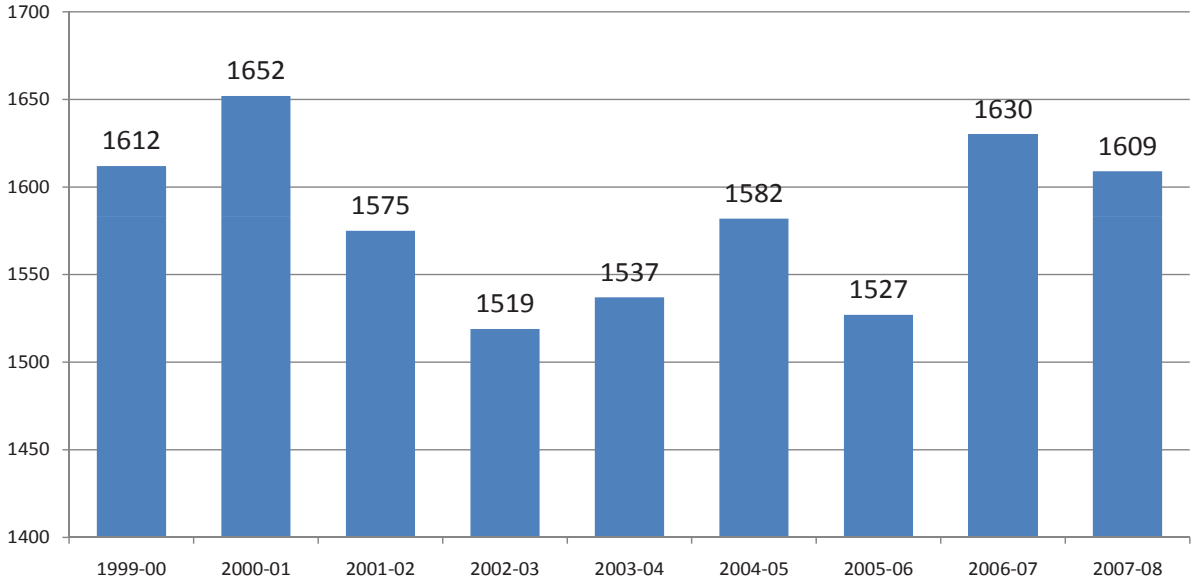


Figure 3.2 - Resident Live Births

Craven County has seven private schools with 789 students enrolled during the 2007-08 school year (2008 North Carolina Private School statistics, (http://www.ncdnpe.org/documents/hhh557.pdf)). Six of the private schools are religiously affiliated and one is independent. There are no charter schools in the county.

Craven County is the home of the MCAS Cherry Point. The base does not operate schools so all the military children attend public, private, or home schools. Public schools in the Havelock area "cluster" are closest to the base and therefore are the recipient of the school-age children residing in on-base housing. The elementary school enrollment in the Havelock cluster schools have increased in the last two years as a result of extensive base housing renovations.

A list of schools with a high number of military-connected students in the Havelock cluster are:

- Arthur W. Edward Elementary, 88 percent
- Graham Barden Elementary, 55 percent
- Havelock Elementary, 50 percent
- Roger Bell Elementary, 43 percent
- W. Jesse Gurganus, 58 percent
- Havelock Middle, 44 percent
- Tucker Creek Middle, 69 percent
- Havelock High, 51 percent

The New Bern cluster schools have experienced the highest growth in recent years. The growth is concentrated along the Highway 70 corridor between Havelock and downtown New Bern. This area has the highest growth potential in the county due to numerous subdivisions that attract families with school-age children. After the Havelock area schools, the New Bern cluster schools are second in the number of military-connected students. Creekside Elementary, with 41 percent military-connected students, is a good example.

Child Care

Craven County has a total of 86 child development facilities with 29 centers and 57 homes. The 29 centers' total enrollment as of April 2009 is 2,208 children. The 57 home-based child development facilities have 433 children enrolled. The county-

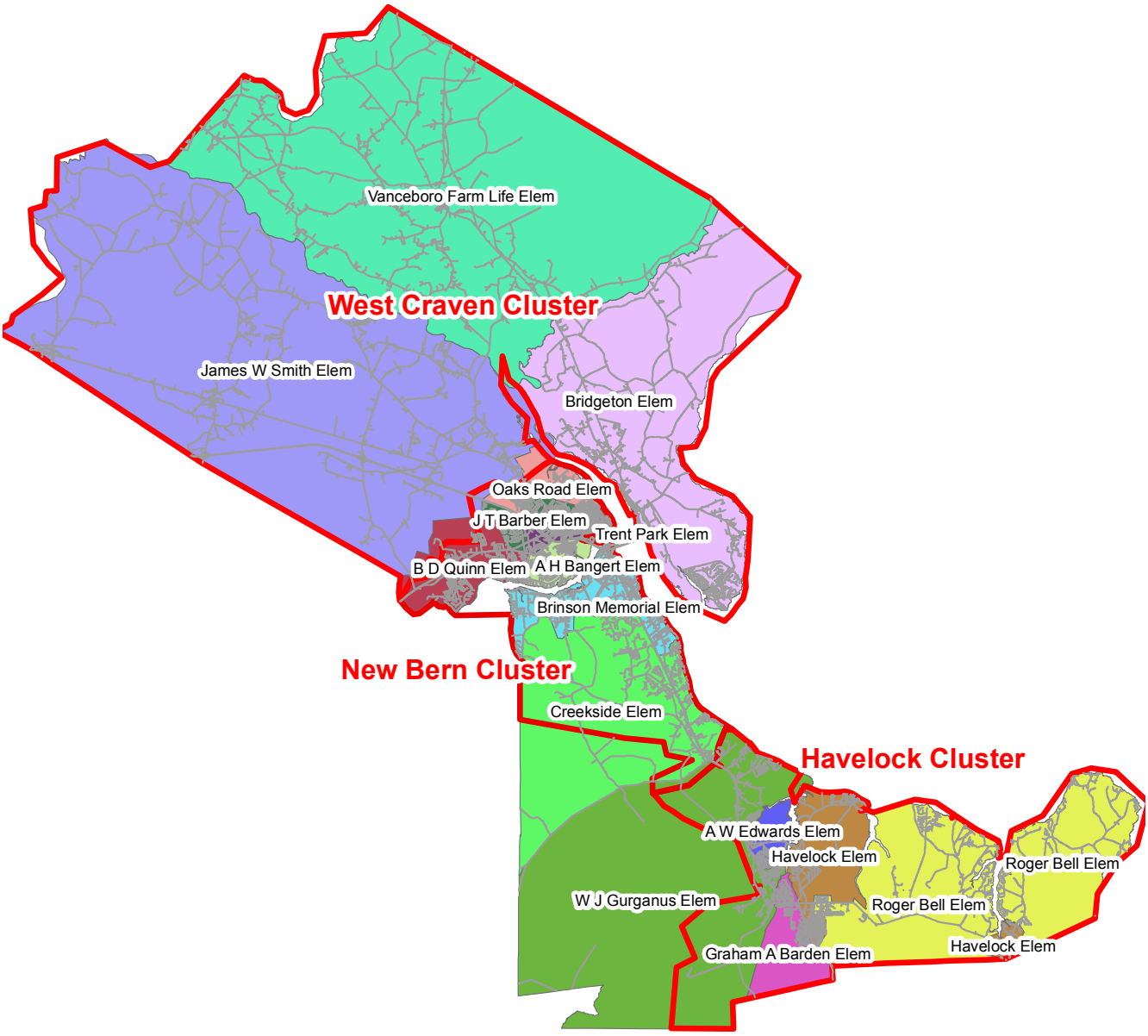


Figure 3.3 - Craven County Public School System Cluster

wide combined child care enrollment is 2,641 children, which is 14 percent of the total population under the age of 15 (North Carolina Department of Health and Human Services, Child Care Statistical Report, March 2009). The county-wide number of child care slots as of April 2009 is 4,154, a 64 percent utilization rate.

The child care centers employ a total of 384 people and the annual employee turnover is approximately 92 employees (24 percent) (Onslow County Partnership for Children, MGTF Workforce Module, Child Care Industry Data and Information). The recent economic downturn and job loss have forced some families to withdraw their children from child care facilities; thus, enrollment and the number of facilities is lower this year than in previous years.

MCAS Cherry Point has two child development centers with a capacity to hold 368 students along with a school-age program with a capacity of 90 children. There are 120 employees and there is a waiting list at both centers (MCCS Cherry Point, Children and Youth Program).

Community College and Post-Secondary Education

Founded in 1965, Craven Community College (CCC) is a comprehensive two-year community college with campuses in New Bern and Havelock and an office on base at MCAS Cherry Point. The college primarily serves Craven County.

The college serves more than 4,500 curriculum students and nearly 10,000 continuing education students each year. CCC features a wide range of programs including college transfer courses, two-year degree offerings, partnerships with four-year universities, specialized workforce training options, and basic skills classes. In the spring of 2008, 14 percent of CCC's curriculum students were active duty military and their dependents. Approximately 11.7 percent of curriculum students were attending at Havelock/MCAS Cherry Point.

The college offers associate's degrees, diplomas and certificates in many areas. It features an FAA-certified Aviation Systems Technology program as well as a number of health care offerings, including nursing, medical assisting and health information technology. The college also offers several programs in business, industry, technology, arts and sciences, and basic skills. In addition, the college offers approximately 100 continuing education classes.

The following outlines CCC's activities to meet the needs of its community:

- 35,000-square-foot building at the New Bern campus to accommodate its wide array of business and computer information technology programs
- Bosch and Siemens Advanced Manufacturing Center on the New Bern campus
- Institute of Aeronautical Technology at the Havelock campus which provides training in aircraft maintenance to support the Fleet Readiness Center East at nearby MCAS Cherry Point
- Collaboration between Fleet Readiness Center East (FRCE), Craven County Economic Development Commission, and CCC to support development and planning of a significant engineering technology park potentially to be located adjacent to the college's campus

Needs Assessment

K-12 Education

The Craven County School's population is forecasted to grow between 150 to 600 students from 2007 to 2011 (**Figure 3.4**).

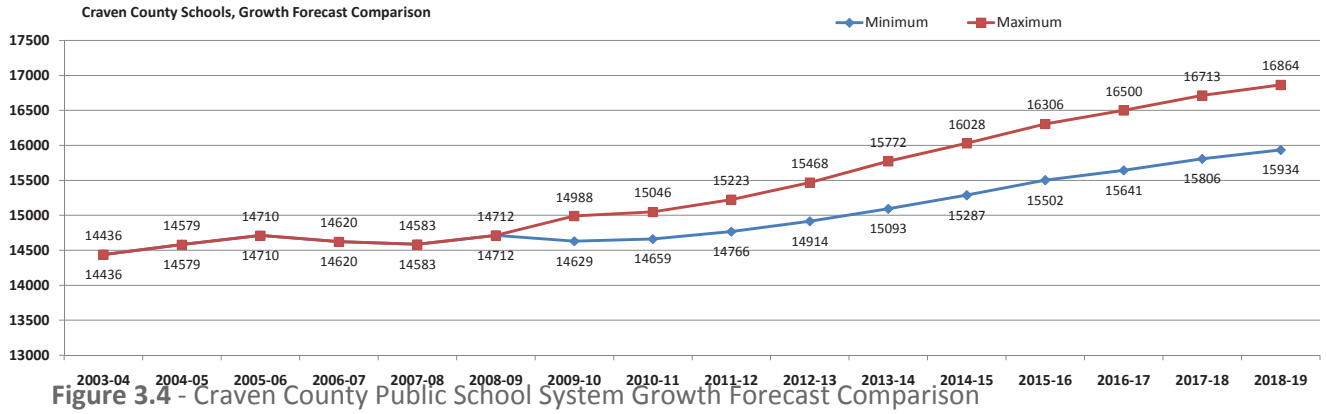


Figure 3.4 - Craven County Public School System Growth Forecast Comparison

The elementary schools serving the Havelock cluster will be heavily influenced by the MCAS Cherry Point base housing renovation activities in the next five years. The A. W. Edwards Elementary Schools will experience the greatest impact because the two base housing complexes feed to this school. During the 2008-09 school year, one elementary school in the Havelock cluster and one in the New Bern cluster were over-capacity. There is a potential for needing a new elementary and middle school if the maximum growth forecast is realized. The cost of building a new elementary school with a capacity of 650 is approximately $17 to $20 million. The cost of building a new middle school with a capacity of 950 is approximately $25 to $30 million (North Carolina Department of Public Instruction, School Planning Section).

	Capacity	Month-2	Projected Month-2 ADM									
	2008-09	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Elementary Schools												
Albert H Bangert Elem	481	450	455	455	456	457	458	459	461	463	463	464
Ben D Quinn Elem	502	506	514	515	522	528	537	542	560	570	576	583
Brinson Memorial Elem	940	695	690	692	710	725	749	764	811	839	853	872
Creekside Elem	635	485	475	479	506	528	564	587	656	699	720	748
J T Barber Elem	519	397	404	405	409	413	419	423	434	441	445	450
Oaks Road Elem	460	448	454	454	457	459	463	465	472	477	479	481
Trent Park Elem	450	356	361	361	361	361	361	361	361	361	361	361
Bridgeton Elem	554	481	486	486	486	486	486	486	486	486	486	486
Vanceboro-Farm Life Elem	695	604	609	609	609	609	609	609	609	609	609	609
James W Smith Elem	701	579	584	584	585	586	587	588	590	592	592	593
Graham Barden Elem	390	339	345	345	347	349	352	354	360	364	365	368
Havelock Elem	445	404	412	413	420	426	435	440	458	468	474	481
Roger Bell Elem	508	488	493	493	493	493	493	493	493	493	493	493
W. Jesse Gurganus Elem	508	512	522	523	532	539	551	559	582	596	603	613
Arthur W Edwards Elem	774	583	573	575	586	595	610	620	648	666	675	687
Totals	**8562**	**7327**	**7377**	**7388**	**7478**	**7552**	**7674**	**7748**	**7980**	**8123**	**8192**	**8288**
Middle Schools												
Grover C Fields Mid	734	543	561	574	592	602	608	612	597	599	607	630
H J MacDonald Mid	1048	815	895	948	1026	1069	1094	1114	1050	1058	1091	1190
West Craven Mid	974	828	829	830	832	833	833	834	832	832	833	835
Havelock Mid	528	433	448	458	472	480	485	488	476	478	484	502
Tucker Creek Mid	642	537	570	592	625	643	653	662	635	638	652	693
Totals	**3926**	**3156**	**3303**	**3402**	**3546**	**3626**	**3673**	**3710**	**3591**	**3606**	**3668**	**3850**
High Schools												
New Bern High	1625	1830	1856	1839	1820	1878	1967	2061	2169	2192	2245	2163
West Craven High	1055	1097	1123	1106	1087	1087	1087	1087	1087	1087	1087	1087
Havelock High	1215	1158	1184	1167	1148	1179	1227	1278	1336	1348	1377	1333
Craven Early College High		144	144	144	144	144	144	144	144	144	144	144
Totals	**3895**	**4229**	**4308**	**4256**	**4199**	**4289**	**4425**	**4570**	**4736**	**4771**	**4853**	**4727**
System Totals	**16383**	**14712**	**14988**	**15046**	**15223**	**15468**	**15772**	**16028**	**16306**	**16500**	**16713**	**16864**

Capacity Legend

< 95%	95% - 100%	100% - 105%	> 105%

Table 3.1 - Craven County Public School System Out-of-Capacity Worksheet

The majority of the school population growth in Craven County will be in the New Bern cluster along the Highway 70 corridor between New Bern and Havelock. This area has experienced the highest growth in the county and will continue to experience high residential growth in the future.

Because of the historical and forecasted growth, New Bern High School and Havelock High School are currently and will continue operating over-capacity. Craven County Schools is in need of a new high school located along the Highway 70 corridor. The cost of building a new high school with capacity of 1,200 is between $45M to $50M.

Growth of 150 students would require eight new teachers and three new teacher assistant positions, at an annual cost of approximately $470,000. The growth will also require adding two new school buses at a cost of $160,000.

If as many as 600 new students arrive in Craven County Schools, 27 new teachers and 12 new teacher assistant positions may be required at an annual cost of $1.9M. This growth would require adding six new school buses at a cost of $480,000.

Just as in the rest of the region, recruiting and retaining qualified teaching staffs have been a tremendous challenge. It will be high priority for Craven County Schools to work with the local and neighboring higher-education institutions to develop a high-quality teaching pool to support the growth.

Child Care

Craven County's child care total enrollment is estimated to increase by over 600 children by 2011. The increase will raise the child care slots utilization from the current 64 percent to 78 percent.

MCAS Cherry Point is building another Child Development Center with a capacity of 292. Construction is to begin in August, 2009. The new center will be done in two phases and majority of the first phase will be for infants. The second phase will not be built until 2015; thus, additional child care facilities will be needed off-base in order to accommodate the growth.

At the current children to staff ratio of 7:1, during the period of 2007 to 2011 the Craven County child care work force will require an additional 83 staff to accommodate the estimated growth of 568 due to normal and military population increase.

Community College and Post-Secondary Education

Regional demographics for Craven County show that the county's population will see the greatest increases in elderly (60-64 years) and young (10-14 years) persons over the next five-year period. Craven County's growth in its elderly population will increase the demand for health care and health-related programs in the region. For the purposes of its long range plan, CCC defines its programs as referring to curriculum, continuing education (occupational extension), and basic skills. **Table 3.2** (below) shows the projected enrollment growth in each of the three main types of programs. The numbers represent full-time equivalents (FTEs) (Craven County Community College, Long Range Plan, 2007-2012).

Program Type	2007-08	2008-09	2009-10	2010-11	2011-12
Curriculum	2159	2222	2315	2455	2600
Basic Skills	215	223	232	240	249
Occupational Extension	322	344	371	399	432
Total	**2696**	**2789**	**2918**	**3094**	**3281**

Table 3.2 - Projected Enrollment Growth

Source: Long Range Plan, Appendix H

CCC is unique in that a healthy percentage of its students (14 percent) are military/military dependents. As evidenced through a 2007 economic impact report produced by MCAS Cherry Point, approximately 21,164 active duty military and their dependents are currently at MCAS Cherry Point. Based on this number, approximately 2.8 percent of them are enrolled at CCC. Considering the increase of 2,726 active duty military and their dependents expected to arrive at MCAS Cherry Point beginning 2008, Craven can expect an additional 83 active duty military/military dependents CCC students each year.

Craven Community College is considering the addition of an Aviation Instructor to meet the increased demand of FAA General, Airframes and Power Plant Exam Prep program. The instructor salary is between $55,000-65,000 and the equipment needs are $25,000 ($15,000 for plane, $10,000 in tools).

CCC is in the process of hiring a Quality Process Instructor to meet the increased demands of Lean Six Sigma Quality Instruction. The instructor salary is between $55,000-65,000 and the estimated supply costs is $10,000.

Recommended Strategies and Actions

K-12

To accommodate the military-induced growth to the county, Craven needs to identify a site for future high school along the Highway 70 corridor, as well as identify land banking sites for two elementary schools in the Havelock and West Craven clusters and for a middle school between Havelock and New Bern clusters. The county should develop a school building project plan that will adhere to OEA outlines on project location, cost, attendances, and number of military connected student to be enrolled in the new school.

To finance these school construction and expansion projects, the county should work toward obtaining special funding from DoD to deal with the special burden imposed on Local Education Agencies (LEAs) due to the military growth. Craven County should also seek community support on general obligation bond to support the K-12 needs; work with policymakers on legislation such as the Military Children's School Investment Act and the Zero-Interest Loans program to

finance construction projects; and work with the Department of Education to seek a higher level of Federal Impact Aid compensation.

Child Care

Craven County should work closely with the Craven Community College to increase the child care work force pool in the county. It should explore reciprocity licensure opportunities to attract qualified out-of-state or DoD child care workers, and also explore reciprocity policy changes by the NC Division of Child Development for the DoD-regulated facilities at MCB Camp Lejeune, MCAS New River, and MCAS Cherry Point.

Community College and Post-Secondary Education

Craven County should request special funding from DoD to support the needs to expand the Aeronautical Technology training and the Lean Six Sigma Quality program. Both programs are directly created and impacted by military growth.

Transportation

Introduction

Craven County is the host county for Marine Corps Air Station (MCAS) Cherry Point, and as such the transportation infrastructure that runs throughout the county is critical to mission readiness and civilian mobility. Roadways, rail, and public transit are essential components of Craven County's transportation system. US 70 stretches from northwestern Jones County through the heart of Craven County and terminates in northeastern Carteret County. This roadway is one of the most important corridors in the county.

Existing Conditions

Roadway

The existing roadway system in Craven County is composed of a network of different streets that perform specific roles. The classification of streets into "functional" categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character as well as operational features for the movement of vehicles.

Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridor (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The existing public street network in Craven County is divided into several functional classifications, including arterials, collectors, and locals. The scope of the Regional Growth Management Plan emphasizes the operation of arterials based on NCDOT designation and necessary improvements to ensure the functionality of these corridors.

- **Arterials** provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distances. Arterials include facilities with full access control, such as freeways, as well as boulevards and major thoroughfares. Arterials usually connect to one another or to collector streets, and very few arterials connect to local streets. Arterials include freeway facilities such as:
  - **Freeways** provide the most mobility and least access (only at interchanges). NCDOT did not designate

any corridors in Craven County as a freeway.

- **Principal arterials** typically have tightly controlled access and few, if any, individual site driveways. These arterials are typically intersected by expressways and freeways as well as minor arterials and other public streets. NCDOT did not designate any corridors in Craven County as a principal arterial.
- **Minor arterials** primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. NCDOT did not designate any corridors in Craven County as a minor arterial.

- **Collectors** typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater access flexibility with adjacent land uses, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-freeway/expressway arterials. Collector streets within the Military Growth Task Force (MGTF) Region include NC 55 and NC 306.
- **Locals** provide greater access and the least mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Most roads in the county are designated as local streets.

Volumes, Congestion, and Safety

With New Bern, Havelock, and MCAS Cherry Point within its borders, traffic volumes in Craven County are among the highest in the seven-county region. In fact, the region's highest traffic volumes occur on US 70 southeast of New Bern, where 47,000 vehicles per day (vpd) travel. In Havelock, US 70 carries 32,000 vehicles per day. Other corridors with high traffic volumes include NC 101 near MCAS Cherry Point (9,200 vpd), US 70 west of New Bern (11,000 vpd), and US 17 north of New Bern (8,800 vpd). Yet, because traffic volumes do not account for roadway capacity, a better assessment of congestion is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. Not surprisingly, the region's major roadways — those with the highest traffic volumes — also experience the highest levels of congestion. In Craven County, congestion is worst on corridors approaching New Bern (NC 43 from the north, US 17 from the west, and US 70 from the south). The entire US 70 corridor between New Bern and Morehead City, however, operates at or above capacity.

Like congestion, traffic safety should be examined during the development of a transportation strategic plan. Between 2001 and 2005, an average of 1,699 crashes occurred in Craven County, approximately 38 percent of which resulted in at least one injury. Still, both the crash rate (192.06 per 100 million vehicle miles traveled) and the average cost per crash ($8.91 per 100 vehicle miles traveled) are below the state averages.

Needs Assessment

TIP Projects

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements. The seven-year document includes funding information and schedules for highway, bicycle, pedestrian, rail, and public transportation projects. Several Craven County priorities identified by the Transportation Working Group are listed on the current (2009-2015) TIP; the projects are detailed below. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have relatively low impact on the military while others will contribute a positive impact. Other recommendations developed by the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/Funding
R-2301A	New Location	US 17/New Bern Bypass (New Route)	west of New Bern in Craven County	US 17 to US 70	Four lanes divided freeway on new location	Planning/design in progress and right-of-way
R-4463	New Location	NC 43 Connector (New Route)	west of New Bern in Craven County	NC 43-55 to US 17	Four-lane divided freeway on new location	Unfunded
R-2513	Widen	US 17	near Vanceboro in Craven County	Spruill Town Road to Possum Track Road	Widen to multi-lanes	Unfunded
R-3403	Widen	US 17	northeast of New Bern in Craven County	Mills Street in Bridgeton to NC 43	Widen to multi-lanes	Planning/design in progress
R-2539	Widen	NC 55	east of New Bern in Craven and Pamlico Counties	US 17 at Bridgeton to NC 304 in Bayboro	Widen to multi-lanes	Unfunded
R-1015	New Location	Havelock Bypass (New Route)	near Havelock in Craven County	US 70 south of Lewis Farm Road in Craven County to US 70 north of the Carteret County line	Four lanes divided on new location	Planning/design in progress – Garvee Bond Funding (partially funded) $91.2 million construction – Payback FY 2015-2026

Table 4.1 - TIP Projects in Craven County

Modal

Craven, Jones, and Pamlico Counties are jointly served by the Craven Area Rural Transit System (CARTS). CARTS provides public transit for the general public, with special emphasis on provision of services to the elderly and/or handicapped.

The Craven County Local Coordinated Plan was adopted in February 2009 and identifies challenges and opportunities for CARTS. CARTS participates in the RouteMatch program through the Eastern Carolina Council (ECC), which enables transportation providers in surrounding counties to secure county residents a seat on a van traveling beyond the region (e.g., to locations like Duke Medical Center or Wake Medical Hospital). Medicaid and elderly are the largest proportion of users of CARTS and the majority of trips are made to health appointments. New Bern has two fixed routes and Havelock has none. Existing public transit services are augmented by taxis in the region.

Recommended Strategies and Actions

The transportation network of Craven County includes a variety of modes. Given the critical need to ensure that people, goods, and services move freely throughout the county and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected officials at the local, regional, and state levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the Transportation Improvement Program projects listed above. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position Craven County to effectively manage future growth. Roadway projects are most critical to the county; other modes, such as rail, must be addressed from a regional perspective.

Roadway

US 17

US 17 is designated a Strategic Highway Corridor by NCDOT, signifying its value to local, regional and state mobility. As a critical connection to Jacksonville, MCB Camp Lejeune, the region's largest cities, other strategic highways, North Carolina ports, and numerous neighborhoods throughout the seven-county region, an urgent need exists to improve the operating capacity of this roadway. US 17 carries up to 34,000 vehicles per day and serves as the primary deployment route from

MCB Camp Lejeune to the Port of Wilmington.

Members of the Transportation Working Group identified US 17's connection between New Bern/US 70 and Jacksonville/ MCB Camp Lejeune/ MCAS New River as a high priority. Such sentiment acknowledges the corridor's significance to the region's development and transport of military troops in and between Jacksonville/MCB Camp Lejeune and New Bern, as well as the direct connection it provides between US 70 and NC 24.

Widening US 17 would provide the needed capacity relief and regional mobility as most of the corridor currently operates near or over-capacity. Additional benefits include safety improvements for the traveling community and tourists as well as an alternative hurricane evacuation route. The current TIP calls for widening US 17 to multi-lanes with bypasses of Belgrade, Maysville, and Pollocksville (TIP # R-2514) and laying the groundwork for an enhanced route to the west of New Bern (TIP # R-4463 and R-2301A). The following recommendation for US 17 supplements these TIP projects to complete an enhanced corridor throughout the seven-county region. The recommendation for NC 43 is shown here because its inclusion helps create an alternative route to US 17 west of New Bern.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
US 17	Widen	near River Bend in Craven County	Jones County Line to US 258/NC 24	4 miles	Widen to multi-lanes	Alleviate congestion; Connects TIP projects R-2514 and R-2301 to create an improved route from Jacksonville to New Bern and points north
NC 43	Widen	northwest of New Bern in Craven County	Washington Post Road to NC 55	2.5 miles	Widen to multi-lanes	Alleviate congestion; Connects TIP projects R-4463 and R-2301 to create an improved route from Jacksonville to New Bern and points north as an alternative to US 17

Table 4.2 - US 17 Corridor Roadway Recommendations

US 70

Like US 17, the US 70 corridor is a major link in the state's transportation system and is designated as a Strategic Highway Corridor. Today, it exists as a multi-lane facility that carries up to 47,000 vehicles per day. The cross section and functionality of US 70 varies on its trek from Raleigh to Morehead City. The corridor alternates between a limited-access freeway and a regional arterial with frequent side streets and driveways. The high volume of traffic and unpredictable access has created a safety hazard for motorists, whether residents, tourists, or military personnel. The corridor experiences its greatest safety problems (157 crashes per 100 million vehicle miles traveled, or twice the state average for a similar roadway) between New Bern and the planned Havelock Bypass.

The significance of US 70 to the military and civilians is directly related to its distinction as the only east-west mobility corridor for the region. The Marine Corps utilizes US 70 for the transport of troops and equipment from MCAS Cherry Point to the Port of Morehead City, a major point of embarkation and debarkation. The highway is virtually the only way for residents to travel between New Bern and Havelock, Craven County's largest cities, and links the beach towns to Raleigh and points west. In Morehead City, US 70 is the main arterial and serves the dual role of providing service to residential and commercial land uses while connecting NC 24 (and thus personnel and equipment from MCB Camp Lejeune) to port facilities. US 70 also serves as a major hurricane evacuation route.

A plan has been developed by the US 70 Corridor Commission that recommends retrofitting US 70 to a freeway from Raleigh to Morehead City. Improving the corridor will enhance regional mobility, alleviate safety concerns, improve the efficiency of evacuations, and enhance east-west travel times for freight traffic as well as military use. The current TIP includes the Havelock Bypass, though this project is partially funded. The following recommendations for US 70 assume the eventual completion of this critical project and supplement it to fulfill the vision of the Super 70 concept.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
US 70 (southeast of New Bern)	Upgrade to Freeway	Between New Bern and Havelock in Craven Counties	US 17 interchange to proposed Havelock bypass	11 miles	Upgrade existing divided highway to freeway standards (restrict access to side street and close median openings)	Conform with the vision of Super 70, a unified effort to transform US 70 into a freeway from I-40 to the coast; Increase mobility for residents, tourists, troops, military equipment; Allow safer and quicker evacuation during emergencies; Improve access between Cherry Point and the Port of Morehead City
US 70 (southeast of Havelock)	Improve existing	Between Havelock and Morehead City in Craven and Carteret counties	Proposed Havelock Bypass to NC 101	17.5 miles	Improve existing divided highway through enhanced access management	Provide an enhanced route between Havelock and Morehead City; increase mobility for residents, tourists, troops, military equipment; Allow safe and quicker evacuation during emergencies; improve access between Cherry Point and the Port of Morehead City
North Carteret Bypass	New location	Between Havelock and Morehead City in Craven and Carteret Counties	Proposed Havelock Bypass to US 70 near Pleasant Drive in Carteret County	17.5 miles	Construct new freeway	Conform with the vision of Super 70, a unified effort to transform US 70 into a freeway from I-40 to the coast; increase mobility for residents, tourists, troops, military equipment; allow safer and quicker evacuation during emergencies; improve access between Cherry Point and the Port of Morehead City

Table 4.3 - US 70 Corridor Roadway Recommendations

Other Roadway Projects

Recommendations for both Strategic Highway Corridors within Craven County are supplemented with improvements to other regionally-significant roadways. The collective result of the following recommendations is improved access and safety between the seven-county region's largest cities, NC ports, MCAS Cherry Point, and MCB Camp Lejeune.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 101 (Havelock)	Widen	Havelock in Craven County	US 70 to Outer Banks Drive	2 miles	Widen existing two-lane road to multi-lanes	Enhance connection between US 70 and access points to Cherry Point; increase mobility for residents, troops, military equipment, allow safer access to Havelock High School
NC 101 (between Havelock and Beaufort)	Improve existing	Between Havelock and Beaufort in Craven and Carteret Counties	Outer Banks Drive in Havelock to US 70 in Beaufort	19.5 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced connection between the Port of Morehead City and the North Carteret Bypass; Increase mobility for residents, troops, military equipment; improve access between Cherry Point and the Port of Morehead City
Catfish Lake Road	Improve existing	Northwest of Havelock in Craven and Onslow Counties	NC 58 to US 70	15.5 miles	Improve existing roadway—widen lanes; add shoulders	Provide an enhanced east-west route in the study area; improve access between Cherry Point/Havelock and Jacksonville; increase mobility for residents, troops, military equipment
Lake Road/ Nine Mile Road	Improve existing	Southwest of Havelock in Craven and Carteret Counties	US 70 to NC 24	13 miles	Improve existing roadway—access management; add shoulders	Provide an enhanced north-south route in the study area; improve access between Cherry Point/ Havelock and Jacksonville; increase mobility for residents, troops, military equipment

Table 4.4 - Other Roadway Projects

Military Installation Access

Although the TIP projects and the roadway recommendations for the seven-county region will help with the safe and efficient flow of military, civilian, and tourism-based traffic, the region's transportation network will continue to experience critical choke points at the access points to the military installations. The following recommendations aim to supplement corridor-based improvements with a series of measures to improve ingress and egress at existing and proposed gate locations.

MCAS Cherry Point

As the main entrance point to MCAS Cherry Point, the US 70/Slocum Road gate experiences significant operational issues

during military personnel shift periods. Delay and safety problems result from spillback problems associated with vehicles entering and exiting the base coupled with vehicle inspections and pass verifications. The result is a bottleneck along the US 70 corridor, causing safety and operational issues during peak-hour travel. With the influx of additional military personnel and civilian staff, the operation of the Slocum gate will continue to degrade. For these reasons, the City of Havelock has identified the intersection as a priority need for the community.

A feasibility study is currently being conducted through collaboration between the City of Havelock, MCAS Cherry Point, and the US Department of Defense. The study has indicated the need for a grade-separated flyover directly into Slocum Road and MCAS Cherry Point with improvements to the gate operation. This project should improve the ingress and egress of military operations as well as improve the security and gate operations to the MCAS Cherry Point. The proposed flyover will essentially eliminate "stop and go" conditions at this strategic gate entrance to the base and will provide a higher level of operation and safer environment for travel. This project is unfunded at a total probable cost of $18 million.

Modal

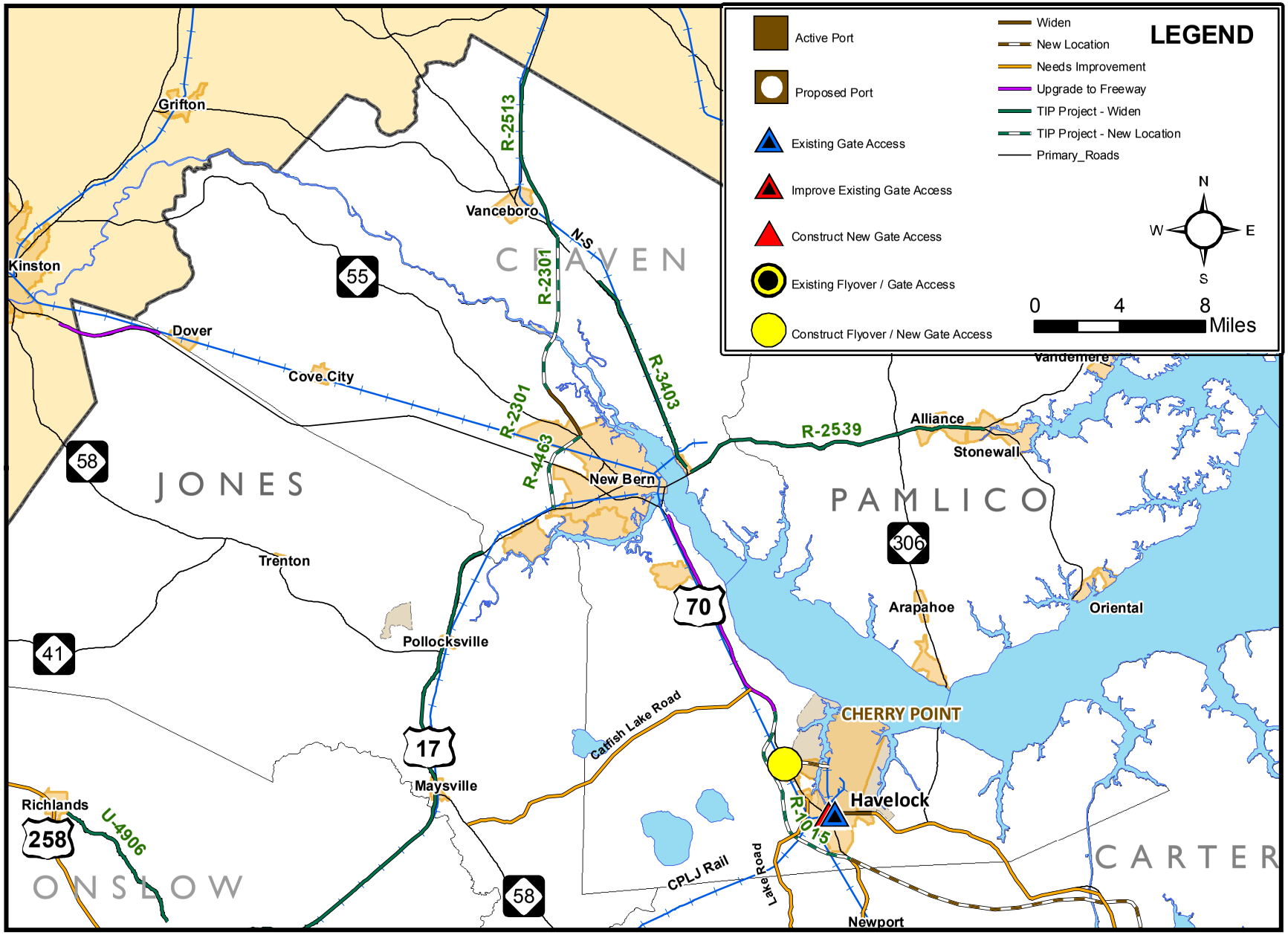
The highest scoring priorities identified during the Craven County Local Coordinated Plan workshop were:

- Expanding fixed-routes
- Working with companies employing a large number of people to form public/private partnership
- Creating a marketing plan
- Meeting with MCAS Cherry Point to discuss how service on base might be provided without having to disembark riders already on the RouteMatch van

The Community Transportation Improvement Plan also urges Jones and Pamlico Counties to coordinate with Craven County more often on transit planning. Although each county is currently served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost-effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases, and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient
- Craven- CARTS to work with MCAS Cherry Point to provide transit service on base without the need to disembark riders mid-trip.

Across the region, there is an overwhelming demand for transit services to and from MCB Camp Lejeune and MCAS Cherry Point. Expansion of current transit services will allow greater mobility of younger-ranking marines as well as more residential to base connections. Although the ECC facilitates RouteMatch to coordinated intra-county public transit, it is underused and needs enhanced technical support.



ROADWAY AND RAIL RECOMMENDATIONS Figure 4.1
Craven County

Infrastructure

Existing Conditions

Water

Potable water facilities are defined as the structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Utility Companies

Water suppliers in Craven County consist of Craven County, the City of New Bern, MCAS Cherry Point, the City of Havelock, First Craven Sanitary District, and the Town of Bridgeton. Much of the County is served by Craven County with public water through a series of wells and water lines and in some areas of the county, private individual wells serve homes and businesses. The extent of the public water system is shown in **Figure 5.1.**

Water Supply and Treatment

Craven County owns and operates a public water supply and distribution system. The average daily usage ranges from 0.475-0.635 millions of gallons per day (MGD) on an annual basis with the lowest flows recorded in January and the highest flows recorded in June. The maximum daily usage ranges from 0.567-0.892 MGD, and the system's water storage capacity is 0.60 million gallons (MG). The current treated water capacity is 0.72 MGD based on wells running 12 hours per day. The current groundwater supply available is 1.476 MGD. In emergencies, Craven County has the ability to provide treated water to Carteret County, Cove City, First Craven, Havelock, and New Bern. Water districts are established by county code. Each district administers water service independent of Craven County management and is responsible for operation and maintenance of the water system.

MCAS Cherry Point reports that its 6.0 MGD water treatment plant (WTP) currently experiences flows ranging from 3.4-4.0 MGD, which equates to approximately 2.0 MGD in available capacity. Staff considers the 15-year old WTP to be in good working condition. Pressures in the existing water distribution range from 50-54 pounds per square inch (PSI). The distribution system needs some modifications to improve its current functioning while future EPA water quality requirements will require further modifications in the future. MCAS Cherry Point has an inter-agency agreement with West Carteret County to provide water to the Bogue Outlying Field (OLF) located in Southwestern Carteret County.

The City of Havelock currently owns and operates a 2.8 MGD water treatment plant that experiences average daily flows of 1.3 MGD. The city also maintains 2.2 MG in elevated storage capacity. The city's water supply consists of four groundwater wells in the Castle Hayne aquifer.

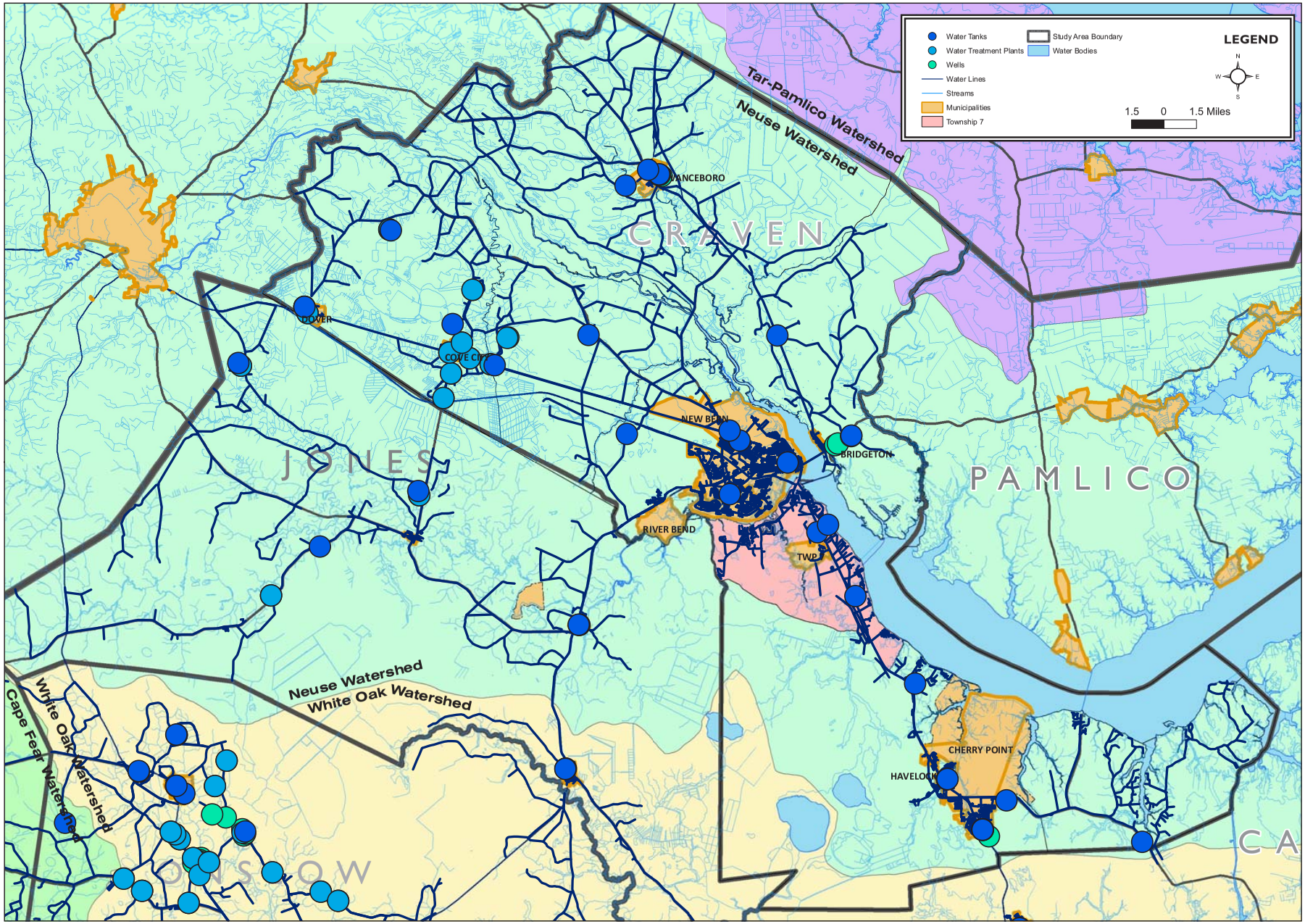
The City of New Bern is currently constructing a new water treatment plant on the western side of the city with a design capacity of five mgd and is expandable to a minimum of seven mgd. The proposed plant will be supplied with groundwater from 15 wells in the lower Castle Hayne aquifer. This change represents a transition initiated by the City of New Bern to combat water losses expected from the Coastal Plain Capacity Use Area (CCPCUA) rules. Current average daily demands on the system are 4.1-4.2 MGD, and the city does not report any pressure issues within its water distribution system.

Regulations

Craven County is one of several eastern North Carolina counties subject to the CCPCUA rules. These rules require regulated water users in the county (users pumping more than 100,000gpd) to gradually limit withdrawals from the Black Creek aquifer over a 16 year period. These water providers in Craven County are required to reduce withdrawals 25 percent over the first six years (to August 2008), an additional 25 percent over the following five years (August 2008 to August 2013), and a further reduction of 25 percent over the remaining five years (August 2013 to August 2018).

Additionally, regulated water users will be required to implement water conservation which may include:

- Conservation ordinances
- Leak detection programs



CRAVEN COUNTY WATER Figure 5.1

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

- Tiered rate structures to encourage conservation
- Plumbing retrofit programs
- Public education advocating water conservation measures

Details on the rule's impacts on the region are found in the Needs Assessment section of the RGMP Infrastructure Module.

North Carolina Department of the Environment and Natural Resources' (NCDENR's) Division of Water Resources monitors saltwater intrusion in the region through a series of monitoring wells that are sampled every three to four years. There are 27 monitoring wells located in Craven County.

Pending Regulations

Representative Russell Tucker (Duplin County) has introduced House Bill (HB) 643, which may provide a solution to groundwater contamination issues. By creating a salinity barrier between saltwater and groundwater the legislation could help protect Carteret County's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the RGMP Reclaimed Water section.

Sanitary Sewer

Sanitary sewer facilities are defined as the structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems. The extent of the public sewer system is shown in **Figure 5.2**. With capacity issues in both the Cities of Havelock and New Bern, wastewater treatment is a challenge in Craven County to military growth.

Wastewater Providers

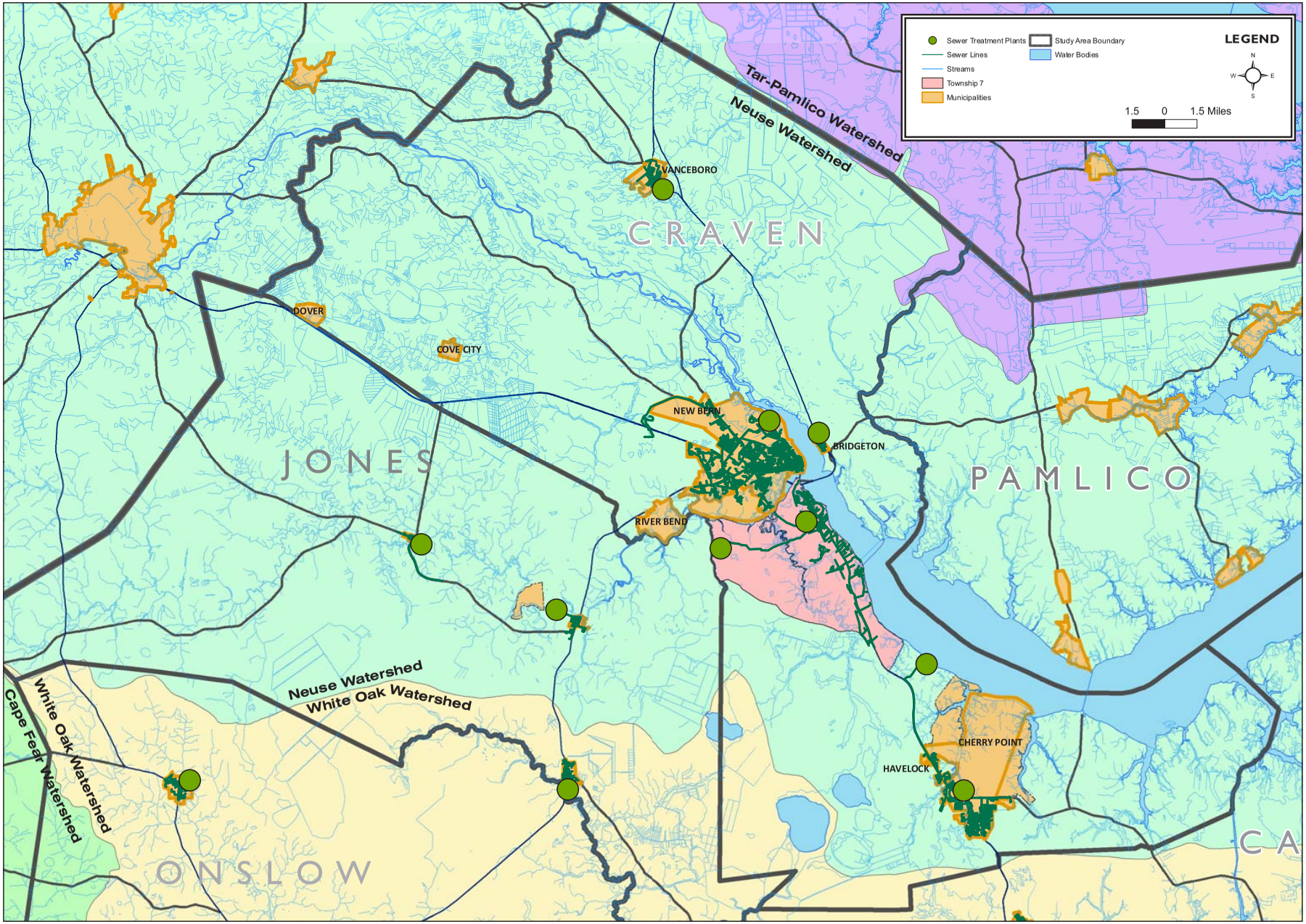
Craven County does not provide public sewer. In the county sewer is provided by the City of New Bern, the City of Havelock, the Town of Vanceboro, MCAS Cherry Point, private package wastewater treatment plant (WWTPs), and individual septic systems. A low pressure sanitary sewer system serves the Town of Trent Woods and ultimately the City of New Bern provides it with wastewater treatment. Like the Town of Trent Woods, River Bend is also served with sewer that is ultimately treated by the City of New Bern. Sewer service is being planned and constructed in Dover and Cove City.

Wastewater Collection and Treatment

MCAS Cherry Point reports that their 3.5 MGD WWTP currently experiences actual average use of 2.0 MGD, which equates to 1.5 MGD of the available capacity. The 16-year old WWTP is in good working condition and underwent a significant plant upgrade in 2007. Wastewater effluent is sprayed via land application on the base. For rehabilitation efforts, the wastewater collection system is in good condition. Much of the collection system piping has been lined, and repairs have been made at troublesome spots over the last seven years.

The City of New Bern's wastewater treatment plant has a design capacity of 6.5 MGD and a current average daily use of 3.8 MGD. An abandoned aggregate mining quarry adjacent to the Neuse River receives wastewater effluent discharge. The wastewater effluent infiltrates into the groundwater through these abandoned quarries. The City of New Bern has a system to replace gravity sewer lines suspected of large amounts of inflow/infiltration (I&I) in the downtown historic area as roadway improvements occur. This system allows incremental improvements to the city's I&I problem and saves construction dollars by not tearing up the roads. City staff estimates that the average flows of 3.8 MGD at the plant increase by as much as 42percent up to 5.2-5.4 MGD after a 1" rainfall event. Much of this I&I is attributed to the older section of New Bern's historic district, where much of the gravity lines are cracked or broken terracotta pipe. Although the city's wastewater treatment flow is at 58.4percent of available capacity, there is currently a bottleneck in the city's wastewater collection system south of the Trent River. There is an existing 8inch force main that is at capacity and runs underneath the Trent River. This force main conveys flow from James City and south including highly developing land in between New Bern and Havelock.

The City of Havelock's WWTP has approximately 200,000 gpd in available capacity at their 1.9 MGD permitted plant. The city has planned a sewer treatment plant expansion to 2.5 MGD; however, the creek that currently receives wastewater discharges has reached its total maximum daily load (TMDL) limits and cannot accept additional sewer. The alternative for the City of Havelock would be to run a force main from the existing wastewater treatment plant to the Neuse River, where



CRAVEN COUNTY SEWER

Figure 5.2

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

a waste load allocation is likely. This route requires the force main to be located on MCAS Cherry Point property.

The First Craven Sanitary District does not provide sewer service. A majority of this district is served with individual private septic systems. Where public sewer is available to the unincorporated county, sewer service within the District is provided by either the Town of Bridgeton (approximately 250 accounts) or the City of New Bern (approximately 100 accounts).

Private Package WWTPs

Several private package wastewater treatment plants are located throughout the county. In many cases, larger sewer providers such as the City of New Bern have taken over smaller package treatment plants. Some of these plants have been converted to pump stations, and the wastewater is treated at a regional wastewater treatment plant.

Septic Systems

For portions of the county where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work well with proper siting, design, installation, operation, and maintenance. However poor soil conditions limit the installation of many new septic systems. Poor soil conditions result in an inability to percolate, rendering properties without access to sewer undevelopable. This could have a significant impact on growth in the county. All new septic systems in the region require a permit from the Craven County Health Department prior to construction.

AU Number	Stream Name
27-(104)	Neuse River
27-(118)b	Neuse River
27-(56)b	Neuse River
27-(96)a	Neuse River
27-(96)b	Neuse River
27-101-(31)b	Trent River
27-101-(39)	Trent River
27-101-40-(1)	Brice Creek
27-123-2	Mortons Mill Pond
27-123-2-1	West Prong Mortons Mill Pond
27-123-2-2	East Prong Mortons Mill Pond
27-123-3	Gulden Creek
27-123-4	Mitchell Creek
27-123-4-1	Big Branch
27-123-4-2	Snake Branch
27-128-1.5	Jerry Bay
27-128-2	Isaac Creek
27-128-4	Kearney Creek
27-90b	Core Creek
27-97-(0.5)a	Swift Creek
27-97-(0.5)b	Swift Creek
27-97-(6)	Swift Creek
27-97-5	Clayroot Swamp

Table 5.1 - Impaired Streams in Craven County

Regulations

Sewer providers in Craven County are subject to the 80percent/90 percent rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities) administered by NCDENR's Division of Water Quality. Details on these rules can be found in the RGMP Infrastructure Module. If either the 80percent or 90 percent rules are not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system, as is the case with the City of Havelock's WWTP. To allow for military growth and avoid moratoriums, it is important for the sewer providers in Craven County to meet these 80percent/90percent requirements.

In Craven County, several bodies of water are listed on the Clean Water Act's Section 303d Impaired Waters List (see Table 5.1). For many of these streams and rivers, TMDLs are developed such that the point discharge of wastewater effluent is not a feasible option. Moreover, the coastal portion of Craven County has brackish or saltwater surface waters, and the discharge of wastewater effluent in these surface waters is prohibited and is considered freshwater pollution into saltwater estuaries. Because of these sensitive surface waters, sewer providers have few options to discharge wastewater and historically opt for land application or spray irrigation.

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how WWTPs capable of producing reclaimed, water quality effluent can discharge effluent and will save space in land application facilities. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in ASR systems. Additional discussion on these rule changes along with HB 643 is included under the Reclaimed Water section of this module.

Reclaimed Water

Providers

Reclaimed water or "reuse water" is relatively new to the seven-county region and to the State of North Carolina; however, in Craven County, there are some facilities permitted for reclaimed water. A list of NCDENR-approved facilities is shown in Table 5.2 - (NCDENR 2009).

Owner	Facility	Permitted Flow (gpd)
City of New Bern	New Bern Seven Water Reclamation Facility	499,362
MCAS Cherry Point	US Marine Corps - Golf Course	1,650,000

Table 5.2 - Facilities in Carteret County Permitted for Reclaimed Water

Capacities

Based on these projects, Craven County has the ability to produce 2.14 MGD of reclaimed water.

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems. These regulations are described in detail in the RGMP Infrastructure Module.

Pending Regulations

Two pending regulatory changes, if approved, will alter the ways that reclaimed water can be used in the State of North Carolina and have significant impact on Craven County: updated 15ANCAC Reclaimed Water Rules and HB 643 – Authorize Aquifer Storage of Reclaimed Water. Information on these pending regulations can be found in the **Appendix**.

Stormwater

Pollution associated with storm water runoff is the number one water quality problem in the region, and the state as a whole. As a result, several regulations have been initiated in Craven County and the City of Havelock to manage stormwater. The regulations that apply in Craven County and Havelock are described below:

Stormwater Management Program (Coastal Stormwater Rules)

As with all coastal counties, Craven County and its municipalities are subject to State Stormwater Management Program (Coastal Stormwater Rules) requirements. The program applies to all development in the county that disturbs one or more acres of land or requires a Coastal Area Management Authority (CAMA) major permit. Recent amendments to the rules address coverage, low density thresholds, design storm requirements, wetlands and impervious surface calculations, and vegetative buffer size, especially as they apply to SA and ORW classified watersheds. (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/coastal.htm)

Neuse River Nutrient Sensitive Waters (NWS) Management Strategy

In March 2001 the City of Havelock became one of fifteen local governments subject to the Neuse River Nutrient Sensitive Waters (NSW) Management Strategy. This strategy is state mandated by North Carolina Division of Water Quality (NCDWQ) and targets nutrient removal as the water quality criteria. As an effected local government, Havelock was required to implement a nitrogen reduction program that includes review and approval of a storm water management plans for new development, public education, identification and elimination of illegal discharges, and identification of retrofit sites where water quality management projects can be installed in existing developments. The city was required to develop a state-approved ordinance and is responsible for implementation of the strategy. (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/Neuse_NSW_Management_Strategy.htm)

The Neuse River NSW Management Strategy may satisfy NPDES Phase II storm water requirements.

401 Water Quality Certification/Neuse Buffer Requirements

Craven County is in the Neuse River Basin. Any activity in the basin that impacts wetlands, streams, and/or protected

riparian buffers is subject to the Neuse Buffer Requirements.

CAMA Requirements

During the development of its CAMA Plan, Craven County developed a series of storm water policies. These policies include: support reducing soil erosion, runoff, and sedimentation to minimize the adverse effects on surface and subsurface water quality, support the enforcement of all controls and regulations, specifically design standards, tie-down requirements, construction and installation standards, elevation requirements, floodproofing, CAMA regulations, and FEMA regulations deemed necessary by the Board of Commissioners to mitigate the risks of lives and property caused by severe storms and hurricanes, support the discharge of storm water runoff into coastal wetlands if the associated construction and development is permitted and does not damage coastal wetland areas, and support implementation of the Tar-Pamlico, Neuse and White Oak River Basin-wide Water Quality Plans.

To execute the policies, the county developed the following implementing actions: support control of agricultural runoff through implementation of Natural Resources Conservation Service "Agricultural Best Management Practices" program, rely on the Division of Land Resources of the Department of Environment and Natural Resources to enforce storm water control on all sites one acre in size or greater, and cooperate with North Carolina Department of Transportation (NCDOT), NCDENR, and other state agencies in mitigating the impact of storm water runoff on all conservation classified areas.

The City of Havelock also developed a series of stormwater policies during formation of its CAMA Plan. These include: maintain corrective measures that minimize storm water inflow and infiltration for the city's waste water collection system where it is deemed fiscally prudent, implement and enforce state regulations relating to storm water quantity and quality, especially in relation to special provisions adopted for the Neuse River Basin, continue coordination with NCDWQ, prepare a storm water master plan (SWMP) that identifies and prioritizes storm water problem areas and targets capital improvements to mitigate them, and allocate funds in the city's Capital Improvement Plan on an annual basis to implement recommendations from the local SWMP where it is deemed fiscally prudent.

To put these policies into action, the city then developed the following implementing actions: develop a request for proposal (RFP) for a storm water master plan, dedicate funding in the capital improvement plan, and review and revise the SWMP on an annual basis. (Craven County CAMA Core Land Use Plan, Draft)

Once the CAMA plan is adopted, these strategies become the policy guidelines for local stormwater management.

Solid Waste

Solid Waste Management

Solid waste management in Craven County encompasses the collection, recycling, and disposal of solid waste generated by local residents, businesses, and the military base.

This section of the plan will describe solid waste management in Craven County, the City of New Bern, the City of Havelock, and MCAS Cherry Point.

Collection

Craven County

Residents of unincorporated Craven County have three options for solid waste collection. First, the county offers a volume-based, "pay as you throw" solid waste management program. Garbage is collected via a sticker system. Stickers can be purchased for $2.50 a sticker at various locations throughout the county. The following rates currently apply in the county:

- 1 sticker-up to 33 gallons (not more than 50 lbs)
- 2 stickers-34 to 64 gallons (not more than 100 lbs)
- 3 stickers-65 to 90 gallons (not more than 150 pounds)

Second, residents may subscribe to service from a private hauler. Five private haulers provide service to various areas of the county. The private haulers and their general service areas are as follows:

- Berry Sanitation-Fairfield Harbour and surrounding area
- Hargett Sanitation-Trent Woods, city limits of Havelock, River Bend, and North West Craven County
- Richards Sanitation-East Craven County (except the City of Havelock), Riverdale, and portions of Old Cherry Point Road
- Sconyers Sanitation-Fort Barnwell, Cove City and surrounding area and the Town of Bridgeton
- Waste Industries-James City and Brices Creek

Finally, residents may take their waste to one of seven convenience centers located throughout the county. (Craven County. http://www.cravencounty.com/departments/cln.cfm)

New Bern

The City of New Bern offers weekly garbage collection through a franchised hauler—GDS/New Bern. Weekly garbage collection coincides with county recycling collection. The hauler provides each resident with a 65 gallon roll-out cart. Senior citizens pay two dollars per month and most residents pay a refuse remove fee of four dollars per month.

The city also provides commercial collection via front-loaded dumpsters. Each business is responsible for providing its own container which is collected by GDS/New Bern for a set fee that appears on the customer's utility bill. Fees vary based on the size of the dumpster and the number of pickups scheduled a month. (New Bern. http://www.ci.new-bern.nc.us/PW/san_home.php)

Havelock

The City of Havelock offers weekly garbage pickup through a contract administered by the Craven County Solid Waste Administrative Services Division. The weekly garbage service is charge to residents by an $11 monthly fee added to the water bill. Recycling is also contracted through Craven County.

Residents also have the option to subscribe to service from a private hauler.

The city also offers a yard trimming weekly pickup that includes grass trimmings, pine needles, leaves, and tree branches of no more than three inches in diameter and four feet long. (Havelock. http://www.havelocknc.us/WebDocuments/Departmentpercent20Publications/Otherpercent20Information/garbagepercent20brochurepercent20forpercent20website.pdf)

MCAS Cherry Point

Residential garbage collection on-base is privatized and managed exclusively by Atlantic Marine Corps Communities (AMCC). Solid waste is collected curbside by a private contractor. Residential garbage includes barracks.

Commercial areas use solid waste dumpsters serviced by Facilities Maintenance. (Email message from Dale McFarland, MCAS Cherry Point Restoration and Recycling Division, April 28, 2009)

Recycling

Craven County

Craven County offers weekly recycling pickup. Residents may recycle aluminum cans, newspaper, clear/green/brown glass, natural and colored plastic, corrugated cardboard, and steel cans. A $36 annual fee is charged to residential dwelling units and small businesses on their annual property tax bill. (Craven County. http://www.cravencounty.com/departments/cln.cfm)

New Bern

In addition to the recycling options offered by Craven County listed above, the City of New Bern also provides for residential,

mixed paper recycling. (New Bern. http://www.ci.new-bern.nc.us/PW/san_home.php)

Havelock

The city also offers weekly recycling pickup through a contract administered by the Craven County Solid Waste Administrative Services Division through the same contract as the solid waste collection. (Havelock. http://www.havelocknc.us/WebDocuments/Departmentpercent20Publications/Otherpercent20Information/garbagepercent20brochurepercent20forpercent20website.pdf)

MCAS Cherry Point

The collection of residential recyclables is also privatized and managed by AMCC. As with solid waste, recyclables are collected curbside by a private contractor.

A private contractor collects mixed commercial recyclables. These materials are consolidated at a central material recovery facility (MRF). Cardboard can be dropped off at two satellite sites also managed by the private contractor, or it can be taken directly to the MFR or four associated satellite sites. The Qualified Recycling Program then bails and sells the recycled cardboard. Scrap metal is recycled through the Defense Reutilization and Marketing Office (DRMO). Office paper is recycled through a private, on-site shredding contract. (Email message from Dale McFarland, MCAS Cherry Point Restoration and Recycling Division, April 28, 2009)

Disposal Facilities

Solid waste collected in the county, the City of New Bern, and the City of Havelock is disposed of at the Tuscarora Landfill located at 7400 Old Hwy 70 West in New Bern. This facility accepts inert debris, municipal solid waste, yard waste, C&D waste, and scrap tires. The Coastal Regional Solid Waste Management Authority (CRSWMA) operates this facility. The CRSWMA was formed in 1990 as a partnership between Carteret, Craven, and Pamlico counties. (Craven County. **http://www.cravencounty.com/departments/cln.cfm**; New Bern. **http://www.ci.new-bern.nc.us/PW/san_home.php**; Havelock. **http://www.havelocknc.us/WebDocuments/Departmentpercent20Publications/Otherpercent20Information/garbagepercent20brochurepercent20forpercent20website.pdf**)

Solid waste collected on the base is disposed of at the Cherry Point Transfer Station located on MCAS Cherry Point. Operation of the transfer station and transportation to the regional landfill are contracted out. The waste is reloaded at the transfer station into large tractor-trailer trucks and transported to the Tuscarora Regional Landfill. (Email message from Dale McFarland, MCAS Cherry Point Restoration and Recycling Division, April 28, 2009)

Landfill Capacity

NCDENR publishes an annual solid waste report that details the remaining capacity for each of the state's landfills. According to the 2007-2008 Solid Waste Annual Report, 217,482.78 tons of solid waste was disposed of in the CRSWMA Regional Landfill between 2007 and 2008. The remaining capacity of the landfill is 1,213,771.43 tons (this total includes landfill volume constructed and permitted to operate). The total volume for the landfill site at final design is 9,058,533.64 tons. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 5.58 years of capacity remaining. If the landfill was built to its maximum design size, the landfill could continue operating for 41.65 years. (N.C. Department of Environment and Natural Resources)

CRSWMA purchased additional land contiguous to the existing landfill and identical in size. Although this land is not permitted, the overall remaining capacity of the landfill has roughly doubled to over 18 million tons. (Phone Interview with Allen Hardison, Executive Director CRSWMA, April 22, 2009)

Telecommunications

Craven County exceeds the state average for connectivity. A total of 88.86 percent of the county has internet access, over 5 percent higher than the state average of 83.33 percent. According to the e-NC Authority, Craven County is a Rural, Tier 5 Community with a connectivity speed of between 10-25 Mbps.

Access Providers

Cable

Suddenlink Communications and Time Warner have cable TV franchises in Craven County. Suddenlink Communications provides cable modem access in the Bridgeton, Cove City, James City, River Bend, Trent Woods, Vanceboro and areas of Craven County. Time Warner provides cable modem service in Cherry Point, Havelock and areas of Craven County. Time Warner does not provide cable modem service in Dover. In total, 85.49 percent of households have access.

Telcos

Embarq provides telephone service in the county. A total of 86.49 percent of households have access to telephone service. Embarq provides DSL access to its subscribers in the Havelock (77 percent), New Bern (94 percent) and Vanceboro (50 percent) exchanges. The area of Craven County served by the Grifton and Kingston exchanges lacks DSL access.

Satellite

Customers with clear views have access to Direcway & Starband high-speed Internet service.

Wireless

There are no wireless high-speed Internet access providers in Craven County. (The e-NC Authority. http://www.e-nc.org/100_County_Report/Craven.pdf)

Needs Assessment

Based on committed residential developments as depicted in the RPGM Infrastructure Module, the majority of population growth and infrastructure demands is expected to be located in and around the City of New Bern and the area between Havelock and the City of New Bern. Much of the proposed developments are located along the US Highway 17 and Highway 70 corridors.

Water

Challenges

On a regional level, Craven County faces several challenges relating to water including meeting the requirements of the CCPCUA rules, combating saltwater intrusion, and having infrastructure in place to meet increasing water demands. These problems are described in the Regional Infrastructure Module. Specifics on these challenges in Craven County, as well as additional challenges at the local level, are detailed below:

- The CCPCUA affects the City of New Bern. Current water treatment plant construction and the addition of 15 wells in the Castle Hayne aquifer should mitigate this problem. The City of Havelock is currently unaffected by the CCPCUA because its wells are currently located in the Castle Hayne aquifer, which is not part of the mandatory restrictions.

Needs

Due to CCPCUA rules, the usage and capacities should be continually monitored to insure that adequate planning can occur should the need arise for additional wells . Additionally monitoring of the saltwater intrusion in the county's aquifers should be continued Some levels of saltwater have already been noted in USGS monitoring activities.

Sewer

Challenges

Due to the City of Havelock's current wastewater treatment plant moratorium status and the City of New Bern's current wastewater collection system bottleneck, much of the area will continue to rely on package WWTPs and private septic systems to maintain current and future wastewater treatment until system upgrades and connections are constructed.

The location most affected by these capacity deficiencies is also the location where the most proposed growth is located: Township Seven along the US Highway 70 corridor between New Bern and Havelock.

To compound these issues, the City of New Bern faces costly repairs associated with the I&I problems. The lack of repairs is causing almost 1.6 MGD of rainwater to be treated at the city's WWTP.

Large portions of the county are designated with wetlands, which makes wastewater effluent disposal a challenge. The James City wastewater treatment plant has effluent disposal at the Crump Farms. Suitable land for future expansion is located adjacent to this existing land application site. However, the land is located in Jones County, and the likelihood of this expansion crossing county lines is low.

Needs

- Land suitable for spray irrigation is scarce due to extensive wetlands in Craven County, expensive, and not conducive to economic development or tax-generating development. Alternative disposal methods for the county's wastewater effluent are necessary for growth to continue.
- A parallel force main is needed to connect Township Seven to the City of New Bern's wastewater treatment plant.
- An agreement between the City of New Bern and Havelock allows for a diversion of up to 500,000 GPD of wastewater flow from Havelock to New Bern until Havelock's WWTP expansion and new discharge into the Neuse River is constructed. Infrastructure allowing the additional 500,000 gpd to flow to New Bern's WWTP is needed.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For Craven County, several accepted methods of beneficial use of reclaimed water employed elsewhere in coastal and neighboring states could benefit both the water and sewer systems within Craven County. The protection of existing groundwater sources from saltwater intrusion is of primary importance.

Currently, the irrigation is the primary means of applying reclaimed water; however, suitable land application sites are costly and scarce, and using developable land for spray irrigation does not help local economies and does not provide a tax base to the jurisdictions where they are located.

Needs

Both the re-write of the current NCDENR reclaimed water regulations and the proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary to allow for expanded use of reclaimed water within Craven County. The beneficial use of reclaimed water can decrease potable water demands positively impacting water needs in the region and could be used to protect the county's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed NCAC updated regulations would allow reclaimed water to be treated as a valuable water resource allowing it to be applied to more end users. The expanded uses will also reduce the demand on land application sites.

Stormwater

Challenges

The biggest challenges facing the region for stormwater management are funding, enforcement, and threats to affordable housing. These challenges are also Craven County's greatest challenges and are described in the Regional Infrastructure Module.

The City of Havelock has also identified stormwater inflow and infiltration issues in their sewage collection system as an issue. The city has committed local funds and secured loans and grants from the U.S. Department of Agriculture totaling $3.2 million to make improvements. These funds are being used for cured-in-place pipe (CIPP) work. The CIPP process lines the pipes with an impermeable lining and is designed to have a life expectancy of 50 years, similar to that of a new

pipe. Improvements are underway, but have not been fully implemented. (CAMA Core Land Use Plan (DRAFT), 2008)

Needs

The City of Havelock's sewer plant is operating at nearly 90 percent capacity. One immediate way to increase capacity of the sanitary sewer system is to alleviate transmission capacity issues by eliminating stormwater inflow and infiltration. The city needs to implement the CIPP work to eliminate infiltration and inflow and increase capacity by 100,000 gpd. (CAMA Core Land Use Plan (DRAFT), 2008)

Solid Waste

Challenges

Craven County is one of three counties in the Seven-county region involved in a partnership for solid waste management. Craven County is a member of the Coastal Regional Solid Waste Management Authority (CRSWMA) and has representation on a seven-member Board of Directors that governs the authority. As discussed in the Existing Conditions section above, CRSWMA recently purchased land to expand the existing landfill. This expansion will roughly double the capacity of the landfill. As a result, solid waste management will be ensured well beyond the planning horizon.

The county's focus will be on meeting its local waste reduction goal of 22 percent established in its 10-year Solid Waste Plan. (NCDENR Solid Waste Management Plans. http://www.wastenotnc.org/swhome/swmplans.asp)

Although MCAS Cherry Point does not have representation on the CRSWMA Board of Directors, the base has an agreement with CRSWMA for solid waste management. As a result, solid waste management on MCAS Cherry Point will not be an issue during the planning horizon and beyond.

Telecommunications

Challenges

Craven County exceeds the state average for internet connectivity. Where possible, the county should work with service providers to extend service to unserved, rural portions of the county.

Recommended Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help Craven County solve its infrastructure problems. Additionally, responsible parties are identified as well as the time frame for the need in short term (urgent by 2011), near term (less than 10 years), or long term.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County .
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Sewer	Havelock/New Bern Regional Sewer Connectivity	Cities of Havelock and New Bern	$21.1M	Urgent	This infrastructure project will provide upgrades to the Township 7 sewer collection system to allow 500,000 gpd of wastewater to be diverted from the City of Havelock's WWTP which is at capacity to the City of New Bern's WWTP. Additionally, this parallel sewer collection line and force main will allow for developments along Hwy 70 between the two municipalities to be served with public sewer. Extensive growth is planned and developing for this portion of Craven County. Currently, there is not available capacity in existing infrastructure south of the Trent River.

Table 5.3.1 - Recommended Actions Matrix

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.
Sewer	New Bern I&I Reduction	City of New Bern	$2M	Near term	During rain events, approximately 1.6 mgd of stormwater infiltrates into the City's wastewater collection system in the downtown New Bern area. Plans have been designed to replace several sewer lines with reported I&I issues.

Table 5.3.2 - Recommended Actions Matrix

Funding opportunities for these strategies are detailed in the RPGM Infrastructure Module.

References

N.C. Division of Water Quality. Land Application Unit: Reclaimed Utilization Systems. http://h2o.enr.state.nc.us/lau/reclaimed.html.

North Carolina General Assembly. House Bill 643. http://www.ncga.state.nc.us/Sessions/2009/Bills/House/PDF/H643v1.pdf.

NCDENR Division of Water Resources. Central Coastal Plain Capacity Use Area Rules. http://www.ncwater.org/Permits_and_Registration/Capacity_Use/Central_Coastal_Plain/CCPCUA_rule_summary_FAQ.php.

N.C. Division of Water Quality. Stormwater Runoff and Nonpoint Source Pollution. http://h2o.enr.state.nc.us/Stormwater.html.

N.C. Division of Water Quality. Stormwater Unit: State Stormwater Management Program. http://h2o.enr.state.nc.us/su/state_sw.htm

N.C. Division of Water Quality. Coastal Stormwater: Revised Rule Effective Oct. 1, 2008. http://h2o.enr.state.nc.us/su/coastal.htm.

N.C. Division of Water Quality. Stormwater Unit: Neuse River Nutrient Sensitive Waters Management Strategy. http://h2o.enr.state.nc.us/su/Neuse_NSW_Management_Strategy.htm.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

The e-NC Authority. 2007 Connectivity Challenged Counties Report. http://www.e-nc.org/pdf/2007ConnChall_120308.pdf.

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/Craven.pdf.

Hardison, Allen. CRSWMA. Phone Interview. April 22, 2009.

McFarland, Dale. MCAS Cherry Point. Email Message. April, 28, 2009.

Craven County. Solid Waste & Recycling. ***http://www.cravencounty.com/departments/cln.cfm***.

City of New Bern. Public Works-Sanitation. http://www.ci.new-bern.nc.us/PW/san_home.php.

City of Havelock. Garbage and Recycling Information for Residents. http://www.havelocknc.us/WebDocuments/Department%20Publications/Other%20Information/garbage%20brochure%20for%20website.pdf.

Holland Consulting Planners, Inc. Craven County, North Carolina CAMA Core Land Use Plan (DRAFT). September, 2008)

N.C. Department of Environment and Natural Resources. Solid Waste Management Plans. http://www.wastenotnc.org/swhome/swmplans.asp.

Wilson, Nat. N.C. Department of Environment and Natural Resources. Email Message pertaining to saltwater intrusion monitoring wells. May, 28, 2009.

Medical and Health Services

Existing Conditions

Department of Defense Health Services

Halyburton Naval Health Clinic Cherry Point

As part of the 2005 Base Realignment and Closure Plan, the inpatient mission at Naval Hospital Cherry Point was disestablished and the hospital was converted to a clinic with an ambulatory surgery center. Similar conversions happened at ten other military hospitals across the country. Although it is a clinic, Naval Health Clinic Cherry Point remained an independent military treatment facility (MTF), and it does not report to another MTF, such as Naval Hospital Camp Lejeune. Thus, all administrative functions for the clinic remain at Cherry Point.

The official conversion from a hospital to a clinic took place on October 1, 2007 and has resulted in substantial changes in the health care system of Craven County. The conversion of the hospital was well communicated with community providers, but has had an even greater impact than anticipated, according to CarolinaEast Regional Medical Center[3] (CERMC). Since the loss of the Naval Hospital, CERMC has experienced a 78.7-percent growth in labor and delivery visits, and a 133-percent growth in emergency department visits.[4] A portion of this increase may be due to the loss of obstetrics and emergency services at NHCCP, but is also due to growth in community obstetrics and emergency volume. In order to respond to utilization pressures, CERMC has invested in several new construction projects totaling over two million dollars, which include expansions for women's and emergency services.

Following the conversion from hospital to clinic, NHCCP continues to provide primary care management, outpatient imaging, and certain ambulatory surgery procedures to active-duty Marines and their dependents. Depending on availability, these services are also available for military retirees and their families. NHCCP's primary objective is to prepare active-duty service members for deployment, and as such, active-duty service members have first priority for services at the clinic. Because the health and wellness of a Marine's dependents also play a key role in a Marine's ability to deploy, family members are the next priority group. As outlined in the Medical, Health, and Social Services Regional module, these priority groups are also mandated by TRICARE. At this time, active-duty Marines and their family members fill the majority of primary care capacity at MCAS Cherry Point. Approximately 1,795 TRICARE enrollees received primary care

3 Formerly Craven Regional Medical Center.

management from civilian primary care managers in Carteret and Craven Counties in 2008 as a result.

The clinic has the following primary care physicians:

Physician Specialty	FTEs
Family Practice	6.0
Internal Medicine	1.0
Pediatrician	1.0

Table 6.1 - Tricare Eligible
Source: Naval Health Clinic Cherry Point

The primary care physicians listed above are supported by physician extenders, including five primary care nurse practitioners and four physician's assistants. Mental health services are provided by 2.5 FTE clinical psychologists.

NHCCP currently provides minimal specialty physician services on base, and it referred over 23,000 specialty care visits to community providers in 2008. The clinic has one general surgeon, one orthopedic surgeon, one gynecological surgeon, and one anesthesiologist to support the ambulatory surgery center. Two CRNAs support the anesthesiologist. In addition, the facility has one radiologist to support outpatient imaging. Orthopedic and radiology services are highly utilized at the clinic because musculoskeletal complaints are the number one concern of clinic users. Marines at MCAS Cherry Point tend to be very active, both when on duty and off duty, and they experience frequent injuries.

As with all military treatment facilities, the provider supply at NHCCP constantly fluctuates. Between October 2007 and October 2008, roughly 20 percent of all health professionals at NHCCP were deployed. As providers are deployed, the facility's medical provider needs become more acute. Although the clinic has the financial resources to contract with civilian physicians to compensate for deployments and other shortages, it has historically had difficulty recruiting civilian physicians to the region.

TRICARE

TRICARE network providers are an essential part of the health system in Craven County, particularly following the loss of Naval Hospital Cherry Point. Because NHCCP does not have enough primary care and specialty physicians to serve the needs of active-duty Marines, active-duty dependents, retirees, and retiree dependents, many TRICARE beneficiaries seek care in the community. Approximately 20.5 percent of the total Craven County population is enrolled in TRICARE and, according to Health Net Federal Services; approximately 78 percent of all physicians in Craven County are TRICARE network providers. Craven County has the second lowest percentage of TRICARE network providers in the region, despite having the second highest number of TRICARE enrollees.

As stated in the Medical, Health, and Social Services Regional module, TRICARE reimbursement is a significant concern for local providers. Although TRICARE is now one of the fastest payers (99.9 percent of claims are processed and paid within a week), the payment remains low, leading to a substantial disincentive to provide services to TRICARE beneficiaries. As such, over 20 percent of the health care providers in Craven County are not in the TRICARE network.

CERMC also faces challenges due to low TRICARE reimbursement. The Department of Defense recently mandated that TRICARE move to the Outpatient Prospective Payment System (OPPS), which will cut payment to hospitals for outpatient services provided to TRICARE patients. The ruling is expected to have a multi-million dollar impact on local hospitals.

Veterans Affairs

The Department of Veterans Affairs has two community-based outpatient clinics (CBOC) within North Carolina's Military Growth Task Force (MGTF) Region, located in Jacksonville and Morehead City. Both facilities provide primary care and mental health services. Larger CBOCs are located in Wilmington and Greenville. Both of these facilities are slated for an expansion of specialty services on site. Currently, specialty services are available in this region by telemedicine.

Health Care Providers

In addition to the providers listed above at NHCCP, there are 65 FTE primary care physicians, 38 FTE medical specialists, and 37 FTE surgical specialist physicians. These physicians are supported by 13 FTE primary care physician extenders and five FTE medical specialty physician extenders. Craven County also has 42 dentists. The county has minimal physician needs in specific specialty areas, and overall, has minimal physician needs to serve the residents of Craven County. Without USMC growth, there is a need for 2.1 FTE obstetrics/gynecology (OB/GYN) physicians, 5.9 FTE medical specialists, and 2.9 FTE

4 Labor and delivery visits increased from 648 in FY 2007 to 1,158 in FY 2009. Emergency Department visits increased from 2,258 in FY 2007 to 5,268 in FY 2009

surgical specialists. The medical and surgical specialty needs are greatest for allergy, endocrinology, neurology, and plastic surgery. There is also an existing need for two additional dentists.

Although there appears to be a minimal need for physicians in Craven County, it is important to recognize that CERMC functions as a regional referral center. As such, many of the physicians located in Craven County also treat patients from other counties in the region. In particular, residents of Jones and Pamlico Counties often travel to New Bern for medical and health services. Thus, the supply of physicians in Craven County is likely meeting the needs of those two counties, as well.

Behavioral Health

Behavioral health services in Craven County are managed by the East Carolina Behavioral Health LME, which also manages services in Beaufort, Bertie, Gates, Hertford, Jones, Northampton, Pamlico, and Pitt Counties. East Carolina Behavioral Health (ECBH) is based in New Bern, and manages an extensive portfolio of mental health, developmental disability, and substance abuse services that focus on a person-centered recovery model of care. Some services include:

- Mobile crisis management,
- Wellness recovery action planning, and
- Recovery education and peer supports.

Currently there are two FTE behavioral health physicians and 1.9 behavioral health care physician extenders in Craven County. Even without the USMC growth of approximately 7,843 persons in Craven County, there will be a need for 9.3 additional FTE providers by 2011. The shortage is more acutely felt by patients who do not have commercial insurance and/or are unable to pay for services out of pocket. ECBH noted that there are several providers within the region who do not take public sources of payment.

ECBH is currently working with two pilot projects to provide additional physician resources in the region via telemedicine. Each of these projects was funded through special state funding, and offers a promising resource to extend physician services to underserved areas of the region.

The greatest concern for Craven County civilian behavioral health providers is the lack of clarity around which services they can and cannot provide for active-duty Marines and their dependents. Historically, there have been some services that could not be provided by community providers. There is a need for additional coordination between providers in the behavioral health arena.

CarolinaEast Regional Medical Center operates a 23-bed adult inpatient psychiatric unit, Crossroads Adult Mental Health. In fiscal year 2008, Crossroads operated at 78.6-percent occupancy, just above the state's defined target occupancy of 75 percent,[5] and served patients from each of the seven counties in the MGTF Region. Assuming no military growth, Craven County will have a surplus of four adult inpatient psychiatric beds. However, because the facility services such a broad service area, this surplus is appropriately utilized by patients from other counties.

There are no adolescent inpatient psychiatric beds and substance abuse beds in Craven County, nor is there enough need for these services to justify their development within the county. Substance abuse and adolescent psychiatric patients originating in Craven County are appropriately treated in other counties, including Onslow and Pitt.

Service	Beds
Medical/Surgical	95
Obstetrics	6
ICU	94
Gynecology	26
Oncology	23
Orthopedics	16
Pediatric	10
TOTAL	**270**

Table 6.2 - Inpatient Bed Capacity
Source: CarolinaEast Regional Medical Center 2009 Hospital License Renewal Application.

Inpatient Acute Care

CarolinaEast Regional Medical Center[6] (CERMC) provides the highest level of specialty services, including comprehensive cardiology and oncology care, and is the largest acute care facility in the region. The medical center has 270 acute care beds, which operated at 78.3-percent occupancy in federal fiscal year 2008.

In addition, CERMC was recently approved to develop 37 additional inpatient acute care beds that will be operational within the next several years. CERMC functions as a regional referral center. In federal fiscal year 2008, CERMC treated patients from each of the seven counties in the region.

County	FFY 2008 Patients
Carteret	980
Craven	10,975
Duplin	19
Jones	920
Onslow	866
Pamlico	1,334
Pender	5
Other NC Counties and Other States	936
Total	**16,035**

Table 6.3 - Patient Origin FFY 2008
Source: CarolinaEast Regional Medical Center 2009 Hospital License Renewal Application.

As stated above, CERMC experienced a 78.7-percent growth in labor and delivery visits, and a 133-percent growth in emergency department visits between FY 2007 and FY 2009.[7] CERMC believes that a portion of this growth is attributable to a shift of patients from MCAS Cherry Point. Although CERMC has not seen an abnormal increase in births and deliveries, the increase in pre-delivery visits has stressed the capacity of the women's services departments. On average, most civilian mothers-to-be have two visits to the hospital prior to delivery. These visits generally result because the woman has a minor health concern, such as a cold or stomach ache, that she worries may harm her unborn child. Military women on average have four visits. This is likely because they are located away from their support network and do not have someone at home to provide reassurance. The increase in emergency department visits is likely directly attributable to the closure of the Cherry Point emergency department.

In order to respond to these pressures, CERMC has invested in several new construction projects totaling over two million dollars that include expansions for women's and emergency services. These projects include the addition of seven emergency department treatment bays, four express care treatment bays, three labor and delivery triage beds, and seven clinical decision unit beds.

Inpatient Rehabilitation Care

CERMC provides the only inpatient rehabilitation unit in the MGTF Region. The unit is supported by physical therapists, rehabilitation nurses, medical social workers, psychologists, occupational therapists, speech pathologists, and a recreational therapist team to provide a comprehensive rehabilitation plan for patients of this accredited facility. All of these staff persons are under the direction of a physiatrist. In federal fiscal year 2008, CERMC's 20-bed unit operated at approximately 46-percent occupancy, and it currently has sufficient capacity to accommodate future volume growth.

Outpatient Services

The following outpatient services are available in Craven County.

There is no identified need for additional outpatient services in Craven County at this time.

Regional Coordination

NHCCP relies heavily on Health Net Federal Services and community providers. As such, NHCCP has diligently worked to maintain a positive working relationship with both Health Net and the community providers. Recently, NHCCP held a provider appreciation dinner on the installation and shared upcoming changes and developments at the clinic with local clinicians. In addition, the clinic stays in weekly communication with Health Net regarding changing service offerings. These types of events and communication have greatly enhanced the relationship between NHCCP and the community. Consequently, community members are motivated to actively work to accommodate the needs of NHCCP and TRICARE enrollees.

Facility Name	Location
Outpatient Rehabilitation	
Craven Regional Medical Center[‡]	New Bern
Diagnostic Imaging Centers*	
Coastal Carolina Health Care, P.A.	New Bern
Craven Regional Medical Center	New Bern
Naval Health Clinic Cherry Point	MCAS Cherry Point
Ambulatory Surgery Centers	
Naval Health Clinic Cherry Point	MCAS Cherry Point
Urgent Care Centers	
CCHC Urgent Care	New Bern
ECIM	New Bern, Havelock
Naval Health Clinic Cherry Point	MCAS Cherry Point

Table 6.4 - Outpatient Services
Source: State Medical Facilities Plan and www.yellowpages.com

5 As defined in the *2009 State Medical Facilities Plan.*
6 Formerly Craven Regional Medical Center

Needs Assessment

Department of Defense Health Services

Physicians in the Craven County community serve patients from counties throughout the region and, as such, the quantitative model for the county masks some specific needs, such as those of NHCCP. According to the physician model, there are no substantial physician shortages in the Craven County medical community. The need for additional physicians to support the direct needs of the military community at NHCCP still exists. In particular, NHCCP has needs for additional primary care managers and behavioral health professionals.

As stated in the Medical, Health, and Social Services Regional module, increased TRICARE reimbursement will also remain one of the greatest needs in Craven County. Health care providers across the region, including in Craven County, are already experiencing declining revenue and initiating cost cutting measures, thereby limiting their ability to make necessary investments in quality care such as workforce development, health information technology, and medical equipment. A 2007 American Medical Association study found that 54 percent of physicians would have to reduce staff, and 67 percent would defer purchasing information technology, if Medicare payments were cut. TRICARE reimbursement is linked to Medicare reimbursement. As such, it is reasonable to believe that a reduction in TRICARE reimbursement would have a similar effect. If TRICARE reimbursement is not enhanced, TRICARE beneficiaries in the region will continue to find it difficult to access appropriate health care services locally and in a timely manner.

Veterans Affairs

As stated in the regional summary, the current Veterans Affairs services are reasonable to meet current and projected needs in the region, including in Craven County. Leadership at the VA has indicated that there are currently no plans to expand services in the region.

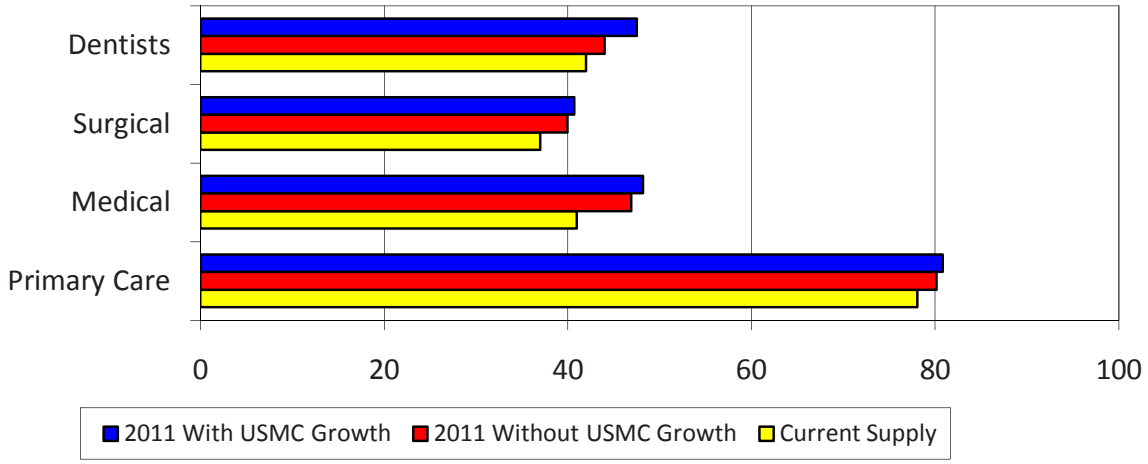


Figure 6.1 - Health Care Provider Needs (FIEs)

Source: Health Net Federal Services, regional providers and HPS Demand Model.

Health Care Providers

As described below, the greatest physician needs in Craven County are for behavioral health providers. However, there are also modest needs for dentists and specific medical and surgical specialists. In particular, there are needs for allergists, oncologists, general surgeons, and plastic surgeons.

7 Labor and delivery visits increased from 648 in FY 2007 to 1,158 in FY 2009. Emergency Department visits increased from 2,258 in FY

Behavioral Health

Craven County has a need for 10.4 FTE behavioral health providers (in addition to the existing 3.9 FTE providers) following USMC population growth. Given that one of the region's most highly utilized inpatient psychiatric facilities is located in Craven County, this need is even more pronounced. Craven County has a substantial behavioral health provider need that must be addressed in order to serve the growing needs of both the military and civilian populations in Craven County and in the surrounding counties.

Following USMC growth, the need for substance abuse and inpatient adolescent beds will remain minimal. In addition, based on inpatient adult psychiatric volume originating in Craven County, there is no need for additional adult psychiatric beds; however, there is a regional need for 16 adult inpatient psychiatric beds.

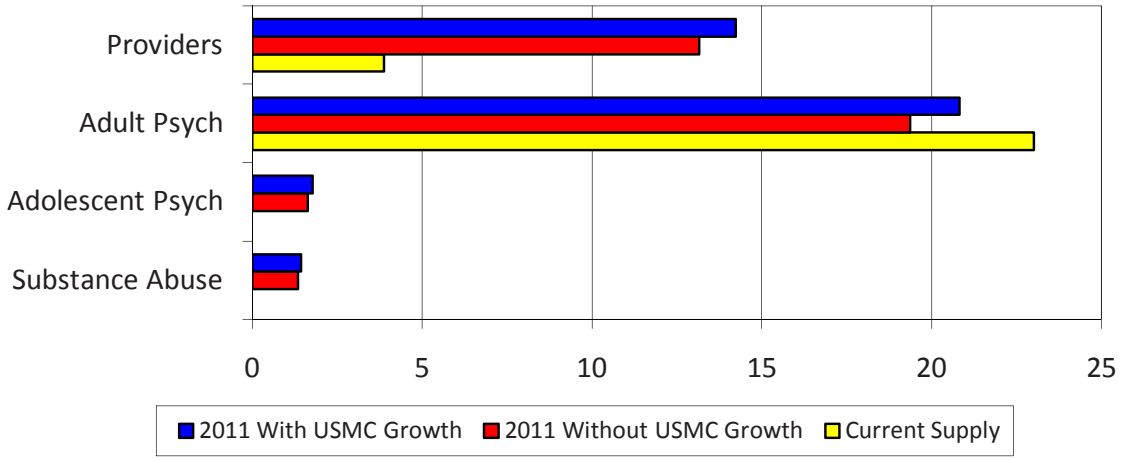


Figure 6.2 - Behavioral Health FTEs and Beds

Source: Health Net Federal Services, regional providers, 2009 Hospital License Renewal Applications, and HPS Demand Model.

Inpatient Acute Care

CERMC is in the process of adding 37 additional acute care beds at the medical center. Any inpatient acute care needs will be met through the addition of those beds (which are included in the current supply in the chart below).

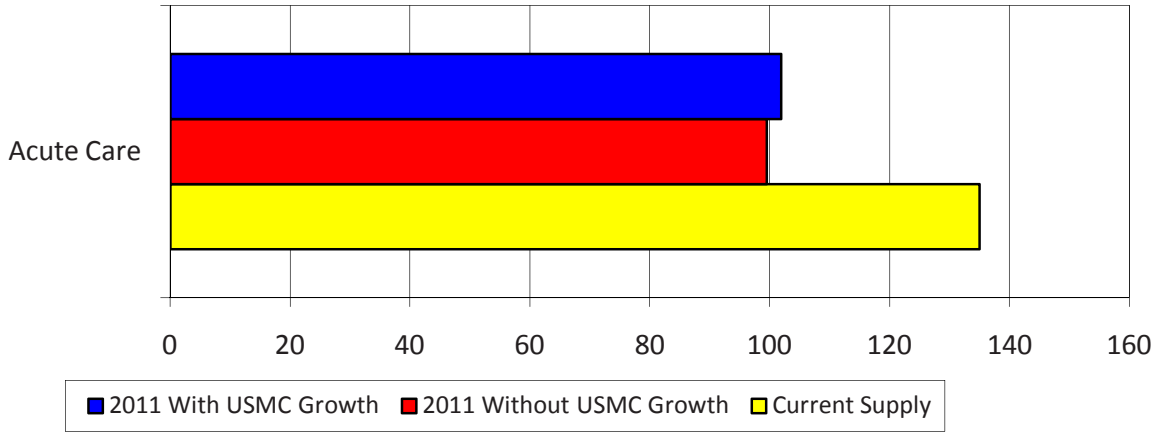


Figure 6.3 - Inpatient Acute Care Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model.

Inpatient Rehabilitation Care

Based on the projected inpatient rehabilitation utilization of Craven County residents, there is no need to develop additional inpatient rehabilitation services in Craven County, as shown in the chart below.

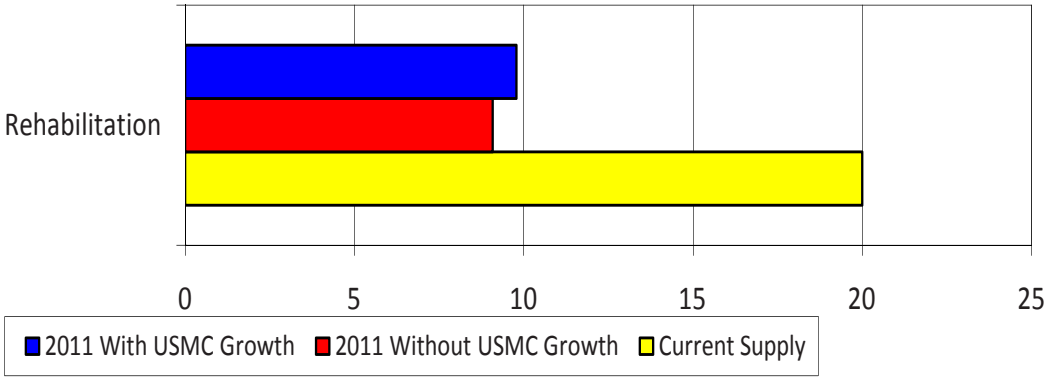


Figure 6.4 - Inpatient Rehabilitation Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model.

The inpatient rehabilitation unit at CERMC currently treats patients from five of the seven counties in the MGTF Region. As such, the capacity at CERMC appropriately serves a greater region.

Outpatient Services

Military population growth is not expected to have an impact on the need for diagnostic centers, ambulatory surgery centers, or urgent care centers in Craven County. The development of additional outpatient rehabilitation services is largely dependent on the county's ability to recruit additional physicians to support the service.

Regional Coordination

Craven County providers are already highly coordinated and must continue to communicate regularly in order to maintain these relationships. As noted above, there is a need to parlay the region's coordination regarding medical services into the behavioral health sector. A round table meeting between all regional behavioral health providers is needed to provide clarification regarding the provision of behavioral health services.

Recommended Strategies and Actions

Craven County needs will be met through the execution of regional strategies and actions. Provider and facility needs in the county are modest. In addition, behavioral health needs will be met by enhanced communication between military and civilian providers, as well as any additional funding granted to LMEs.

Action 1: Recruit additional behavioral health providers to Craven County.

Rationale

Craven County is projected to have a shortage of more than 10 behavioral health providers following USMC growth based on Craven County's population. The CarolinaEast Regional Medical Center's inpatient psychiatric unit, however, is highly utilized by patients throughout the region. As such, the need for behavioral health providers is more pronounced.

Responsible Party

CarolinaEast Regional Medical Center

Funding

According to the Merritt Hawkins 2008 Survey of Physician and CRNA Recruiting Incentives, the average cost of recruiting a psychiatrist in 2008 was $189,000. If this provider covers a multi-county area, this cost could be shared by multiple organizations.

Action 2: Recruit two additional OB/GYNs to Craven County.

Rationale

Following the closure of inpatient services at NHCCP, CarolinaEast Regional Medical Center has experienced a sharp increase in obstetrics volume. In addition, community providers have experienced growth of patient panels.

Responsible Party

CarolinaEast Regional Medical Center

Funding

According to the Merritt Hawkins 2008 Survey of Physician and CRNA Recruiting Incentives, the average cost of recruiting an OB/GYN in 2008 was $255,000.

Social Services

Existing Conditions

MCAS Cherry Point Marine and Family Services

Marine and Family Services is a division of the Department of Marine Corps Community Services (MCCS), and provides a variety of services in order to strengthen the military community at each Marine installation throughout the country. Marine and Family Services programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or by visiting the Marine and Family Services offices located on MCAS Cherry Point at the corner of E Street and 4th Avenue. Marines and their family members can access services voluntarily or via referral from a commander or another division of military services, such as a health care provider. Marines are briefed on available services during the required base orientation, Welcome Aboard, upon arrival at any Marine installation. Services and special events are advertised on the base television channel and on flyers around base, including at the commissary, shops, and restaurants. Marine spouses living off-base rely on information relayed from their spouses if they do not visit the base frequently.

The following table outlines the specific services offered by MCAS Cherry Point Marine and Family Services:

Program	Services
New Parent Support	▪ Parent education, support and guidance ▪ Home visits ▪ Parenting classes and workshops ▪ Support and play groups
Lifelong Learning	▪ Apprenticeship programs ▪ Testing, including SAT/ACT ▪ Tuition Assistance ▪ Educational counseling
Prevention and Intervention	▪ Family advocacy – domestic violence ▪ Individual and family counseling ▪ Combat stress counseling ▪ Family violence prevention ▪ Suicide prevention education ▪ Partnership with commanders
Exceptional Family Member	▪ Placement coordination ▪ Respite care
Family Advocacy Program	▪ Sexual assault awareness ▪ Child abuse ▪ Stress management ▪ Victim protection
Personal Readiness & Community Support	▪ Financial counseling ▪ Relocation assistance ▪ Transition assistance ▪ Career resource center ▪ Family member employment ▪ Volunteer and skills development ▪ Department of veterans affairs
Child & Youth Programs	▪ Short-term/hourly care center ▪ Family child care program ▪ Child care resources and referrals ▪ School age care site ▪ Youth center
Substance Abuse Counseling Center	▪ Prevention education ▪ Screening and assessment ▪ Counseling
Retired Activities Office	▪ Counseling on benefits, entitlements and privileges ▪ Transition assistance

Figure 6.5 - MCAS Cherry Point Marine and Family Services

Source: MCAS Cherry Point Marine and Family Services website (http://www.mccscherrypoint.com/marineservices.htm)

The central aim of all Marine and Family Services is to support mission readiness: to strengthen the individual Marine and his or her family for mental and emotional fitness, allowing the Marine to be fully prepared for optimal performance during mission deployment. To this end, Marine and Family Services offers the range of support programs listed above, which are available to active-duty and retired Marines, as well as their legal spouses and dependents. Due to its integration into the military structure, staff coordination with official military channels and staff understanding of military life, Marine and Family Services is able to address social service needs from the context of military culture.

Personal Readiness & Community Support and Marine Corps Family Team Building

- Marine readiness is central to all Marine and Family Services as it strives to strengthen and support Marines, their families, and the military community. To ensure that Marines are mission-ready, Marine and Family Services provides classes, workshops, and counseling to mentally prepare the service member and his or her family for deployment through the following programs:
- *Lifeskills* courses provide workshops on a wide range of topics that are crucial to healthy individuals, marriages and families.
- *Lifestyle, Insights, Networking, Knowledge and Skills* (L.I.N.K.S.) program provides military members, spouses, and children with mentoring and guidance through Marine and Family Services staff, chaplains, Marine Corps Retention Services, and volunteer military spouses.
- *Chaplain's Religious Enrichment Development Operation* (CREDO) is a weekend retreat program for military members and their families on topics such as personal growth, character development, team building, and ethical leadership. Workshops are also offered to address issues such as marriage enrichment and spiritual growth.
- *New Parent Support Program* (NPSP) provides education and training for new parents including parenting, baby safety, and play times.

- Deployment puts a strain upon the Marine and his or her family and, in particular, his or her spouse, who must manage household and child responsibilities on his or her own. These services are essential to helping identify and prevent potential crises before they require intervention. These Marine and family readiness programs address issues relating to deployment, and are currently operating at capacity because the demand for these services has

increased as more troops deploy for OIF and OEF.

Child Development Centers

Access to child development center options play a central role in the need for, and delivery of, social services. Access is particularly crucial for military spouses, because it provides increased opportunities for employment outside the home, time to care for personal needs such as routine medical appointments, community involvement, and opportunities to pursue continued training and education. The need for child development options is most acute when a service member is deployed, leaving all household and family responsibilities to one spouse. For all these reasons, access to affordable child development options is critical. It allows military families—in particular military spouses—to be more financially independent, maintain physical and mental health, and develop professional skills. In turn, these opportunities often lead to a decreased need for other social services such as food assistance, counseling, and child welfare services.

- Marine and Family Services has a range of child development options for children from six weeks to 14 years of age; fees are based on a sliding scale. Options include:
  - Full-time care for children ages six weeks to 12 years, available from 5:30 a.m. until 6:00 p.m.
  - Part-time care for children from ages three to five years, morning or afternoon sessions
  - Hourly care for children ages six weeks to 12 years, available from 8:00 a.m. until 5:30 p.m.
  - Emergency care for children ages six weeks to 12 years, available for unexpected emergencies 24 hours a day, 7 days a week, in the home of a certified family child development care provider
- These options are available at the two Cherry Point child development facilities, as well as with in-home child development providers on base. Marine and Family Services assists military spouses wishing to be certified to manage an in-home child development center through the Family Child Care program.
- MCAS Cherry Point child development programs currently serve 400 children a day, but the demand for care at MCAS Cherry Point is greater than the current program's capacity. Advance reservations are required and slots often fill up weeks in advance, making last-minute or urgent day care needs a challenge. Weekday child development care is available during the day during normal business hours, but not during second and third-shift times, limiting employment options for military spouses and single parents. Child development care is sometimes available at private facilities off base, but slots are limited and private facilities are often unaffordable for military families. MCAS Cherry Point is currently adding child development facility capacity. A third facility is being built, and will add 90 slots in the first stage at the end of 2009. These slots will mostly be put towards infant slots, given that the majority of children on the waiting list are in this age range. A second phase will add 200 slots by 2015, and these slots will mainly be allocated for young children.

Exceptional Family Member Program

The Exceptional Family Member Program (EFMP) is a mandatory program for families who have children with special needs. EFMP staff provides placement coordination, family support, and 40 hours of monthly respite care. MCAS Cherry Point's EFMP has been growing quickly over the past few years, but is currently operating at capacity levels that present barriers to providing optimal care; MCAS Cherry Point currently needs two additional EFMP staff. In addition, many families in the EFMP program are experiencing challenges accessing local health services for their exceptional family members. Many specialty services are available only in the Triangle at Duke University Hospital or the University of North Carolina Hospitals. Accessing services at these facilities requires an all-day trip, which places burdens on parents and children alike. Because transportation services are not available to these facilities, parents must take a day off of work to travel to the Triangle, and may also have to pull other children out of school for the day because they do not have before- or after-school day care options. Further, although TRICARE reimburses families for making this trip, payment is made well after the trip is made. For some families, even paying the initial cost of gas and parking up front is a financial hardship.

Counseling Services & Family Advocacy

Marine and Family Services provides individual and family counseling and victim advocacy to address challenges individuals and families are experiencing. Counseling services are experiencing an increase in demand for individual and family

counseling as a result of Marine experiences in OIF and OEF. In addition, the recent shift of focus and surge of troops to Afghanistan has resulted in increased anxiety for Marines and family members. While risks of deployment in Iraq have largely been understood by the military, and anticipated by Marines and their families, Afghanistan is a new environment, and the full impact of this shift has yet to be realized. This uncertainty has added anxiety for both Marines and their families, and will likely increase counseling service need.

Marine and Family Services counseling services are meant to address short-term counseling needs such as child-parent and spouse relationship issues. Long-term mental health needs such as traumatic brain injuries (TBI), post-traumatic stress disorder (PTSD), and combat stress are provided for in the Marine or community medical facilities by psychologists and psychiatrists. Regardless of the length of counseling needs, these issues often have an effect on marriages and families as combat experiences and deployment transition can lead to family relationship strains and even domestic violence and child abuse.

A number of barriers to access exist that prevent or inhibit Marines from accessing mental health services. Stigma still plays a major role in Marines' not seeking treatment for mental health issues because many fear that seeking such services will negatively impact their careers. Marines are screened when they leave for, and return from, deployment, in order to detect any mental health concerns, but many Marines attempt to avoid detection. Marine and Family Services estimates that one out of every 10 Marines suffers from some form of PTSD and that 23 percent of these Marines are not currently seeking treatment. TBI injuries are a relatively new condition, and command units and health providers are still being trained on how to recognize, diagnose, and treat the condition. Some Marines do seek mental health services, but are confused as to how to access medical or counseling services. Finally, demand for mental health services currently exceeds supply, and for on- and off-base providers, results in long wait times for services or long travel, often to Jacksonville, Greenville, or Raleigh. Travel is reimbursed only if it exceeds 100 miles. Consequently, trips to Jacksonville and Greenville are not reimbursed and this cost can be a financial hardship. Due to difficulties accessing appointments, many mental health issues remain un-treated, placing additional stress on the Marine and his or her family. Mental health needs are more fully addressed in the medical and health section above.

Substance Abuse

Substance abuse becomes a particular concern during times of deployment as Marines and their families cope with stress of separation from family and experiences of war. The substance abuse program aims to prevent substance abuse and treat Marines and their families with substance abuse issues. The program offers preventative educational programs for military members and works closely with command structures to recognize and intervene in any potential case of substance abuse. When cases of suspected substances abuse do emerge, the substance abuse program provides screenings and assessments and refers Marines and family members to appropriate treatment options. Marine and Family Services provides substance abuse counseling and coordinates with outpatient medical services. Because inpatient facilities are not available at MCAS Cherry Point, Marines requiring in-patient substance abuse treatment must be transferred to military facilities located in Wilmington, North Carolina, or Norfolk, Virginia.

Additional Marine and Family Services

Other Marine and Family Services programs expect a less significant impact due to the demographics of expected Marines, including the following programs:

- *Food Assistance* – While most Marine families do not qualify for food assistance based upon their income and family size, financial counselors screen eligibility and provide referrals when appropriate. The military provides assistance through the Family Subsistence Supplemental Allowance (FSSA), a program that provides additional income dedicated to food purchases. Marine and Family Services staff also refer eligible Marines to Food and Nutritional Services (FNS), commonly known as "food stamps," accessed through County DSS offices, and to Women Infant Children (WIC), a Department of Agriculture program for pregnant, post-partum, and breastfeeding women and children under age five to meet crucial food needs.
- *Relocation & Transition Assistance* – When Marines and their families are arriving at or departing from MCAS Cherry Point, Marine and Family Service staff assist them with information and logistical support to facilitate a smooth move. Information on housing, schools and available resources are provided to new Marines and their families. When a Marine is departing from the military, similar assistance is available including resume preparation, employment assistance and training on accessing civilian services. Transition staff coordinates with

the Marine for Life program, available to all service members, and with the Transition Assistance Program through the Department of Labor. While these programs offer a range of services to assist Marines and their families, many Marines currently do not seek these services.

- *Lifelong Learning* – In order to provide Marines and their spouses with opportunities for personal and professional development, this program provides and facilitates access to continued education and occupational training. Career and educational counseling, testing, online classes, and referrals to local educational centers are available. Currently the library is in need of additional staff and resource updates and development.
- *Retired Affairs Office* – Retired Marines are eligible for continued support and assistance, provided at this office. Staff assists retired Marines with information regarding benefits available, including health care, education, casualty assistance, VA disability compensation, and social security.

OneSource

Military OneSource is a resource contracted through the Department of Defense for military members and their families, intended to supplement existing military support services through the Internet or by phone. Military OneSource complements Military and Family Services, providing a central location for information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs. OneSource offers counseling sessions over the phone and online, and refers to local counselors for in-person counseling. Local counselors in the communities surrounding MCAS New River and MCB Camp Lejeune often have limited availability and waiting lists are frequent and wait times lengthy.

Department of Social Services

Services Provided – County Department of Social Services

North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[8] All County Departments of Social Services (County DSS) provide the following social services. [For a full description of DSS services please see the Medical, Health, and Social Services Regional module.]

- *Adult & Family Services* – supports disabled adults with a range of services such as guardianship, transportation to medical facilities, services for the blind, and adult care home monitoring.
- *Child Welfare* – covers the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.
- *Crisis Intervention* – helps low-income households with heating or cooling-related emergencies to reduce the risk of health or safety problems as well as the risk of eviction.
- *Day Care* – provides free and/or subsidized child day care for low-income families.
- *Food and Nutrition Services* -- offers food assistance to eligible families.
- *Pregnancy Services* – supports low-income individuals with unplanned pregnancies, addressing medical, social, education and psychological issues.
- *Refugee Assistance* – assists newly-arrived refugees.
- *Senior Services* – offers meal assistance and health promotion activities to eligible adults over 60 years of age.
- *Work First* – provides temporary assistance to needy families and supports their ability for self-sufficiency.

8 North Carolina Department of Social Services, available at http://www.ncdhhs.gov/dss/about/

Military and civilian populations in Craven County access DSS services by phone, Internet, or in-person at the County DSS office, located in New Bern.

As discussed previously, while Marine and Family Services is meant to be the primary avenue by which military members and their families access services, military families living off base, particularly those who are less knowledgeable about military resources, access social service programs through the County DSS. In particular, the military population uses Child Welfare, particularly Child Protective Services, Day Care, and to a lesser extent, Food and Nutritional Services (FNS), commonly known as "food stamps." In addition, affordable transportation is a current need for both military and civilian populations that greatly impacts access to social services.

While Craven County DSS expects these programs used by military populations to experience increased demand as a result of the military growth, the military impact will be compounded by the increase in County DSS services currently being experienced as a result of the current economic conditions. Craven has experienced an increase in demand for its services, stretching thin funds and staff capacity. With County DSS capacity already stretched in the current economic climate, adding Marine populations will further exacerbate already-existing funding, staff, and facility capacity challenges.

Day Care

As previously discussed, access to day care is important for the family unit and, in particular, provides increased opportunities for military spouses. Craven County's current demand for affordable day care exceeds current capacity and many families are placed on waiting lists for available slots. While the facilities to increase day care capacity exist, funding for staff and administration to support increasing day care slots is not available.

Child Welfare

Military families, particularly younger, junior-enlisted military families, use DSS child welfare services at higher rates than do civilian populations. This higher use rate is due to factors discussed fully in the regional report, including lack of support networks due to frequent moves and separation from extended families. In addition, families living in the civilian community often feel isolated from the military population and might perceive that the civilian population does not understand the unique challenges they face. Finally, they might not be knowledgeable about on-base services and resources, or not be able to access those services, further exacerbating their sense of isolation.

All of these factors lead to military families requiring a disproportionate amount of child welfare services in Craven County, particularly child protective services. Child abuse and child neglect cases exist at high rates among the military community, and military families often constitute some of the most severe cases. In order to prevent or reduce these cases, Craven County DSS involves military families in its programs to prevent child abuse and neglect, which include parenting classes and Smart Start, a program that provides child care and early childhood development while engaging parents to support positive parent-child relationships.

Transportation

Craven County does have public transportation, CARTS, which serves Craven, Pamlico and Jones Counties with 32 vehicles. CARTS is best for scheduled travel—trips must be pre-arranged at least two days in advance and changes or cancellations must be made 24 hours in advance. After three violations of the cancellation policy, individuals lose their privileges to access CARTS.

Geographic access is also a challenge—Craven County is a large county, and much of the military population is located far from the Craven County DSS services in New Bern. Private transportation, such as taxis, is sometimes available but is not affordable for many community members.

Many junior-ranking military families do not have more than one car, and a lack of public transportation for these families particularly those living off-base, has a major impact on their ability to access services. This presents particular challenges as many social services available on-base and at Craven County DSS offices are best accessed in person. Lack of transportation can also add to feelings of isolation for military families, particularly those living off base, who are often far from extended family and lack support networks.

Coordination - Marine and Family Services & Departments of Social Services

Overall, Craven County DSS offices and the military report limited need to coordinate in the delivery of social services. In cases of child abuse, however, coordination between County DSS and military staff is essential; coordination is formalized

through a Memorandum of Understanding between Craven County DSS and MCAS Cherry Point. If the offender is a military service member, his or her commanding officer is notified and the service member may be removed from the home temporarily and/or placed in custody on-base. This coordination is particularly important because military families often do not have extended families in the area, and without the removal of the offender, Craven County DSS would need to find temporary housing for the victims following allegations of child abuse. With the removal of the offender through the military discipline system, the child can remain in the home while follow-up investigation and counseling are conducted. Please note that spousal abuse cases are not handled by DSS.

Needs Assessment

Marine and Family Services and Craven County DSS

As discussed in the Regional Medical, Health, and Social Services module, the military community, especially younger, junior-enlisted service members and their families, already use public social services at higher rates than does the civilian population. Craven County is expecting over 7,500 Marines and their families in the military population influx, and 90 percent of these Marines are expected to be between the ages of 18 and 26 and junior-ranking. These families often have young children, and are still learning life and coping skills to address the challenges they face and the stresses of military life. With current wartime deployments to OEF and OIF, stresses on military service members and their families are increasing, as are injuries and mental health conditions such as TBIs , PTSD cases, and combat stress, adding to the need for additional social service capacity.

The influx is not expected to create needs for new service;, rather the increased military population is expected to exacerbate resource needs already present, both on base at MCAS Cherry Point Marine and Family Services and off base through County DSS services. Marine and Family Services on base at MCAS Cherry Point expects all services to experience increased demand, and expects Day Care, Individual and Family Counseling, Family Advocacy, and the Exceptional Family Member Program to be particularly impacted by the military growth. County DSS increased demand is expected for Child Welfare and Day Care programs. Current barriers to access for the expected Marine population are also expected to be exacerbated—particularly transportation and geographical access.

Transportation and Geographic Access

As discussed previously, access to affordable public transportation and increasing geographic access is a major need for both the civilian and military population throughout the MGTF Region. In particular, needs include:

- Increased ability for military families living off base to access social services in their own communities.
- Transportation that can be accessed daily and without advance reservations.
- Increased geographical access including increasing options to access services, such as satellite offices.

Child Welfare

- Craven County expects that Child Welfare services will experience the greatest increase in demand as a result of the USMC population growth. As discussed previously, military families and particularly Marines of the expected demographic group (younger, junior-enlisted military families) use child welfare services at high rates. Craven County reports that military families also comprise some of the most severe cases of child abuse and neglect. In particular Craven County DSS deals with high rates of Shaken Baby Syndrome Cases.[9] Increased capacity to address issues that cause this demographic group to need child protective services, as well as increased resources to child neglect and abuse cases, is a significant need. These preventative and response programs, staff, and systems are in place, but will need increased funding and targeted initiatives to address expected upcoming need. In particular:
- Increased capacity for preventative programs through Marine and Family Services and Craven County DSS that are currently in place and will need increased funding include classes, workshops, and counseling on topics including

9 Shaken Baby Syndrome is caused by vigorous shaking of a child. Injuries often cause developmental delays, seizures, paralysis and even death. More information available at the Centers for Disease Control and Prevention webiste, http://www.cdc.gov/HealthMarketing/entertainment_education/tips/shaken_baby.htm

parenting, anger management, positive communication, and healthy relationships.

- Increased capacity for targeted programs that address specific needs for the expected Marine demographics, including recognizing and addressing mental health conditions incurred during combat, addressing relationship and family challenges before/after deployment, and life and coping skills for military spouses during deployment.
- Increased capacity for preventative initiatives, targeted to decrease the sense of physical and cultural isolation that many off-base military families feel, is needed to increase the well being of these families and to decrease their need for child protective services, which include mentoring programs for military spouses and youth, as well as support groups.
- Increased knowledge about services available to military families, in particular those living off-base. While military service members do receive information about Marine and Family Services as part of their base orientation, many military service members and their families do not know about, or do not know how to access, available resources.
- Increased capacity for child protective services for both MCAS Cherry Point Marine and Family Services and County DSS. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly, and that adequate follow up (counseling, legal coordination, coordination with military Command) is thorough and timely.

Child Development

While the increase in military population is expected to have a relatively minor impact on the demand for child development center slots, it is expected to contribute to already-existing child care capacity issues. Craven County DSS offices already have the necessary facilities to increase child care availability, but lack the necessary funding to provide adequate staff and administrative support. Although MCAS Cherry Point has on-base facilities, demand exceeds capacity, and both bases have a substantial number of children on the child development waiting lists. Additional facility space is under construction, but it is possible that future demand will even exceed this new capacity. Marine and Family Services provides referrals to other providers off base, but not enough off-base providers are available to meet current demand.

The following child development center needs reflect current needs that will be exacerbated by the influx of military population:

- Expanded child development center slots and qualified staff to support this capacity.
- Expanded child development center slots and capacity for children with special needs, such as extreme attention-deficit hyperactivity disorder (ADHD).
- Increased day care availability at second and third shift times. Access to day care at these times would greatly increase military spouses' ability to find employment outside the home, increasing financial independence and decreasing needs for other social services such as FNS.
- Increased access to respite care is needed, particularly for single parents, military spouses whose spouses are deployed, and parents with children with special needs.
- Increased child development center slot availability for parents who need urgent or last-minute day care options, particularly single parents or military spouses whose spouses are deployed.

The following chart outlines current and anticipated day care need for Craven County:

	Child Care Enrollment - 2007	Expected Child Care Enrollment due to Normal Population Growth - 2011	Additional Slots Expected Due to the Military Increase - 2011	Total Expected 2011Child Care Enrollment
Children aged 5-12	618	701	59	760
Children under 15 years old	2,242	2,542	214	2,756

Figure 6.6 - Anticipated Day Care Needs for Craven County

Source: Education Working Group, Military Growth Task Force.

Marine and Family Services

In addition to the needs listed above, Marine and Family Services programs have the following specific needs.

Counseling Services & Family Advocacy

Counseling resources are currently in place to meet the needs of Marines and their families who are facing challenges in areas such as pre- and post-deployment family transitions, anger management, positive communication, and healthy relationships. The need for increased counseling services capacity is also linked to need for increased mental health services, provided through the health system. Unmet need for mental health treatment spills over into Marine and Family Services counseling, family advocacy, and child protective services. Increasing overall capacity for all mental health services is needed—clinical and non-clinical, as well as counseling services.

- Increased capacity for counseling services for Marines and families members.
- Increased continuity of care between the medical services and Marine and Family Services would address both the mental health condition and any social service spillover into family issues that require counseling or the intervention of family advocacy services.
- Increased capacity for family advocacy programs to ensure timely and appropriate response to acute families issues including domestic violence, child abuse, and child neglect.
- Increased clinical staff capacity through increasing clerical staff to support administrative tasks.
- Increased training for providers and Command to more effectively recognize and treat TBIs and combat stress.

Exceptional Family Member Program

- MCAS Cherry Point's Exceptional Family Member program is operating at full capacity and additional resources are needed even at current program levels. EFMP program needs include:
- Increased capacity in terms of staff and facilities to provide respite care.
- Increased staff capacity to provide EFMP program support.
- Resources to assist families who must travel to Durham or Chapel Hill to access appropriate medical services, in particular day care for EFMP siblings, and up-front payment to pay for gas and parking during the trip.

Recommended Strategies and Actions

Action 1: Increase Marine and military family knowledge of available social services, both on MCAS Cherry Point and in the community.

Rationale

Many Marines and their families do not have a clear understanding of where or how to access social services. Mental health services are particularly unclear as these issues are addressed by both the medical system and MCAS Cherry Point Marine and Family Services.

Supporting activities

- Utilize media, including public service announcements, to educate the military community, particularly residing in Craven County, about social services available.
- Target education to individuals in the off-base community who have the opportunities to become aware of Marine or family issues and can provide referrals to Marine and Family Services. Target this education at those with whom military families already interact as part of daily life, including school teachers, school counselors, and clergy.

Funding

- Funding for media and educational campaigns. Points of contact at MCAS Cherry Point for further discussion of funding through Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury and Director of Marine and Family Services, Vera Campbell.

Action 2: Increase access to services by addressing limited mobility and geographic access challenges.

Rationale

The lack of flexible public transportation and the distance between Craven County's military population and Craven County DSS results in many military families encountering challenges in accessing services. Families accessing services for children or spouses with special needs must travel to Greenville or the Triangle at considerable cost.

Supporting activities

- Reduce or eliminate geographic access barriers by bringing services to military communities in Craven County. Form community action teams through Craven County DSS and Marine and Family Services that can serve military families at accessible locations throughout Craven County, such as community facilities, schools, and churches. Preventative programs such as workshops could particularly be successful in these venues and child care could be provided on-site. The appropriateness of providing services that require confidentiality, such as individual or family counseling, will depend on the capacity of the community facility.
- Provide a public transportation option to EFMP families to Greenville and Chapel Hill. Purchase a multi-passenger van that will have scheduled travel once a week to Greenville and the Triangle. This van could be considered for other uses on the remaining three weekdays. For example, the van could be used to provide transportation to Marine and Family Services programs or events, or be used to transport the community action teams described above.

Funding

- The EFMP transportation option is estimated at $22,900 for the initial cost of a multi-passenger van, and

approximately $37,200 in operating costs per year, assuming that the van is in operation two days a week.

- Points of contact at MCAS Cherry Point for further discussion of funding through Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury and Director of Marine and Family Services, Vera Campbell.

Action 3: Increase preventative program capacity through MCAS Cherry Point Marine and Family Services.

Rationale

Because many military families access services at a point of crisis, addressing causal issues through preventative programs can reduce the need for emergency services.

Supporting activities

- Target military members most at risk for needing emergency social services, such as young and junior-enlisted military families with young children.
- Target outreach programs, particularly in accessible locations, for off-base communities.
- Increase the number of qualified staff to serve these programs. Maximize these clinical staff through increasing administrative support.

Funding

- Funding for increased program capacity need. Points of contact at MCAS Cherry Point for further discussion of funding through Cherry Point's Community Services: Chief Financial Officer of Marine Corps Community Services, Marsha Asbury and Director of Marine and Family Services, Vera Campbell.

Public Safety and Emergency Services

Existing Conditions

Emergency Management

Communications Interoperability

Craven County's emergency responders rely on varying communication systems, with various agencies utilizing VHF, 300 MHz, 400 MHz, and 800 MHz radios.

Law Enforcement

Havelock Police and Fire

Data provided by Havelock Police and Fire provides compelling evidence that growth directly and indirectly related to the Grow the Force action is having a significant effect on demands for service. Between 2004 and 2008, yearly calls for service increased by 45 percent, with 24 percent of that increase occurring since 2006.

Maintaining levels of service to meet growing demands has been especially difficult for this department due to an especially high attrition rate to MCAS Cherry Point since the recent privatization of law enforcement functions there. The department maintains a force of 29 sworn positions; seven officers have left the department to work for the base, requiring the department to backfill nearly a quarter of its positions. Although the department employs a number of

recruitment methods, such as Job Fairs, community college BLET classes, radio, television, and print media, the number of forthcoming qualified recruits is lacking. During the course of PS/ES committee meetings, these recruitment issues were found to be widespread throughout the MGTF study region.

Interoperable communications remains a challenge for this department. The department has access to two VIPER-compatible handheld units and high costs have prohibited any expansion of this use for the indefinite future. The department has cited a need for a central Communications Center to ensure reliable, coordinated access to any VIPER system. Renovation plans for the police department facilities have been developed, but high costs remain a barrier to implementation.

New Bern Police Department

Data provided by the City of New Bern Police Department do not show a correlation between military and related growth in the region and an increase in demands for service. Nonetheless, the department faces challenges in meeting existing demands even absent significant growth within the jurisdiction.

Although personnel levels have increased steadily within the department since 2004, current personnel numbers do not provide ideal levels of service. The department relates recent successes in recruiting through a novel employment method. New hires are brought on prior to certification at a probationary reduced salary. Upon completion of training and certification, new recruits are then assigned to field training. These recruits agree to provide five years of service in exchange for being hired and trained prior to certification.

New Bern utilizes a mixed communication system consisting of an 800 MHz trunked radio system, a low band UHF 400 MHz system for fire mutual aid, and a 300 MHz channel for county and state mutual aid. There is no true interoperable communication system in place. Agencies communicate with one another through the use of a single frequency patch, greatly limiting the ability to simultaneously coordinate with multiple agencies. This system is past its end-of-life and New Bern PD representatives expressed an urgent need to upgrade the system. Despite an expressed desire to upgrade to a VIPER-compatible system, the total cost for even a low-tier system is estimated at nearly $900,000.

New Bern PD is currently in the planning phase for a 16,000 square foot Communications and Emergency Operations Center. This facility would be built to withstand Category 5 storms and would function as a self-sustaining, 24 hour emergency center during such events. The total cost for such an undertaking is estimated at over $5 million.

Public Health

Craven County's Environmental Health department reports no increases in caseloads, a fact department representatives attributed to a lack of new construction in the current economic climate. Currently frozen positions will be reactivated if a substantial increase in work volume is seen. The department related no need for additional personnel, equipment, or facilities.

Needs Assessment

Personnel and Equipment

Law Enforcement

Havelock Police and Fire

- 3 police personnel (estimated salary of $43,000)
- 2 communications personnel (estimated salary of $33,000)
- Vehicles, weapons, uniforms, radios, support equipment for new police staff

New Bern PD

- Police officers (7) (estimated total salaries and benefits of $290,940)
- Associated vehicles and equipment for new officers ($55,000 each)

Facilities

Emergency Services

- Havelock Communications Center
- Havelock Fire Rescue Annex demolition and reconstruction (SCG application) for $1,894,000.
- New Bern Communications/Emergency Operations Center ($ 6.33 million)

Law Enforcement

- Renovation of Havelock Police facilities ($600,000)

Recommended Strategies and Actions

Action 1: Transition all emergency response departments to 800MHZ, P25-Compliant trunked radio systems. Upgrade defunct radio systems.

Funding

- State appropriations
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 2: Seek additional funding to overcome personnel, equipment, and facility deficiencies among law enforcement departments

Funding

- Justice Assistance Grants (Governor's Crime Commission)
- National Criminal History Improvement Program Grants (Governor's Crime Commission)

Quality of Life

Existing Conditions

Parks and Recreation and Sports Venues

The Croatan National Forest is located partially within Craven County (with its headquarters in New Bern), offering outdoor recreation, water access, and camping opportunities.

The Craven County Parks and Recreation Department manages several parks and facilities, the largest of which is Creekside Park (111 acres). In total, the county's recreation and parks department has 365 acres of parkland. At its parks, the county provides picnic facilities, athletic fields (multipurpose fields, basketball courts, baseball fields, soccer fields, softball fields, volleyball court, bocce court, and tennis courts), playgrounds, walking trails, an archery area, docks, pier, canoe/kayak launch, and boat ramps. The county also has many youth, adult, and senior programs, including athletics, camps, and classes.

Eleven public school facilities are also used by the county on a limited availability, outside school hours. The Craven Community College has a lighted field that was formerly used extensively by the community, but was lost due to college expansion.

All of the county's athletic fields are used to their full potential and school facilities are no longer available for the amount of time and space needed, with the exception of baseball fields. A quick solution to the shortage of softball fields would be to convert excess baseball fields to softball use. A comparison of Craven County's recreation facilities and state standards can be found in **Table 8.1** below.

Facilities	North Carolina Standard	# in Craven	Recommended # based on 2007 population (96,353)	Over (+) and Under (-)
Baseball Fields	1/8,000	32	12	+20
Soccer Fields	1/6,000	11	16	-4
Softball Fields	1/4,000	8	24	-16
Tennis Courts	1/1,200	13	80	-67
Outdoor Swimming Pools	1/14,000	0	7	-7
Community Centers	1/14,000	2	7	-5

Figure 8.1 - Comparison of Recreation Facilities Managed by Craven County Parks and Recreation Department and Havelock Parks and Recreation Department with State Standards (2006)

Note: Does not include public school, municipal, and military facilities, or privately-run facilities

A comparison of Craven County's parks and state standards can be found in **Table 8.2** below.

Park Class	Recommended Minimum Standard (Acres/1000 people)	Acres Needed Based on 2007 Population (96,353)	Acres Available	Over (+) and Under (-)
Neighborhood Parks	6	578	65.9	-512.1
Community Parks	10	963	77	-886
District/Metro Area Parks	20	1,927	352	-1,575

Table 8.2 - Comparison of Parks in Craven County with State Standards (2005)

Note: Includes public parks managed by county and municipal parks and recreation department (including Havelock and New Bern)

Craven County also has the Twin Rivers Paddle Trail, which has more than 250 miles of mapped trails with 30 launch sites.

The Twin Rivers YMCA is located in New Bern, and provides a water park, indoor and outdoor pool, gym, fitness equipment room, racquetball, an indoor walking track, three multi-purpose fields, a picnic area, playground, and athletic programs to members.

Almost 50 percent of the county's population lives in New Bern or Havelock, which both have their own organized parks and recreation departments (Craven County Recreation and Parks Department 2005 Comprehensive Recreation and Park Plan Volume II). The remaining municipalities in the county do not have parks and recreation departments, so the other 50 percent of the population is dependent on the Craven County Recreation and Parks Department for organized public recreation opportunities.

The City of Havelock has a total of 14 parks and associated facilities that cover approximately 108 acres of land. The city also has a Senior Citizens Center. The city parks offer such facilities as tee-ball fields, multi-purpose fields, basketball courts, volleyball courts, playgrounds, picnic facilities, a covered stage, fishing piers, and walking paths,

The city's recreation complex has space for indoor recreation, including a basketball court and weight/exercise room, and outdoor recreation, including eight ball fields, one football/soccer/lacrosse field, and three tennis courts. The indoor facility also has meeting and activity rooms, and houses the office for the city's Recreation Department.

The Senior Citizens Center includes space for indoor multi-purpose activities, recreation, and meetings. It also has an assembly hall, computer room, card playing area, television/library room, a storage room, a full commercial kitchen, and office space.

The city's Parks and Recreation Comprehensive Plan listed the top five recreation activities with unmet demand as walking trails, greenways, fitness trails, playing softball, and viewing wildlife. Also, about 23 percent of the population swims at a private pool outside of the city limits, but a municipal pool is very costly and is not one of the top five facilities needed in Havelock. The Comprehensive Plan also notes that those who have access to MCAS Cherry Point have access to the pool on base.

Current Plans

The Latham-Whitehurst Nature Park (133 acres) is currently undeveloped, but the county has plans for a parking area, restrooms, picnic areas, walking trails, boardwalks, docks, and an observation deck. This project is proposed for fall 2010.

The county has land at Creekside Park and West Craven Park that could be developed to create additional playing fields and areas for community centers to accommodate future growth, but the funding would need to be raised to accomplish this goal.

Craven Community College has set aside land to replace the multi-purpose field that was lost in 2005, and is supportive of the land that is being used for community recreational use. The college is considering adding a gym, classroom, or student center to this space.

The county's Recreation and Parks Comprehensive Plan listed short-, mid-, and long-term goals for the county's Department of Parks and Recreation. Among other things, the short-term goals included maintenance, and the development and expansion of existing parks to include new and better facilities for public use. The mid-term goals included the development of new parks, often on property that has already been acquired through the county flood buyout program, or identified as potential parkland. Specific facilities were recommended, as was the expansion of youth athletic programs.

The long-term goals outlined in the comprehensive plan include a community center (to include a gym, meeting rooms, classrooms, and office space) and a Nature/Environmental Education Center at West Craven Park.

The county has identified a demand for a swimming pool, and the long-term goals include a pool (in a central area of the county) and/or a splash pad at Creekside or West Craven Park. A splash pad is a good alternative because it creates recreational opportunities at a lower cost and less liability than a swimming pool.

The City of Havelock currently has five parks that are on undeveloped open space (Bryan Boulevard Park, South Forest Park, Village Park, Wolf Creek Park, and MacDonald Downs), totaling 15.6 acres. Wolf Creek does not have dedicated access, so an easement would be needed to allow that access, and turn it into a public recreational area.

The city's Comprehensive Parks and Recreation Master Plan includes various goals for improving Havelock's recreational programs. The goals include building a recreation complex on the west side of the city, adding new facilities (possibly through partnerships with the county), and acquiring new land to use for additional recreational purposes and a greenway trail system.

The need for a recreational facility on the west side of Havelock has been identified as a need by the public, and has already been brought up to the city's Board of Commissioners. The hope is that this facility would be able to accommodate several unmet needs if it included various athletic fields and trails. The City and the Parks and Recreation Director have begun searching for a potential site for the facility, but no land had been purchased as of September, 2007, when the Parks and Recreation Comprehensive Plan was published.

Also relevant, Havelock is currently seeking state assistance to clean up an old landfill to use for new recreation fields.

Water Access and Parking

Two major rivers flow through Craven County – the Neuse River (40 miles within the county) and the Trent River (17 miles within the county).

Craven County has five available boat ramps, two of which are county-operated.

- Spring Garden Landing (at the end of West Craven Middle School Road, adjacent to the Middle School) has parking for 50 vehicles, which is currently ample for boat traffic during peak times, according to an email correspondence with Jan Parker, Recreation and Parks director, on May 1, 2009.
- Cowpen Landing (at the end of Cowpen Landing Road, off River Road near West Craven High School) has approximately 10 parking spaces, which is an insufficient number based on current population. There is county-owned land near the boat ramp that could be used for about 10 additional parking spaces, but this would still be insufficient to accommodate parking needs during peak times. Currently, this lot is not developed as a parking lot, and there is not enough funding available for this project, according to an email correspondence with Jan Parker, Recreation and Parks director, on May 1, 2009.

Creekside Park offers 25 parking spaces for its canoe/kayak launch area, a sufficient number to meet current demand.

There are also 30 launch sites throughout the county for residents to access the Twin Rivers Paddle Trail [listed in Appendix O].

Waterfront Park has a boat ramp and fishing pier with a parking lot. The parking lot is busy on weekends, but is sufficient for use. It is not expected that additional growth to the area would result in exceeding the lot's capacity. Stonebridge Park also has a fishing pier and a kayak/canoe launch, but provides no parking area. The site recently suffered some damage, and the City is in planning stages to rebuild it and possibly include a parking area.

There is a boat ramp into Slocum Creek, which flows into the Neuse River. Parking is available at this boat access site, but the ramp is not run by the City, and may be privately-owned.

Current Plans

The newly-obtained Latham-Whitehurst Nature Park will add water access points for the county.

In addition, the county's Parks and Recreation Comprehensive Plan in 2005 listed repairs at both boat-launch sites in the county (repair boat launch area, repair pier, and grading for erosion control).

The city of Havelock's Comprehensive Parks and Recreation Master Plan includes a goal for the city to improve and acquire new water access facilities. The plan states that to achieve this, the city should "aggressively seek and acquire additional properties for water access facilities within the City; expand and increase the number, variety, and distribution of water access facilities in the City; and include deep water, as well as kayak and canoe launches and beach access areas."

Arts and Culture

The Craven-Pamlico-Carteret Regional Library System operates nine libraries, four of which are located within Craven County. The library system's headquarters is located in New Bern, and there are additional branches in Cove City, Havelock, and Vanceboro. Their square footage is listed below and compared to the state standard (State Library of North Carolina 2007, 18):

Cove City-Craven County Public Library:	3,400 SF
Havelock-Craven County Public Library:	8,449 SF
New Bern-Craven County Public Library:	25,000 SF
Vanceboro-Craven County Public Library:	3,000 SF
TOTAL:	39,849 SF

Based on the 2007 population of Craven County (96,353) and the state recommendations for library square footage (0.65 per capita), the suggested area for libraries in Craven County is 62,629 square feet. This indicates a deficit of about 22,782 square feet in the county.

It is expected that the New Bern and Havelock library branches will experience the greatest impact due to military-induced growth within the county.

Tryon Palace is also located in the City of New Bern (a historic site and gardens), and holds cultural events throughout the year.

Museums within the county include the New Bern Fireman's Museum and the Attmore Oliver House.

The county hosts several events throughout the year, including the Carolinian Shakespeare Festival, Chrysanthemum Festival, Scottish Heritage Society of Eastern North Carolina Festival, Colonial Living Day, and the Coastal Carolina Agricultural Fair.

The Craven-Pamlico-Carteret Regional Library System has a library branch in Havelock, and The Eastern Carolina Aviation Heritage Foundation Exhibit is located in Havelock. The city also hosts an annual Chili Festival.

The Havelock Tourist and Event Center is used for art shows, military balls, and concerts throughout the year.

Current Plans

According to the library's five-year plan, the library system has been pursuing possibilities for an additional branch of the New Bern Public Library, but is not promising that it can achieve it (Craven-Pamlico-Carteret Regional Library 2008). The 2008-2013, five-year plan outlines plans for a demographic study/needs assessment of library facility needs in the county, specifically for the New Bern area, with implementation of the study/assessment in 2012-2013.

Tryon Palace in New Bern is currently building a North Carolina History Education Center, which broke ground in June 2008. The History Education Center will have a children's history museum (the Pepsi Family Center) that will provide an interactive learning experience for children and families. The History Education Center is expected to open in 2010.

The long-term goals outlined in the County Parks and Recreation's comprehensive plan include a Nature/Environmental Education Center at West Craven Park.

The Havelock Tourist and Event Center Aviation exhibit is developing a conceptual plan for expansion of the exhibit.

Hotels and Meeting Space

Craven County has 18 hotels [listed in Appendix Q]. There are a total of 1,708 hotel rooms within the county, with a current average annual occupancy rate of about 57 percent for 2008. This number is low, and is attributed to the current national economic downturn. About two years ago when the economy was at its peak, the hotel annual average occupancy rate was 70-75 percent. Of the 1,708 rooms within the county, approximately 1,160 of them were located in New Bern, and the remaining rooms (approximately 550) were located in Havelock.

In addition to the limited amount of available meeting space in hotels, New Bern has a large convention center that can accommodate groups of up to 1,350 people, and serve banquets for more than 1,000 people. In FY08, the convention center held 308 separate events, generating close to $13 million for the county and resulting in 23,500 overnight hotel rooms stays. According to the convention center's 2008 recapitulation, the convention center either lost or turned away 186 events in FY08. Most of these events were weddings, local social events, single day meetings, and other miscellaneous functions. Of these, two conventions were lost due to hotel property conditions, two were lost due to overall costs; and one was lost due to the preference of a central location. The other events were lost due to conflicting dates.

Hotels in the City of Havelock provide the city with approximately 550 hotel rooms. [These are listed in the Craven County table in Appendix Q, denoted with an asterisk.]

The Havelock Tourist and Event Center contains meeting rooms and can accommodate groups of up to 700 guests for meetings and 500 guests for banquets. The center also has a conference room that seats 24 people, a classroom, two breakout rooms, and a pre-function area.

Current Plans

A new Best Western hotel with about 60 rooms is believed to be planned in James City, but this has not yet been confirmed.

The long-term goals outlined in the Craven County Parks and Recreation comprehensive plan include establishing a community center (to include meeting rooms) at West Craven Park.

Shopping

Generally, there are adequate shopping opportunities in the county to accommodate the current population. Although there are enough stores, however, the quality of these shops and restaurants is not up to the standard that many residents of Craven County desire. The county has only lower-end shopping alternatives, and many of its residents typically travel to Raleigh, Greenville, or Wilmington to shop at better stores.

Needs Assessment

Craven County currently needs 16 softball fields, four soccer fields, 67 tennis courts, seven public outdoor swimming pools, and five community centers, and the military-induced growth will only add to demand for these facilities. The natural population growth within the county will also increase the need for baseball and soccer fields. **Table 8.3** below shows which facilities will be necessary due *just to the military-induced growth.*

Facilities	State Standard	Craven County (7,843 people)
Baseball Fields	1/8,000	1
Soccer Fields	1/6,000	1
Softball Fields	1/4,000	2
Tennis Courts	1/1,200	6
Outdoor Swimming Pools	1/14,000	1
Community Centers	1/14,000	1

Table 8.3
Source: Sports Venue Facilities Needed to Support Military-Induced Growth in Craven County

Because the county already has enough baseball fields for the current population, these new fields should not be a high priority for addressing the military-induced growth, but community centers and sports complexes with indoor and outdoor athletic facilities (specifically softball, soccer fields and tennis courts) are needed. In addition to athletic fields and venues, more parks are also needed. The county already lacks enough park space per capita; therefore, steps need to be taken to preserve open space within the county.

Table 8.4 below shows which types of parks will be necessary to accommodate military-induced growth.

Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
7,843	47-63 acres	78 acres	157-784 acres

Table 8.4 - Parks Needed to Support Military-Induced Growth in Craven County

Regarding water access, the county has a number of launch sites for its paddle trails. Additional launch sites should be added wherever possible, as well as boat ramps, to ensure that there are sufficient boat launch sites with adequate parking in the county.

Libraries in the county already lack enough space per capita (by about 22,782 square feet), and will be strained further by anticipated population growth. Because New Bern and Havelock branches will likely experience the greatest impact, it has been suggested that additional space be added within these municipalities. **Table 8.5** below shows the estimated square footage that will be needed within the county to accommodate the military-induced growth.

Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
7,843	5,098 SF	7,843 SF

Table 8.4 - Library Space Needed to Support Military-Induced Growth In Craven County

In addition to needing more square footage, library programs will be stretched thin as regional population increases. Steps should be taken to increase number and size of available programs, access to computers and the Internet, and parking for the library buildings. Typically, the lack of parking is due to a lack of funds for new parking areas.

Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items/ capita)	User Seating (2.5 seats/1000 residents)	Programming/Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF)
7,843	4	15,686	20	26	26

Table 8.6 - Additional Library Needs to Support Military-Induced Growth in Craven County

Recommended Strategies and Actions

Recommendation 1: Build two new recreation complexes, one of which would be located in Creekside Park (which has already been researched and estimated by the Parks and Recreation Department to cost approximately $5 million), and another that would be located in Havelock (possibly an expansion of the current recreation center).

A feasibility study to site the complexes, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of the complexes should be initiated in FY 11, with completion planned for FY 12. The estimated cost for each complex is $5 million-$30 million, depending on its size.

Rationale

Craven County is already lacking in the number of athletic fields it offers, based on state standards, and the military-

induced growth will only place further stress on existing recreational programs and facilities. The county will need new or expanded recreation facilities that include new sports fields and gymnasiums.

Funding

Grants and other funding sources available for parks and recreation projects are listed below.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: (www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: (www.ils.unc.edu/parkproject/trails/home.htm).

North Carolina Adopt-A-Trail Program – This grant is awarded annually to government agencies, non-profits, and private trail groups. 100-percent funding is available up to $5,000. Contact the Trails Program at: http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – A state program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php (Phone: 919-715-8699).

Land and Water Conservation Fund – A federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone) 202-343-9563.

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories including acquisition, landscaping, bicycling, and pedestrian facilities. www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – Community grants program supports local health departments in NC in efforts to development community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example: Carteret County Health Department in collaboration with County Parks and Recreation and other community partners will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project. For information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Harold H. Bate Foundation – Offers financial support to Craven, Pamlico, and Jones Counties. The foundation administers charitable gifts to enhance education, youth and recreation, and the quality of life for the three counties. Grants are not awarded for purposes ordinarily supported by tax funds, but may be used in public-private partnerships. Grants are also discouraged for services that the public sector "should be reasonably expected to provide." (http://www.batefoundation.org/Grant_Guidelines.pdf) (http://www.batefoundation.org/index.html)

Recommendation 2: Establish additional libraries, library programs, and amenities.

The anticipated cost for new library space is $255 per square foot. This cost includes construction, related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, copiers), contingency construction and uplift, and library collections (books for 50-percent fill rate and A/V materials).

Rationale

Libraries and their programs are an important, low-cost activity for military families in Craven County. The county is

not up to state space standards, and is lacking in the number of computers and other programs or amenities that it offers. Libraries are becoming increasingly like community centers, and as a free resource, are very important to military families.

Library Funding

Below is a list of funds and grants that are available for library projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries are located in counties that have either a 10-percent or greater poverty level in the Foundation-defined service area OR more than 3,000 persons living in poverty. http://statelibrary.ncdcr.gov/gates/gates.html Libraries in Craven County that have been established as eligible by the Foundation include:

Cove City-Craven County Public Library

Havelock-Craven County Public Library

New Bern-Craven County Public Library

Vanceboro-Craven County Public Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. For available grants, contact: http://www.neh.gov/grants/index.html

National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. Is the nation's largest funding agency for the Arts. For grant information, contact: http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – North Carolina organization whose mission is to promote the social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities through building up the capacity of nonprofits, historically, supports fundraising campaigns to build capital projects (e.g., libraries, museums, community centers). http://www.kresge.org/index.aspx

Kellenberger Historical Foundation (based in Craven County)

Recommendation 3: Recruit additional hotels that have full amenities and attached meeting space.

Rationale

The Craven County convention center is currently limited by hotel capacity within the city and county. New hotels are needed, especially those with full amenities and meeting facilities, to accommodate groups that need meeting space within the hotel. The convention center is not attached to any hotels.

NOTE: To address both Library and Meeting Space needs, the possibility should be explored of expansion of the current Library foot print through the addition of a joint (Craven Community College, Library, City of Havelock) meeting center. This could address three shortfalls:

- Workforce New Technology Center (IT classes)
- Expand ing library square footage (computers)
- Creating additional meeting spaces/rooms within the City of Havelock.

The land area at this joint Craven Community College/Library/City site is believed to be presently large enough to encompass such a structure while not diminishing parking.

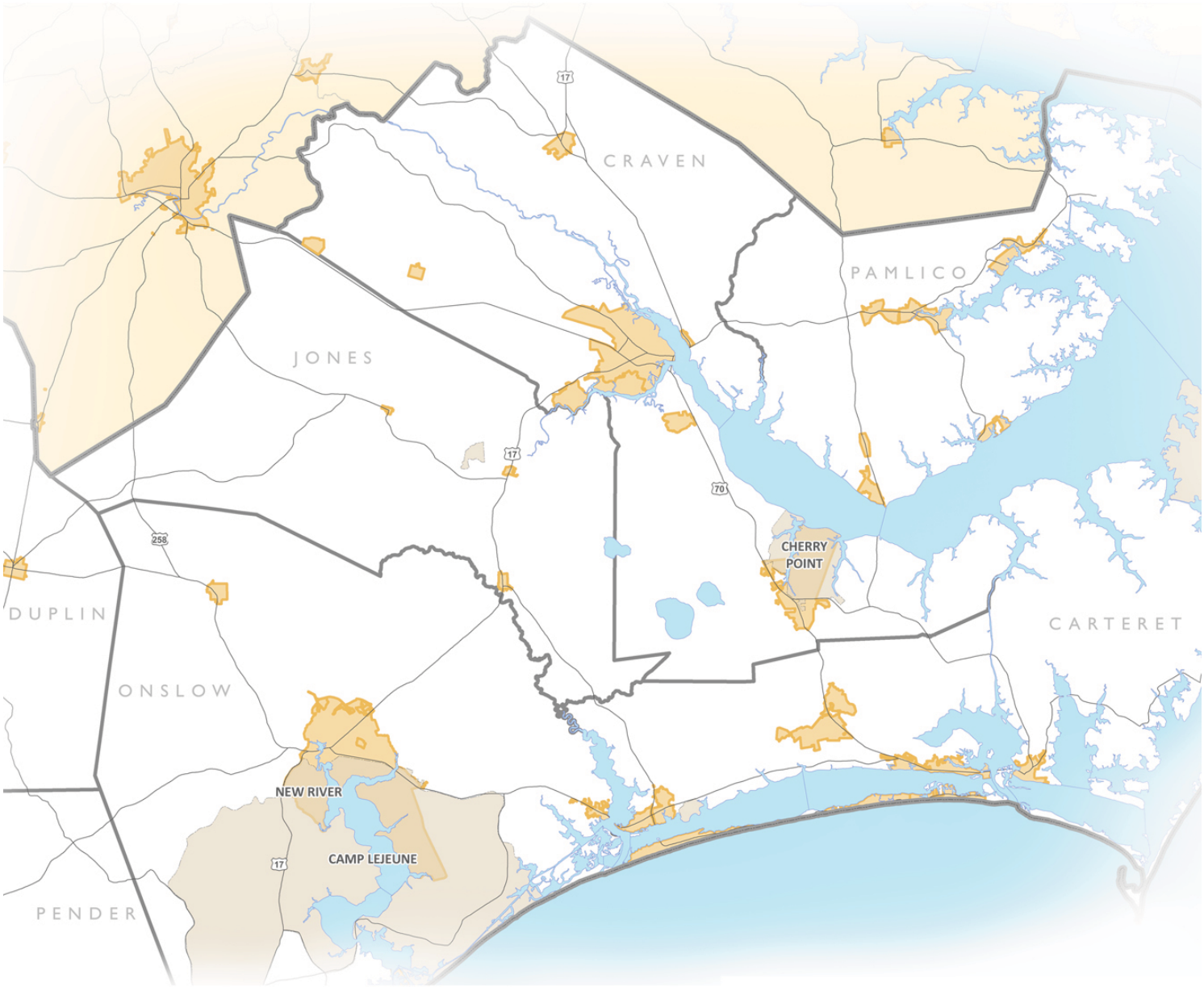
Recommendation 4: Conduct a retail leakage study to identify the need for higher-end shopping alternatives in the county, and produce a strategy to attract the quality of shopping that is desired.

The typical cost of such a study is $100,000. A retail leakage study that would identify the magnitude of the need for higher-end shopping should be undertaken in FY 09. A strategy to attract appropriate shopping and retail services should be initiated in FY 10.

Rationale

Citizens in the county generally have to drive to Raleigh, Greenville, or Wilmington to shop at higher-quality stores than those currently available in Craven County. To keep the county's citizens shopping in the county, which would provide convenience to residents and tax dollars to counties, higher-quality retail needs to be explored for the county.

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Duplin County

Submitted to the:
North Carolina Eastern Region's
Military Growth Task Force

www.nceastmgtf.org

Marstel-Day, LLC

In Partnership with:

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

Housing

Duplin County, although not a host county for a Marine Corps installation, will experience civilian and military growth between now and 2011. Civilian demand for new housing will total 1,333 households by 2011 and military demand for new housing will total 34 households. Currently, much of the incoming civilian population has been attributed to retired civil servants from Washington, DC and retired professionals from larger manufacturing firms in the region. Military officers often choose to live in Duplin as well, especially in areas east and south of Beulaville. The county, although largely fueled by agricultural production, is ripe for development. Industrial parks adjacent to I-40 and the CSX rail line could help spur more development. The following section examines the provision of adequate and affordable housing in the county with respect to incoming civilians and military personnel. It also includes an assessment of the needs and issues facing the county, with recommended strategies and actions.

Existing Conditions

Housing Supply

Housing supply impacts pricing and the competition for homes in the county. In 2007, there were 21,331 housing units reported for Duplin County. The preference for housing types and neighborhood styles varies across the county and the region. This section focuses on four general home categories prevalent in the county: for-sale homes, rental homes, manufactured homes, and second homes/seasonal rentals.

Housing unit estimates for the county were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this chapter was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the county include the impacts of cities and towns within it.

A summary of each general housing category follows.

Manufactured Homes

A manufactured home is built on an integral chassis in a factory, transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). One in four homes in Eastern North Carolina is a manufactured home.

In 2007, there were 7,100 manufactured homes in Duplin County. This represents 3.4 percent of all the housing units reported for the county.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

For-Sale Homes

For-sale homes are occupied by the owner of the unit. They are site built homes, typically purchased using a mortgage. For-sale homes are the dominant housing type in the county.

In 2007, there were 9,491 owner- occupied homes in the county. This represents 60 percent of all the housing units reported for the county.

For-sale homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (**see Appendix G**). Based on the foregoing, 1,088 for-sale homes are available for new residents coming to Duplin. The number of for-sale homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

For-sale housing in the county, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site built home in the county is $96,840, which is substantially below the state average ($278,943).

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time (usually one calendar year). In 2007, there were 3,177 occupied rental homes in the county. This represents 22 percent of all the housing units reported for the county.

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (**see Appendix G**). Based on the foregoing, 364 available rental homes were estimated for Duplin. The number of rental homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

Rents in the region were collected from an internet and telephone survey of apartments available in the seven counties. The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy at rental homes in the region was estimated at 92 percent based on US Census Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98 percent). These trends are reflected at the county level as well.

The magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases unless new units are constructed soon.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment property, hoping to retire to the home once it was paid off (National Association of Realtors, 2004). When asked why they bought a second home, respondents to the National Association of Realtors survey reported they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home, because they had the extra money to spend.

The hottest reported markets for second homes are the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates.

In 2007, 7,100 of the total housing units in Duplin County were listed as seasonal rental units.

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 230 dwelling units were approved in Duplin County between 2005 and 2009. None of these dwelling units have been built. Some of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. The Committed Residential Development Database prepared by the ECC is included in the **Appendix G** of this report.

Cost of Homeownership

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the county.

Purchase Price

The median home value published in the American Community Survey for 2007 was used to estimate the purchase price of a home in the county. Median home price for Duplin County was $96,840.

Mortgage

A conventional, fixed-rate 30-year mortgage was assumed to estimate the typical monthly cost of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15 percent of the purchase price. No down payment was assumed for home loans to military families in order to be consistent with the terms of most VA loans. The loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

Property Taxes

The tax rate in Duplin County is $0.770 per $100 of value.

Utilities

Utility costs were estimated from state and local sources. The average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners Insurance

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductible levels, and the insurance company providing the policy. The cost of homeowners insurance was estimated to be 0.75 percent of the purchase price of the home.

Monthly Payment

The monthly payment to afford a home of median value in Duplin County was estimated to be $780.90 for civilians and $863.00 for military personnel.

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see Appendix D). Average rents assumed for the region are also assumed for the county and are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active duty military personnel and their dependents buying homes, and active duty military personnel and their dependents renting homes.

Civilian renters who desire to rent a 3-bedroom apartment in Duplin County will find it to be marginally unaffordable when compared to 30 percent of the average monthly salary ($43.02). However, for all home-ownership for military and civilians is affordable.

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the county. The demand for housing reflects both civilian and military growth. Anticipated demand for for-sale homes and rental homes in the region is as follows: civilian homeowners (999), civilian renters (334), military homeowners (12), and military renters (22).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as 'built' from the Committed Residential Development Database (2005-2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 1,088 for-sale homes and 364 rental homes. All manufactured homes and second homes/ seasonal rentals inventoried for the county were removed from available housing supply for the gap analysis.

By 2011, only 85 housing units of the currently available housing stock will remain available. This margin of surplus is not large enough to ensure long-term availability of housing. Completion of the yet to be built dwelling units in the committed residential development database prepared by the ECC will help facilitate provision of housing beyond the 2011 planning horizon.

Issues Facing the County

Although the cost-burden and housing gap analysis reveal that civilians and military personnel moving to the county can afford and find available housing, there are several critical issues that must be addressed in order to ensure that housing is affordable and available beyond the 2011 planning horizon. These issues were identified through stakeholder interviews and included:

- Zoning is limited to municipalities.
- Extent of floodplains limits development; voluntary agricultural districts also protect 3,000 acres.
- There is no housing authority in the county. Some towns (Beulaville, Warsaw, Wallace and Greenevers) have housing authorities and manage rental housing.
- There is a shortage of multi-family for sale housing in county (condos, duplexes, townhomes, etc).
- 80% or more of the building permits issued in the county are for manufactured homes.
- Recent housing proposals are all Planned Unit Developments (PUDs) and are trending towards higher end homes, including a 400 unit exclusive golf course community.
- Public water is controlled by 6 different water districts. While in towns, almost 100% of areas are serviced by public water, only 60-80% of the county has public water.
- Unlike towns which have access to sewer, the unincorporated county does not. Currently, the Town of Wallace is acting as an interim regional sewer center to serve portions of Duplin County.

In order to address these challenges, the county is rewriting its subdivision ordinance, which was last updated in 2003 and also passed an ordinance to protect land around the airport. In addition, the county is currently undertaking a sewer study to determine the excess capacity in the towns and the willingness of the towns to provide capacity to county. Incoming development proposals have helped initiate discussions on the need for zoning. Zoning could be used to help link infrastructure provision with development, and enable provision of more affordable housing.

Recommended Strategies and Actions

Critical to the success of the regional growth management plan, are the implementing actions of participating municipalities and counties. Duplin County should continue to plan for long term growth through implementation of county-wide zoning and its existing subdivision and conservation ordinances. Recommended strategies and actions to be pursued on behalf of the county could also include:

- Implementing the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.
- Adopting adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region.
- Adopting policies or incentives that expedite the construction of new rental and affordable housing.

Workforce

Existing Conditions

Duplin County has a labor force that has expanded from 22,566 in 2001 to over 25,000 in 2009. Since 2002, employment growth exceeded labor force growth and drove the unemployment rate down to 4.5 percent in 2007. Over the past three years, however, estimated unemployment has more than doubled, rising from 1,083 to over 2,700, and the unemployment rate[1] in the first three months of 2009 was between 10.5 and 10.8 percent.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	22,566	21,157	1,409	6.2
2002	23,044	21,339	1,705	7.4
2003	24,277	22,623	1,654	6.8
2004	24,403	23,014	1,389	5.7
2005	23,781	22,350	1,431	6.0
2006	23,521	22,310	1,211	5.1
2007	24,243	23,160	1,083	4.5
2008	24,041	22,613	1,428	5.9
J'09	24,992	22,375	2,617	10.5
F'09	25,019	22,308	2,711	10.8
M'09	24,632	22,054	2,578	10.5

Table 2.1 - Employment Trends in DuplinCounty, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

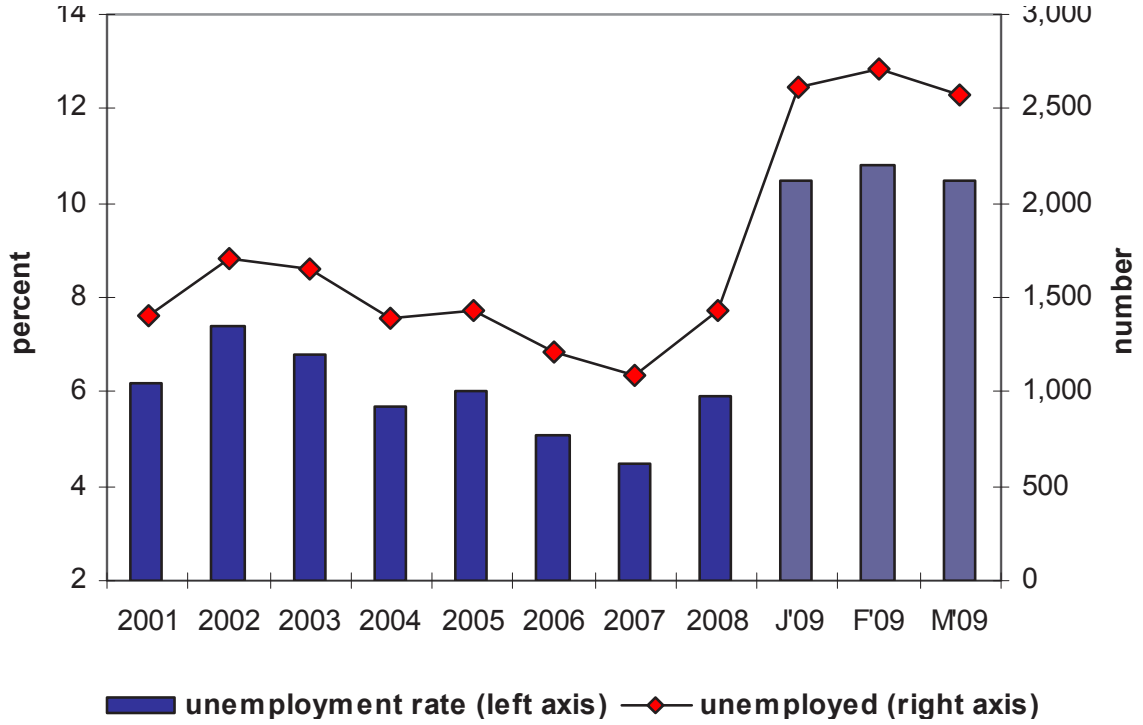


Figure 2.1 - Employment Trends in DuplinCounty, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

1 Seasonally unadjusted

Over the past two years, the county has seen a few public notices of workforce job losses, as shown in the Announced Business Closings & Permanent Layoffs table. All of the closings and layoffs affected government operations at the state, county, and local level, with the largest in the summer of 2008, the termination of activities at the James Keenan School of Engineering. The school functions were transitioned to the Duplin Early College High School Program which opened in August 2009 on the campus of James Sprunt Community College.

NAICS Code	Date	Company	City	Product	Affected	Reason	Closing or Layoff
921140	Nov. 2008/Jan. 2009	Town of Warsaw	Warsaw	Town Government	2	Equipment Changes	LY
611110	June/July 2008	James Kenan School of Engineering	Warsaw	Magnet High School	9	Low Proficiencies	CL
921140	June 2007	County of Duplin	Kenansville	Economic Development	1	Budget Cut	LY
812990	Feb. 2007	DOT DMV office	Wallace	DMV Office		Declining Demand	CL

Table 2.2 - Announced Business Closings & Permanent Layoffs – Duplin County, 2007-2009

Source: These data are derived from a statewide survey of newspaper accounts of closings and layoffs, and from information supplied to the Employment Security Commission of North Carolina by the employing units experiencing the closings/layoffs. The data are not comprehensive, and are not evaluated for accuracy by the Employment Security Commission.

The county registered over 20,600 private and public-sector employees in 2007, a 2.5 percent increase over the level six years earlier in 2001. The largest industry employers in 2007 were: the manufacturing industries, with 6,079 employees; the local governments, with 2,633 employees; and the retail trade industry, with 1,887 employees. The federal and state governments play minor roles as employers in the county. While manufacturing jobs slightly declined between 2001 and 2006, almost 400 jobs were added in the health care and social assistance industry over the period, growing 29 percent.

		Establishments		Employees		Average Annual Pay	
		2001	2007	2001	2007	2001	2007
Total Covered		1,114	1,137	20,126	20,629	$23,624	$28,423
Private		1,033	1,067	16,755	17,285	$23,114	$27,248
11	Agriculture, forestry, fishing, and hunting	ND	139	ND	ND	ND	ND
21	Mining, quarrying, and extraction	ND	1	ND	ND	ND	ND
22	Utilities	4	4	45	28	$47,749	$48,265
23	Construction	137	137	633	671	$21,184	$27,749
31-3	Manufacturing	47	35	6,211	6,079	$24,585	$29,156
42	Wholesale trade	54	48	629	516	$33,665	$32,911
44-5	Retail Trade	198	186	1,596	1,667	$16,659	$19,470
48-9	Transportation and warehousing	43	48	366	253	$38,248	$39,858
51	Information	8	12	59	90	$26,589	$30,041
52	Finance and insurance	46	48	222	230	$30,958	$36,090
53	Real estate, rental, and leasing	23	30	88	72	$22,630	$18,078
54	Professional and technical services	ND	65	ND	ND	ND	ND
55	Management of companies and enterprises	ND	3	ND	ND	ND	ND
56	Administrative and waste services	24	26	248	493	$16,836	$17,953
61	Educational services	3	3	13	15	$7,540	$10,867
62	Health care and social assistance	78	100	1,291	1,666	$18,484	$21,837
71	Arts, entertainment, and recreation	9	8	123	34	$20,436	$11,010
72	Accommodation and food services	63	62	982	1,060	$8,371	$9,716
81	Other services, ex. public administration	90	61	262	212	$19,598	$24,883
99	Unclassified	2	50	NA	53	NA	$28,528
Federal Government		21	18	159	175	$37,507	$47,376
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	-	-	-	-	-	-
48-9	Transportation and warehousing	10	11	81	79	$31,717	$40,910
52	Finance and insurance	1	NA	1	NA	$61,389	NA
54	Professional and technical services	-	-	-	-	-	-
61	Educational services	-	-	-	-	-	-
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	10	7	78	97	$43,340	$52,648
State Government		27	20	552	536	$25,585	$34,632
48-9	Transportation and warehousing	-	-	-	-	-	-
56	Administrative and waste services	NA	1	NA	ND	NA	ND
61	Educational services	ND	1	ND	ND	ND	ND
62	Health care and social assistance	ND	1	ND	ND	ND	ND
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	ND	17	ND	272	ND	$39,285
Local Government		33	33	2,660	2,633	$25,596	$33,609
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	3	3	9	14	$18,629	$13,178
48-9	Transportation and warehousing	-	-	-	-	-	-
51	Information	-	-	-	-	-	-
56	Administrative and waste services	-	-	-	-	-	-
61	Educational services	ND	18	ND	ND	ND	ND
62	Health care and social assistance	ND	1	ND	ND	ND	ND
81	Other services, ex. public administration	-	-	-	-	-	-
92	Public administration	12	12	862	832	$24,814	$29,385
99	Unclassified	-	-	-	-	-	-

Table 2.3 - Duplin Employment and Pay - 2001 and 2007

Note: "NA" is Not Available, "ND" is Non-Disclosure, and "-" is not recorded.

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009.*

The Top 25 Employers table provides a recent snapshot of the companies and organizations that employ the highest number of people in the county. As of the third quarter of 2008, four organizations employed more than 1,000 employees: Carolina Turkeys, Smithfield Foods, Inc., the Duplin County Board of Education, and the House of Raeford.[2] It is notable that the county has a well-balanced economy, with top employers spanning major industries, including: agriculture; a diverse range of manufacturing; education; health services; and business services. While the military is not a large employer in the county, indirect economic impacts of the military presence in the region contribute to the county's economy.

Rank	Company Name	Industry	Employment Range
1	Carolina Turkeys	Manufacturing	1,000+
2	Smithfield Foods, Inc.	Manufacturing	1,000+
3	Duplin County Board of Education	Education & Health Services	1,000+
4	House of Raeford, Inc.	Manufacturing	1,000+
5	Guilford Mills, Inc.	Manufacturing	500-999
6	Murphy Family Ventures, Inc.	Natural Resources & Mining	500-999
7	County of Duplin	Public Administration	500-999
8	Bay Valley Foods, LLC	Manufacturing	500-999
9	Johnson Breeders, Inc.	Natural Resources & Mining	250-499
10	Duplin General Hospital, Inc.	Education & Health Services	250-499
11	James Sprunt Technical College	Education & Health Services	250-499
12	Nash, Johnson, & Sons Farms, Inc.	Natural Resources & Mining	100-249
13	Cottle Farms, Inc.	Natural Resources & Mining	100-249
14	Glencare of Mt. Olive	Education & Health Services	100-249
15	Cottle Strawberry Nursery, Inc.	Natural Resources & Mining	100-249
16	The Mega Force Staffing Group, Inc.	Professional & Business Services	100-249
17	National Spinning Company, Inc.	Manufacturing	100-249
18	Wal-Mart Associates, Inc.	Trade, Transportation, & Utilities	100-249
19	State of North Carolina	Public Administration	100-249
20	Precision Hydraulic Cylinders, Inc.	Manufacturing	100-249
21	The Pork Company (A Corp)	Manufacturing	100-249
22	Food Lion, LLC	Trade, Transportation, & Utilities	100-249
23	Goshen Medical Center Garland	Education & Health Services	100-249
24	Valley Protein, Inc.	Manufacturing	100-249
25	Ambassador Personnel, Inc.	Professional & Business Services	100-249

Table 2.4 - Top 25 Employers in Duplin County 2008-QIII

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009 (QCEW), Largest Employers; 2009*

The occupational profile of current jobs in the county provides another view of the workforce structure and the occupations that organizations in the county have emphasized as important. In most cases, the largest occupational categories are the ones where new job market entrants will also find greater employment opportunities. The Occupational Employment and Wages table shows that, in 2008, Production workers led all other occupational groups in the county, accounting for 4,830 employees, followed by Transportation and Material Moving workers with 2,450 employees. Specifically, the detailed occupational information in the lower half of the table shows that the most popular jobs in the county were:

2 Primarily for business proprietary reasons, the Bureau of Labor Statistics does not release exact employment figures by the organizations, but rather just employment ranges.

meat, poultry, and fish cutters and trimmers (primarily at chicken processing facilities); slaughterers and meat packers; and home health aides.

Occupational Code	Employment by Occupational Group	Estimated Employment	Estimated Annual Wage-Median
00_0000	Total All Occupations	18,250	$20,269
11_0000	Management Occupations	560	$60,833
13_0000	Business and Financial Operations Occupations	230	$43,935
15_0000	Computer and Mathematical Occupations	30	$34,784
17_0000	Architecture and Engineering Occupations	50	$34,860
19_0000	Life, Physical, and Social Science Occupations	*	$39,824
21_0000	Community and Social Services Occupations	130	$35,701
23_0000	Legal Occupations	-	-
25_0000	Education, Training, and Library Occupations	1,700	$34,259
27_0000	Arts, Design, Entertainment, Sports, and Media Occupations	20	$33,155
29_0000	Healthcare Practitioners and Technical Occupations	670	$40,522
31_0000	Healthcare Support Occupations	890	$18,891
33_0000	Protective Service Occupations	130	$29,520
35_0000	Food Preparation and Serving Related Occupations	1,560	$14,840
37_0000	Building & Grounds Cleaning & Maintenance Occupations	360	$17,321
39_0000	Personal Care and Service Occupations	*	$15,032
41_0000	Sales and Related Occupations	1,250	$23,045
43_0000	Office and Administrative Support Occupations	1,770	$23,871
45_0000	Farming, Fishing, and Forestry Occupations	210	$19,415
47_0000	Construction and Extraction Occupations	500	$28,059
49_0000	Installation, Maintenance, and Repair Occupations	690	$31,620
51_0000	Production Occupations	4,830	$18,821
53_0000	Transportation and Material Moving Occupations	2,450	$18,080
	20 Top Occupations		
51_3022	Meat, Poultry, and Fish Cutters and Trimmers	1,540	$17,876
51_3023	Slaughterers and Meat Packers	1,090	$18,380
31_1011	Home Health Aides	680	$18,127
53_7062	Laborers & Freight, Stock & Material Movers, Hand	520	$17,836
35_3031	Waiters and Waitresses	480	$14,170
41_2011	Cashiers	410	$16,865
53_7064	Packers and Packagers, Hand	390	$14,818
53_7051	Industrial Truck and Tractor Operators	340	$20,299
49_9042	Maintenance and Repair Workers, General	320	$29,564
53_3032	Truck Drivers, Heavy and Tractor-Trailer	310	$26,874
43_3031	Bookkeeping, Accounting, and Auditing Clerks	290	$28,360
35_3021	Combined Food Preparation and Serving Workers	270	$14,710
37_2011	Janitors and Cleaners, Except Maids and Housekeeping	250	$17,382
53_7061	Cleaners of Vehicles and Equipment	250	$18,572
11_1021	General and Operations Managers	230	$58,262
43_6014	Secretaries, Except Legal, Medical, and Executive	220	$19,477
29_1111	Registered Nurses	200	$46,989
51_3021	Butchers and Meat Cutters	200	$18,069
43_5081	Stock Clerks and Order Fillers	190	$16,114
51_1011	First-Line Supervisors/Managers of Production	190	$38,608

Table 2.5 - Occupational Employment and Wages in Duplin County - 2008

"*" is non disclosed; "-" is not reported

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009 (QCEW), Largest Employers; 2009*

The federal government has a presence in the county and the Direct Expenditures or Obligations tables lists the Fiscal Year (FY) 2007 monies transferred into the county. Both the USMC-related monies and the total Navy Department expenditures or obligations are listed, and show that, in FY 2007, only $3 million flowed into the county from the Navy Department, all in the form of retirement and disability payments to retirees and veterans.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	3,039	1,793
Grants	-	-
Procurements	-1	-
Salaries & Wages	-1	-
Total	3,038	1,793

Table 2.6 - Direct Expenditures or Obligations in Duplin County FY 2007 (in thousands of dollars)

Source: U.S. Census Bureau. Consolidated Federal Funds Report, Fiscal Year 2007.

Needs Assessment

The county is projected to grow in population by 3,022 persons from January 2007 to the end of December 2011. With the addition of 982 persons due to the USMC directly- and indirectly-related impacts, the county will experience a 1.5 percent annual average growth over the five-year period. This influx is projected to add an additional demand for just over 1,800 new jobs.

Some of the current impediments to a fully-functioning workforce, low unemployment rates, and economic growth in the county include those listed in the Current Regional Issues section of the Regional Workforce Module, but also include those listed below:

- Low educational attainment and high drop-out rates of younger residents, contrasted with the hard work and dedication shown among older residents.
- A paradox whereby successfully challenging younger residents to seek two- and four-year college degrees often leads to a “brain drain” once the higher education is completed and the former residents seek opportunities in other regions.
- Many low-paying jobs related to the agriculture industry and food processing plants that are filled by immigrants to the area.
- A lack of high-paying jobs to attract retiring military personnel and spouses.

Recommended Strategies and Actions

The county and the surrounding region have a number of tools available to mitigate the impacts of military growth on the workforce, while at the same time positioning the county and the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include, first and foremost, taking the following actions to increase the economic base of the region so that the new entrants find meaningful and productive employment that matches their skills and desired occupations:

- Acquiring and allocating resources to support and plan for a new Technology Center in the region and a new Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and entrepreneurship.
- Emphasizing industrial clusters that will potentially be available at the two centers, and also at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.
- Supporting private and public efforts such as “Onward Onslow” that encourage new and relocating business to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.

- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through several initiatives:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and others adults who guide and influence teenagers in the region.
- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.
- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before many other areas of the country, and to plan for training and educational requirements of those future green jobs.
- Devoting immediate resources to increasing child-care training, certification, and facilities. Not only will this action provide direct employment to child-care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.
- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.
- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small- and disadvantaged businesses.
- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.
- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.
- Creating a more military-family-friendly workplace by offering flexible benefit packages, and having the added benefit of reducing the cost of labor to businesses.

Education

Existing Conditions

K-12

The estimated 2007 population of Duplin County is 52,979. Duplin County Public Schools, with a 2008-09 K-12 enrollment of 8,880 students, is the 41st largest public school system in the state (North Carolina Department of Public Instruction, School Statistical Profile). The average annual growth in enrollment in the past five years was 1 percent, but there was a decline in the most recent three years (**Figure 3.1**). The annual live births to residents averaged over 800 in the last 10 years with an increasing number since 2005. The most recent data for 2007 reported 847 new births in Duplin County, the highest recorded annual new births in the last 10 years (**Figure 3.2**) (North Carolina Department of Health and Human Services, State Center for Health Statistics).

Other characteristics of the school district are as follows:

- Duplin County Schools has four high schools with a combined enrollment of 2,470 students, including the JK School of Engineering with 111 students enrolled. The East Duplin High School is the largest high school in the county with 904 students enrolled. The North Duplin Junior/Senior High School covers the northwest part of the county, and is the smallest with 463 students enrolled. James Kenan and Wallace-Rose Hill High Schools serve students in the western and southwest parts of the county.
- There are three middle schools with a combined enrollment of 964 students. There is no middle school in the East Duplin cluster; instead, the B.F. Grady, Beulaville, and Chinquapin elementary schools house students from Kindergarten to 8th grade.
- Fifty-one percent of the enrollment in Duplin County Schools is in the Kindergarten to the 5th grade range, 22 percent in 6th to 8th grades, and 27 percent in the 9th to 12th grade range.
- Duplin County Schools did not maintain historical data on military-connected students, but is in the process collecting this information.
- The per-pupil expenditure is $8,115 with 72 percent state funded, 15 percent federally funded, and 23 percent locally funded (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).
- Duplin County Schools operates 121 school buses transporting 5,260 students at a cost of $569 per pupil. Fifty-nine percent of students utilize school buses.
- Duplin County Schools employs 506 teachers and 156 teacher assistants.
- There is no charter school in Duplin County, there are 3 private schools.

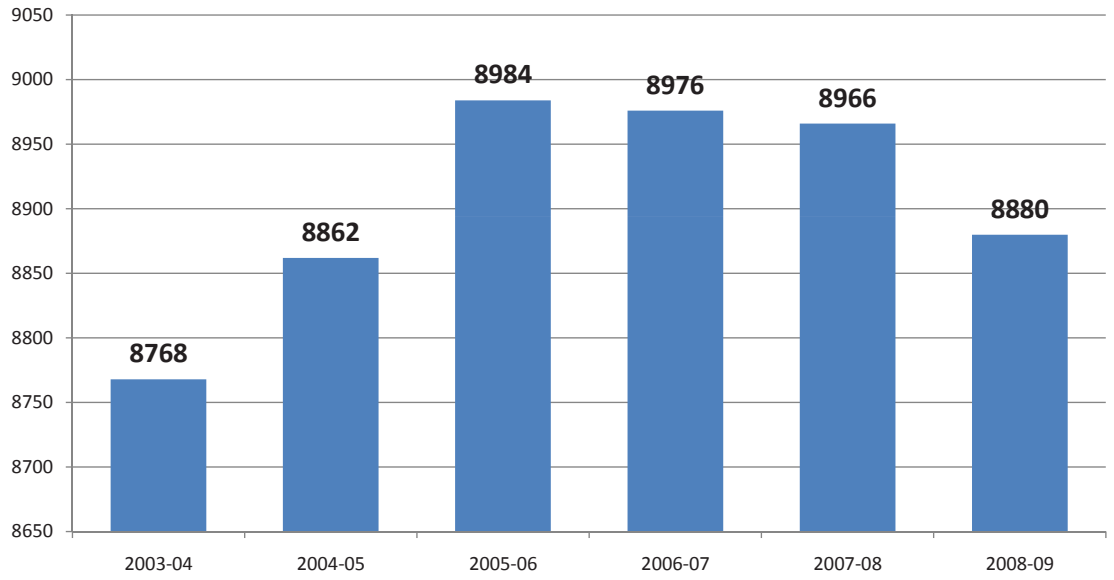


Figure 3.1 - Average Daily Membership

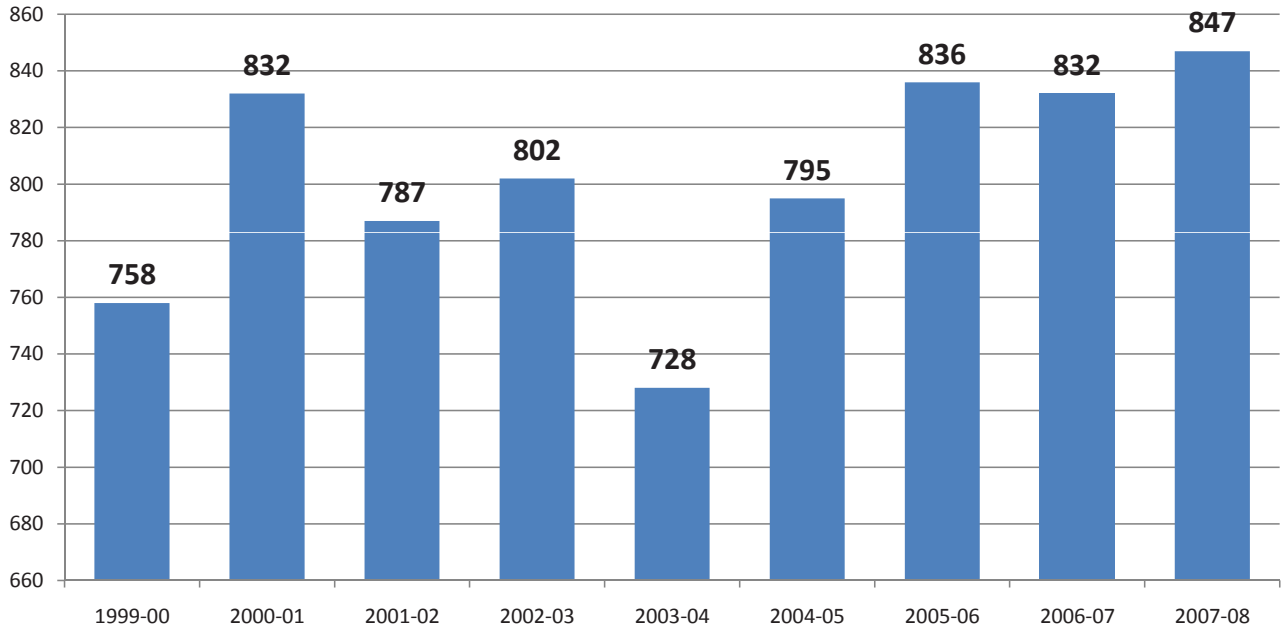


Figure 3.2 - Resident Live Births

Beulaville Elementary in the East Duplin cluster and Wallace Elementary in the Wallace-Rose Hill cluster are the two areas in the county that experienced steady school population increases (**Figure 3.3**). The Beulaville Elementary average annual gain is 15 students, and the Wallace Elementary average annual gain is 20 students.

Duplin County is predominantly rural with few subdivisions; there have been two subdivisions approved since 2007 and both are in the Wallace-Rose Hill cluster.

Child Care

The County has a total of 72 child development facilities with 40 centers and 32 homes. The 40 centers' total enrollment is 1,477 children, and the 36 home-based child development facilities have 186 children enrolled. The county-wide

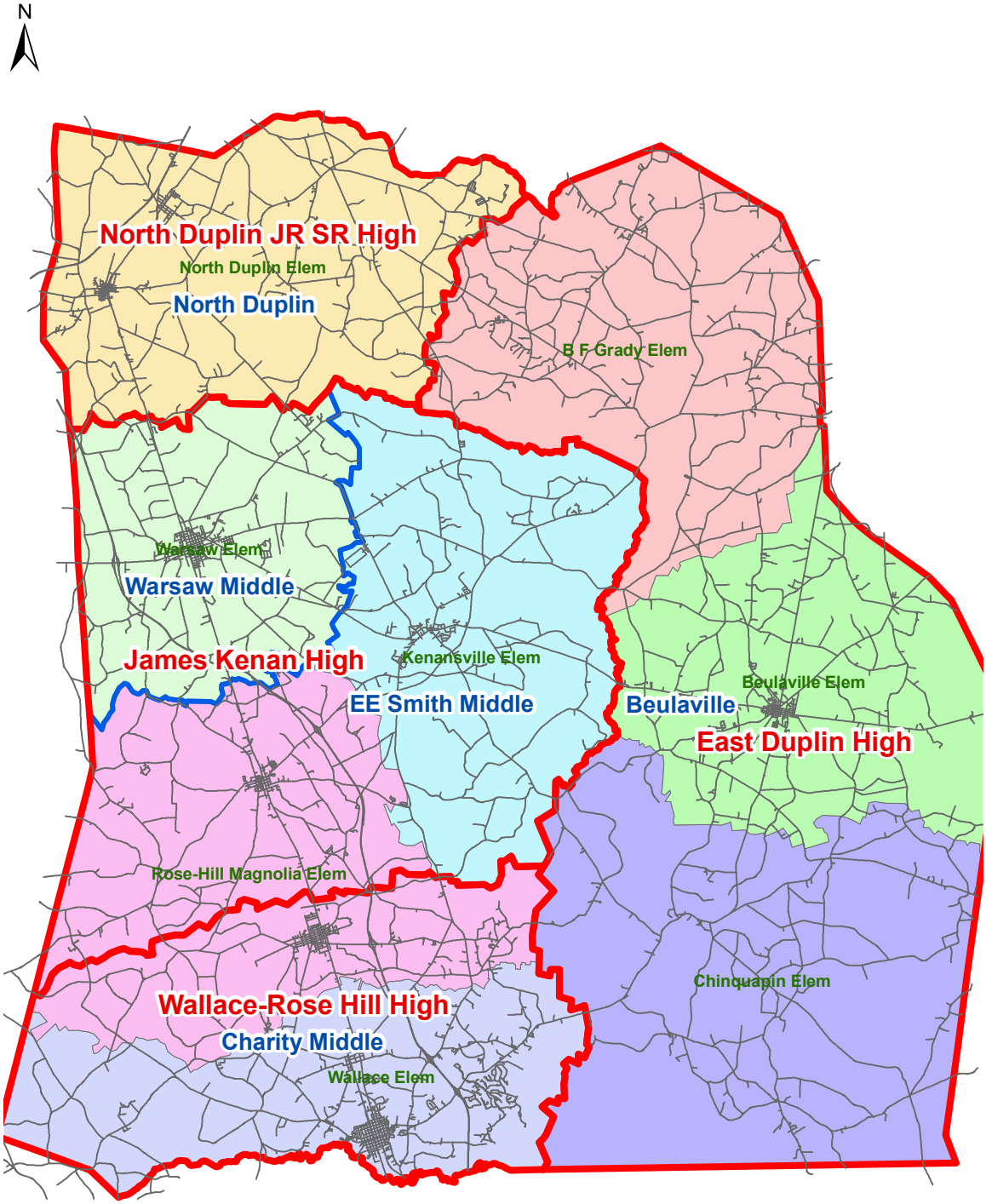


Figure 3.3 - Duplin County Public School System Cluster

combined child care enrollment is 1,663 children, or 14 percent of the total population under the age of 15 (North Carolina Department of Health and Human Services, Child Care Statistical Report, March 2009). The county-wide, there were 3,401 child care slots as of April 2009, so there is a 49 percent utilization rate.

The child care centers employ a total of 300 and the average employee turnover is approximately 46 employees annually (24 percent) (Onslow County Partnership for Children, MGTF Workforce Module, Child Care Industry Data and Information).

Community College and Post-Secondary Education

James Sprunt Community College's service area is Duplin County. It was chartered in 1964 to provide a quality education

primarily to residents of Duplin County. In the 2006-07 academic year, over 98 percent of students were county residents. Its main campus is located in Kenansville. The college also operates an Adult Education Center four evenings a week at the Wallace-Rose Hill High School in Teachey, NC. At this center the college offers several curriculum courses along with a wide variety of continuing education courses except during the summer.

The college's full-time enrollment (FTE) has changed as trends in the local economy have fluctuated. Over the past five years, there have been several major job closures in Duplin County. The college expects that the number/percent of students returning from previous semesters will remain stable or show a slight increase; however, there are many external factors over which the college has no control, such as the expanding job market and personal situations. The college's enrollment increased in 2004-05 when the curriculum enrollment exceeded 1,960 students and the continuing education enrollment exceeded 8,034 students. However, when the unemployment rate declined, the college enrollment also declined in 2005-06 (the curriculum enrollment declined to 1,401 students while continuing education enrollment declined to 4,453 students).

Needs Assessment

K-12

Duplin County School's population is forecast to grow between 0 and 350 students from 2007 to 2011 (Figure 3.4).

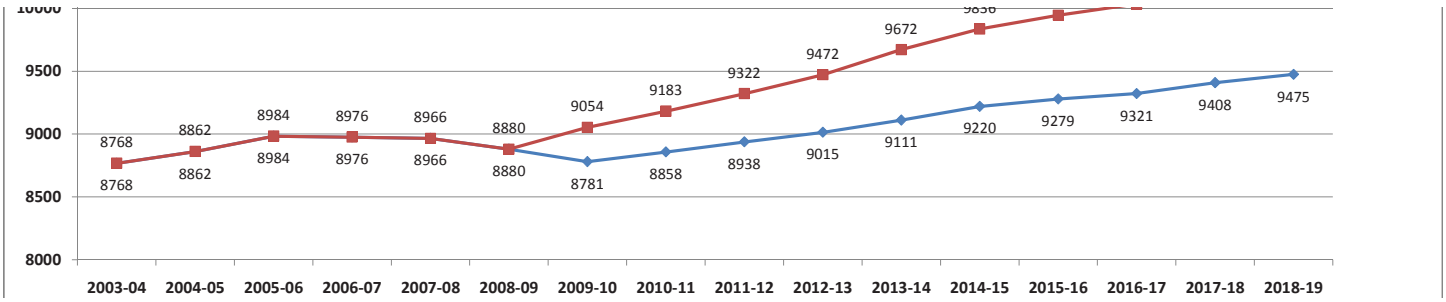


Figure 3.4 - Duplin County Schools Forecast Comparison

As seen in **Table 3.1** below, according to the 2008-09 school year's Month-Two Average Daily Membership report, the B.F. Grady Elementary, Chinquapin Elementary, Kenansville Elementary, Wallace Elementary, and East Duplin High schools' memberships exceed building capacity. The highest over-capacity is B.F. Grady Elementary operating at 163 percent of the school's capacity. This over-capacity condition is expected to increase to 170 percent in 2011. Chinquapin Elementary is operating at 145 percent over-capacity and is expected to increase to 160 percent in 2011. Beulaville Elementary is currently under-capacity but is expected to be operating at 113 percent in 2011. Overcrowding in these five schools is currently being addressed by 43 mobile classrooms. There are a total of 68 mobile classrooms in the Duplin County Schools system.

At a minimum, Duplin County Schools needs a new elementary school with a capacity of 650 to address the over-capacity that already exists plus the potential near-term growth. The new school should be located optimally to alleviate overcrowding in the East Duplin cluster, Wallace-Rose Hill Cluster, and the eastern portion of the James Kenan cluster. The cost to construct a new elementary school with a capacity of 650 is approximately $17 to $20 million (North Carolina Department of Public Instruction, School Planning Section).

A growth of 350 students would require 16 new teachers and seven new teacher assistant positions at an annual cost of approximately $1 million. This growth would also require adding four new school buses at a cost of $320,000.

Like the rest of the region, recruiting and retaining qualified teaching staffs has been a tremendous challenge. It will be a high priority for Duplin County Schools to work with the local and neighboring higher-education institutions to develop a high-quality teaching pool to support the growth.

Child Care

Duplin County's total child care enrollment is estimated to increase by 160 children by 2011. This increase will raise the child care slots utilization rate from the current 49 percent to 52 percent. At the current children to staff ratio of 5.5:1 in

	Capacities	Month-2	Projected Month-2 ADM									
	2008-09	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Elementary Schools												
B F Grady Elem (K-8)	523	851	870	886	894	901	915	921	928	937	950	967
Beulaville Elem (K-8)	935	924	980	1028	1053	1075	1116	1134	1155	1183	1221	1273
Chinquapin Elem (K-8)	382	565	584	600	608	615	629	635	642	651	664	681
Kenansville Elem	389	418	420	436	442	453	466	480	502	507	513	517
North Duplin Elem (K-6)	669	657	659	669	673	680	689	698	713	716	720	723
Rose Hill-Magnolia	773	626	627	632	634	638	642	647	654	656	658	659
Wallace Elem	759	819	821	837	843	854	867	881	903	908	914	918
Warsaw Elementary	632	475	476	481	483	487	491	496	503	505	507	508
Totals	**5062**	**5335**	**5436**	**5568**	**5629**	**5703**	**5814**	**5890**	**6000**	**6063**	**6147**	**6246**
Middle Schools												
Charity Middle	577	435	464	474	481	481	490	484	471	482	495	521
E E Smith Middle	545	321	351	362	370	370	379	373	359	370	385	412
Warsaw Middle	282	208	216	219	222	222	224	222	219	222	226	233
Totals	**1404**	**964**	**1032**	**1055**	**1072**	**1073**	**1093**	**1079**	**1049**	**1073**	**1106**	**1166**
High Schools												
North Duplin JR SR	654	463	479	481	491	499	510	518	514	519	528	535
East Duplin High	700	904	898	882	910	948	980	1033	1051	1049	1052	1011
James Kenan High	755	520	517	510	523	540	555	579	588	587	588	569
Wallace-Rose Hill High	715	583	581	576	585	598	609	627	633	632	633	619
Totals	**2824**	**2470**	**2475**	**2449**	**2510**	**2585**	**2654**	**2756**	**2786**	**2787**	**2801**	**2734**
Special/Alternative Schools												
JK School of Engineer		111	111	111	111	111	111	111	111	111	111	111
System Totals	**9290**	**8880**	**9054**	**9183**	**9322**	**9472**	**9672**	**9836**	**9946**	**10035**	**10165**	**10257**

Capacity Legend

< 95%	95% - 100%	100% - 105%	> 105%

Table 3.1 - Duplin County Public School System Out-of-Capacity Worksheet

the county, during the period of 2007 to 2011 the Duplin County child care work force will require an additional 29 staff to accommodate the increased growth.

Community College and Post-Secondary Education

The College has predicted 2007-2012 program enrollments based on the method recommended by the NC Community College System but with the assumption that the five-year average is to be adjusted upward by an additional 4 percent added to the five-year average percent share due to an increase in the service area population of 20 percent within the next four years as predicted by the North Carolina Eastern Region Board of Directors. The enrollment projections are summarized in the table below (James Sprunt Community College, Long Range Plan, 2007-2012).

Program Type	2007-08	2008-09	2009-10	2010-11	2011-12
Curriculum	2160	2223	2315	2455	2600
Basic Skills	105	101	99	95	93
Continuing Education/Occupational	152	166	180	198	214
Total	**1465**	**1462**	**1475**	**1512**	**1546**

Table 3.2 - Enrollment Projections (FTE)

The James Sprunt Community College stated that the college must have additional space before there can be significant program and service expansion to meet the needs of area residents. However there is no specific plan to meet the potential military growth in the county.

Recommended Strategies and Actions

K-12

The county should continue the improvement in the collection of Federal Impact Aid surveys among schools, and strive to record and track the growth history at each school.

Duplin should also identify a site for a future elementary school to relieve elementary school overcrowding in the East Duplin, Wallace-Rose Hill, and James Kenan clusters. The school project plan should adhere to the OEA outline on project location, cost, attendances and number of military connected students to be enrolled in the new school.

In order to obtain funding for new schools that are needed due to the growth, Duplin County should seek community support on a general obligation bond to support the K-12 needs. This should be the first strategy because the school overcrowding conditions already exist without or without military impact. Additionally, the county should work with Department of Education to seek a higher level of Federal Impact Aid compensation and work with policy makers on legislation such as the Military Children's School Investment Act and the Zero-Interest Loans program to finance construction projects. Another strategy would be to obtain additional funding from DoD to deal with the special burden imposed on Local Education Agencies (LEAs) due to the military growth.

The county school system should collaborate with the local and neighboring higher-education institutions to develop a high-quality teaching pool to support the growth.

Duplin County should work closely with the James Sprunt Community College to increase the child care work force pool in the county.

Transportation

Duplin County is one of the two inland counties in the North Carolina Military Growth Task Force (MGTF) Region and is predominantly rural. As such, the critical transportation modes for the county include roadways, rural transportation systems, and rail corridors. Major roadways in the county include Interstate-40 and US 117 oriented north-south and NC 24 and NC 41 oriented east-west. NC 24 connects I-40 in Duplin County to Jacksonville in Onslow County and Morehead City in Carteret County.

Existing Conditions

Roadway

The existing roadway system in Duplin County is composed of a network of different streets that perform specific roles. The classification of streets into "functional" categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character as well as operational features for the movement of vehicles.

Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridor (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The existing public street network in Duplin County is divided into several functional classifications, including arterials, collectors, and locals. The scope of the Regional Growth Management Plan emphasizes the operation of arterials based on NCDOT designation and necessary improvements to ensure the functionality of these corridors.

- **Arterials** provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distances. Arterials include facilities with full access control, such as freeways, as well as boulevards and major thoroughfares. Arterials usually connect to one another or to collector streets, and very few arterials connect to local streets. Arterials include freeway facilities such as:
  - **Freeways** provide the most mobility and least access (only at interchanges). Local examples of freeways include I-40.
  - **Principal arterials** typically have tightly controlled access and few, if any, individual site driveways. These arterials are typically intersected by expressways and freeways as well as minor arterials and other public streets. NC 24 is classified as a principal arterial.
  - **Minor arterials** primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. NCDOT did not designate any corridors in Duplin County as minor arterials.
- **Collectors** typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater access flexibility with adjacent land uses, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-freeway/expressway arterials. Collector streets within Duplin County include NC 11, NC 903, and NC 41.
- **Locals** provide greater access and the least mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Most roads in the county are

designated as local streets.

Volumes, Congestion, and Safety

Traffic volumes in Duplin County are lower than its neighboring counties. Excluding I-40 which traverses the western side of the county, the highest traffic volumes occur on US 117 near Teachey (9,000 vehicles per day (vpd)), NC 11 between Kenansville and Beulaville (8,800 vpd), NC 24 near the Onslow County border (8,500 vpd), NC 11 south of Kenansville (8,100 vpd), and NC 41 between I-40 and NC 50 (7,000 vpd). However, because traffic volumes do not account for roadway capacity, a better assessment of congestion is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. This process for Duplin County reveals relatively low levels of congestion throughout the county. In fact, only two corridors currently operate at capacity — US 117 in Wallace and NC 11 in Kenansville. US 41 in Wallace is approaching capacity.

Like congestion, traffic safety should be examined during the development of a transportation strategic plan. Between 2001 and 2005, an average of 1,564 crashes occurred in Duplin County. Slightly more than 34 percent of these crashes resulted in at least one injury. The crash rate (241.39 per 100 million vehicle miles traveled) and severity (percentage of crashes resulting in an injury) are below regional and state averages. However, the average cost per crash ($11.24 per 100 vehicle miles traveled) is above the state average and is outpaced regionally only by the much larger Carteret and Onslow Counties.

Needs Assessment

TIP Projects

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements. The seven-year document includes funding information and schedules for highway, bicycle, pedestrian, rail, and public transportation projects. Several Duplin County priorities identified by the Transportation Working Group are listed on the current (2009-2015) TIP; the projects are detailed below. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have relatively low impact on the military while others will contribute a positive impact. Other recommendations developed by the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/Funding
R-2531	Widen	NC 41	West of Wallace in Duplin County	NC 11 to I-40	Widen to multi-lanes	Planning/design in progress
R-2303	Widen; New Location	NC 24	Western Duplin County	*West* of Maxwell Road/Clinton Road in Cumberland County to I-40 in Duplin County	Four lanes divided; some on new location	Planning/design in progress
R-2204	Widen; New Location (Pink Hill Bypass)	NC 11-903	Duplin County northwest of Kenansville	NC 24 to Rosewood Drive north of Pink Hill	Four lanes divided; some on new location	Programmed for planning and environmental study only

Table 4.1 - Duplin County TIP Projects

Modal

The Duplin County Transportation Department (DCTD), which is a rural transportation system with a fleet of 22 vehicles and 23 full and part time drivers, offers services based on "Demand Response, Deviated Fixed Routes, and Subscriptions." Like other public transit agencies in the region, the transportation department has established a policy of transporting individuals to county medical facilities on a scheduled basis during the month. DCTD also participates in the RouteMatch program though the Eastern Carolina Council (ECC).

One of the three primary rail lines for the seven-county region runs through Duplin County. The CSX-owned corridor that runs parallel to the I-40/US 117 corridors extends from points west of Goldsboro southward to the terminus at Wallace. This terminus begins a 27-mile stretch of abandoned CSX rail line (now NCDOT owned right-of-way) that connects Wallace to Castle Hayne in New Hanover County.

Recommended Strategies and Actions

The transportation network of Duplin County includes a variety of modes. Given the critical need to ensure that people, goods, and services move freely throughout the county and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected officials at the local, regional, and state levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the Transportation Improvement Program projects listed above. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position Duplin County to effectively manage future growth. Roadway projects are most critical to the county; other modes, such as rail, must be addressed from a regional perspective.

Roadway

Within the seven-county region, NC 24 connects Duplin, Onslow, and Carteret Counties, consequently linking I-40, Jacksonville/MCB Camp Lejeune, and Morehead City. The roadway — a mixture of five-, six-, and seven-lane facilities with no control of access — is identified as an expressway in the Strategic Highway Corridor Concept Plan. Within Duplin County, NC 24 links three communities (Warsaw, Kenansville, and Beulaville) and carries up to 8,800 vehicles per day. Operational issues along NC 24 are exasperated during the summer months when tourist traffic mixes with local and military traffic. The urgency for improvements to NC 24 is not capacity-driven, but related more to the opportunity to protect the corridor. The time is now to properly plan land use and transportation decisions concurrently. The recommendations that follow aim to improve the safety and regional mobility of this strategic connection between I-40 and Morehead City.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 24 (northwest of Jacksonville)	Improve existing	Duplin and Onslow counties	I-40 in Duplin County to NC 53 near Jacksonville in Onslow County	46 miles	Improve existing roadway—add shoulders, enhance access management and control the number of new signals	Improves safety for motorists traveling from I-40 to Jacksonville, MCB Camp Lejeune, and MCAS New River

Table 4.2 - NC 24 Corridor Roadway Recommendations in Duplin County

Modal

Critical components to the Duplin County transportation system include rail and transit, which augment movement of civilians, troops, and freight.

Rail

- Reopen the 27-mile line segment between Wallace and Castle Hayne to re-establish passenger and freight rail service to the Port of Wilmington. Probable construction cost is listed at $81 million.

Transit

A transportation survey (10 February 2009 and 6 March 2009) helped identify system needs and priorities in Duplin County, and 92 percent of respondents believed that there is not enough public transportation service available across the county. The highest priority needs identified by Local Coordinated Plan workshop participants included:

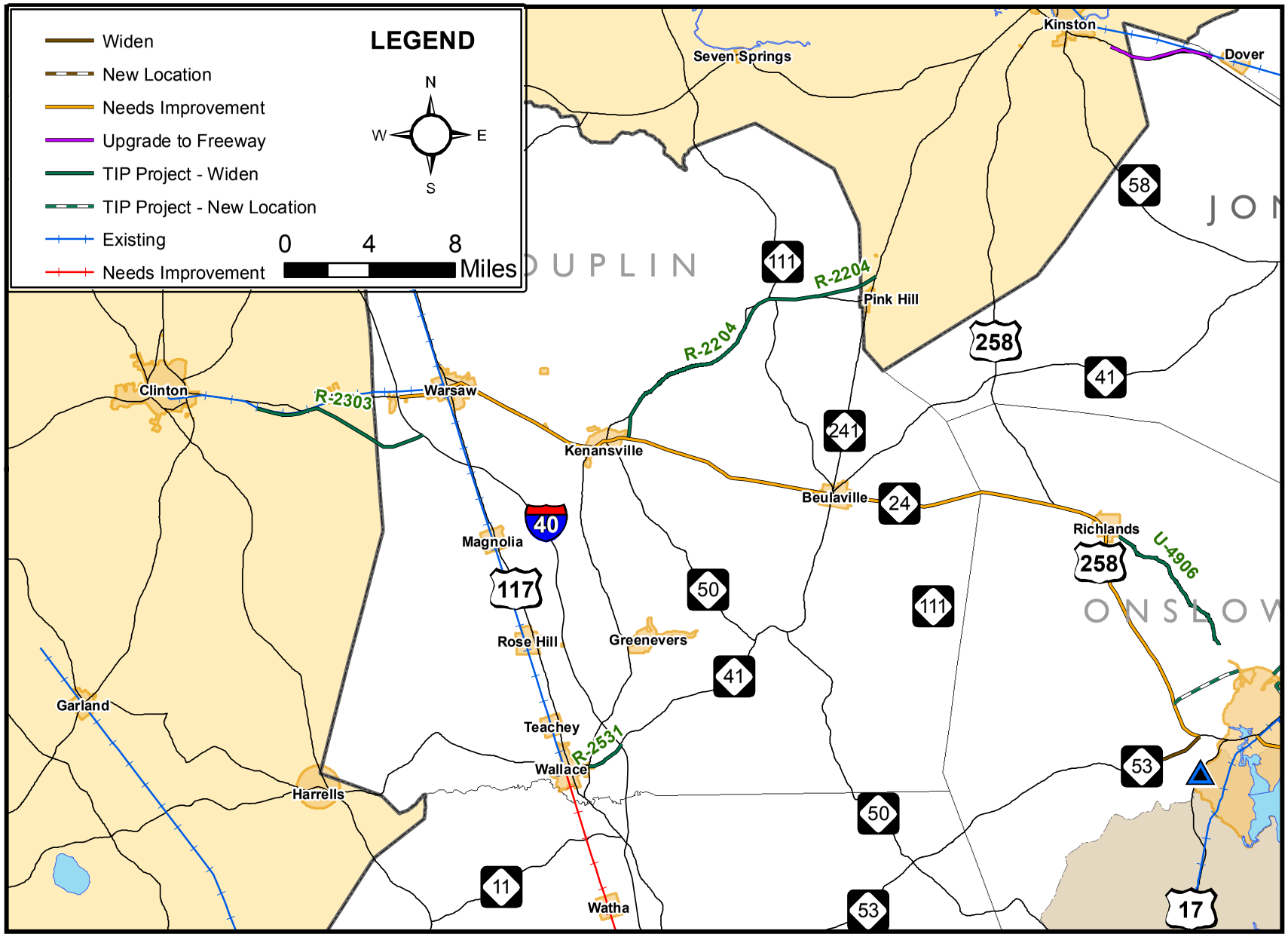
- Decreasing the amount of time needed to pre-arrange a ride on the system, and

- Developing an automated centralized transportation information system to provide information on all types of transportation available in the area

Although each county currently is served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost-effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases, and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient

Across the region, there is an overwhelming demand for transit services to and from MCB Camp Lejeune and MCAS Cherry Point. Expansion of current transit services will allow greater mobility of younger -ranking Marines as well as more residential to base connections. Although the ECC facilitates RouteMatch to coordinated intra-county public transit, it is underused and needs enhanced technical support.



ROADWAY AND RAIL RECOMMENDATIONS Figure 4.1
Duplin County

Infrastructure

Existing Conditions

Water

Potable water facilities in Duplin County are defined as the structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Utility Companies

Public water is provided by seven water districts (Water Districts A through G) within the County by the Duplin County Water Department. Close to 100 percent of Towns within Duplin County have water service, while between 60-80 percent of the unincorporated County has water service available. Private wells also serve much of the rural portions of Duplin County, and Duplin County Health Department is responsible for issuing well permits to install new wells. A private community, Chinquapin, also operates a private water system for that subdivision. **Figure 5.1** shows the extent of the water systems in Duplin County.

Water Supply and Treatment

Duplin County Water Department owns and operates 13 groundwater wells and reports an average use of 1.3 millions of gallons per day (MGD).

Regulations

Duplin County is one of several eastern North Carolina counties subject to the Coastal Plain Capacity Use Area (CCPCUA) rules. These rules require regulated water users in the county (users pumping more than 100,000 gpd) to gradually limit withdrawals from the Black Creek aquifer over a 16-year period. Water providers in Duplin County are required to reduce withdrawals by 25 percent over the first six years (to August 2008), an additional 25 percent over the following five years (August 2008 to August 2013), and a further reduction of 25 percent over the remaining five years (August 2013 to August 2018).

Additionally, regulated water users will be required to implement water conservation which may include:

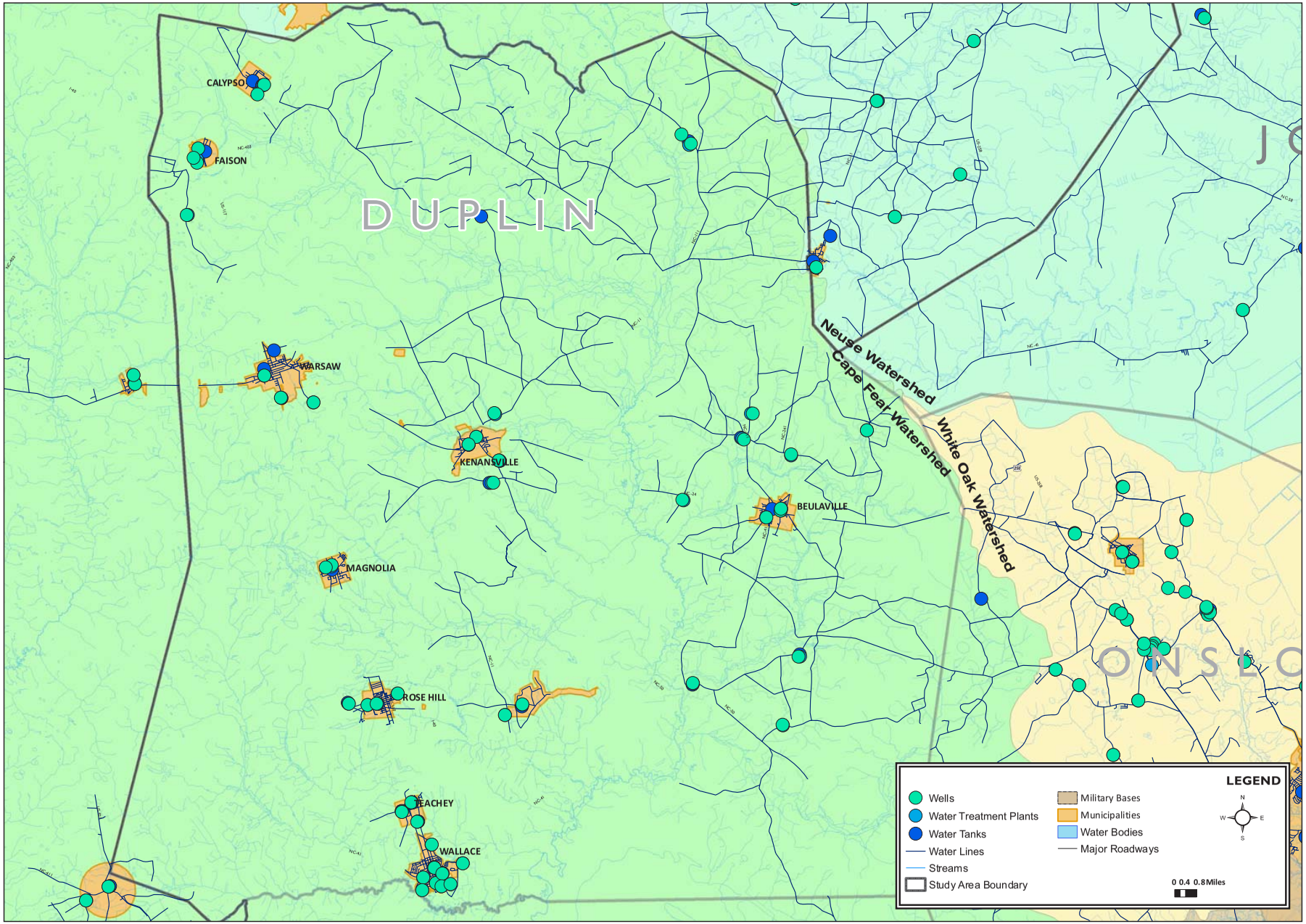
- Conservation ordinances
- Leak detection programs
- Tiered rate structures to encourage conservation
- Plumbing retrofit programs
- Public education advocating water conservation measures

Details on the rule's impacts on the region are found in the Needs Assessment section in the RGMP Infrastructure Module.

North Carolina Department of the Environment and Natural Resources' (NCDENR's) Division of Water Resources monitors saltwater intrusion in the region through a series of monitoring wells that are sampled every three to four years. There are seven monitoring wells located in Duplin County.

Pending Regulations

Representative Russell Tucker (Duplin County) has introduced House Bill (HB) 643, which may provide a solution to groundwater contamination issues. By creating a salinity barrier between saltwater and groundwater the legislation could help protect Carteret County's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the Reclaimed Water in the RGMP Infrastructure Module.



DUPLIN COUNTY WATER Figure 5.1

Sanitary Sewer

Sanitary sewer facilities are defined as the structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems.

Wastewater Providers

Public sewer is provided in Duplin County by eight towns within the county: Faison, Warsaw, Kenansville, Magnolia, Rose Hill, Wallace, Calypso, and Beulaville; Duplin County itself does not have a sewer system. Seven of these towns have their own waste water treatment plants (WWTPs): Faison, Warsaw, Beulaville, Kenansville, Rose Hill, Wallace, and Magnolia. The remainder of the towns in the county has regional pump stations that pump to one of the other municipalities' WWTPs. The Town of Calypso pumps its wastewater to the Town of Mt. Olive, in neighboring Wayne County. The Town of Wallace serves portions of Pender County with wastewater treatment in addition to its own Town and Duplin County customers. Individual septic systems also serve portions of the county, and these systems are permitted by the Duplin County Health Department. The extents of the wastewater systems in Duplin County are shown on **Figure 5.1**.

Wastewater Collection and Treatment

Table 5.1 reveals treatment capacities and uses for wastewater treatment plants in Duplin County (per NCDENR reports), and all of the plants are surface water point discharges:

Facility Name	Permitted Flow (mgd)	Actual Flow (mgd)	% Use of Capacity
Wallace WWTP	1	0.698	69.8%
Beulaville WWTP	0.26	0.176	67.8
Rose Hill WWTP	0.45	0.26	58.1%
Kenansville WWTP	0.3	0.17	57.0%
Warsaw WWTP	0.915	0.408	44.6%
Magnolia WWTP	0.25	0.092	36.9%

Table 5.1 - Characteristics of Wastewater Treatment Plants in Duplin County

The Town of Wallace recently acquired a 2.0 MGD WWTP from a local mill. A county-wide study is currently underway to determine the available capacities from the towns' sewer systems that could be used to serve unincorporated Duplin County and to evaluate those towns' willingness to take on additional treatment. This study is in the initial fact-finding phase.

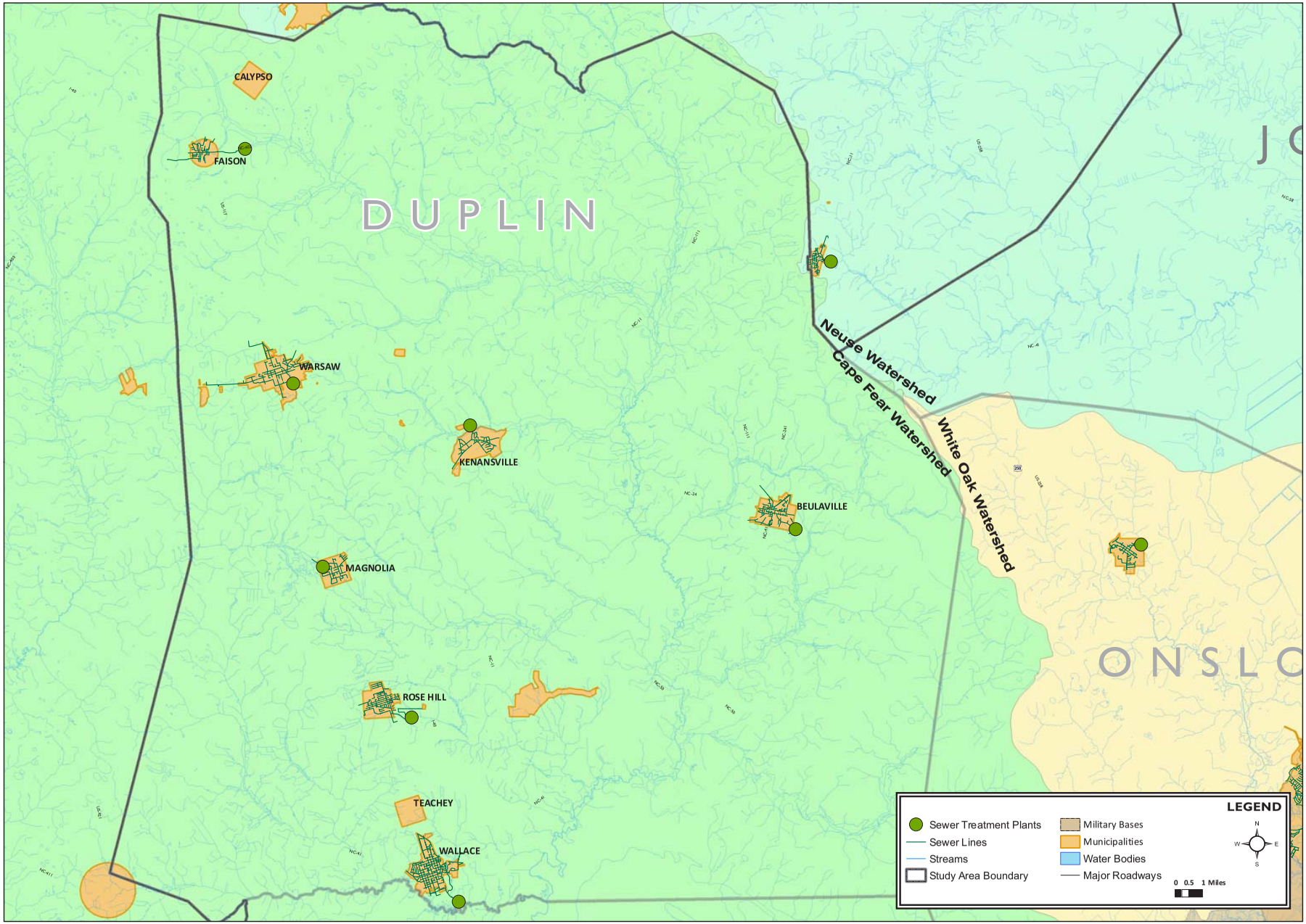
Septic Systems

For portions of the county where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work well with proper siting, design, installation, operation, and maintenance. However, poor soil conditions limit the installation of many new septic systems. Poor soil conditions result in an inability to percolate, rendering properties without access to sewer undevelopable. All new septic systems in the region require a permit from the Duplin County Health Department prior to construction.

Regulations

Sewer providers in Duplin County are subject to the 80 percent/90 percent rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities) administered by NCDENR's Division of Water Quality. Details of these rules can be found in the RPGM Infrastructure Module. If either the 80 percent or 90 percent rules are not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system. To allow for military growth, it is important for the sewer providers in Duplin County to meet these 80 percent/90 percent requirements to avoid moratoriums.

Several bodies of water in Duplin County are listed on the Clean Water Act's Section 303d Impaired Waters List (**see Table 5.2**). For many of these streams and rivers, total maximum daily loads (TMDLs) are developed such that the point discharge of wastewater effluent is not a feasible option.



DUPLIN COUNTY SEWER Figure 5.2

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

AU Number	Stream Name
18-74-(1)a	Northeast Cape Fear River
18-74-(25.5)	Northeast Cape Fear River
18-74-19a	Goshen Swamp
18-74-25	Muddy Creek
18-74-29b	Rock Fish Creek (New Kirk Pond)

Table 5.2 - Impaired Streams in Duplin County

Source: NC Division of Water Quality

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how WWTPs capable of producing reclaimed, water quality effluent can discharge effluent and will save additional space in land application facilities. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in ASR systems. Additional discussion on these rule changes along with HB 643 is included under the Reclaimed Water section of this portion of the plan.

Reclaimed Water

Providers

Reclaimed water or "reuse water" is relatively new to the seven-County region and to Duplin County. In Duplin County, some sewer providers are already using reclaimed water for irrigation as summarized in **Table 5.3:**

Owner	Facility	Permitted Flow (gpd)
Duplin Land Utilities Inc	River Landing WWTF	470,000
Town of Warsaw	Town of Warsaw Reclaimed Water Utilzation System	10,959
Town of Magnolia	Magnolia WWTF Conjunctive Re-Use Spray Irrigation	45,550

Table 5.3 - Sewer Providers Using Reclaimed Water in Duplin County

Capacity

Based on the permitted flows, the capacity for reclaimed water within the county is 0.53 MGD.

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems. These regulations are described in detail beginning in the RPGM Infrastructure Plan.

Pending Regulations

There are currently two pending regulatory changes that will alter the ways that reclaimed water can be used in the State of North Carolina and have a significant impact on Duplin County: updated 15ANCAC Reclaimed Water Rules and HB 643 – Authorize Aquifer Storage of Reclaimed Water. Information on these pending regulations can be found on page 128 of this plan.

Stormwater

Duplin County and its municipalities do not operate a storm water system or control any public storm water facilities. The only systems for storm water management are the ditches that are dug for mosquito control, side ditches along the road system, and private drainage systems.

Duplin County is not subject to any state storm water requirements. However, it is subject to the requirements of Senate Bill 845 which necessitates that parking fields have no more than 80 percent impervious cover or that 20 percent of new parking fields runoff into bioretention areas. (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/parkingspaces.htm)

Solid Waste

Solid Waste Management

Solid waste management encompasses the collection, recycling, and disposal of solid waste generated by local residents and businesses.

Collection

Duplin County does not offer curbside trash collection. Residents living in the unincorporated areas of the county transport their solid waste to a transfer station located on-site at the Duplin County Solid Waste and Recycling Department located at 325 Landfill Road in Rose Hill, NC.

The Department also manages the Land Clearing Inert Debris that is disposed of on-site. Accepted debris includes yard waste, stumps, trees, pallets, unpainted and untreated wood, along with bricks, blocks, concrete and asphalt.

Recycling

A recycling warehouse is also located on-site and processes recyclable materials collected throughout the county. The materials processed at the site are then sold to manufacturers for recycling into new products. Duplin County currently ranks in the top 10 percent of recycling programs in the state, receiving awards for Outstanding County Recycling Program and the 2002 Outstanding Community Involvement special achievement award from NC Big Sweep.

Disposal Facilities

Solid waste collected at the county's transfer station is reloaded into large tractor-trailer trucks and transported to the Sampson County landfill located at 7434 Roseboro Highway on Highway 24. The landfill accepts construction debris, demolition debris, commercial yard waste, and business and residential waste. (Duplin County. http://www.duplincountync.com/governmentOffices/solidWasteRecycling.html)

The county has a 10-year contract with Sampson County, with six years remaining on the current contract.

Landfill Capacity

NCDENR publishes an annual solid waste report that details the remaining capacity for each of the state's landfills. According to the 2007-2008 Solid Waste Annual Report, 1,073,935.90 tons of solid waste were disposed of in the Sampson County Landfill between 2007 and 2008. The remaining capacity of the landfill is 4,255,960.61 tons (this total includes landfill volume constructed and permitted to operate). The total volume for the landfill site at final design is 32,774,991.11 tons. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 3.96 years of capacity remaining. If the landfill was built to its maximum design size, the landfill could continue operating for 30.52 years. (N.C. Department of Environment and Natural Resources. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf)

Telecommunications

Duplin County is below the state average for connectivity. With 54.89 percent connectivity (state average is 83.33 percent), Duplin County is considered "Connectivity Challenged" by the e-NC Authority. Duplin is classified as a Rural, Tier 3 Community with a connectivity speed of between 3-6 Mbps.

Access Providers

Cable

Charter Communications has the cable TV franchise in Duplin County. Charter Communications provides cable modem access to 10 communities within Duplin County and the unincorporated areas of the county. In total, 37.02 percent of households have access to cable.

Telcos

AT&T, Embarq, and Stat Telephone Membership Corporation provide telephone service in Duplin County. About 55 percent of households in the county have telephone access.

AT&T provides DSL access in some of the areas served by the Mount Olive exchange. Embarq provides DSL access to the Beulaville (41 percent), Faison (85 percent), Kenansville (69 percent), Rose Hill (37 percent), Wallace (65 percent), and Warsaw (74 percent) exchanges as well as the area served by the Pink Hill (32 percent) exchange. The areas of Duplin County served by the Moss Hill and Richlands exchanges do not have DSL access. Star Telephone Membership Corporation provides DSL service to the southwestern corner of Duplin County.

Satellite

Customers with clear views have access to Direcway & Starband high-speed Internet service.

Wireless

Interstar provides wireless high-speed Internet access in certain areas of Duplin County.

In March 2009 e-NC Authority announced the award of incentive grants to EMBARQ and Verizon to fund the expansion of high-speed Internet services in Duplin County. This expansion will bring the number of households connected from 54.89 percent to over 70 percent. (The e-NC Authority. http://www.e-nc.org/100_County_Report/Duplin.pdf)

Needs Assessment

Water

Challenges and Needs

Because of CCPCUA rules, the usage and capacities should be continually monitored so that adequate planning can occur if additional wells are needed throughout Duplin County. The monitoring of saltwater intrusion in the county's aquifers should be continued. Some levels of saltwater have already been noted in USGS monitoring activities.

Sewer

Challenges and Needs

Much of the area will continue to rely on package WWTPs or private septic systems to maintain current and future wastewater treatment. To allow for continued growth municipalities with centralized sewer will continue to have to monitor the wastewater treatment plant actual flows against the 80 percent/90 percent rules.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For Duplin County, already employed elsewhere in coastal and neighboring states, could benefit both the water and sewer systems within Carteret County. The protection of existing groundwater sources from saltwater intrusion is of primary importance.

Currently, irrigation is the principle means of applying reclaimed water however, suitable land application sites are costly and scarce. Furthermore, using developable land for spray irrigation does little to help local economies and fails to provide a tax base to the jurisdictions where they are located.

Needs

Both the re-write of the current NCDENR reclaimed water regulations and the approval of the proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary for the expansion of reclaimed water usage within Duplin County. The beneficial use of reclaimed water can decrease potable water demands positively impacting water needs in the region and could be used to protect the county's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed NCAC updated regulations would allow reclaimed water to be treated as a valuable water resource allowing it to be applied to a large number of end-users.

Stormwater

Challenges

Duplin County is subject to minimal stormwater requirements. Its biggest challenge is identifying and addressing stormwater drainage issues in the county.

Solid Waste

Challenges

The county has six years remaining on a contract with Sampson County for waste management. The Sampson County landfill has ample capacity well beyond the planning horizon.

Telecommunications

Challenges

Duplin County is below the state average for connectivity. The e-NC Authority Grant will increase connectivity to over 70 percent, but it will still remain below the state average of 83.33 percent. The county is faced with the challenge of increasing connectivity in its rural, remote areas.

Needs

Duplin County needs to work with service providers to meet or exceed the state average for connectivity.

Recommended Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help Duplin County solve its infrastructure problems. Responsible parties are identified as well as the time frame for the need in short term (urgent by 2011), near term (less than 10 years), or long term.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County .
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.

Table 5.4 - Recommended Actions Matrix

Funding opportunities for these strategies are detailed in the RPMP Infrastructure Module.

References

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/Duplin.pdf.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

N.C. Department of Environment and Natural Resources. Solid Waste Management Plans. http://www.wastenotnc.org/swhome/swmplans.asp.

Duplin County. Duplin County Solid Waste and Recycling Department. http://www.duplincountync.com/governmentOffices/solidWasteRecycling.html.

N.C. Division of Water Quality. Impervious Parking Legislation. http://h2o.enr.state.nc.us/su/parkingspaces.htm.

Wilson, Nat. N.C. Department of Environment and Natural Resources. Email Message pertaining to saltwater intrusion monitoring wells. May, 28, 2009.

Medical, Health, and Social Services
Medical and Health Services

Introduction

Duplin County has a relatively small medical community and is served by one community hospital and 22.1 FTE health care providers. Duplin County has needs for additional inpatient and outpatient behavioral health services, driven on the inpatient side by patients from surrounding counties traveling to Duplin General Hospital for care. Duplin General Hospital, the county's only acute care provider, benefits from being a University Health Systems affiliate, which aids physician recruitment and provides access to clinical expertise. In addition, Goshen Medical Center, the largest federally-qualified health center (FQHC) in North Carolina, offers physician services at several locations within the county. Despite the existence of these institutions, however, the county has issues regarding physician recruitment and retention that limit the projected need for inpatient acute care services.

Existing Conditions

Department of Defense Health Services

There are no Department of Defense (DoD) facilities located in Duplin County. Military residents of Duplin County travel primarily to Naval Hospital Camp Lejeune in Jacksonville, approximately 20 miles away from most county residents, for treatment at a military treatment facility. Only 892 of Duplin County's 1,498 TRICARE-eligible residents, under 60 percent, are enrolled. Just over half of those enrollees choose to have a civilian primary care manager.

	2008
Enrolled to a Military Treatment Facility Primary Care Manager	437
Enrolled to Network Civilian Primary Care Manager	455
Total Enrolled	**892**
Total Eligible	**1,498**

Table 6.1 - TRICARE Enrollment

Source: Health Net Federal Services

Given Duplin County's population of over 50,000, TRICARE covers fewer than two percent of residents. Despite this level of TRICARE enrollment, according to Health Net, over 77 percent of Duplin County physicians are in the TRICARE network.

Veterans Affairs

The Department of Veterans Affairs has two community-based outpatient clinics (CBOC) within the MGTF Region, located in Jacksonville and Morehead City. The Jacksonville CBOC, the nearest to Duplin County residents, offers primary care and mental health services, and the Morehead City CBOC also offers dental services. Specialty services are available in this region by telemedicine.

Patients in Duplin County access inpatient VA hospitals in Fayetteville and Durham. Due to the distance to these facilities, VA patients may be referred to a local community hospital if emergency services are needed.

Health Care Providers

Duplin County has been designated as a Health Professional Shortage Area by the Health Resources and Services Administration (HRSA) for primary, mental health, and dental care. However, Duplin General Hospital's affiliation with University Health Systems, based in Greenville, and the presence of Goshen Medical Center, mitigate the challenges associated with physician recruitment and retention in the county. Duplin County has approximately 16.5 FTE primary care physicians, 1.2 FTE medical specialists, and 1.4 FTE surgeons. Many of these providers split their time between Duplin General Hospital and Goshen Medical Center, because these two institutions often jointly recruit new providers to the area. In addition, Duplin County has one FTE hospitalist, 13.4 FTE physician extenders (including nurse practitioners and physician assistants), and ten FTE dentists.

Assuming no military population growth, there is an additional need for 7.8 FTE primary care providers, 16.3 FTE medical specialists, 13.5 FTE surgeons, and 14.6 FTE dentists in 2011. Physicians at larger medical centers in New Hanover, Pitt, and Craven Counties provide care to Duplin County residents. As such, a portion of the physician needs of the Duplin

County population are already being met by providers located outside of the county. If Duplin County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.

Behavioral Health

Behavioral health services in Duplin County are managed by the Eastpointe LME, which also serves Lenoir, Sampson, and Wayne Counties. Eastpointe is based in Goldsboro, in Wayne County, and operates walk-in crisis centers in each county it serves; a crisis center is located in Rose Hill for Duplin County. Eastpointe offers a crisis intervention team and respite options that have been developed with community cooperation to divert emergency psychiatric events. Eastpointe also conducts educational events in the community on topics such as geriatric mental health, adolescent substance abuse, traumatic brain injuries, physical abuse, and divorce.

Providers in Duplin County cite continuing challenges with outpatient behavioral health services due to a shortage of providers. When patients have easy access to outpatient therapeutic services the likelihood of their needing interventional and crisis services in the future decreases.

Duplin County has approximately 2.0 FTE behavioral health providers.

Provider	Providers	FTEs
Psychiatrist	1.0	1.0
Licensed Clinical and Social Worker*	1.0	0.5
Marriage and Family Therapist*	1.0	0.5
Total	**3.0**	**2.0**

* Licensed Clinical and Social Workers and Marriage and Family Therapists are estimated at 0. 5 FTE per provider.

Table 6.2 - Behavioral Health Providers

Source: Health Net Federal Services and regional providers

Assuming no military population growth, there is a need for an additional 4.5 FTE behavioral health providers in 2011.

Duplin General Hospital operates 20 adult inpatient psychiatric beds, but no adolescent inpatient psychiatric or substance abuse beds. In FY 2008, the psychiatric unit at Duplin General Hospital operated at 85.4 percent occupancy, well above the optimal occupancy of 75 percent as defined by the *2009 North Carolina State Medical Facilities Plan.* In fact, the psychiatric unit at Duplin General Hospital has operated at an occupancy rate of greater than 75 percent in each of the past six years. Patients from all seven counties in the region seek care at Duplin General Hospital's psychiatric unit, particularly Onslow and Carteret Counties. Craven and Pamlico County residents also sought care, but to a lesser extent.

County of Patient Origin	Psychiatric Treatment Days of Care	Psychiatric Treatment Days of Care as Percent of Total
Duplin	1,713	27%
Carteret	92	1%
Craven	410	7%
Jones	13	0%
Onslow	1,550	25%
Pender	176	3%
Pamlico	9	0%
Other Counties and States	2,274	36%
Total	**6,237**	**100%**

Table 6.3 - Inpatient Psychiatric Unit Patient Origin

Source: Duplin General Hospital 2009 License Renewal Applications

Assuming no military population growth, the projected 2011 adolescent inpatient psychiatric visits in the Duplin County indicate a need for one adolescent inpatient psychiatric bed. Similarly, assuming no military population growth, the projected 2011 substance abuse visits in the county indicate a need for less than one substance abuse bed. The 2009 State Medical Facilities Plan indicates no additional need for adolescent inpatient psychiatric or substance abuse beds in 2011 for the Eastpointe LME. The region is projected to have a surplus of adolescent inpatient psychiatric and substance abuse beds in 2011; thus, capacity will be available to treat Duplin residents in nearby counties. Given the low level of demand for these services in Duplin County and the availability of resources in neighboring counties, it is unlikely that new programs will be developed in Duplin County in the foreseeable future.

Assuming no military population growth, the projected number of 2011 adult inpatient psychiatric visits in the county indicates a surplus of adult inpatient psychiatric beds. Similarly, the 2009 State Medical Facilities Plan indicates no additional need for adult inpatient psychiatric beds in the Eastpointe LME. As discussed above, patients from other counties, including those in the MGTF Region, travel to Duplin General Hospital for adult inpatient psychiatric care,

resulting in an over-utilized psychiatric unit. Assuming no military population growth, the projected 2011 adult inpatient psychiatric visits in the region indicate an additional need for 10 adult inpatient psychiatric beds. Duplin General Hospital is currently monitoring its ability to expand its psychiatric unit, which could help to meet this need.

Inpatient Acute Care

Inpatient acute care services in Duplin County are provided by Duplin General Hospital. As a function of its size and location, Duplin General Hospital is not eligible for designation as a Critical Access Hospital or sole community hospital, either of which would provide significant financial benefit. Each of the other community hospitals in the region benefits from one of these designations. Duplin General Hospital does, however, benefit from its affiliation with University Health Systems. The affiliation reduces the difficulties of physician recruitment and achieving access to clinical expertise. University Health Systems operates eight acute care hospitals in North Carolina, including one academic medical center, Pitt County Memorial Hospital.

In FY 2008, Duplin General Hospital's 61 licensed acute care beds operated at 48 percent occupancy, but the hospital only staffed 49 beds during that time. The staffed beds operated at 60 percent occupancy. As such, there is excess capacity in the county for inpatient services.

Hospital	Acute Care Beds	County
Albemarle Health	182	Pasquotank
Bertie Memorial Hospital	6	Bertie
Chowan Hospital	49	Chowan
Duplin General Hospital	61	Duplin
Heritage Hospital	101	Edgecombe
The Outer Banks Hospital	19	Dare
Pitt County Memorial Hospital	628	Pitt
Roanoke-Chowan Hospital	86	Hertford

Table 6.4 - University Health Systems Acute Care Hospitals

Source: 2009 State Medical Facilities Plan

If all Duplin County residents received inpatient acute care in Duplin County, there would be a total need for 59 acute care beds in 2011, assuming no military population growth. More than 60 percent of Duplin County patients receive acute care services at facilities outside of the county. As such, even with a reasonable reduction in the level of out-migration for inpatient acute services, Duplin County has no need for inpatient acute care beds. Similarly, the *2009 State Medical Facilities Plan* indicates no additional need for inpatient acute care beds in Duplin County. Duplin County residents who leave the county for inpatient acute care travel primarily to nearby tertiary and quaternary care hospitals, New Hanover Regional Medical Center and Pitt County Memorial Hospital. Due to the higher level of specialty services located at these facilities, most of this out-migration is appropriate.

Duplin General Hospital provides general surgery, obstetrics/gynecology, and intensive care services. In addition, the hospital offers diagnostic imaging services, including CT, mobile MRI, ultrasound, and X-ray, on an inpatient and outpatient basis. The hospital does not provide comprehensive cardiac or comprehensive oncology services.

Inpatient Rehabilitation Care

There are no providers of inpatient rehabilitation services in Duplin County; county residents primarily seek inpatient rehabilitation care at New Hanover Regional Medical Center and Pitt County Memorial Hospital, which operate 60 and 75 inpatient rehabilitation beds, respectively. Assuming no military population growth, the projected 2011 inpatient rehabilitation visits in the county indicate a need for four inpatient rehabilitation beds. However, inpatient rehabilitation patients are appropriately being treated in Pitt and New Hanover Counties at this time. As such, the need for additional capacity in Duplin County is likely being met outside of the county. The *2009 State Medical Facilities Plan* calculates need on a facility basis, rather than by county, and indicates that there is no additional need for inpatient rehabilitation beds at the facilities in Pitt or New Hanover Counties.

Outpatient Services

Duplin General Hospital provides emergency department services, diagnostic imaging, and outpatient surgery. Atlantic Diagnostic, a diagnostic imaging center, and Wallace Urgent Care are also located in the county.

Regional Coordination

Duplin County providers work with military treatment facilities and other regional providers as necessary to meet the health care needs of the county population. By nature of its hospital affiliation, Duplin General Hospital is highly collaborative with University Health Systems. Regional providers have stated that the current collaboration between counties and between military and civilian providers is effective.

Needs Assessment

Department of Defense Health Services

As stated in the regional summary, TRICARE reimbursement is a current and future concern. However, given the level of TRICARE enrollment in Duplin County, these needs are not as acute as in other counties in the MGTF Region.

Veterans Affairs

As stated in the regional summary, the current Veterans Affairs services are reasonable to meet current and projected needs in the region, including in Duplin County. Leadership at the VA has indicated that there are currently no plans to expand services in the region.

Health Care Providers

Duplin County currently faces physician shortages in several areas; the small growth expected in the military population in the county will exacerbate these to some extent. Following the projected increase in the military population, the projected 2011 physician needs in the county indicate an additional need for 8.2 FTE primary care physicians, 16.5 FTE medical specialists, 13.7 surgeons, and 15 FTE dentists. Duplin County's physician needs include specialty services such as cardiology, otolaryngology, urology, and general surgery. Physicians at larger medical centers in New Hanover, Pitt, and Craven Counties provide care to Duplin County residents. As such, a portion of the physician needs of the Duplin County population are already being met by providers located outside of the county. If Duplin County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.

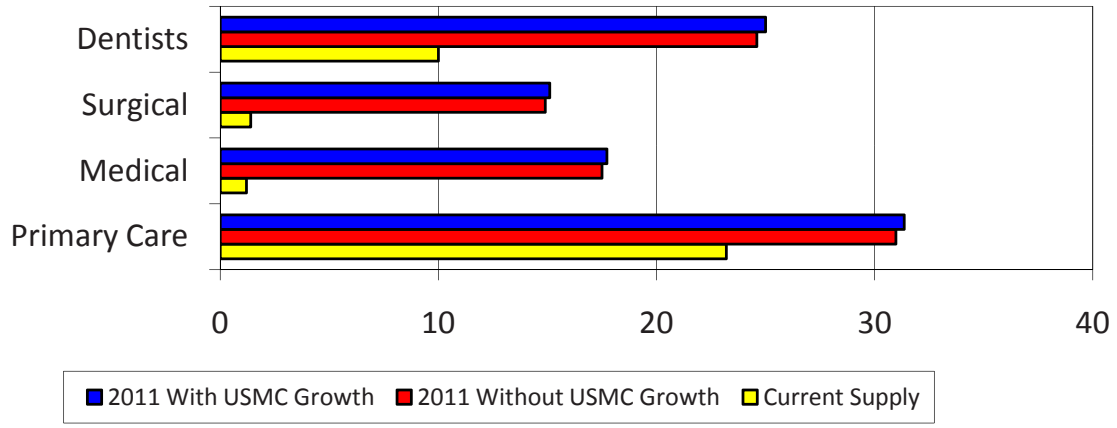


Figure 6.1 - Health Care Provider Needs (FTEs)

Source: Health Net Federal Service, regional providers, and HPS Demand Model

Behavioral Health

Following the projected increase in the military population, the projected 2011 behavioral health visits in the county indicate an additional need for 4.6 FTE behavioral health providers. Although extenders, such as counselors and licensed social workers, could meet some of these needs, there is also a need for an additional psychiatrist to provide back up for the county's sole psychiatrist.

As active-duty troops return from abroad and military forces relocate to the area as part of the BRAC processes, the need for additional adult inpatient psychiatric beds in the region will increase, especially considering the well-documented prevalence of behavioral health problems among deployed and returning soldiers and their families.

While Duplin County alone will have a surplus of adult psychiatric beds, Duplin General Hospital will likely continue to serve as a regional provider of such care. If its 2008 utilization were to remain constant through 2011, Duplin General Hospital would need three additional adult psychiatric beds in order to achieve the optimal occupancy rate of 75 percent. Following the projected increase in the military population, the region will have a shortage of 16 inpatient adult psychiatric

beds in 2011. Duplin General Hospital is currently monitoring its ability to expand its psychiatric unit to meet this need.

The growth in the military population will not significantly change the minor need for adolescent inpatient psychiatric and substance beds. The region after military growth is projected to have a surplus of adolescent inpatient psychiatric and substance abuse beds in 2011, and thus, capacity will be available in nearby counties.

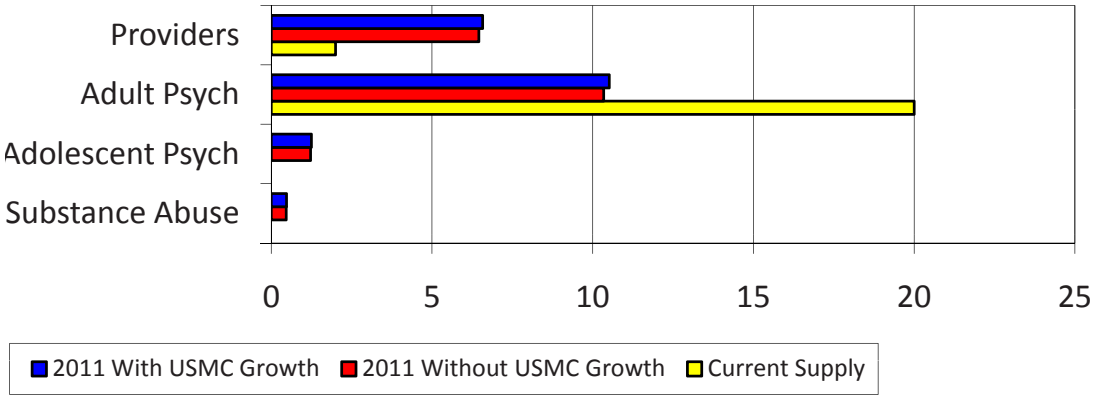


Figure 6.2 - Behavior Health FTEs and Beds

Source: Health Net Federal Services, regional providers, 2009 Hospital License Renewal Applications and HPS Demand Model

Inpatient Acute Care

The growth of the military population will not result in a need for additional acute care beds in Duplin County, given the level of out-migration from the county for inpatient acute care services.

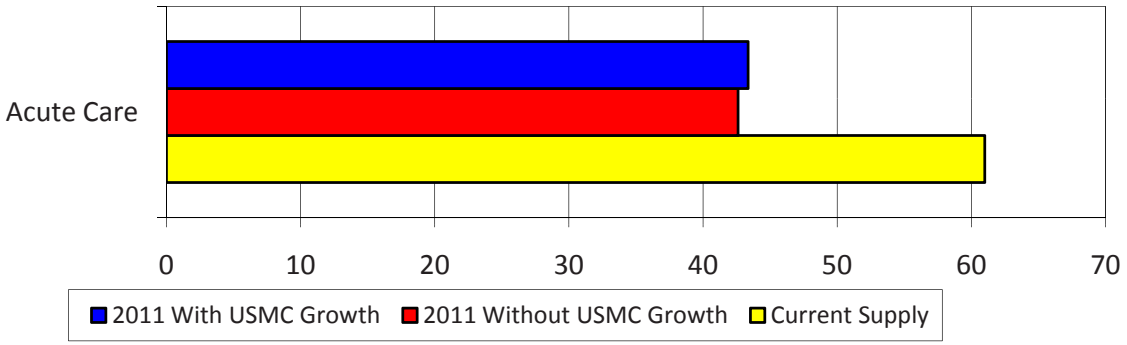


Figure 6.3 - Inpatient Acute Care Beds

Source 2009 Hospital License Renewal Applications and HPS Demand Model

Inpatient Rehabilitation Care

The growth of the military population will not result in a new need for additional inpatient rehabilitation beds. As stated previously, inpatient rehabilitation patients are appropriately being treated in Pitt and New Hanover Counties at this time. As such, the need for additional capacity is likely already being met outside of the county.

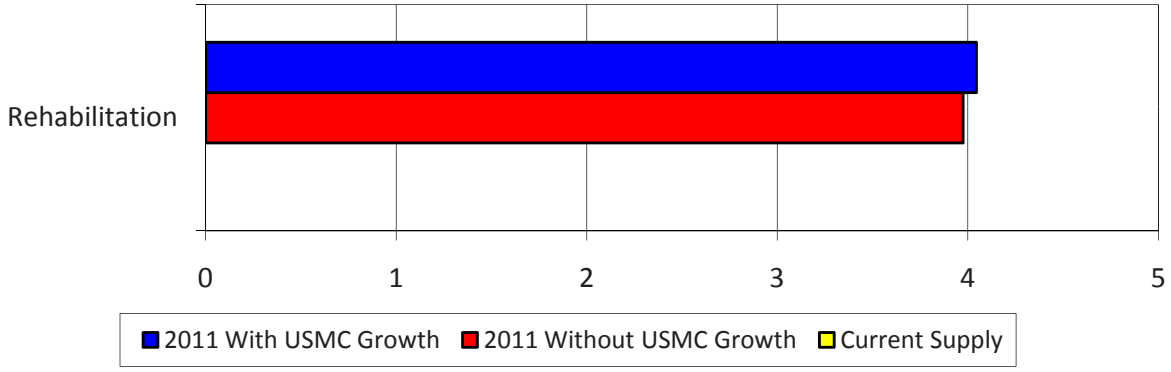


Figure 6.4 - Inpatient Rehabliltation Beds

Source 2009 Hospital License Renewal Applications and HPS Demand Model

Recommended Strategies and Actions

Duplin County needs will be met through the execution of regional strategies and actions in addition to those listed below.

Action 1: Continue efforts to recruit and retain primary care physicians, medical and surgical specialists, and behavioral health providers.

Rationale

The greatest needs in Duplin County (both with and without military population growth) are for primary care physicians, behavioral health providers, and physicians in specialty services such as cardiology, otolaryngology, urology, and general surgery.

Responsible Party

Local hospital and physician leadership.

Funding

None requested.

Action 2: Continue to monitor ability to expand inpatient adult psychiatric bed capacity.

Rationale

Duplin General Hospital's inpatient psychiatric unit is currently over-utilized because it serves as regional provider of care.

Responsible Party

Local hospital leadership.

Funding

None requested.

Social Services

Existing Conditions

Marine and Family Services

Marine and Family Services is a division of the Department of Marine Corps Community Services (MCCS) and provides a variety of services to strengthen the military community at each marine installation throughout the country. Marine and Family Service programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or by visiting Marine and Family Services offices located on Camp Lejeune, MCAS Cherry Point and MCAS New River. Marines and their family members can access services voluntarily, or via referral to social services by a commander or a division of military services, such as a health care provider. Marines are briefed on available services during the required base orientation, *Welcome Aboard*, upon arrival at any Marine installation. Services and special events are advertised on the base television channel and on flyers around base, including at the commissary, shops, and restaurants.

Because of the distance to each installation in the region, most Duplin County residents do not access these services. MCAS New River, MCB Camp Lejeune, and MCAS Cherry Point are approximately 50, 60, and 85 miles respectively from central Duplin County. For a full description of Marine and Family Service Programs, please see the Regional Medical, Health, and Social Services module.

OneSource

Military OneSource is a resource contracted through the Department of Defense for military members and their families, intended to supplement existing military support services through the Internet or by phone. Military OneSource complements Military and Family Services, providing a central location for information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs. OneSource offers counseling sessions over the phone and online and refers to local counselors for in-person counseling. These services are ideal for Duplin County residents who live a significant distance from each of the local installations. Local counselors in the communities surrounding MCB Camp Lejeune, MCAS Cherry Point and MCAS New River, however, often have limited availability and waiting lists are frequent and wait times lengthy.

Department of Social Services

Services Provided – County Department of Social Services

North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[3] All County Departments of Social Services (County DSS) provide the following social services. [For a full description of DSS services please see the Regional Medical, Health, and Social Services module.]

- *Adult & Family Services* – supports disabled adults with a range of services such as guardianship, transportation to medical facilities, services for the blind, and adult care home monitoring.
- *Child Welfare* – covers the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.
- *Crisis Intervention* – helps low-income households with heating or cooling-related emergencies to reduce the risk of health or safety problems as well as the risk of eviction.
- *Day Care* – provides free and/or subsidized child day care for low-income families.

3 North Carolina Department of Social Services, available at http://ncdhhs.gov/dss/about

- *Food and Nutrition Services* -- offers food assistance to eligible families.
- *Pregnancy Services* – supports low-income individuals with support for unplanned pregnancies, addressing medical, social, education and psychological issues.
- *Refugee assistance* – assists newly-arrived refugees.
- *Senior Services* – offers meal assistance and health promotion activities to eligible adults over 60 years of age.
- *Work First* – provides temporary assistance to needy families and supports their ability for self-sufficiency.

Military and civilian populations in Duplin County access DSS services by phone, internet or in-person at the Duplin County DSS office, located in Kenansville.

As discussed previously, while Marine and Family Services is meant to be the primary avenue by which military members and their families access services, military families living off base access social service programs through the Duplin County DSS. While overall the active military population in Duplin County is small—less than 1 percent—the military population does use Child Welfare, particularly Child Protective Services, Day Care, and Food and Nutritional Services (FNS). In addition, affordable transportation is a current need for both military and civilian populations that greatly impacts access to social services.

Child Welfare

As discussed at length in the Regional Medical, Health, and Social Services module, military families, particularly younger, junior-enlisted military families, use DSS child welfare services at higher rates than do civilian populations. This higher use rate is due to factors that include lack of support networks due to frequent moves and separation from extended families.

Please note that spousal abuse cases are not handled by DSS.

Day Care

Access to day care is important for the family unit and, in particular, provides increased opportunities for military spouses. Duplin County DSS also coordinates with Duplin County Partnership for Children for a range of childhood services including Smart Start, aimed at addressing issues of child abuse and neglect. Duplin County currently has a need for increased day care and Smart Start program capacity for both the civilian and military populations.

Food and Nutritional Services (FNS)

Because many Marines are young and junior-enlisted, some need assistance with providing food for their families. Eligibility for FNS is determined by income level and family size; Marines who are eligible for this assistance access FNS programs through the Duplin County DSS.

Transportation

Duplin County has a rural transportation system comprised of 22 vehicles. This public service focuses on providing transportation assistance to those already accessing social services. Individuals enrolled in the Smart Start program, accessing county educational programs and accessing medical services are given priority for this public transportation system.

Needs Assessment

Duplin County is anticipating a medium impact from the military population influx; approximately 982 Marines and their families are expected. However, much of this population is expected to be younger, junior-ranking individuals who are expected to use social services at higher rates. The military population influx is not expected to create needs for new services; rather, the increased military population is expected to exacerbate resource needs already present through Duplin County DSS services. Specifically, Duplin County DSS expects the increase in population to have the most impact on Child Welfare programs and to a lesser extent, Day Care and FNS. Current barriers to access for the expected Marine population are also expected to be exacerbated—particularly transportation.

Transportation

As previously discussed, access to affordable public transportation and increasing geographic access is a major need for both the civilian and military populations throughout Duplin County. In particular, needs include transportation that can be accessed daily and without advance reservations.

Child Welfare

Duplin County DSS expects that Child Welfare services will experience increased demand as a result of the military population growth. These programs, staff, and systems are in place, but will need increased funding and targeted initiatives to address expected upcoming need. In particular:

- Increased capacity for child protective services through Duplin County DSS. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly, and that adequate follow-up (counseling, legal coordination, coordination with military command) is thorough and timely.

Day Care

Access to affordable day care is currently a need for the civilian and military populations in Duplin County, and the increased military population in Duplin is expected to further increase the need for day care slots. The following child care needs reflect current needs that will be exacerbated by the influx of military population.

The following chart outlines current and anticipated day care need for Duplin County:

	Child Care Enrollment - 2007	Expected Child Care Enrollment due to Normal Population Growth - 2011	Additional Slots Expected Due to the Military Increase - 2011	Total Expected 2011Child Care Enrollment
Children aged 5-12	524	565	11	576
Children under 15 years old	1,732	1,868	37	1,905

Table 6.5 - Projected Child Care Enrollment

Source: Education Working Group, Military Growth Task Force

Food and Nutritional Services (FNS)

Because much of the military population expected in Duplin County DSS will be younger and junior-ranking, Duplin County expects an increase in demand for FNS Services.

Recommended Strategies and Actions

Duplin County needs will be met through the execution of regional strategies and actions, in addition to those listed below.

Action 1: Increase access to services by addressing limited mobility.

Rationale

The lack of flexible public transportation in Duplin County results in many military families encountering challenges in accessing services.

Supporting activities

- Reduce or eliminate geographic access barriers by bringing services to military communities in Duplin County. This can be achieved by forming community action teams through Duplin County DSS and Marine and Family Services. These action teams can serve military families at accessible locations throughout Duplin County, in locations such as community facilities, schools, and churches. Preventative workshops particularly could be successful in these venues, and child care could be provided on site. The appropriateness of providing services that require confidentiality, such as individual or family counseling, will depend on the capacity of the community facility.

Funding

- No funding requested

Public Safety and Emergency Services

Existing Conditions

The Public Safety and Emergency Services (PS/ES) sector in Duplin County will not see the same impact on levels of service that counties that are host to Marine Corps installations can expect. Nonetheless, the relatively small population here means that relatively small increase can have a significant impact here.

Emergency Management

Interoperable Communications

Pender County's first responders are in the process of migrating to the VIPER network full-time. The counties law enforcement and EMS agencies have completed the transition and fire departments will transition from VHF to an 800MHz, VIPER-compatible system in the near future. The county has maintained VHF systems for dispatching and backup purposes. With VIPER, the county's first response agencies have or will have interoperability with a number of local neighboring agencies as well as NC Highway Patrol and state Emergency Management. The counties first responders still face deficiencies in portable and mobile radios that are being addressed incrementally.

Emergency Medical Services

Duplin County EMS employs 65 full-time employees, 35 part-time employees, and eight paramedic ambulances. Unlike some counties in the region, Duplin's EMS force is fully paid. Though emergency management representatives report that the foundation of the county's EMS department is strong, they face a growing deficiency in personnel as the population continues to increase. The challenge of growing the department is primarily a function of inadequate funding to support more salaries.

Courts

Between FY2004 and FY2008, Duplin County's District Court experienced an 18 percent increase in yearly court filings (AOC 2009). This increase in demands for service are especially challenging to Duplin's courts due to current hiring freezes and pre-existing facility needs. The District Attorney's office has been especially strained by increases in caseloads, according to Clerk's Office representatives. Security measures at court facilities are also in need of upgrades. Current security measures are limited to restricted entrance access and electronic wand scanning prior to entering courtrooms.

Needs Assessment

Communications Interoperability

- Handheld and mobile radio devices for first responders (estimated cost $975,000)

Emergency Services

Emergency Management/EMS

- 50 additional employees (Estimated cost $1.8 million)

Courts

- Additional personnel for District Attorney's Office
- Additional courtroom

Recommended Strategies and Actions

Action 1: Secure funding to ensure that most county first responders have access to VIPER-compatible radio equipment

Funding

- Assistance to Firefighters Grant (FEMA)
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 2: Initiate measures to update and expand court facilities

Supporting Activities

- Request the U.S. Marshal's Study on court facility needs, as has been completed in Onslow County's court facilities
- Initiate planning for new facilities based on study outcome

Funding

- OEA community development funding

Action 3: Seek additional funding to overcome personnel and equipment deficiencies in emergency management

Funding

- Assistance to Firefighters Grant (FEMA)

Quality of Life

Existing Conditions

Parks and Recreation and Sports Venues

Duplin County no longer has a parks and recreation department. The only county-run park is Cabin Lake Park, which is 222 acres and includes areas for camping, hiking, fishing, boating, picnicking, and swimming. The park has restroom and shower facilities, and RV hookups. There is a 2.2 mile- hiking/walking trail, and a 69-acre lake for paddling and fishing. The county runs youth and adult athletic programs, but there are no county-run athletic fields. The Albertson baseball field is the only functional county facility, and the rest of the programs take place on land maintained by the towns. The athletic programs typically use local public school facilities.

Kenan Park, in the town of Kenansville, is a "multi-purpose yard" with picnic facilities, tennis courts, ball fields, and playground equipment. There are two campgrounds in the county: Lake Leamon, with swimming, paddleboats, canoes, and three miles of walking trails; and Maxwell Mill Park.

Golf is also an important recreational activity in the county, and five public and private courses available.

Current Plans

In 2000, when Duplin County had a parks and Recreation department, objectives were identified in a three-year plan. One of these objectives was to build four new district parks, one in each of the four established school districts.

- ***East Duplin District –*** 40 acres behind Chinquapin Elementary School or 59 acres at Albertson Recreation Park
- ***James Kenan District –*** Work with James Sprunt Community College, Services for the Aged, and the county government to build a Recreation Complex that would include a gym, indoor pool, ball fields, etc. at the new Agri-Business Complex across from the community college.
- ***Wallace-Rose Hill District –*** Develop land already owned by Rose Hill Recreation across from Jimmy Jerome Park.
- ***North Duplin District –*** Develop land in conjunction with North Duplin Junior or Senior High Schools, or North Duplin Elementary School.

Another objective was to add to the Cabin Lake Park facilities, and to develop walking or biking trails. The county also hoped to expand athletic programs and offer special events, camps, and programs. According to Cabin Lake Park authorities, the future of these projects is unknown because there is no funding available for these projects, nor a parks and recreation department.

Water Access and Parking

Duplin County has one boat ramp into the Northeast Cape Fear River. The county also has two lakes for recreational water use, Cabin Lake and Lake Leamon, both of which provide water access for canoes and paddleboats. Because Duplin County is not a coastal county, it has no beach access points.

Arts and Culture

The Duplin County public library system has six locations, including a headquarters in Kenansville, and locations in Beulaville, Faison, Magnolia, Rose Hill, and Warsaw. Their square footage is listed below and compared to the state standard (State Library of North Carolina 2007, 21-22):

Duplin County-Dorothy Wightman Library (Kenansville):	5,616 SF
Phillip Leff Memorial Library (Beulaville):	2,929 SF
Faison Branch Library (Emily Hill Library):	340 SF
Florence Gallier Library (Magnolia):	1,056 SF
Rose Hill Library:	3,493 SF

Warsaw-Kornegay Public Library:		1,200 SF
	TOTAL:	**14,634 SF**

Based on the 2007 population of Duplin County (52,851) and the state recommendations for library square footage (0.65 per capita), the suggested area for libraries in Duplin County is 34,353 SF. This indicates a deficit of about 19,719 square feet in the county.

The public library also administers the Duplin County Law Library, located in the Courthouse. The Thelma Dingus Bryant Library in the City of Wallace also lies partially in Duplin County.

The branch in Beulaville is expected to receive the most impact from the added growth to the county. Of the library locations in Duplin County, four are located along Route 117 (Faison Branch, Florence Gallier, Rose Hill, and Warsaw-Kornegay), and an increase in population will deliver more traffic by these library branches.

The main branch in Kenansville is already operating over capacity, and greatly needs to be expanded. Most of the libraries in the county are also limited in space, programming, and computers. Within the Warsaw-Kornegay library, space is severely limited, so that only seven to nine children can participate in programs it offers due to space constraints and fire codes. All libraries have an insufficient number of computers for public use, an even more acute problem in the midst of the national economic downturn. Within the past year, there has been a 409 percent increase in computer use in the public libraries in the county. The Warsaw-Kornegay and main branch library in Kenansville frequently experience waiting lines for computers. The Warsaw-Kornegay Library currently has seven computers, but needs 15 to serve its users. The Kenansville library also has plans to remove its reference section to allow space for other collections and amenities.

The Phillip Leff Memorial Library and Rose Hill Library are the newest libraries in the county, and are currently adequately equipped for use. There is room for growth within these libraries, however, as evidenced by the heavy use of their meeting rooms.

The Duplin County Arts Council coordinates and promotes educational and cultural activities, including arts, theater, and craft programs. Other cultural attractions within the county include the Confederate Arms Factory, World's Largest Frying Pan, Buckner Hill Plantation, Cowan Museum, Faison Museum, Historic L.P. Best House/Duplin County Veterans Museum, Liberty Hill Plantation, Tarkil Branch Farm's Homestead Museum, and the Thomas C. Townsend Fireman's Museum.

Duplin County has several farms for touring (Agri-Cultural tourism is becoming increasingly popular in the state), and also several wineries for touring and tasting.

The Kenan Memorial Amphitheatre hosts seasonal stage shows, seating 1,000 people.

Current Plans

The Duplin County-Dorothy Wightman Library has requested a 16,000- square foot combination renovation/addition. The request and plans have been presented to County Commissioners, but the library is not a top priority for county funds during the current, tough economic situation, so it is yet unknown when this project will be funded.

Hotels and Meeting Space

Duplin County has nine hotels [listed in Appendix E] that provide a total of 365 rooms, with an average annual occupancy rate of 54 percent during the week, and 80 percent on the weekends.

Within the county, the largest event space is the Duplin Events Center, which has fixed seating for 1,875 people, and the possibility of expanding capacity to seat over 4,200 people. However, the facility cannot partition space to accommodate multiple smaller events, so it is only really conducive to large events. The events center typically hosts events such as wedding receptions, graduations, agricultural shows, festivals, concerts, tradeshows, etc.

Other event space within the county includes: the Duplin County Agribusiness Center, which holds up to 300 people in its banquet room; the County Squire Restaurant & Vintage Inn, which can accommodate 20-300 people; the Duplin Winery, which can hold up to 190 people; the Holiday Inn Express in Wallace, which has a meeting room to fit 50 people; James Sprunt Community College, which has several spaces that can hold a variety of groups of up to 250 people; the Kenan Auditorium, which can hold up to 1,000 people; the Mad Boar Restaurant, which can accommodate up to 300 people; and the Tarkil Branch Farm's Homestead Museum, which can hold up to 60 people. The meeting space available for larger events is considered adequate, but the need exists for smaller event spaces that will hold 300-600 people.

Ideally, Duplin County needs a new hotel with attached meeting space (a divided ballroom, for example) that would provide both small and large meeting facilities.

Current Plans

There are currently no hotels under construction within the county; however, one hotel is planned, but it cannot start construction due to unavailability of water and sewer infrastructure.

Needs Assessment

Table 8.1 below shows which sports facilities will be needed to accommodate military-induced growth.

Facilities	State Standard	Duplin County (982 people)
Baseball Fields	1/8,000	-
Soccer Fields	1/6,000	-
Softball Fields	1/4,000	-
Tennis Courts	1/1,200	1
Outdoor Swimming Pools	1/14,000	-
Community Centers	1/14,000	-

Table 8.1 - Sports Venue Facilities Needed To Support Military-Induced Growth in Duplin County

In addition to athletic fields and venues, parks are needed to accommodate a population increase. **Table 8.2** below shows which types of parks will be needed in Duplin County.

Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
982	6-8 acres	10 acres	20-98 acres

Table 8.2 - Parks Needed To Support Military-Induced Growth in Duplin County

Libraries in the county, which are already lacking enough space per capita (by about 19,719 square feet), will be strained by the population influx. It is anticipated that the Beulaville branch will be the most affected, so it is suggested that additional space be added to this location. **Table 8.3** below shows the estimated square footage that will be needed within the county due to military growth.

Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
982	639 SF	982 SF

Table 8.3 - Library Space Needed To Support Military-Induced Growth in Duplin County

In addition to needing more square footage, library programs will be stretched thin as regional population increases, Steps should be taken to increase available programs, access to computers and the Internet, and parking for the library buildings. Typically, the lack of parking is due to a lack of funds for new parking areas.

Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items/ capita)	User Seating (2.5 seats/1000 residents)	Programming/Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF)
982	0.5	1.964	2.5	3	3

Table 8.4 - Additional Library Needs to Support Military-Induced Growth in Duplin County

Recommended Strategies and Actions

Recommendation 1: Build one recreation complex that includes new sports fields and gymnasiums to bring the county up to state recreation standards.

A feasibility study to site the complex, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of complex should be initiated in FY 11, with completion planned for FY 12. The estimated cost for the complex would be $5 million - $30 million, depending on its size.

Rationale

Duplin County is already lacking in the number of athletic fields it offers, based on state standards, and the military-induced growth will only place further stress on existing recreational programs and facilities. The county will need new or expanded recreation facilities that include new sports fields and gymnasiums.

Funding

Grants and other funding sources available for parks and recreation projects are listed below.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: www.ils.unc.edu/parkproject/trails/home.htm

North Carolina Adopt-A-Trail Program – This grant is awarded annually to government agencies, non-profits, and private trail groups. 100 percent funding is available up to $5,000. Contact the Trails Program at: http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – A state program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php; Phone: (919) 715-8699

Land and Water Conservation Fund – A federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone) 202-343-9563.

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories including acquisition, landscaping, bicycling, and pedestrian facilities. www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – Community grants program supports local health departments in NC in efforts to development community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example: Carteret County Health Department in collaboration with County Parks and Recreation and other community partners will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project.

For information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Recommendation 2: Additional library space, programs, and amenities, as outlined above, particularly at Phillip Leff Library in Beulaville (which will be most affected by military growth), and at the Kenansville Library.

The anticipated cost for new library space is $255 per square foot. This cost includes construction and related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, copiers), contingency construction and uplift, and library collections (books for 50 percent fill rate and A/V materials).

Rationale

Libraries and their programs are an important, low-cost activity for military families in Duplin County. The county is not up to state space standards, and is lacking in the number of computers and other programs or amenities that it offers. Libraries are becoming increasingly like community centers, and as a free resource, are very important to military families.

Library Funding

Below is a list of funds and grants that are available for library projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries are located in counties that have either a 10 percent or greater poverty level in the Foundation-defined service area OR more than 3,000 persons living in poverty. http://statelibrary.ncdcr.gov/gates/gates.html Libraries in Duplin that have been established as eligible by the Foundation:

- Duplin County-Dorothy Wightman Library
- Faison Branch Library (Emily Hill Library)
- Florence Gallier Library
- Phillip Leff Memorial Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. For available grants, contact: http://www.neh.gov/grants/index.html

National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. Is the nation's largest funding agency for the Arts. For grant information, contact: http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – North Carolina organization whose mission is to promote the social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities through building up the capacity of nonprofits, historically, supports fundraising campaigns to build capital projects (e.g., libraries, museums, community centers). http://www.kresge.org/index.aspx

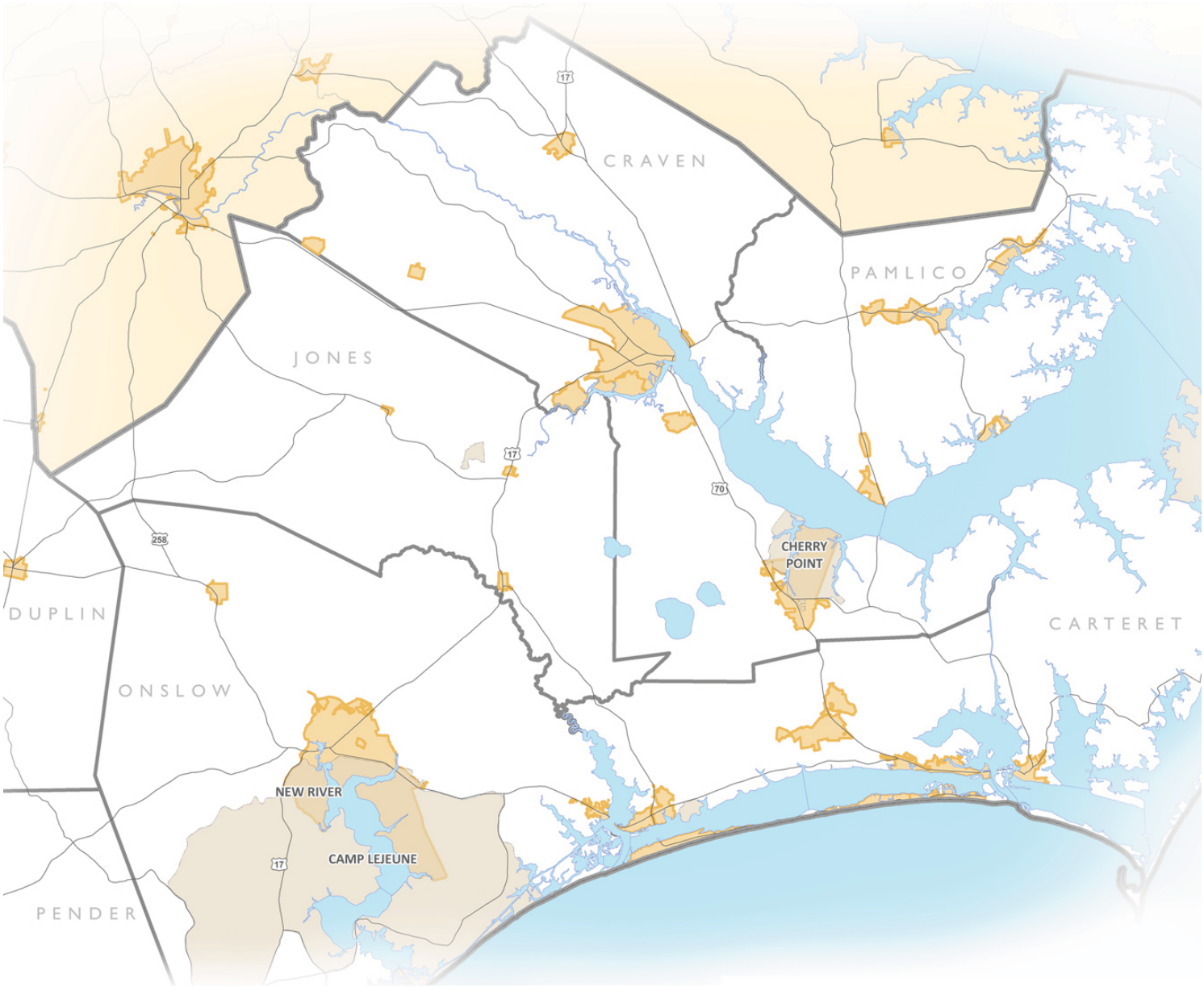
Kellenberger Historical Foundation (based in Craven County)

Recommendation 3: Recruit new hotels with full amenities and attached meeting space.

Rationale

Duplin County has several large meeting facilities, but not enough small meeting space. New hotels with full amenities and meeting facilities are needed to accommodate groups that need a meeting space in the hotel.

THIS PAGE INTENTIONALY LEFT BLANK.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Jones County

Submitted to the:
North Carolina Eastern Region's
Military Growth Task Force

www.nceastmgtf.org

Marstel-Day, LLC

In Partnership with:

Kimley-Horn and Associates, Inc.

URBAN RESOURCE GROUP
A DIVISION OF KIMLEY-HORN AND ASSOCIATES, INC.

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

Housing

Jones County, although not a host county for Marine Corps installations, will experience military and civilian growth by 2011. Civilian demand for new housing will total 134 households by 2011 and military demand for new housing will total 70 households. The following section examines the provision of adequate and affordable housing in the county with respect to incoming civilians and military personnel. It also includes an assessment of the needs and issues facing the county, with recommended strategies and actions.

Existing Conditions

Housing Supply

Housing supply impacts pricing and the competition for homes in the county. In 2007, there were 4,679 housing units reported for Jones County. The preference for housing types and neighborhood styles varies across the county and the region. This section focuses on four general home categories prevalent in the county: for-sale homes, rental homes, manufactured homes, and second homes/seasonal rentals.

Housing unit estimates for the county were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this chapter was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the county include the impacts of cities and towns within it.

A summary of each general housing category follows.

Manufactured Homes

A manufactured home is built on an integral chassis in a factory, transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). One in four homes in Eastern North Carolina is a manufactured home.

In 2007, there were 1,633 manufactured homes in Jones County. This represents 0.8 percent of all the housing units reported for the county.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

For-Sale Homes

For-sale homes are occupied by the owner of the unit. They are site built homes, typically purchased using a mortgage. For-sale homes are the dominant housing type in the county.

In 2007, there were 2,109 occupied for-sale homes in the county. This represents 45 percent of all the housing units reported for the county.

For-sale homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see **Appendix G**). Based on the foregoing, 294 for-sale homes are available for new residents coming to Jones. The number of for-sale homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

For-sale housing in the county, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site built home in the county is $94,977, which is below the state average ($278,943).

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time (usually one calendar year). In 2007, there were 535 occupied rental homes in the county.

This represents 11 percent of all the housing units reported for the county.

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see Appendix G). Based on the foregoing, 74 available rental homes were estimated for Jones. The number of rental homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

Rents in the region were collected from an internet and telephone survey of apartments available in the seven counties. The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy at rental homes in the region was estimated at 92 percent based on US Census Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98%). These trends are reflected at the county level as well.

The magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases unless new units are constructed soon.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment property, hoping to retire to the home once it was paid off (National Association of Realtors, 2004). When asked why they bought a second home, respondents to the National Association of Realtors survey reported they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home because they had the extra money to spend.

The hottest reported markets for second homes are the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates.

In 2007, 34 of the total housing units in Jones County were listed as seasonal rental units.

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 225 dwelling units were approved in Jones County between 2005 and 2009. None of these have been built. None of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. The Committed Residential Development Database prepared by the ECC is included in the Appendix of this report.

Cost of Homeownership

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the county.

Purchase Price

The median home value published in the American Community Survey for 2007 was used to estimate the purchase price of a home in the county. Median home price for Jones County was $94,977.

Mortgage

A conventional, fixed-rate 30-year mortgage was assumed to estimate the typical monthly cost of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15 percent of the purchase price. No down payment was assumed for home loans to military families in order to be consistent with the terms of most VA loans. The loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

Property Taxes

The tax rate in Jones County is $0.790 per $100 of value.

Utilities

Utility costs were estimated from state and local sources. The average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners Insurance

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductible levels, and the insurance company providing the policy. The cost of homeowners insurance was estimated to be 0.75 percent of the purchase price of the home.

Monthly Payment

The monthly payment to afford a home of median value in Jones County was estimated to be $771.17 for civilians and $851.70.

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see **Appendix B**). Average rents assumed for the region are also assumed for the county and are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active duty military personnel and their dependents buying homes, and active duty military personnel and their dependents renting homes.

Civilians and military personnel are both able to afford homes in Jones County. Rentals are also affordable, except for civilians choosing or needing to rent a 3 bedroom unit. This affordability gap ($102.95) represents the highest affordability gap for any housing type in the region.

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the county. The demand for housing reflects both civilian and military growth. Anticipated demand for for-sale homes and rental homes in the region is as follows: civilian homeowners (107), civilian renters (27), military homeowners (25), and military renters (45).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as 'built' from the Committed Residential Development Database (2005-2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 294 for-sale homes and 74 rental homes. All manufactured homes and second homes/ seasonal rentals inventoried for the county were removed from available housing supply for the gap analysis.

By 2011, only 164 housing units of the currently available housing stock will remain available. This margin of surplus is not large enough to ensure long-term availability of housing. Completion of the yet to be built dwelling units in the committed residential development database prepared by the ECC will help facilitate provision of housing beyond the 2011 planning horizon.

Issues Facing the County

Although the cost-burden and housing gap analysis reveal that civilians and military personnel moving to the county can

generally afford and find available housing, there are several critical issues that must be addressed in order to ensure that housing is affordable and available beyond the 2011 planning horizon. These issues include loosening lending to ensure that approved housing units are constructed and enabling regulatory tools that will help promote the rural heritage of Jones County while allowing development to occur in a way that does not over-burden existing and planned infrastructure.

Recommended Strategies and Actions

Critical to the success of the regional growth management plan, are the implementing actions of participating municipalities and counties. Jones County should continue to plan for long term growth through implementation of county-wide zoning and its existing subdivision and conservation ordinances. Recommended strategies and actions to be pursued on behalf of the county could also include

- Implementing the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.
- Adopting adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region.
- Adopting policies or incentives that expedite the construction of new rental and affordable housing.

Workforce

Existing Conditions

Jones County has a labor force that has fluctuated from 4,584 in 2001 to almost 5,000 in 2005, dropping to just over 4,800 in 2009. Since 2001, employment has not grown, but rather has remained within a band between 4,300 and just over 4,700. From 2001-2007, the unemployment rate also stayed within a range of 4.5 to 6.8 percent. However, over the past two years, estimated unemployment has more than doubled, rising from 215 to over 500, and the unemployment rate[1] in the first three months of 2009 was between 10.4 and 10.8 percent.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	4,584	4,322	262	5.7
2002	4,687	4,368	319	6.8
2003	4,713	4,447	266	5.6
2004	4,900	4,668	232	4.7
2005	4,961	4,720	241	4.9
2006	4,823	4,604	219	4.5
2007	4,813	4,598	215	4.5
2008	4,707	4,395	312	6.6
J'09	4,827	4,321	506	10.5
F'09	4,842	4,320	522	10.8
M'09	4,828	4,324	504	10.4

Table 2.1 - Employment Trends in Jones County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics, 2009

1 **Seasonally unadjusted.**

Figure 2.1 - Employment Trends in Jones County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics, 2009

Over the past two years, the county has registered no public notices of workforce job losses, as shown in the Announced Business Closings & Permanent Layoffs table.

NAICS Code	Date	Company	City	Product	Affected	Reason	Closing or Layoff
No business closings or layoffs were reported during this time period.							

Table 2.2 - Announced Business Closings & Permanent Layoffs – Jones County, 2007-2009

Source: These data are derived from a statewide survey of newspaper accounts of closings and layoffs, and from information supplied to the Employment Security Commission of North Carolina by the employing units experiencing the closings/layoffs. The data are not comprehensive, and are not evaluated for accuracy by the Employment Security Commission.

The county registered over 1,631 private and public-sector employees in 2007, down slightly from the level in 2001 of 1,860. The largest industry employers in 2007 were: the local government, with 428 employees; the health care and social assistance industry, with 312 employees; and the retail trade industry, with 210 employees. Agricultural, construction, and manufacturing employment all decreased from 2001 to 2007, in contrast to an 8 percent increase in the health care and social assistance industry.

		Establishments		Employees		Average Annual Pay	
		2001	2007	2001	2007	2001	2007
Total Covered		**198**	**204**	**1,860**	**1,631**	**$22,727**	**$29,624**
Private		**160**	**174**	**1,324**	**1,082**	**$21,408**	**$28,566**
11	Agriculture, forestry, fishing, and hunting	18	21	184	169	$20,626	$25,070
21	Mining, quarrying, and extraction	-	-	-	-	-	-
22	Utilities	-	-	-	-	-	-
23	Construction	34	29	154	127	$16,507	$26,899
31-3	Manufacturing	9	7	186	43	$13,346	$26,711
42	Wholesale trade	7	7	66	24	$34,160	$39,644
44-5	Retail Trade	26	28	215	210	$12,751	$21,095
48-9	Transportation and warehousing	16	12	84	35	$29,097	$43,337
51	Information	ND	2	ND	ND	ND	ND
52	Finance and insurance	5	7	19	ND	$24,447	ND
53	Real estate, rental, and leasing	ND	1	ND	ND	ND	ND
54	Professional and technical services	8	8	39	35	$46,008	$26,894
55	Management of companies and enterprises	-	-	-	-	-	-
56	Administrative and waste services	7	9	22	29	$27,852	$23,393
61	Educational services	-	-	-	-	-	-
62	Health care and social assistance	12	16	289	312	$28,517	$38,148
71	Arts, entertainment, and recreation	ND	4	ND	19	ND	$8,307
72	Accommodation and food services	ND	6	ND	29	ND	$10,264
81	Other services, ex. public administration	8	11	21	22	$14,014	$22,265
99	Unclassified	NA	7	NA	ND	NA	ND
Federal Government		**10**	**7**	**29**	**26**	**$29,571**	**$39,880**
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	-	-	-	-	-	-
48-9	Transportation and warehousing	5	4	19	18	$28,350	$41,773
52	Finance and insurance	-	-	-	-	-	-
54	Professional and technical services	-	-	-	-	-	-
61	Educational services	-	-	-	-	-	-
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	5	3	10	8	$31,825	$35,543
State Government		**14**	**10**	**86**	**96**	**$21,993**	**$32,052**
48-9	Transportation and warehousing	-	-	-	-	-	-
56	Administrative and waste services	NA	NA	NA	NA	NA	NA
61	Educational services	ND	1	ND	ND	ND	ND
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	ND	9	ND	ND	ND	ND
Local Government		**14**	**13**	**421**	**428**	**$26,550**	**$31,147**
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	-	-	-	-	-	-
48-9	Transportation and warehousing	-	-	-	-	-	-
51	Information	ND	1	ND	ND	ND	ND
56	Administrative and waste services	-	-	-	-	-	-
61	Educational services	ND	7	ND	283	ND	$33,748
62	Health care and social assistance	ND	NA	ND	NA	ND	NA
81	Other services, ex. public administration	-	-	-	-	-	-
92	Public administration	ND	5	ND	ND	ND	ND
99	Unclassified	-	-	-	-	-	-

Table 2.3 - Jones County Employment and Pay – 2001 and 2007

Note: "NA" is Not Available, "ND" is Non-Disclosure, and "-" is not recorded

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, 2009

The Top 25 Employers table provides a recent snapshot of the companies and organizations that employ the highest number of people in the county. As of the third quarter of 2008, only one organization had more than 250 employees: the Jones County Board of Education. Two organizations employed between 100 and 249 employees each—Eastern Carolina Internal and Jones County. The rest of the employers are private and government organizations that span many industry sectors, but employ only modest numbers of employees. While the military is not a large employer in the county, indirect economic impacts of the military presence in the region contribute to the county's economy.

Rank	Company Name	Industry	Employment Range
1	Jones County Board of Education	Education & Health Services	250-499
2	Eastern Carolina Internal	Education & Health Services	100-249
3	County of Jones	Public Administration	100-249
4	American Health Care Services, Inc.	Education & Health Services	50-99
5	North Carolina Department of Transportation	Public Administration	50-99
6	Food Lion, LLC	Trade, Transportation, & Utilities	Below 50
7	Smithfield Foods, Inc.	Manufacturing	Below 50
8	Beacon House	Education & Health Services	Below 50
9	Preston Taylor Foods, Inc.	Trade, Transportation, & Utilities	Below 50
10	Lenoir Community College	Education & Health Services	Below 50
11	Olsten Certified Healthcare Corporation	Education & Health Services	Below 50
12	PRC Industries, Inc.	Professional & Business Services	Below 50
13	Blue Rock Structures, Inc.	Construction	Below 50
14	Williams Fuel Acquisition, Inc.	Trade, Transportation, & Utilities	Below 50
15	M & W Signs, Inc.	Manufacturing	Below 50
16	Subway	Leisure & Hospitality	Below 50
17	D. Robinson Trucking, LLC	Trade, Transportation, & Utilities	Below 50
18	Harvey L. Rouse	Natural Resources & Mining	Below 50
19	Home Health and Hospice Care, Inc.	Education & Health Services	Below 50
20	Riverwalk Deli & Grill	Leisure & Hospitality	Below 50
21	U.S. Postal Service	Trade, Transportation, & Utilities	Below 50
22	Liberty Propane Operations, LLC	Trade, Transportation, & Utilities	Below 50
23	Jack Bender Construction, Inc.	Construction	Below 50
24	State of North Carolina	Public Administration	Below 50
25	Sassers Mill Livestock, Inc.	Natural Resources & Mining	Below 50

Table 2.4 - Top 25 Employers in Jones County 2008-QIII

Source: U.S. Department of Labor, Bureau of Labor Statistics. Quarterly Census of Employment and Wages (QCEW), Largest Employers; 2009

The occupational profile of current jobs in the county provides another view of the workforce structure and the occupations that organizations in the county have emphasized as important. In most cases, the largest occupational categories are the ones where new job market entrants will also find greater employment opportunities. The Occupational Employment and Wages table shows that, in 2008, Office and Administrative Support workers led all other occupational groups in the county, accounting for 520 employees, followed by Healthcare Practitioners and Technical workers, with 280 employees. Specifically, the detailed occupational information in the lower half of the table shows that the most popular jobs in the county were: secretaries (not including legal, medical, and executive secretaries); registered nurses; bookkeeping, accounting, and auditing clerks; and receptionists and information clerks.

Occupational Code	Employment by Occupational Group	Estimated Employment	Estimated Annual Wage-Median
00_0000	Total All Occupations	2,110	$23,257
11_0000	Management Occupations	80	$62,497
13_0000	Business and Financial Operations Occupations	20	$83,024
15_0000	Computer and Mathematical Occupations	-	-
17_0000	Architecture and Engineering Occupations	-	-
19_0000	Life, Physical, and Social Science Occupations	-	-
21_0000	Community and Social Services Occupations	-	-
23_0000	Legal Occupations	-	-
25_0000	Education, Training, and Library Occupations	270	$39,948
27_0000	Arts, Design, Entertainment, Sports, and Media Occupations	-	-
29_0000	Healthcare Practitioners and Technical Occupations	280	$34,465
31_0000	Healthcare Support Occupations	100	$20,144
33_0000	Protective Service Occupations	-	-
35_0000	Food Preparation and Serving Related Occupations	*	$16,280
37_0000	Building & Grounds Cleaning & Maintenance Occupations	*	$20,662
39_0000	Personal Care and Service Occupations	*	$15,267
41_0000	Sales and Related Occupations	*	$17,119
43_0000	Office and Administrative Support Occupations	520	$18,472
47_0000	Construction and Extraction Occupations	*	$27,852
49_0000	Installation, Maintenance, and Repair Occupations	-	-
51_0000	Production Occupations	-	-
53_0000	Transportation and Material Moving Occupations	*	$22,371
	20 Top Occupations		
43_6014	Secretaries, Except Legal, Medical, and Executive	80	$25,637
29_1111	Registered Nurses	20	$45,196
43_3031	Bookkeeping, Accounting, and Auditing Clerks	20	$23,601
43_4171	Receptionists and Information Clerks	20	$25,267
37_2011	Janitors and Cleaners, Except Maids and Housekeeping	10	$22,858
43_5052	Postal Service Mail Carriers	10	$38,653
11_1021	General and Operations Managers	*	$60,319
11_3031	Financial Managers	*	$77,025
11_9131	Postmasters and Mail Superintendents	*	$57,720
41_4012	Sales Representatives, Wholesale and Manufacturing	*	$31,884
43_4051	Customer Service Representatives	*	$23,695
43_5051	Postal Service Clerks	*	$45,500
43_5053	Postal Service Mail Sorters and Processors	*	$22,360
43_6011	Executive Secretaries & Administrative Assistants	*	$29,386

Table 2.5 - Occupational Employment and Wages in Jones County – 2008

Note: "*" is non-disclosed, "-" is not reported

Source: U.S. Department of Labor, Bureau of Labor Statistics. Occupational Employment Survey (OES), Occupational Employment and Wages, 2008

The federal government has a presence in the county and the Direct Expenditures or Obligations tables lists the Fiscal Year (FY) 2007 monies transferred into the county. Both the USMC-related monies and the total Navy Department expenditures or obligations are listed and show that, in FY 2007, only slightly more than $3 million flowed into the county from the Navy Department, most in the form of retirement and disability payments to retirees and veterans, and $300,000 in the way of Navy contracts and procurements.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	2,872	2,198
Grants	-	-
Procurements	302	-
Salaries & Wages	-	-
Total	**3,174**	**2,198**

Table 2.6 - Direct Expenditures or Obligations in Jones County FY 2007 (in thousands of dollars)

Source: U.S. Census Bureau. Consolidated Federal Funds Report, Fiscal Year 2007.

htt://harvester.census.gov/cffr/index.html

Needs Assessment

The county is projected to grow in population by 125 persons from January 2007 to the end of December 2011. With the addition of 370 persons due to the USMC direct and indirect impacts, the county will experience a 0.9 percent annual average growth over the five-year period. This influx is projected to add an additional demand for almost 170 new jobs.

Some of the current impediments to a fully-functioning workforce, low unemployment rates, and economic growth in the county include those listed in the Current Regional Issues section of the Regional Workforce Module, but also include those listed below:

- Lenoir Community College plays a significant role in training and educating the local workforce, particularly in the skilled trades, and needs the resources to continue providing a range of programs to meet the growing needs of the county. At the same time, local residents are realizing that they need to learn new skills, particularly in the high- and information-technology areas to be competitive in the changing economy.
- Jones County serves as a bedroom community for many who work in surrounding counties, and the county economy is just as affected by layoffs and closings as other counties.
- The county is very small, with just over 10,000 residents, and paying for new and expanding public services is difficult because of its limited tax base.
- Most successful organizations in the county cannot afford to pay the high salaries seen in other parts of the state.
- Despite the fact that it is an economically-depressed, “Tier 1” county that can offer certain job tax credits to employers, Jones County still finds it difficult to compete with counties like Onslow and Craven for new business ventures and opportunities.

Recommended Strategies and Actions

The county and the surrounding region have a number of tools available to mitigate the impacts of military growth on the workforce, while at the same time positioning the county and the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include first and foremost, taking the following actions to increase the economic base of the region so that the new entrants find meaningful and productive employment that matches their skills and desired occupations:

- Acquiring and allocating resources to support and plan for a new Technology Center in the region and a new

Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and entrepreneurship.

- Emphasizing industrial clusters that will potentially be available at the two centers, and also at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.
- Supporting private and public efforts such as "Onward Onslow" that encourage new and relocating business to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.
- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through several initiatives:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and others adults who guide and influence teenagers in the region.
- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.
- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before many other areas of the country, and to plan for training and educational requirements of those future green jobs.
- Devoting immediate resources to increasing child-care training, certification, and facilities. Not only will this action provide direct employment to child-care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.
- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.
- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small- and disadvantaged businesses.
- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.

- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.
- Creating a more military-family-friendly workplace by offering flexible benefit packages, and having the added benefit of reducing the cost of labor to businesses.

Education

Existing Conditions

K-12 Education

The estimated 2008 population of Jones County is 10,277. Jones County Schools, with a 2008-09 K-12 enrollment of 1,192 students, is the 5th smallest public school system in the state (North Carolina Department of Public Instruction, School Statistical Profile). The school district membership has been on the decline with an average annual decrease of three percent (**Figure 3.1**). The annual live births to residents are averaging 95 births per year over the last 10 years with an increasing trend beginning in 2004 (**Figure 3.2**) (North Carolina Department of Health and Human Services, State Center for Health Statistics).

Other characteristics of the school district are:

- Jones County Schools has one high school with an enrollment of 377 students, one middle school serving 7th and 8th graders with enrollment of 171 students, and four elementary schools serving Kindergarten to 6th graders.
- Forty-six percent of the enrollment in Jones County Schools is in the Kindergarten to 5th grade range, 22 percent in 6th to 8th grades, and 32 percent in the 9th to 12th grade range.
- Jones County Schools did not collect Federal Impact Aid surveys during the 2008-09 school year. The most recent data was collected in April 2008, when there were 43 military-connected students attending Jones County Schools (Jones County Schools Federal Impact Aid data).
- The per-pupil expenditure is $11,242 and is the highest in the MGTF Region. Seventy-five percent of the expenditure is from state funds, 14 percent from federal funds, and 11 percent from local funds (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).
- Jones County Schools operates 27 school buses transporting 981 students at a cost of $663 per pupil. The percent of students utilizing school buses is the highest in the impacted region at 82 percent.
- Jones County Schools employs 103 teachers and 38 teacher assistants.
- There are no charter or private schools in Jones County.

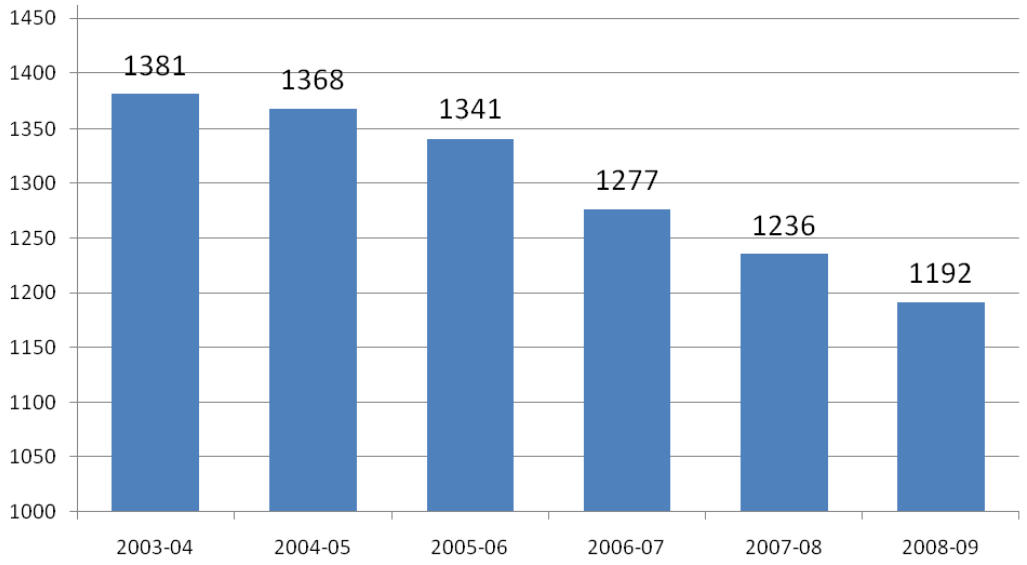


Figure 3.1 - Average Daily Membership

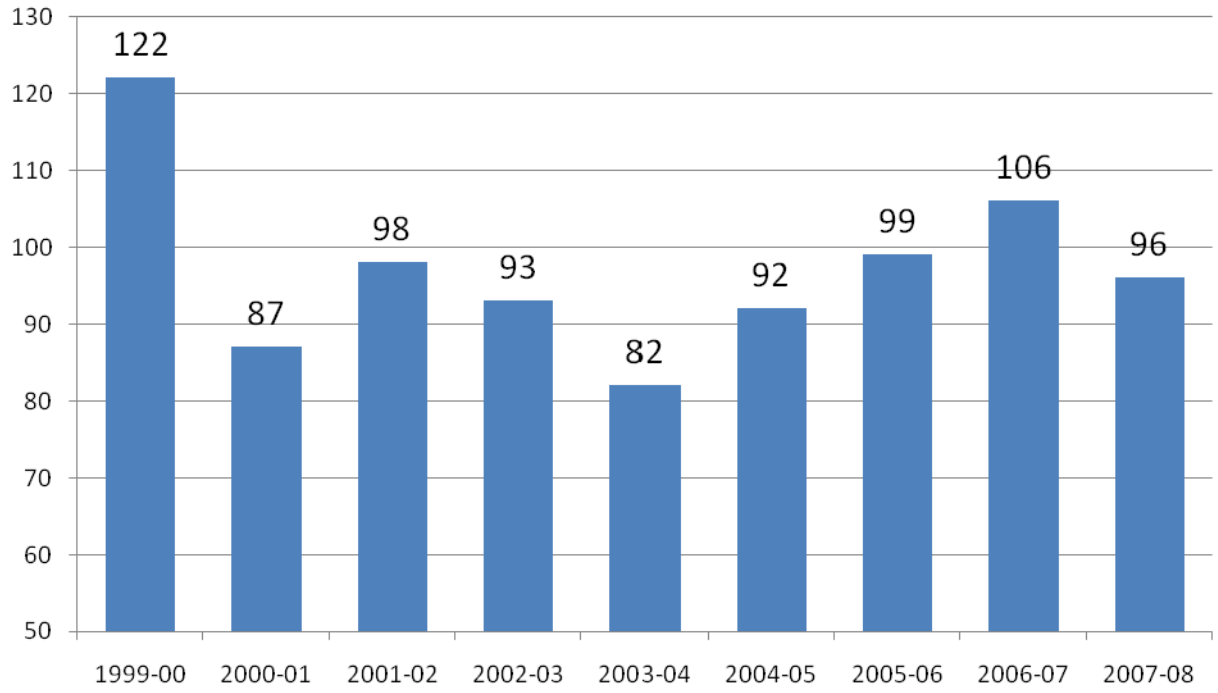


Figure 3.2 - Resident Live Births

The four elementary schools in Jones County divide the county into four quadrants: Trenton Elementary to the north, Comfort Elementary to the west, Pollocksville Elementary to the east, and Maysville Elementary to the south. Maysville lies between Jacksonville and New Bern and both cities are easily accessible by Highway 17.

See **Figure 3.3**, Jones County School Clusters on the next page.

Child Care

Jones County has a total of eight child development facilities with six centers and two homes. The six centers' total enrollment is 166 children and the two home-based child development facilities have nine children enrolled. The county-wide combined child care enrollment is 175, or nine percent of the total population under the age of 15 (North Carolina Department of Health and Human Services, Child Care Statistical Report, March 2009). The county-wide number of child care slots as of April 2009 is 270 with a 65 percent utilization rate. The child care centers employ a total of 39, resulting in a student-to-staff ratio of 4.5:1.

Community College and Post-Secondary Education

Lenoir Community College (LCC), chartered by the state in 1958, is located in Kinston in Lenoir County. Its primary service area is Lenoir, Greene, and Jones Counties. The college offers both degree and non-degree programs serving approximately 3,500 curriculum students and 12,500 extension students annually.

LCC offers four degrees: an Associate of Arts degree with fifteen pre-majors; an Associate of Applied Science degree with forty-four programs; an Associate of Fine Arts degree; and an Associate of Science degree. In addition, the college offers many certificate and diploma options requiring less than two years for completion. For those desiring a four-year degree, LCC has an articulation agreement that allows for a seamless transition to universities in the UNC system.

LCC offers traditional day, evening, and weekend classes as well as hybrid and internet courses. Currently, more than 1,700 students are enrolled in one of 107 courses offered online. Classes are also offered for high school students through dual enrollment.

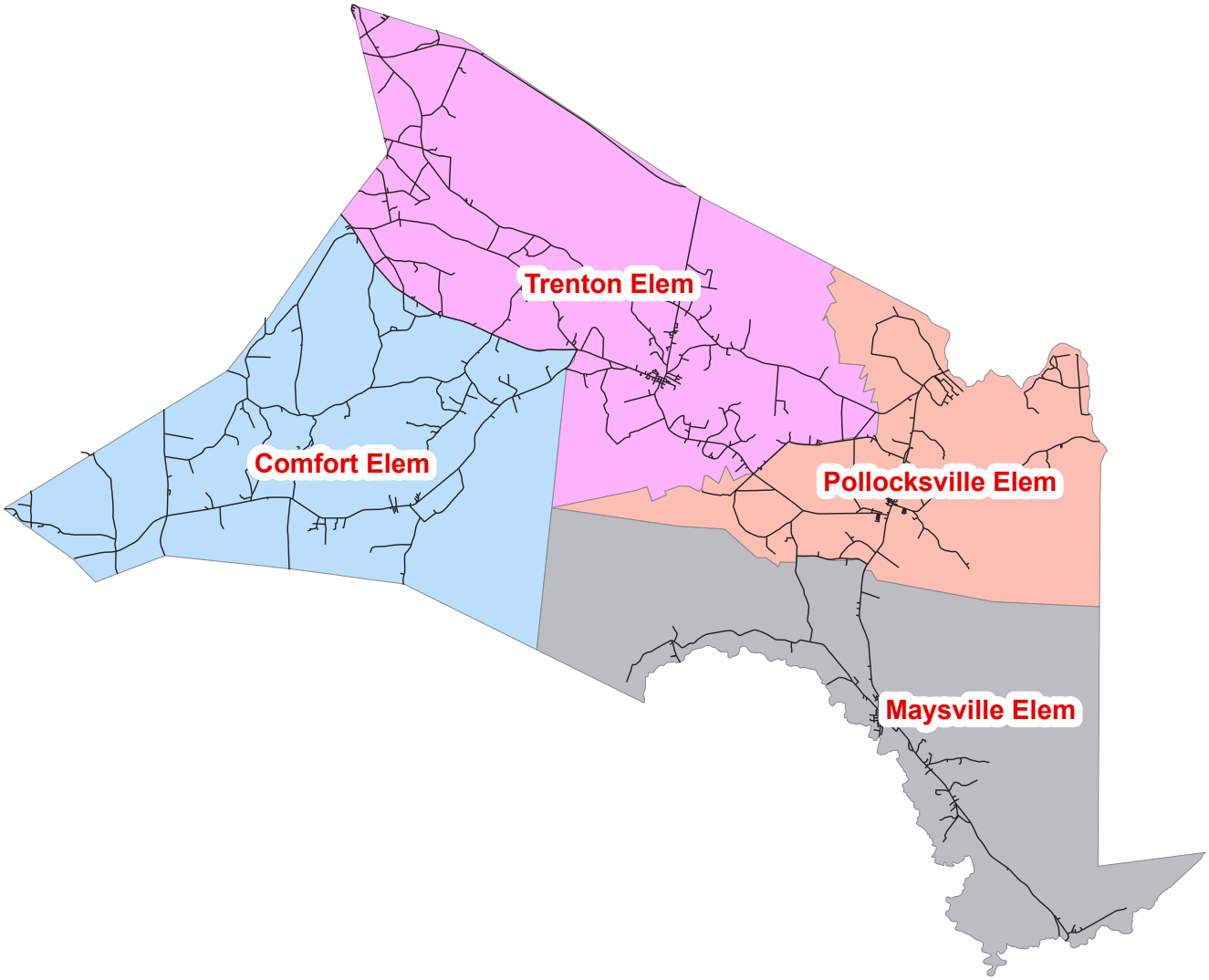


Figure 3.3 - Jones County School Clusters

Needs Assessment

K-12

Jones County Schools' population has the potential to grow by a maximum of 75 students from 2007 to 2011 (**Figure 3.4**).

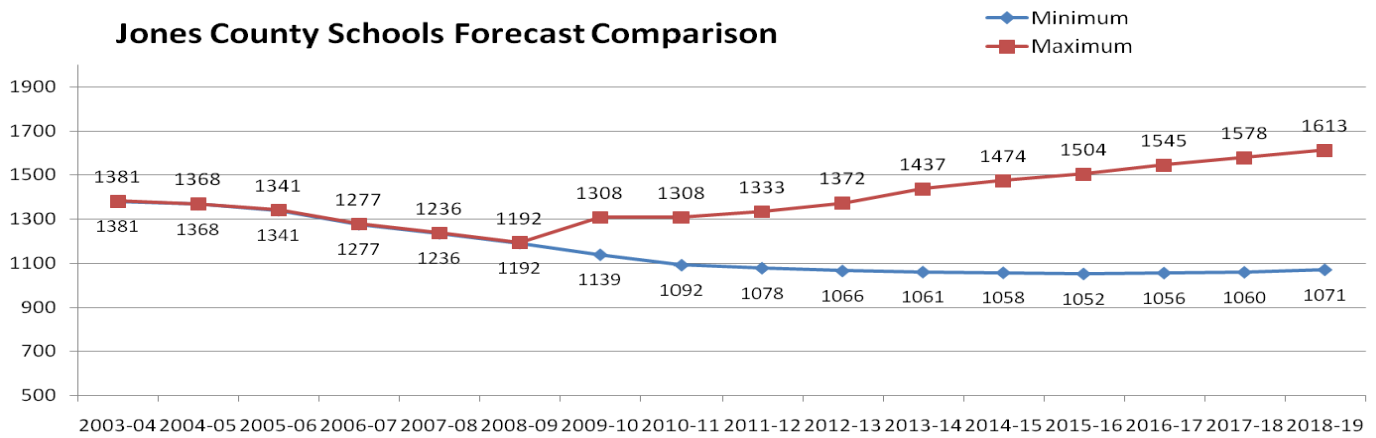


Figure 3.4 - Jones County Schools Growth Forecast Comparison

The Maysville Elementary School area is the most likely recipient of new growth due to its proximity to Marine Corps Base (MCB) Camp Lejeune, but this growth will not require a new facility.

The maximum growth of 75 students would require three new teachers and two new teacher assistants at an annual cost of approximately $325,000. The growth would also require adding one new school bus at a cost of $80,000.

Child Care

Jones County's total child care enrollment is estimated to increase by 17 children by 2011. The increase will raise the slot utilization from the current 65 percent to 69 percent and will require four additional child care staff.

Community College and Post-Secondary Education

For curriculum programs, projected enrollment at the Lenoir Community College is expected to increase by 20 percent between the years 2007 to 2012 (Lenoir County Community College, Long Range Plan, 2007-2012). This enrollment growth may be due to the increase in special credit students, concurrent enrollment students, and early college high school students. It may also be impacted by the projected population growth of students between the ages of 20 and 24. According to the NC Community College System, overall curriculum growth is expected to be very slow and result primarily from early college growth and distance learning.

Program Type	2007-08	2008-09	2009-10	2010-11	2011-12
Curriculum	2160	2223	2315	2455	2600
Basic Skills	460	470	479	489	498
Continuing Education	636	655	678	705	734
Total	**3256**	**3348**	**3472**	**3649**	**3832**

Table 3.1 - Enrollment Projections (FTE)

Source: LCC Long Range Plan

The program-specific growth forecast and needs are:

- Basic Skills programs are expected to increase by 2.4 percent over the next five years.
- Continuing Education program enrollment is projected to increase at a rate of 2.63 percent each year.
- Growth in degrees in computer information technology is expected in order to meet the forecasted 20 percent increase in computer technologists.
- The Health and Science program is at its maximum capacity (200 students). A new building will be required in order to expand the program.
- Projected 23 percent increase in education services offering degrees in Early Childhood and Teacher Associate programs. A new or expanded building is needed with classroom and office space.
- The Early College High Schools program is expected to increase from a total of 150 students to up to 500 students in the near term. LCC is currently operating two programs, one in Lenoir County and one in Green County. A Jones County program is in the planning phase.
- LCC, however, did not outline specific needs with direct links to the military or specific to Jones County.

Recommended Strategies and Actions

K-12 and Child Care

To cope with the expected military-induced growth within Jones County, the county should work toward enhancing the collection method of the Federal Impact Aid survey among schools, and record and track the growth history for each school.

In addition, the county should collaborate with the local and neighboring higher education institutions to develop a high-quality teaching pool to support the growth. The county should also work closely with Lenoir County Community College to increase the child care work force pool in the county.

Transportation

Introduction

Major roadways are critical to the transportation infrastructure of Jones County. US 70 stretches from northwestern Jones County through the heart of Craven County and terminates in northeastern Carteret County. US 17 travels through Craven, Jones, Onslow, and Pender Counties in its trek along the eastern seaboard. Within the seven-county North Carolina Military Growth Task Force (MGTF) Region, US 17 connects Wilmington, Jacksonville, and New Bern.

Existing Conditions

Roadway

The existing roadway system in Jones County is composed of a network of different streets that perform specific roles. The classification of streets into “functional” categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character as well as operational features for the movement of vehicles.

Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is

to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridor (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The existing public street network in Jones County is divided into several functional classifications, including arterials, collectors, and locals. The scope of the Regional Growth Management Plan emphasizes the operation of arterials based on NCDOT designation and necessary improvements to ensure the functionality of these corridors.

- Arterials provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distances. Arterials include facilities with full access control, such as freeways, as well as boulevards and major thoroughfares. Arterials usually connect to one another or to collector streets, and very few arterials connect to local streets. Arterials include freeway facilities such as:
  - Freeways provide the most mobility and least access (only at interchanges). NCDOT did not designate any corridors in Jones County as a freeway.
  - Principal arterials typically have tightly controlled access and few, if any, individual site driveways. These arterials are typically intersected by expressways and freeways as well as minor arterials and other public streets. US 17 and US 70 are classified as principal arterials.
  - Minor arterials primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. NCDOT did not designate any corridors in Duplin County as minor arterials.
- Collectors typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater access flexibility with adjacent land uses, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-freeway/expressway arterials. Collector streets within Jones County include NC 58 and NC 41.
- Locals provide greater access and the least mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Most roads in the county are designated as local streets.

Volumes, Congestion, and Safety

With US 17 as the only major corridor in the county, traffic volumes in Jones County are lower than other counties in the MGTF region. The highest traffic volumes occur on US 17 (11,000 to 12,000 vehicles per day [vpd]). Other corridors with higher traffic volumes include US 258 (up to 4,100 vpd) and NC 58 between Trenton and Pollocksville (4,100 vpd). However, because traffic volumes do not account for roadway capacity, a better assessment of congestion is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. In Jones County, a study of V/C ratios reveals the highest level of congestion occurring along US 17.

Like congestion, traffic safety should be examined during the development of a transportation strategic plan. As a rural county, the crash rates in Jones County generally fall below regional and state averages. Between 2001 and 2005, an average of 310 crashes occurred in Jones County. With nearly 39 percent of these crashes resulting in an injury or death, crashes in Jones County are slightly more severe than the state average. Still, the crash rate (160.88 per 100 million vehicle miles traveled) is the lowest in the seven-county region.

Needs Assessment

TIP Projects

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements. The seven-year document includes funding information and schedules for highway, bicycle, pedestrian, rail, and public transportation projects. One critical Jones County priority identified by the Transportation Working Group is listed on the current (2009-2015) TIP; the project is detailed below. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have relatively low impact on the military while others will contribute a positive impact. Other recommendations developed through the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/Funding
R-2514	Widen, New Location (Bypasses of Belgrade, Maysville, Pollocksville)	US 17	Northeast of Jacksonville in Onslow and Jones Counties	North of Jacksonville to New Bern Bypass	Widen to multi-lanes with bypasses of Belgrade, Maysville, and Pollocksville	Planning/design in progress; Total cost is $227.9 million; Unfunded portion is $95.9 million.

Table 4.1 - TIP Projects in Jones County

Modal

Craven, Jones, and Pamlico Counties are jointly served by the Craven Area Rural Transit System (CARTS), which provides public transit for the general public, with special emphasis on provision of services to the elderly and/or handicapped. Jones County also is served by CCATS and does not have county-wide public transit agencies.

Regionally, each county's public transit options are linked by RouteMatch, administered by the Eastern Carolina Council (ECC). RouteMatch enables transportation providers in surrounding counties to secure a county resident a seat on a public transit vehicle traveling beyond the region (e.g., to locations like Duke Medical Center or Wake Medical Hospital). Existing public transit services are augmented by taxis in the region.

Recommended Strategies and Actions

The transportation network of Jones County includes a variety of modes. Given the critical need to ensure that people, goods, and services move freely throughout the county and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected officials at the local, regional, and state levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the Transportation Improvement Program project listed above. Still, more must be done, particularly in light of organic and military-infused growth throughout the seven counties. The recommendations that follow include both roadway recommendations as well as modal recommendations. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position Jones County to effectively manage future growth.

Roadway

US 70

The US 70 corridor is a major link in the state's transportation system and is designated a Strategic Highway Corridor. Today, it exists as a multi-lane facility that carries up to 47,000 vehicles per day. The cross-section and functionality of US 70 varies on its trek from Raleigh to Morehead City. The corridor alternates between a limited-access freeway and a regional arterial with frequent side streets and driveways. The high volume of traffic and unpredictable access has created

a safety hazard for motorists, whether residents, tourists, or military personnel.

The significance of US 70 to the military and civilians is directly related to its distinction as the only east-west mobility corridor for the region. The Marine Corps utilizes US 70 for the transport of troops and equipment from Marine Corps Air Station (MCAS) Cherry Point to the Port of Morehead City, a major point of embarkation and debarkation. The highway is virtually the only way for residents to travel between New Bern and Havelock, Craven County's largest cities, and links the beach towns to Jones County, Raleigh and points west. In Morehead City, US 70 is the main arterial and serves the dual role of providing service to residential and commercial land uses while connecting NC 24 (and thus personnel and equipment from Marine Corps Base (MCB) Camp Lejeune) to port facilities. US 70 also serves as a major hurricane evacuation route.

A plan has been developed by the US 70 Corridor Commission that recommends retrofitting US 70 to a freeway from Raleigh to Morehead City. Improving the corridor will enhance regional mobility, alleviate safety concerns, improve the efficiency of evacuations, and enhance east-west travel times for freight traffic as well as military use. The current TIP includes the Havelock Bypass, though this project remains unfunded. The following recommendations for US 70 assume the eventual completion of this critical project and supplement it to fulfill the vision of the Super 70 concept.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
US 70 (west of Dover)	Upgrade to freeway	west of Dover in Jones County	West Kornegay Street to the proposed Kinston Bypass	5 miles	Upgrade existing divided highway to freeway standards (restrict access to side street and close median openings)	Conform with the vision of Super 70, a unified effort to transform US 70 into a freeway from I-40 to the coast; Increase mobility for residents, tourists, troops, military equipment; Allow safer and quicker evacuation during emergencies

Table 4.2 - U.S. 70 Corridor Roadway Recommendations (Jones County)

US 17

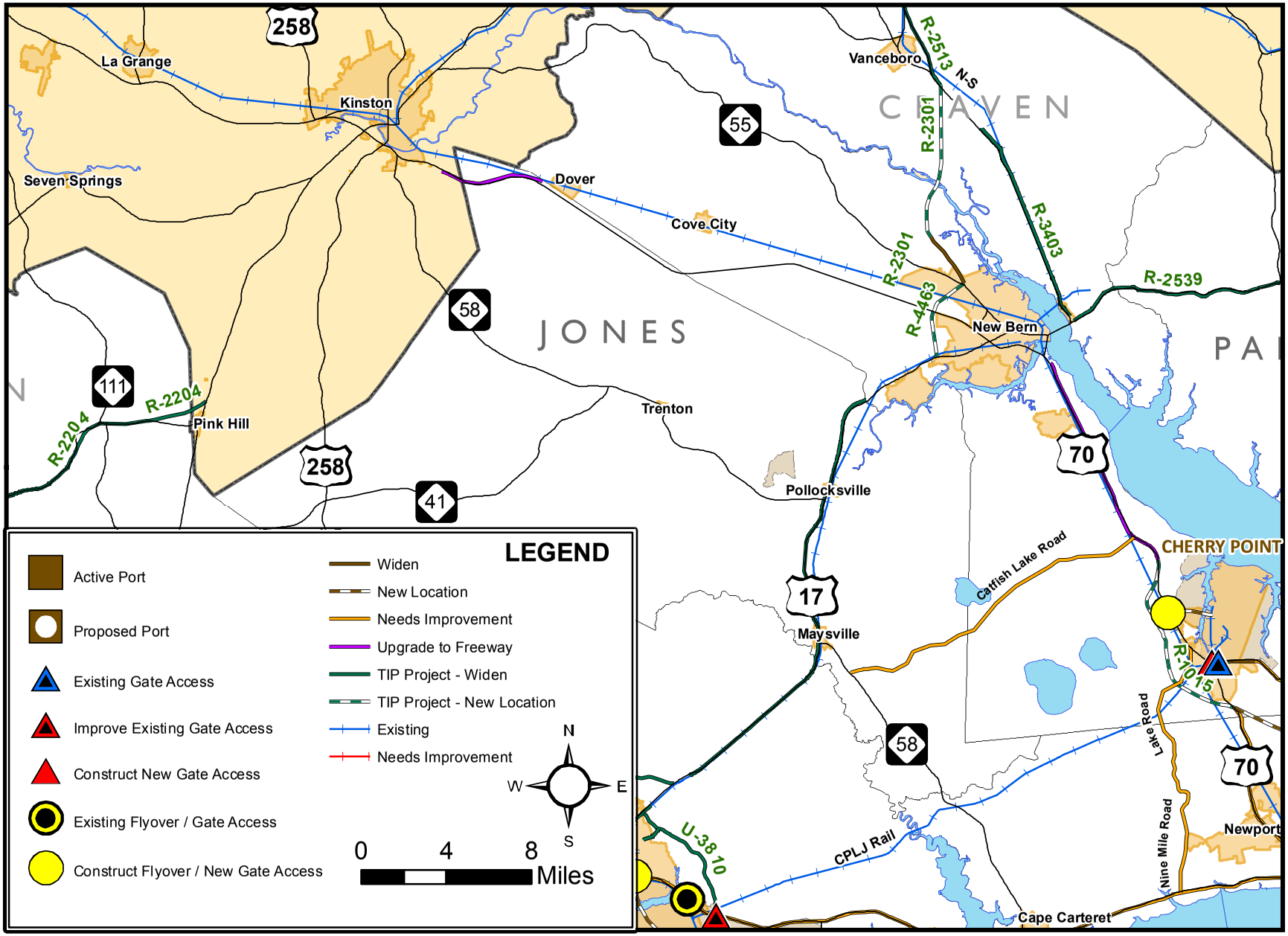
US 17 is designated a Strategic Highway Corridor by NCDOT, signifying its value to local, regional and state mobility. As a critical connection to Jacksonville, MCB Camp Lejeune, the region's largest cities, other strategic highways, North Carolina ports, and numerous neighborhoods throughout the seven-county region, an urgent need exists to improve the operating capacity of this roadway that carries up to 34,000 vehicles per day. US 17 also serves as the primary deployment route from Camp Lejeune to the Port of Wilmington.

Members of the Transportation Working Group identified US 17's connection in Jones County between New Bern/US 70 and Jacksonville/MCB Camp Lejeune/ MCAS New River as a high priority. Such sentiment acknowledges the corridor's significance to the region's development and transport of military troops in and between Jacksonville/MCB Camp Lejeune and New Bern, as well as the direct connection it provides between US 70 and NC 24.

Widening US 17 would provide the needed capacity relief and regional mobility as most of the corridor currently operates near or over-capacity. Additional benefits include safety improvements for the traveling community and tourists as well as an alternative hurricane evacuation route. The current TIP calls for widening US 17 to multi-lanes with bypasses of Belgrade, Maysville, and Pollocksville (TIP # R-2514) and laying the groundwork for an enhanced route to the west of New Bern (TIP # R-4463 and R-2301A). Though there are no additional recommendations for US 17 in Jones County, this TIP project supports with a project in neighboring Craven County, essentially creating an enhanced US 17 corridor between New Bern and Jacksonville.

Modal

The Jones County Local Coordinated Plan stresses greater coordination with CARTS and Craven County on administration, management, dispatch, planning, and marketing of CARTS. Highest priorities for the county relative to CARTS include:



ROADWAY AND RAIL RECOMMENDATIONS

Figure 4.1

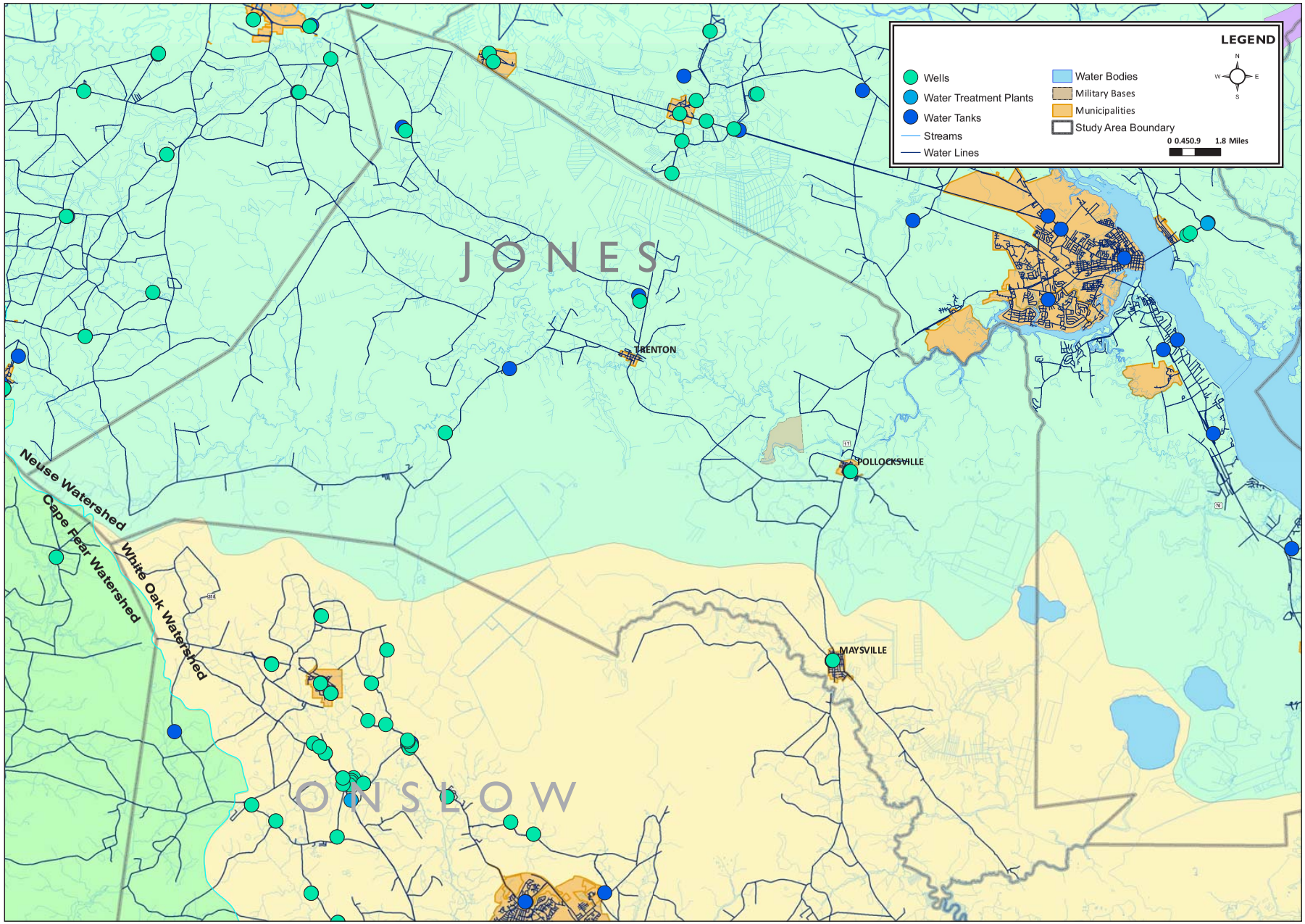
Jones County

- Expansion of services to include night and weekend hours
- Expansion of fixed-routes
- Greater inter-county and inter-agency coordination on public transit

Although each county is currently served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost-effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases, and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient

Across the region, there is an overwhelming demand for transit services to and from MCB Camp Lejeune and MCAS Cherry Point. Expansion of current transit services will allow greater mobility of younger- ranking marines as well as more residential to base connections. Although the ECC facilitates RouteMatch to coordinated intra-county public transit, it is underused and needs enhanced technical support.



JONES COUNTY WATER Figure 5.1

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Infrastructure

Existing Conditions

Water

Potable water facilities in Jones County are defined as the structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Utility Companies

Centralized water service is provided in the county by the Towns of Pollocksville and Maysville, and the Jones County Water Department provides water service. **Figure 5.1** depicts the extent of the water service areas within Jones County.

Water Supply and Treatment

The Town of Pollocksville's water distribution system includes one groundwater well with a 0.9 MGD 12-hour supply, a 0.173 millions of gallons per day (MGD) water treatment plant, and a 0.15 mg storage tank. The system reports an average daily demand of 0.067 MGD.

The Town of Maysville operates a public water system with one well in the Castle Hayne aquifer with a permit for 0.144 MGD. The town also has one 75,000-gallon elevated storage tank. Currently, the town interconnects with Jones County.

The Jones County Water Department owns and operates five groundwater wells and has one elevated storage tank in its water distribution system.

Regulations

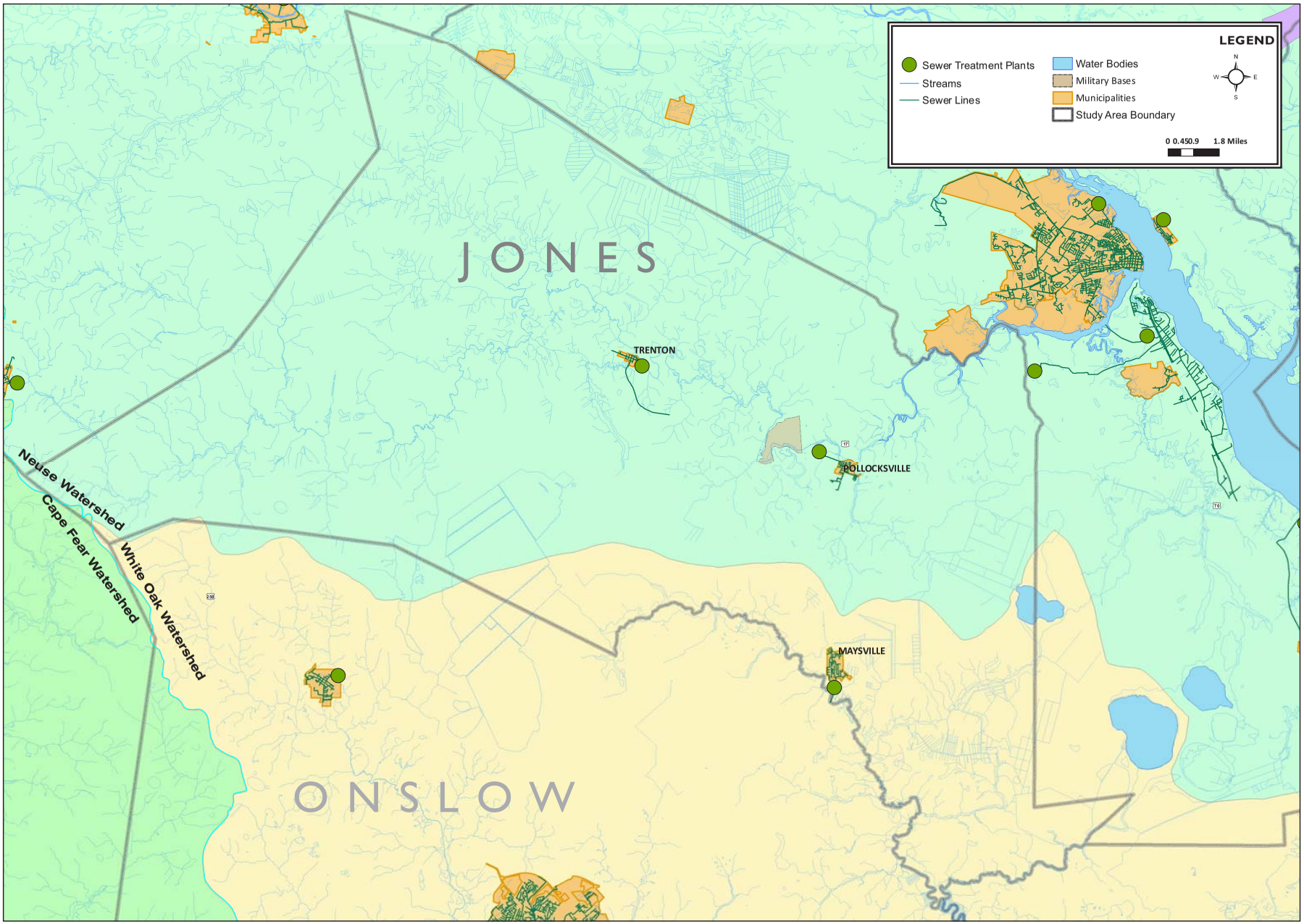
Jones County is one of several eastern North Carolina counties subject to the Coastal Plain Capacity Use Area (CCPCUA) rules. These rules require regulated water users in the county (users pumping more than 100,000 gpd) to gradually limit withdrawals from the Black Creek aquifer over a 16 year period. Water providers in Jones County are required to reduce withdrawals 25 percent over the first six years (to August 2008), an additional 25 percent over the following five years (August 2008 to August 2013), and a further reduction 25 percent over the remaining five years (August 2013 to August 2018).

Additionally, regulated water users will be required to implement water conservation which may include:

- Conservation ordinances
- Leak detection programs
- Tiered rate structures to encourage conservation
- Plumbing retrofit programs
- Public education advocating water conservation measures

Details on the rule's impacts on the region are found in the Needs Assessment section of the RGMP Infrastructure Module.

North Carolina Department of the Environment and Natural Resources' (NCDENR's) Division of Water Resources monitors saltwater intrusion in the region through a series of monitoring wells that are sampled every three to four years. There are 13 monitoring wells located in Jones County.



JONES COUNTY SEWER **Figure 5.2**

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Pending Regulations

Representative Russell Tucker (Duplin County) has introduced House Bill (HB) 643, which may provide a solution to groundwater contamination issues. By creating a salinity barrier between saltwater and groundwater the legislation could help protect Carteret County's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the Reclaimed Water section in the RGMP Infrastructure Module.

Sanitary Sewer

Sanitary sewer facilities are defined as structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems.

Wastewater Providers

Centralized sewer is currently provided by the Towns of Pollocksville, Maysville, and Trenton. Individual private septic systems provide additional wastewater treatment in the county. **Figure 5.2** shows the extent of the centralized wastewater systems.

Wastewater Collection and Treatment

The Town of Maysville currently owns and operates a 0.18 MGD permitted wastewater treatment plant with an average daily flow of 0.0841 MGD, or 46.7 percent of its capacity.

The Town of Trenton currently owns and operates a 0.07 MGD permitted wastewater treatment plant with an average daily flow of 0.053 MGD, which represents 70 percent of capacity.

The Town of Pollocksville owns and operates a 0.102 MGD permitted wastewater treatment plant with an average daily flow of 0.041, or 40 percent of total capacity.

Septic Systems

For portions of the county where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work well with proper siting, design, installation, operation, and maintenance. However poor soil conditions limit the installation of many new septic systems. Poor soil conditions result in an inability to percolate, rendering properties without access to sewer undevelopable. All new septic systems in the region require a permit from the Jones County Health Department prior to construction.

Regulations

Sewer providers in Jones County are subject to the 80 percent/90 percent rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities) administered by NCDENR's Division of Water Quality. Details of these rules can be found in the RGMP Infrastructure Module of the plan. If either the 80 percent or 90 percent rules are not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system. To allow for military growth, it is important for the sewer providers in Duplin County to meet these 80 percent/90 percent requirements to avoid moratoriums.

Three bodies of water in Jones County are listed on the Clean Water Act's Section 303d Impaired Waters List (**see Table 5.1**). For many of these streams and rivers, total maximum daily loads (TMDLs) are developed such that the point discharge of wastewater effluent is not a feasible option

AU Number	Stream Name
19-(1)	New River
27-101-(1)	Trent River
27-101-15	Beaver Creek

Table 5.1 - Impaired Streams in Jones County (2006)

Source: NC Division of Water Quality

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how waste water treatment plants (WWTPs) capable of producing reclaimed water quality effluent can discharge effluent and will save additional space in land application facilities. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in ASR systems. Additional discussion on these rule changes along with HB 643 is included under the Reclaimed Water section of this portion of the module.

Reclaimed Water

Reclaimed water is an emerging technology and water resource in North Carolina. Jones County currently lacks a wastewater treatment plant that is permitted to produce reclaimed, water quality effluent.

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems. These regulations are described in the RGMP Infrastructure Module

Pending Regulations

Two pending regulatory changes, if approved, will alter the ways that reclaimed water can be used in the State of North Carolina and have significant impact on Jones County: updated 15ANCAC Reclaimed Water Rules and HB 643 – Authorize Aquifer Storage of Reclaimed Water. Information on these pending regulations can be found in the RGMP Infrastructure Module.

Stormwater

Pollution associated with storm water runoff is the number one water quality problem in the region and the state as a whole. As a result, several regulations have been initiated to manage storm water. The regulations that apply in Jones County are described below:

401 Water Quality Certification/Neuse Buffer Requirements

Jones County is in the Neuse River Basin. Any activity in the basin that has an impact on wetlands, streams, and/or protected riparian buffers is subject to the Neuse Buffer Requirements. Details on these requirements can be found in the RGMP Infrastructure Module.

Jones County is also subject to the requirements of Senate Bill 845 which necessitates that parking fields have no more than 80 percent impervious cover or that 20 percent of new parking fields runoff into bioretention areas. (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/parkingspaces.htm)

Solid Waste

Solid Waste Management

Solid waste management encompasses the collection, recycling, and disposal of solid waste generated by local residents and businesses.

Collection

Jones County offers weekly curbside garbage collection to its residents. Residents are charged $13 a month for one 96-gallon curbside cart, weekly pick up. The monthly water bill includes that curbside fee except for those residents without Jones County Water who receive a separate solid waste bill. Residents may purchase a bin from the county for $5.00 and residents can also bring their garbage directly to the Jones County landfill.

Recycling

The county also offers weekly curbside recycling pick-up. Residents can recycle aluminum, newspaper, glass, plastic, corrugated cardboard, and steel.

Disposal Facilities

The majority of solid waste collected in the county is transported to a transfer station managed by Onslow County Service, Inc. Solid waste collected at the transfer station is then reloaded into large tractor-trailer trucks and transported to the Bertie County Landfill (East Carolina Environmental) located at 1922 Republican Rd in Aulander, NC.

A small portion of the county's waste is transported to the Tuscarora Regional Landfill at 7400 Old Hwy 70 West in New Bern, NC. The regional landfill is operated by the Coastal Regional Solid Waste Management Authority (CRSWMA). The CRSWMA was formed in 1990 as a partnership between Carteret, Craven, and Pamlico counties. (Jones County. http://www.co.jones.nc.us/)

Landfill Capacity

NCDENR publishes an annual solid waste report that details the remaining capacity for each of the state's landfills. According to the 2007-2008 Solid Waste Annual Report, 217,482.78 tons of solid waste were disposed of in the CRSWMA Regional Landfill between 2007 and 2008. The remaining capacity of the landfill is 1,213,771.43 tons (this total includes landfill volume constructed and permitted to operate). The total volume for the landfill site at final design is 9,058,533.64 tons. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 5.58 years of capacity remaining. If the landfill was built to its maximum design size, the landfill could continue operating for 41.65 years.

Additionally, 511,882.00 tons of solid waste were disposed of in Bertie County Landfill between 2007 and 2008. The remaining capacity of the landfill is 2,525,541.55 tons (this total includes landfill volume constructed and permitted to operate). The total volume for the landfill site at final design is 11,376,644.73. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 4.93 years of capacity remaining. If the landfill was built to its maximum design size, the landfill could continue operating for 22.23 years. (N.C. Department of Environment and Natural Resources. http://www.wastenotnc.org/swhome/swmplans.asp)

Telecommunications

As of the most recent connectivity report (2007) published by the e-NC Authority, Jones County was considered "Connectivity Challenged." With only 41.83 percent of households with access to connectivity, Jones County was one of four counties in the state with less than 50 percent of households with connectivity. According to the e-NC Authority, Jones County is a Tier 1 Community, with a connectivity speed of 200-768 kbps which is not considered to be a "high-speed" connection. In 2008, service providers in Jones County were awarded an incentive grant from e-NC Authority to fund the expansion of high-speed Internet services in the county. Expansions were completed by the end of the year, increasing the number of households with internet access to over 70 percent.

Access Providers

Cable

Time Warner has the cable TV franchise in Jones County. Time Warner provides cable modem access in Maysville, Pollocksville and areas in Jones County. In total, 36.47 percent of households have access to cable.

Telcos

Embarq provides telephone service in Jones County. A total of 41.81 percent of households have access.

Embarq provides DSL access in the Maysville (54 percent), Pollocksville (62 percent) and Trenton (52 percent) exchanges. The areas served by the Kinston, New Bern, Pink Hill and Richlands exchanges do not have access to DSL service.

Satellite

Customers with clear views have access to Direcway & Starband high-speed Internet service.

Wireless

There are no wireless high-speed Internet access providers in Jones County. (The e-NC Authority. http://www.e-nc.org/100_County_Report/Jones.pdf)

Needs Assessment

Water

Challenges

Due to CCPCUA rules, the usage and capacities should be continually monitored so that adequate planning can occur if additional wells are needed throughout Jones County. The monitoring of saltwater intrusion in the county's aquifers should also be continued. Some levels of saltwater have already been noted in USGS monitoring activities.

Needs

- The Town of Maysville's well supply currently meets NCDENR potable water supply requirements with one water supply well and an emergency interconnection with the Jones County Water System. Long-Term growth in Maysville, coupled with the effects of CCPCUA water use reductions to Jones County, is expected to compromise the ability of Jones County to serve as the additional supply for Maysville. Maysville will require another well and its associated treatment system for redundancy and increased capacity within Maysville.
- The Town of Maysville's minimum fire hydrant withdrawal requirement of 500 gallons per minute (GPM)requires 60,000 gallons. The Town's 75,000-gallon maximum capacity is considered borderline relative to providing adequate storage to meet fluctuations on the potable distribution side while also maintaining the required 60,000 gallons of fire protection storage. Therefore, for future growth to occur Maysville will need an additional elevated storage tank to manage fluctuating pressures and ensure constant access to fire flows.

Sewer

Challenges

Much of the area will continue to rely on package WWTPs or private septic systems to maintain current and future wastewater treatment. To allow for growth those municipalities with centralized sewer will continue to have to monitor the wastewater treatment plant's actual flows against the 80 percent/90 percent rules to allow for continued growth. Large portions of the county are designated with wetlands; therefore, wastewater effluent disposal is a challenge. While poor soil conditions in some areas do not allow for septic systems, the lack of a central sewer system does not afford the option of taking a failing private septic off-line to minimize environmental impacts,.

Needs

- The Town of Maysville has an existing 30-year old package waste water treatment facility that is permitted for a 180,000 gpd discharge to the White Oak River. The facility needs upgrade and expansion to approximately 360,000 gpd with conversion of the disposal to a non-discharge, infiltration disposal system in order to accommodate increased flow from two new subdivisions of over 500 homes.

- Land suitable for spray irrigation is scarce due to extensive wetlands in Jones County, expensive, and not conducive to economic development or tax-generating development. Alternative disposal methods for the county's wastewater effluent are necessary for continued growth.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For Jones County, several accepted methods of beneficial use of reclaimed water employed elsewhere in coastal and neighboring states could benefit both the water and sewer systems within the county. Of primary importance is the protection of existing groundwater sources from saltwater intrusion.

Currently, irrigation is the principle means of applying reclaimed water; however, suitable land application sites are costly and scarce.Using developable land for spray irrigation does little to help local economies and fails to provide a tax base to the jurisdictions where it is located.

Needs

Both the re-write of the current NCDENR reclaimed water regulations and the approval of proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary for the expansion of reclaimed water usage within Jones County. The beneficial use of reclaimed water can decrease potable water demands positively impacting water needs in the region and could be used to protect the county's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed NCAC updated regulations would allow reclaimed water to be treated as a valuable water resource allowing it to be applied to more end users. The expanded uses will also reduce the demand on land application sites.

Stormwater

Challenges

Jones County is subject to minimal stormwater requirements. Its biggest challenge is identifying and addressing stormwater drainage issues in the county.

Solid Waste

Challenges

Although Jones County does not have representation on the CRSWMA Board of Directors, the county has an agreement with CRSWMA for solid waste management. As discussed in the Existing Conditions section above, CRSWMA recently purchased land to expand the existing landfill. This expansion will roughly double the capacity of the landfill. As a result, solid waste management in Jones County will not be an issue during the planning horizon and beyond.

Telecommunications

Challenges

Jones County is below the state average for connectivity. The e-NC Authority Grant has increased connectivity by over 70 percent, but it will still remain below the state average of 83.33 percent. The county is faced with the challenge of increasing connectivity in the rural, remote areas of the county.

Needs

Jones County needs to work with service providers to meet or exceed the state average for connectivity.

Recommended Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help Jones County solve its infrastructure problems. Additionally, responsible parties are identified as well as the time frame for the need in short term (urgent by 2011), near term (less than 10 years), or long term.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Sewer	Maysville Sewer Treatment Expansion	Town of Maysville	$5M	Near term	The town's current 180,000 gpd WWTP needs to be expanded to 360,000 gpd to meet current and future needs based on two additional developments in the Town. The land application site for the existing WWTP is near capacity, so the proposed plant expansions will alter the wastewater effluent from being land applied to using rapid sand infiltration ponds.
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.

Table 5.2.1 - Recommended Actions Matrix

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water	Maysville Water Treatment and Storage Expansion	Town of Maysville	$1.5M	Near term	The town's current water storage capacity provides enough storage and fire flow for the current residents but does not allow for any additional expansion. Due to the town's location, it is anticipated that growth will occur in Maysville exceeding industry standards for water storage for fire flow. The construction of an additional storage tank will alleviate this fire flow issue. By 2013, it is anticipated that the town's redundant groundwater well will be inoperable due to CCPCUA rules, so an additional groundwater supply well is needed to serve existing and future residents of Maysville.

Table 5.2.2 Recommended Action Matrix

Funding opportunities for these strategies are detailed in the RGMP Infrastructure Module.

References

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/Jones.pdf.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

N.C. Department of Environment and Natural Resources. Solid Waste Management Plans. http://www.wastenotnc.org/swhome/swmplans.asp.

Duplin County. Duplin County Solid Waste and Recycling Department. http://www.duplincountync.com/governmentOffices/solidWasteRecycling.html.

N.C. Division of Water Quality. Impervious Parking Legislation. http://h2o.enr.state.nc.us/su/parkingspaces.htm.

Jones County. http://www.co.jones.nc.us/.

Zesiger, Scott. Onslow Container Service. Email message. April 22, 2009.

Wilson, Nat. N.C. Department of Environment and Natural Resources. Email Message pertaining to saltwater intrusion monitoring wells. May, 28, 2009.

N.C. Division of Water Quality. Impervious Parking Legislation. http://h2o.enr.state.nc.us/su/parkingspaces.htm.

Medical, Health, and Social Services
Medical and Health Services

Introduction

Jones County has a small medical community that includes a diagnostic center in Pollocksville, but does not have a facility that offers inpatient services. The county has modest needs for additional health services, due to the fact that providers in Craven County and other counties serve many Jones County patients.

Existing Conditions

Department of Defense Health Services

There are no Department of Defense (DoD) facilities located in Jones County. Military residents of Jones County who seek treatment at a military treatment facility travel to Naval Hospital Camp Lejeune in Jacksonville or Naval Clinic Cherry Point in Havelock, which are over 13 miles and 11 miles away, respectively, from most county residents. Of Jones County's 1,090 TRICARE-eligible residents, approximately 89 percent are enrolled. Close to two thirds of these enrollees choose to have a military treatment facility primary care manager.

	2008
Enrolled to a Military Treatment Facility Primary Care Manager	626
Enrolled to Network Civilian Primary Care Manager	341
Total Enrolled	**969**
Total Eligible	**1,090**

TRICARE beneficiaries account for 9.3 percent of Jones County's approximately 10,000 residents. On a percentage of total population basis, Jones County has the third largest TRICARE population in the MGTF Region behind Onslow and Craven Counties. According to Health Net, all Jones County physicians are in the TRICARE network.

Table 6.1 - TRICARE Enrollment

Veterans Affairs

The Department of Veterans Affairs has two community-based outpatient clinics (CBOC) within the region, located in Jacksonville and Morehead City. The Jacksonville CBOC, the nearest to Jones County residents, offers primary care and mental health services, and the Morehead City CBOC also offers dental services. Specialty services are available in this region by telemedicine.

Patients in Jones County access inpatient VA hospitals in Fayetteville and Durham. Due to the distance to these facilities, VA patients may be referred to a local community hospital if emergency services are needed.

Health Care Providers

Jones County has approximately 15 FTE primary care providers,[1] seven FTE medical specialists, no surgeons, and one FTE dentist.

Assuming no military population growth, there is a need for an additional 0.8 FTE primary care providers, 2.3 FTE medical specialists, 3.3 FTE surgeons, and 3.6 FTE dentists in 2011. Jones County is projected to have a surplus of internists, but a need for 0.8 FTE obstetrics/gynecology physicians, which is responsible for the projected need for primary care. Similarly, without USMC growth, Jones County is projected to have a surplus of specific medical specialties, such as hematology/oncology and endocrinology, but a deficit in others such as cardiology, nephrology, and dermatology, which are responsible for the projected need for medical specialties.

1 The 15 FTE primary care providers include 12.5 FTE physicians and 5 physician extenders which are estimated to be 0.5 FTE per extender for a total of 2.5 extender FTEs.

Physicians at larger medical centers in Carteret, Craven, and Pitt Counties provide care to Jones County residents. As such, a portion of the physician needs of the Jones County population are already being met by providers located outside of the county. If Jones County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.

Behavioral Health

Behavioral health services in Jones County are managed by the East Carolina Behavioral Health LME, which also manages services in Beaufort, Bertie, Craven, Gates, Hertford, Northampton, Pamlico and Pitt counties. East Carolina Behavioral Health is based in New Bern in Craven County.

Currently, Jones County has no behavioral health providers. The behavioral health needs of Jones County are primarily met by Craven County providers. Assuming no military population growth, there is an additional need in Jones County for 1.3 FTE behavioral health providers in 2011.

There are no inpatient behavioral health services providers in Jones County; county residents seeking these services primarily receive care at CarolinaEast Regional Medical Center in Craven County. Furthermore, there is no need for inpatient behavioral health services in the county for the foreseeable future given the small size of the population. The NC MGTF region as a whole is projected to have a surplus of adolescent inpatient psychiatric and substance abuse beds in 2011 including a projected surplus of adult inpatient psychiatric beds in Craven County as shown in the Craven County module. Thus, capacity will be available in nearby counties to treat the needs of Jones County residents.

Inpatient Acute Care

There are no providers of inpatient acute care services in Jones County; county residents primarily seek these services at CarolinaEast Regional Medical Center, Lenoir Regional Medical Center, and Pitt County Memorial Hospital:

Hospital	County	Acute Care Beds	Jones County Residents Admitted in FY 2008
CarolinaEast Regional Medical Center	Craven	270	920
Lenoir Regional Medical Center	Lenoir	218	212
Pitt County Memorial Hospital	Pitt	628	105

Table 6.2 - Inpatient Acute Care Admissions to Regional Facilities

Source: 2009 State Medical Facilites Plan and 2009 Hospital License Renewal Applications

There is no need for inpatient services in the county for the foreseeable future given the small size of the population. Inpatient acute care patients are treated in the facilities noted above in Craven, Lenoir and Pitt counties. Assuming no military population growth, Craven County is projected to have a surplus of acute care beds in 2011 as shown in the Craven County module. Additionally, in the *2009 State Medical Facilities Plan,* the facilities in Lenoir and Pitt counties are projected to have a surplus of acute care beds in 2011. Thus, capacity at nearby existing providers will be sufficient to treat the needs of Jones County residents.

Inpatient Rehabilitation Care

There are no providers of inpatient rehabilitation services in Jones County; county residents primarily seek these services at CarolinaEast Regional Medical Center, Lenoir Regional Medical Center, and Pitt County Memorial Hospital.

Hospital	County	Rehabilitation Beds
CarolinaEast Regional Medical Center	Craven	20
Lenoir Regional Medical Center	Lenoir	17
Pitt County Memorial Hospital	Pitt	75

Table 6.3 - Inpatient Rehabilitation Bed

Souce: 2009 State Medical Facilites Plan

There is no need for inpatient rehabilitation services in the county for the foreseeable future given the small size of the population. Inpatient rehabilitation patients are treated in the facilities noted above in Craven, Lenoir and Pitt counties. In the *2009 State Medical Facilities Plan,* each of these facilities is projected to have a surplus of rehabilitation beds. In addition, assuming no military population growth, Craven County is projected to have a surplus of rehabilitation beds as shown in the Craven County module. Thus, capacity at nearby existing providers will be sufficient to treat the needs of Jones County residents.

Outpatient Services

There are no providers of outpatient rehabilitation or ambulatory surgery in Jones County. Eastern Carolina Internal Medicine operates a diagnostic center in Pollocksville which provides diagnostic imaging, laboratory and oncology services. Jones County patients receive other outpatient services in other counties and there is currently no need for additional services located within the county.

Regional Coordination

Jones County providers work with military treatment facilities and other regional providers as necessary to meet the health care needs of the county population. By nature of the geography of the region, providers often serve Jones County in conjunction with Craven and Pamlico counties by moving between the counties to different locations to deliver care on a daily basis. This level of integration between the providers of these three counties has fostered effective collaboration.

Needs Assessment

Department of Defense Health Services

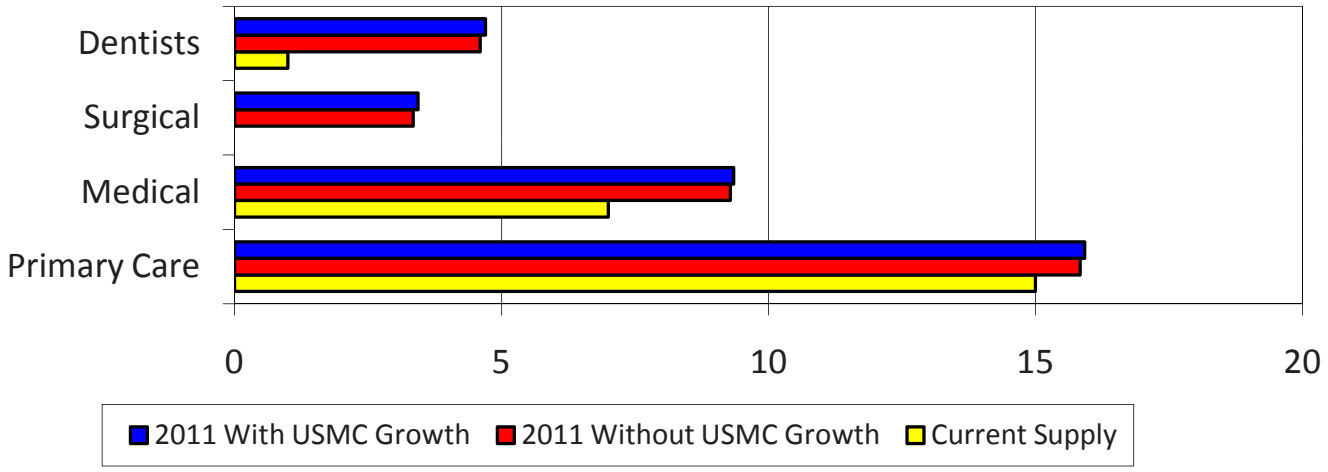
As stated in the regional summary, TRICARE reimbursement is a current and future concern. However, Jones County's needs are not as acute as other counties in the NC MGTF region.

Veterans Affairs

As stated in the regional summary, the current Veterans Affairs services are reasonable to meet current and projected needs in the NC MGTF region, including Jones County. Leadership at the VA has indicated that there are currently no plans to expand services in the NC MGTF region.

Health Care Providers

Jones County currently faces physician shortages in several areas; the small growth expected in the military population in the county will exacerbate these to some extent. Following the projected increase in the military population, the projected 2011 physician needs in the county indicate a need for 0.9 FTE primary care providers, 2.3 FTE medical specialists, 3.4 FTE surgeons and 3.7 FTE dentists in addition to the existing providers. Jones County is projected to have a surplus of internists, but a need for 0.9 FTE obstetrics/gynecology (OB/GYN) physicians, which is responsible for the projected need for primary care. Jones County also is projected to have a surplus in specific medical specialties, such as hematology/oncology and endocrinology, but a deficit in other specialties, such as cardiology, nephrology, and dermatology, which is responsible for the projected need for medical specialties. Physicians at larger medical centers in Carteret, Craven, and Pitt Counties provide care to Jones County residents. As such, a portion of the physician needs of the Jones County population are already being met by providers located outside of the county. If Jones County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.



Figure

Table 6.4 - Health Care Provider Needs (FTES)

Source: Health Net Federal Services, regional providers and HPS Demand Model

Behavioral Health

The growth in the military population will not change the low level of need for behavioral health services in Jones County. Following the projected increase in the military population, the projected 2011 behavioral health visits in the county indicate an additional need for 1.4 FTE behavioral health providers. For the foreseeable future, Jones County residents will access inpatient behavioral health services in neighboring counties where they are currently being appropriately treated.

Inpatient Acute Care

The growth in the military population will not change the low level of need for inpatient acute care services. For the foreseeable future, Jones County residents will access these services in neighboring counties where they are currently being appropriately treated.

Inpatient Rehabilitation Care

The growth in the military population will not change the low level of need for inpatient rehabilitation services in Jones County. For the foreseeable future, Jones County residents will access these services in neighboring counties where they are currently being appropriately treated.

Recommended Strategies and Actions

Jones County needs will be met through the execution of regional strategies and actions in addition to those listed below.

Action 1: Continue efforts to recruit and retain behavioral health providers.

Rationale

Jones County (both with and without military population growth) has a need for behavioral health providers.

Responsible Party

Local physician leadership

Funding

According to the Merritt Hawkins 2008 Survey of Physician and CRNA Recruiting Incentives, the average cost of recruiting a psychiatrist in 2008 was $189,000.

Action 2: Continue efforts to recruit and retain dentists

Rationale

Jones County (both with and without military population growth) has a need for additional dentists.

Responsible Party

Local physician leadership

Funding

None requested.

Social Services

Existing Conditions

Marine and Family Services

Marine and Family Services is a division of the Department of Marine Corps Community Services (MCCS), and provides a variety of services to strengthen the military community at each Marine Corps installation throughout the country. Marine and Family Service programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or by visiting Marine and Family Services offices located on MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River. Marines and their family members can access services voluntarily or via referral to social services by a commander or a division of military services, such as a health care provider. Marines are briefed on available services during the required base orientation, Welcome Aboard, upon arrival at any Marine installation. Services and special events are advertised on the base television channel and on flyers around base, including at the commissary, shops, and restaurants.

Because of the distance to each installation in the MGTF Region, most Jones County residents do not access these services. MCAS New River, MCAS Cherry Point, and MCB Camp Lejeune are approximately 35, 40, and 60 miles, respectively, from the capital of Jones County, Trenton. For a full description of Marine and Family Service Programs, please see the Regional Medical, Health, and Social Services module.

OneSource

Military OneSource is a resource contracted through the Department of Defense for military members and their families, intended to supplement existing military support services through the Internet or by phone. Military OneSource complements Military and Family Services, providing a central location for information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs. OneSource offers counseling sessions over the phone and online and refers to local counselors for in-person counseling. These services are ideal for Jones County residents who live a significant distance from each of the local installations. However, local counselors in the communities surrounding MCB Camp Lejeune, MCAS Cherry Point and MCAS New River often have limited availability and waiting lists are frequent and wait times lengthy.

Department of Social Services

Services Provided – County Department of Social Services

North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[2] All County Departments of Social Services (County DSS) provide the following social services. [For a

2 North Carolina Department of Social Services, available at http://www.ncdhhs.gov/dss/about/

full description of DSS services please see the Regional Medical, Health, and Social Services module.]

- *Adult & Family Services* – supports disabled adults with a range of services such as guardianship, transportation to medical facilities, services for the blind, and adult care home monitoring.
- *Child Welfare* – covers the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.
- *Crisis Intervention* – helps low-income households with heating or cooling-related emergencies to reduce the risk of health or safety problems as well as the risk of eviction.
- *Day Care* – provides free and/or subsidized child day care for low-income families.
- *Food and Nutrition Services* -- offers food assistance to eligible families.
- *Pregnancy Services* – supports low-income individuals with support for unplanned pregnancies, addressing medical, social, education and psychological issues.
- *Refugee assistance* – assists newly-arrived refugees.
- *Senior Services* – offers meal assistance and health promotion activities to eligible adults over 60 years of age.
- *Work First* – provides temporary assistance to needy families and supports their ability for self-sufficiency.

Military and civilian populations in Jones County access DSS services by phone or in person at the County DSS office, located in Trenton.

As discussed previously, while Marine and Family Services is meant to be the primary avenue by which military members and their families access services, military families living off base access social service programs through the County DSS. Although overall, the active military population in Jones County is small—less than 1 percent—the military population does use Child Welfare, particularly Child Protective Services, and to a lesser extent, Day Care. In addition, affordable transportation is a current need for both military and civilian populations that greatly impacts access to social services.

Child Welfare

As discussed at length in the Regional Medical, Health, and Social Services module, military families, particularly younger, junior-enlisted military families, use DSS child welfare services at higher rates than do civilian populations. This higher use rate is due to factors such as lack of support networks due to frequent moves and separation from extended families.

Please note that spousal abuse cases are not handled by DSS.

Day Care

Access to day care is important for the family unit and, in particular, provides increased opportunities for military spouses. Additional day care capacity is currently needed in Jones County for both the civilian and military populations.

Food and Nutritional Services (FNS)

Few Marines utilize FNS programs through Jones County DSS, as most Marines do not qualify for these services. Qualification for FNS is based upon income and family size.

Transportation

Jones County does not have a public transportation system. Jones County does contract with CARTS, based in Craven County, to provide transportation for qualifying individuals for medical needs. CARTS is best for scheduled travel—trips must be pre-arranged at least two days in advance and changes or cancellations must be made 24 hours in advance. After three violations of the cancellation policy, individuals lose their privileges to access CARTS. Flexible, accessible public

transit is a need for both military and civilian populations in Jones County.

Coordination - Marine and Family Services & Departments of Social Services

While the Jones County DSS office reports limited coordination in overall social service delivery, in cases of child abuse, coordination between Jones County DSS and military staff is substantial. If the offender is a military service member, his or her commanding officer is notified and the service member may be removed from the home temporarily and/or placed in custody on base.

Needs Assessment

Jones County is anticipating a small impact from the military population influx; approximately 125 Marines and their families are expected. The military population influx is not expected to create needs for new services; rather, the increased military population is expected to exacerbate resource needs already present through Jones County DSS services. Specifically, Jones County DSS expects the increase in population to have the largest impact on Child Welfare programs and, to a lesser extent, Day Care and FNS. Current barriers to access for the expected Marine population are also expected to be exacerbated—particularly transportation.

Transportation

As discussed previously, access to affordable public transportation is a need for both the civilian and military populations throughout Jones County. In particular, needs include transportation that can be accessed daily and without advance reservations.

Child Welfare

- Jones County DSS expects that Child Welfare services will see the greatest increase in demand as a result of the military population growth. These programs, staff, and systems are in place, but will need increased funding and targeted initiatives to address the expected upcoming need. In particular:
- Increased capacity for child protective services Jones County DSS. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly and that adequate follow up (counseling, legal coordination, coordination with military command) is thorough and timely.

Day Care

Access to affordable day care is currently a need for the civilian and military populations in Jones County. Therefore, while the increased military population is expected to have a minor impact on the demand for day care, it will exacerbate already-existing day care needs. The following child care needs reflect current and expected needs as a result of the military population influx.

	Child Care Enrolment - 2007	Expected Child Care Enrolment due to Normal Population Growth - 2011	Additional Slots Expected Due to the Military Increase - 2011	Total Expected 2011 Child Care Enrolment
Children aged 5-12	43	45	2	47
Children under 15	178	188	8	196

Table 6.5 - Projected Child Care Enrollment

Souce: Education Working Group, Military Growth Task Force

Food and Nutritional Services (FNS)

Few military families likely qualify for the FNS program; Jones County DSS expects a small impact on FNS services as a result of the military population increase.

Recommended Strategies and Actions

Jones County needs will be met through the execution of regional strategies and actions, in addition to those listed below.

Action 1: Increase access to services by addressing limited mobility.

Rationale

The lack of flexible public transportation in Jones County results in many military families encountering challenges in accessing services.

Supporting activities

- Reduce or eliminate geographic access barriers by bringing services to military communities in Jones County. This can be achieved by forming community action teams through Jones County DSS and Marine and Family Services. These action teams can serve military families at accessible locations throughout Jones County, in locations such as community facilities, schools, and churches. Particularly, preventative workshops could be successful in these venues; and, child care could be provided on-site. The appropriateness of providing services requiring confidentiality, such as individual or family counseling, will depend on the capacity of the community facility.

Funding

- No funding requested

Public Safety and Emergency Services

Existing Conditions

The Public Safety and Emergency Services (PS/ES) sector in Jones County will not see the same impact on levels of service that counties that are host to Marine Corps installations can expect. Nonetheless, the largely rural, sparsely populated character of Jones County means that levels of population growth that may be considered small elsewhere can have a significant impact here. Whereas some larger counties have a robust PS/ES infrastructure in place, Jones County faces some challenges in developing a state-of-the-art PS/ES system that meets the growing needs of the MGTF Region

Emergency Medical and Fire Services

Jones County is covered by seven volunteer fire departments and seven EMS departments, six of which are all-volunteer. These departments are reporting significant increases in calls for service since the onset of the Grow the Force Initiative. In 2008, county fire departments fielded 28 percent more calls than in 2006. During that same period, calls to EMS departments increased by 34 percent. During this time period, the number of firefighters serving the area increased also and the number of EMS personnel increased from six to eight. County emergency services representatives related a remaining need of 8 EMS personnel and also additional firefighters to meet current service demands. County representatives also see a need to address inadequacies in recruitment of new personnel. EMS and fire departments rely on newspaper listings and recruitment through local community colleges, methods which have not proven effective enough to meet staffing needs.

In addition to personnel, Jones County faces equipment and facilities challenges in maintaining adequate levels of service.

Currently, the county employs only one ambulance due to a lack of funding and staffing shortages. Some fire and EMS facilities are also said to be at capacity, hindering any department growth even absent current personnel funding shortfalls. In order to coordinate emergency services more effectively, county representatives also expressed a need for a central communications operating center.

The state of interoperable communications among volunteer fire and EMS departments is also in need of improvement. The county's fire and EMS departments utilize VHF communications full-time. Each emergency response agency in the county has at least one portable radio with VIPER capabilities that provide very limited access to the VIPER network. County emergency responders related a desire to utilize the VIPER system full-time. The county recently applied for the 2009 Assistance to Firefighters Grant from the Federal Emergency Management Administration (FEMA) to field VIPER among all emergency responders, the results of which have yet to be released

Law Enforcement

Jones County Sheriff's Office

Call for service data suggests that Jones County is seeing significant increases in service demands. Between 2006 and 2008, the number of service calls per year increased by 139%. In that time period, staffing levels have remained static. According to county law enforcement representatives, the situation is becoming critical as the county's officers are increasingly struggling to adequately meet service demands. Municipal police departments have also reported increasingly strained staffs. Maysville currently employs one full-time paid officer and another reserve officer. Pollocksville employs a single part-time paid officer and sometimes obtains reserve officers from a BLET program, though these are typically lost due to attrition to larger, better funded departments. The Sheriff's Office sees a need to expand current staffing by fifty percent while both municipal departments relate a need to more than double current staffing to keep pace with service demands.

Jones County law enforcement agencies are currently utilizing low bandwidth VHF radio communication systems. Currently, interoperability is extremely limited. The Sheriff's Department communicates with other agencies by use of DCI-PIN messages and could, in case of a regional emergency, utilize the Jones County Emergency Management VIPER-compatible radio system. Otherwise, the county's law enforcement has limited communication capabilities with Craven County Sheriff's Department. Although not currently utilizing the VIPER system, Jones County's law enforcement agencies would be amenable to utilizing the system if funding was made available.

Courts

The Jones County court system faces challenges that are compromising its ability to fulfill service needs. The county's courts have not seen the same increases in demands for service as some others within the MGTF study region. Although the Clerk's Office has not seen a significant enough increase in court filings to warrant significant staffing changes, the county's courts still face historical staffing, security, and facilities needs.

Like many county court systems in the MGTF study region, Jones County reported inadequate office space to employ any more workers and a desperate lack of storage space for court filings. Currently, the court utilizes an electronic scanning device for certain cases. Existing court facilities also need a number of upgrades to provide security to court personnel during sessions. Identified deficiencies include a lack of security cameras, insecure doors, and insufficient bailiffs at court sessions.

Public Health

Data provided by Jones County's Environmental Health department does not provide compelling evidence of a major increase in service needs in recent years. Nonetheless, the department reported minor staff shortages and a lack of adequate office and filing space

Needs Assessment

Communications Interoperability

Emergency Services

In order to achieve communications interoperability among the county's first responders, all fire and EMS departments should be updated to trunked, P25 Compliant, 800 MHz communication systems prior to the onset of FCC bandwidth

limitations in 2013. The cost for this undertaking is estimated at $400,000.

Law Enforcement

The Sheriff's Office and municipal police departments should upgrade to VIPER-compliant 800MHz systems.

Personnel

Emergency Services

EMS

- 8 EMS personnel

Law Enforcement

Sheriff's Office

- 1 criminal detective
- 1 narcotics detective
- 2 patrol supervisors
- 4 detention/communications staff
- 1 administrative assistant

Maysville Police Department

- 3 part-time sworn officers

Pollocksville Police Department

- 2 part-time sworn officers

Courts

- Assistant District Attorney

Facilities and Equipment

Emergency Services

- Communications Operating Center
- 1 ambulance
- Facilities to house ambulance
- Facilities for two additional EMS crews

Law Enforcement

- 1 fully equipped patrol vehicle and gear per incoming deputy
- In-car computer systems, bullet proof vests, and VIPER-compatible handhelds per each deputy and sworn officer

Courts

- Additional storage space for court filings
- Office space and storage space per each additional employee

Recommended Strategies and Actions

Action 1: Transition all fire, EMS, and law enforcement departments to 800MHZ, P25-Compliant trunked radio systems.

Funding

- State appropriations
- Assistance to Firefighters Grant (FEMA)
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 2: Upgrade Jacksonville PD communications system before it expires.

Funding

- State appropriations
- Federal grants to DCC&PS
- State Homeland Security Appropriations

Action3: Increase the recruitment and training of qualified personnel, institutionalizing interest at a younger age.

Supporting Activities

- Work with Jones County high schools to develop Law Enforcement, Fire, and EMS recruitment and training programs. Explore the possibility of reciprocal benefits, including allowing students to claim class credits for time spent training and volunteering. Such programs could be presented to students as an opportunity to learn and gain experiences outside of traditional classrooms.
- Produce literature explaining the educational benefits available to fire and EMS volunteers, including college scholarship opportunities. Explore new scholarship opportunities with community colleges and North Carolina state universities to incentivize student volunteerism.

Funding

- Matching funds between school districts and individual departments
- OEA community development funding

Action 4: Initiate measures to update and expand EMS, fire, and law enforcement facilities, including communications operating center.

Supporting Activities

- Initiate planning for new facilities

Funding

- OEA community development funding

Action 5: Initiate measures to update and expand court facilities to ensure quality of service and enhance the safety of court personnel. Backfill frozen positions and create new positions to meet service demands.

Supporting Activities

- Initiate planning for new court facilities
- Seek funding for personnel to meet service demands

Funding

- OEA community development funding

Quality of Life

Existing Conditions

Parks and Recreation and Sports Venues

Much of the outdoor recreation in Jones County is centered on rivers, ponds, and forests. The Trent River offers cruising, rafting, canoeing, kayaking, and fishing prospects. The White Oak River Paddle Trail is also a primary stream in the county, providing recreational paddling and camping along the length of the White Oak River. There are six lakes or ponds of five acres or more, including Brock Mill pond, which is one of the county's most scenic and historic areas. The Brock Mill pond and dam are a popular attraction.

Croatan National Forest covers the eastern part of the county, and has camping opportunities, 4,300 acres of lakes, and 40 miles of streams. Part of the Hoffmann Forest is also within Jones County, and the Catfish Lake Waterfowl Impoundment is in Maysville. However, the Hoffmann Forest is not open to the public.

There is only one park within the county, operated by a municipality. The County Parks and Recreation department does not operate any parks within the county.

The Jones County Recreational Program offers youth and senior athletics and activities, but the county does not have any county-run athletic fields or facilities. The county must rely on school athletic fields and gyms, but this is becoming increasingly difficult to coordinate. As schools' budgets decrease, they must start charging the county to use their facilities, thus cutting down on the amount of athletic programming the county can offer. It is unrealistic to count on school fields and gymnasiums for county programs, and conflicts will only increase as the population grows.

Facilities	North Carolina Standard	# in Jones	Recommended # based on 2007 population (10,277)	Over (+) and Under (-)
Baseball Fields	1/8000	0	1	-1
Soccer Fields	1/6000	0	2	-2
Softball Fields	1/4000	0	3	-3
Tennis Courts	1/1200	0	9	-9
Outdoor Swimming Pools	1/14,000	0	0	0
Community Centers	1/14,000	0	0	0

Table 8.1 - Comparison of Recreation Facilities Managed by Jones County Parks and Recreation Department with State Standards (2005)
Notes:Does not include public school facilities.

Water Access and Parking

The town of Pollocksville has a boat ramp into the Trent River, as does the town of Trenton. The Pollocksville ramp and dock area has about 20-30 parking spaces, but is not sufficient to meet demand during peak times. The Trenton boat ramp's parking area is not paved, but is currently adequate for use. There are no canoe or kayak launch sites along the Trent River, but efforts to clean up the river for kayaking and canoeing have recently been begun. The White River has three launch points within the Croatan Forest in Jones County. Because Jones County is not a coastal county, there are no beach access points.

Arts and Culture

The Jones County has four library branches: Comfort Branch Library (in Trenton); Maysville Branch Library; Pollocksville Branch Library; and Trenton Branch Library. These branches are part of the Neuse Regional Library system, headquartered in Kinston in Lenoir County. Their square footage is listed below and compared to the state standard (State Library of North Carolina 2007, 48-49):

Maysville Branch Library: 1,800 SF

Pollocksville Public Library:	1,800 SF
Comfort Branch Library (Trenton):	1,800 SF
Trenton Branch Library:	1,800 SF
TOTAL:	7,200 SF

Based on the 2007 population of Jones County (10,277) and the state recommendations for library square footage (0.65 per capita), the suggested area for libraries in Jones County is 6,680 SF. This indicates a surplus of about 520 square feet in the county.

A variety of arts programs are offered through the Jones County Arts Council, including the Little Theater. The Jones County Civic Center has a stage for performances. County attractions also include the Foscue Plantation House, Things from Yesteryear Museum, and the Back in Time Museum.

Hotels and Meeting Space

Jones County has one motel, the Trent Motel [listed in Appendix E]. The motel is county-run, and has 12 rooms. The motel is estimated to be at occupied at approximately 70-80-percent capacity. Because the county is so close to both New Bern and Jacksonville, the surrounding counties and cities supply most hotel needs within Jones County.

Facilities	State Standard	Jones County (370 people)
Baseball Fields	1/8000	
Soccer Fields	1/6000	
Softball Fields	1/4000	
Tennis Courts	1/1200	1
Outdoor Swimming Pools	1/14,000	
Community Centers	1/14,000	

Table 8.2 - Sports Venue Facilities Needed To Support Military-Induced Growth in Jones County

The Jones County Civic Center has two auditoriums for events, and a seating capacity of up to 1,000. It also has a small meeting conference room and several office rooms that can be rented. The meeting space within the county is currently considered sufficient, but additional meeting space could certainly be used if it were made available. The Civic Center's peak season is the summer and holidays, and meeting space is used heavily during these times. During off-season, the civic center is booked approximately 10-12 days out of the month. Typical uses for the civic center are reunions and county meetings.

For reunions that last more than one day, visitors generally stay in Craven, Lenoir, or Onslow County hotels. A representative of the county's civic center department noted that a hotel that could accommodate guests to the civic center is needed, adding that the many requests for other meeting venues in the county suggest that additional meeting space is needed as well.

Shopping

The only retail shopping alternatives available within Jones County are two Dollar General Stores and a few low-end grocery stores. The county has a significant need for additional and higher-quality shopping opportunities.

Needs Assessment

Jones County is severely underserved with athletic and sports fields and facilities. It is unrealistic to count on school fields and gymnasiums for county programs, and scheduling and cost conflicts will likely only increase as the population grows. **Table 8.2** below shows the sports venues that will be needed *just* to support the expected military-related growth to the county. The county's need for athletic fields is most apparent, given that currently none are operated in the county.

The county currently needs one baseball field, three softball fields, two soccer fields, and nine tennis courts. A county recreational indoor and outdoor sports complex should also be developed, including outdoor sports fields, a gymnasium, and activity rooms.

Jones County also must ensure that open space and parkland is maintained as military-induced growth occurs in the region. The county currently has no county parks (and only one municipal park), so it needs to create enough parkland for its current population, plus additional parkland to accommodate the projected military growth. **Table 8.3** below outlines the park space that will be needed to accommodate the anticipated military-induced growth, based on per-capita state standards for parkland.

Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
370	2-3 acres	4 acres	7-37 acres

Table 8.3 - Parks Needed To Support Military-Induced Growth in Jones County

Canoe and kayak launch sites are needed along the Trent River, as well as an additional boat ramp in the Comfort Area.

Library space estimated to be needed to accommodate the military-induced growth within the county is shown in **Table 8.4** below.

Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
370	240 SF	370 SF

Table 8.4 - Library Space Needed To Support Military-Induced Growth in Jones County

Since there is a surplus of about 520 square feet of surplus library space in Jones County, additional space to accommodate the new military-induced growth in the county is unnecessary. However, amenities at the libraries should be kept up-to-date to accommodate growth and ensure that high-quality library facilities exist in the county, including seating, collections, programming and meeting space, and public computers. Please see **Table 8.5** below for details.

Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items/ capita)	User Seating (2.5 seats/1000 residents)	Programming/Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF)
370	0	740	1	1	1

Table 8.5 - Additional Library Needs to Support Military-Induced Growth in Jones County

The county would also benefit from the construction of a hotel that would accommodate guests to the civic center for events. These guests typically stay in other counties, and consequently, tax revenue that could be generated from these guests is lost to other counties.

Additional, higher-quality retail opportunities within the county are greatly needed, and the county should work to recruit better stores, including grocery stores, restaurants, clothing and retail shops, etc. Better restaurants and shopping venues will especially be needed if and when a hotel is built within the county to serve reunions and other groups at the Civic Center.

Recommended Strategies and Actions

Recommendation 1: Build one new recreation complex in Trenton that includes all the fields outlined above, plus a gymnasium. A current Jones County estimate for a 1,500-square foot facility is $1 million.

A feasibility study to site the complex, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of complex should be initiated in FY 11, with completion planned for FY 12. The estimated cost for such a complex would be $5 million - $30 million, depending on its size.

Rationale

Jones County is already lacking in the number of athletic fields it offers, based on state standards, and the military-induced growth will only place further stress on existing recreational programs and facilities. The county will need new or expanded recreation facilities that include new sports fields and gymnasiums.

Funding

Grants and other funding sources that are available for parks and recreation projects are listed below.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: www.ils.unc.edu/parkproject/trails/home.htm

North Carolina Adopt-A-Trail Program – This grant is awarded annually to government agencies, non-profits, and private trail groups. 100-percent funding is available up to $5,000. Contact the Trails Program at: http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – State program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php Phone: (919-715-8699)

Land and Water Conservation Fund – Federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone) 202-343-9563.

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories including acquisition, landscaping, bicycling, and pedestrian facilities. www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – Community grants program supports local health departments in NC in efforts to development community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example: Carteret County Health Department in collaboration with County Parks and Recreation and other community partners will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project. For information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Harold H. Bate Foundation – Offers financial support to Craven, Pamlico, and Jones counties. The foundation administers

charitable gifts to enhance education, youth and *recreation*, and the *quality of life* for the three counties. Grants are not awarded for purposes ordinarily supported by tax funds, but may be used in public-private partnerships. *Grants are also discouraged for services that the public sector "should be reasonably expected to provide." (*http://www.batefoundation.org/Grant_Guidelines.pdf) (http://www.batefoundation.org/index.html)

Recommendation 2: Develop canoe/kayak launches along the Trent River and add a boat ramp and parking in the Comfort area.

Rationale

There will continue to be problems with enough water and beach access and associated parking as the county population grows.

Water Access Funding

Below is a list of funds and grants that are available for water access projects.

North Carolina Waterfront Access and Marine Industry (WAMI) Fund – Created by the North Carolina General Assembly to acquire waterfront properties or develop facilities to provide, improve, or develop public and commercial waterfront access. In 2007, $20 million was approved, and in 2008, 13 sites were selected for funding.

Land and Water Conservation Fund – Federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

Clean Water Management Trust Fund – Will fund projects that: 1) enhance or restore degraded waters; 2) protect unpolluted waters; and/or 3) contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits. www.cwmtf.net

Recommendation 3: Jones County's library space seems to be adequate based on state standards, but additional library programs and amenities are needed as outlined above.

The anticipated cost for new library space is $255 per square foot. This cost includes construction and related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, copiers), contingency construction and uplift, and library collections (books for 50-percent fill rate and A/V materials).

Rationale

Libraries and their programs are an important, low-cost activity for military families in Jones County. The county is not up to state space standards, and is lacking in the number of computers and other programs or amenities that it offers. Libraries are becoming increasingly like community centers, and as a free resource, are very important to military families.

Library Funding

Below is a list of funds and grants that are available for library projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries are located in counties that have either a 10-percent or greater poverty level in the

Foundation-defined service area OR more than 3,000 persons living in poverty. http://statelibrary.ncdcr.gov/gates/gates.html Libraries in Jones that have been established as eligible by the Foundation:

Comfort Branch Library

Maysville Public Library

Pollocksville Public Library

Trenton Public Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. For available grants, contact: http://www.neh.gov/grants/index.html

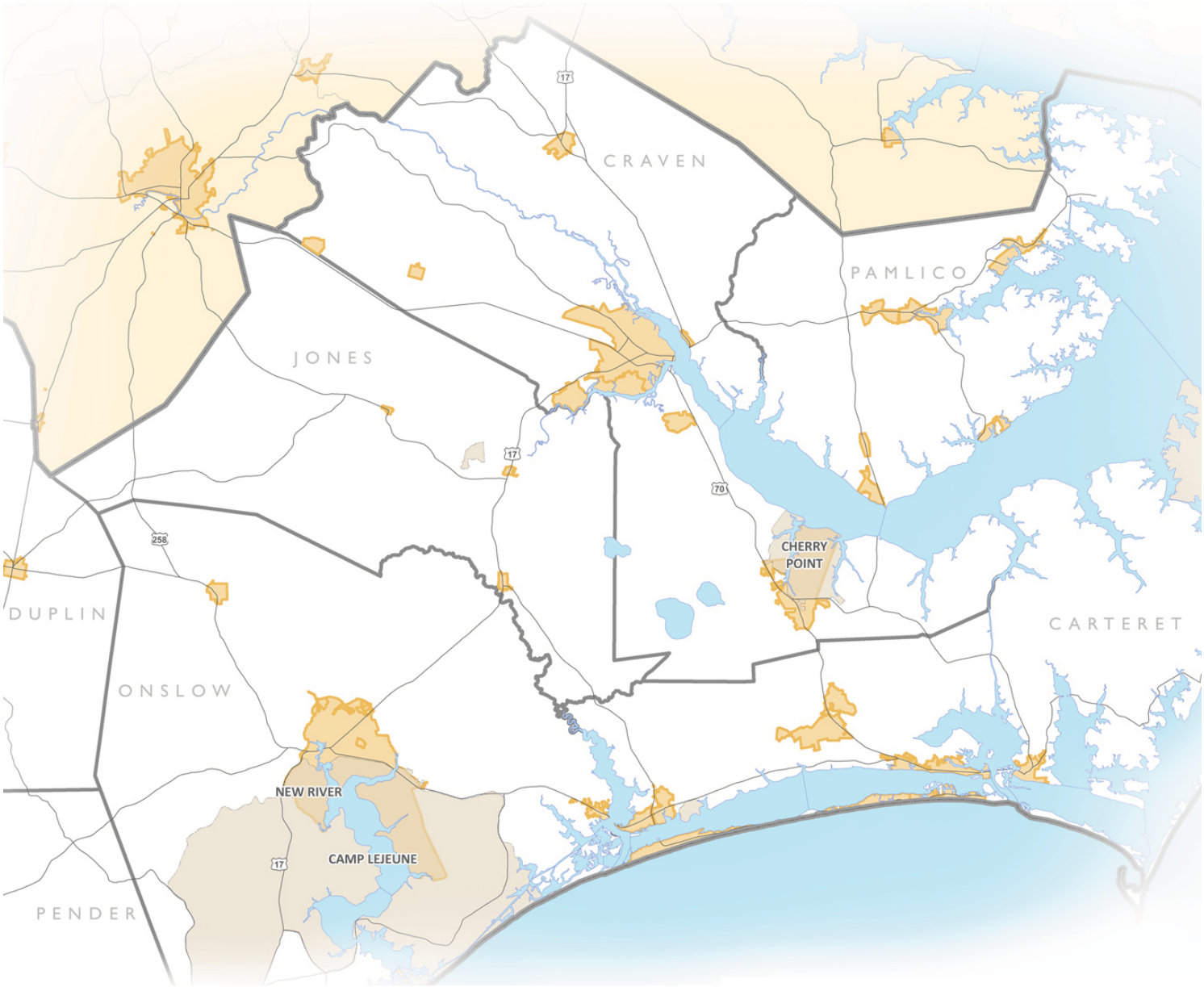
National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. Is the nation's largest funding agency for the Arts. For grant information, contact: http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – North Carolina organization whose mission is to promote the social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities through building up the capacity of nonprofits, historically, supports fundraising campaigns to build capital projects (e.g., libraries, museums, community centers). http://www.kresge.org/index.aspx

Kellenberger Historical Foundation (based in Craven County)

THIS PAGE INTENTIONALLY LEFT BLANK



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Onslow County

Submitted to the:
North Carolina Eastern Region's
Military Growth Task Force

www.nceastmgtf.org

Marstel-Day, LLC

In Partnership with:

Kimley-Horn and Associates, Inc.

URBAN RESOURCE GROUP
A DIVISION OF KIMLEY-HORN AND ASSOCIATES, INC.

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

Housing

Onslow County is the host county for Marine Corps Base Camp Lejeune and Marine Corps Air Station New River, and, as such, the provision of adequate and affordable housing is critical to both economic development and Marine Corps mission readiness. There is an overwhelming demand for civilian and active-duty housing, especially in Jacksonville. The transient Marine population has helped create a large rental market. Civilian demand for new housing will total 6,790 households by 2011 and military demand for off-base housing will total 2,009 households. The following section examines the provision of adequate and affordable housing in the county with respect to incoming civilians and military personnel. It also includes an assessment of the needs and issues facing the county, with recommended strategies and actions.

Existing Conditions

Housing Supply

Housing supply impacts pricing and the competition for homes in the county. In 2007, there were 63,785 housing units reported for Onslow County. The preference for housing types and neighborhood styles varies across the county and the region. This section focuses on four general home categories prevalent in the county: for-sale homes, rental homes, manufactured homes, and second homes/seasonal rentals.

Housing unit estimates for the county were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this chapter was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the county include the impacts of cities and towns within it.

A summary of each general housing category follows.

Manufactured Homes

A manufactured home is built on an integral chassis in a factory, transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). One in four homes in Eastern North Carolina is a manufactured home.

In 2007, there were 15,550 manufactured homes in Onslow County. This represents 7.4 percent of all the housing units reported for the county.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

For-Sale Homes

For-sale homes are occupied by the owner of the unit. They are site built homes, typically purchased using a mortgage. For-sale homes are the dominant housing type in the county.

In 2007, there were 24,213 occupied for-sale homes in the county. This represents 50 percent of all the housing units reported for the county.

For-sale homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see **Appendix G**). Based on the foregoing, 3,889 for-sale homes are available for new residents coming to Onslow. The number of for-sale homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

For-sale housing in the county, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site built home in the county is $134,700, which is below the state average ($278,943).

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time (usually one calendar year). In 2007, there were 17,441 occupied rental homes in the county.

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see Appendix G). Based on the foregoing, 2,802 available rental homes were estimated for Onslow. Based on that comparison, it was determined that these numbers were much higher than the MLS indicated. Key reasons for this discrepancy include that these numbers represent for-rent dwelling units at all price points, and the MLS service shows that almost no units are available below the $850 price-point.

Rents in the region were collected from an internet and telephone survey of apartments available in the seven counties. The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy at rental homes in the region was estimated at 92 percent based on US Census Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98 percent). These trends are reflected at the county level as well.

The magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases unless new units are constructed soon.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment property, hoping to retire to the home once it was paid off (National Association of Realtors, 2004). When asked why they bought a second home, respondents to the National Association of Realtors survey reported they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home because they had the extra money to spend.

The hottest reported markets for second homes are the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates.

In 2007, 2,515 of the total housing units in Onslow County were listed as seasonal rental units.

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 7,867 dwelling units were approved in Onslow County between 2005 and 2009. Of these, 5,242 dwelling units were approved but not yet built in 2007. All of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. The Committed Residential Development Database prepared by the ECC is included in the Appendix of this report.

Military Housing

The DOD allocates significant funding to provide adequate housing for bachelors and military families serving at MCB Camp Lejeune and MCAS New River. Information on housing supply and demand at these installations was summarized from the *2008 Housing Market Analysis Update* completed for MCB Camp Lejeune and MCAS New River (combined study).

Officer and enlisted personnel assigned to MCB Camp Lejeune and MCAS New River totaled 47,878 in 2008. Unaccompanied personnel rank E1 – E5 are assumed to live on base. Officer, warrant, and higher ranking enlisted (E6 – E9) personnel may live on- or off-base subject to local base housing policies adopted pursuant to the Marine Corps Housing Management Manual. Officials for MCB Camp Lejeune report 25,802 service members currently live in on-base bachelor housing. Demand for bachelor housing is forecasted to increase to 26,407 in 2013.

Accompanied personnel at MCB Camp Lejeune and MCAS New River represented 18,872 military families in 2008. Officials for the base report 3,650 families live on base and 1,300 more families are on a waiting list. All family housing units on base are privatized government housing. 672 housing units are currently offline for renovations between the two bases. By 2013, the two bases will have a total of 4,700 to 4,900 on-base housing units. Neighborhoods on MCB Camp Lejeune

include Berkeley Manor, Courthouse Bay, Hospital Point, Knox Cove, Midway Park, Paradise Point, Tarawa Terrace, and Watkins Village. Neighborhoods on MCAS New River include McCutcheon Manor and Peterfield Point.

All other military families are expected to reside off-base. This trend toward moving military families off base is consistent with guidance from the Office of the Secretary of Defense (OSD) to rely primarily on private sector community housing to meet demand (Department of Defense, 2003). The 2008 Housing Market Analysis Update for MCB Camp Lejeune and MCAS New River estimates 15,222 families in 2008 and 17,786 families in 2013 will seek housing in the community.

The recent housing market analysis update estimates 35.5 percent of all military families living off-base own a home (6,693 families). By 2013, housing affordability for military families is expected to decline to 33.6 percent unless the allowance for basic housing (BAH) is increased. As housing becomes less affordable, many potential home buyers may decide to rent.

In 2008, 8,529 families assigned to MCB Camp Lejeune or MCAS New River lived in off-base rental housing. The 2008 Housing Market Analysis Update for MCB Camp Lejeune and MCAS New River forecasts 11,146 families will seek rental housing in 2013. Approximately 36.5 percent of the existing rental units in the housing market area were considered inadequate using US Marine Corps Standards. This includes 25.0 percent of the inventory that were mobile homes and 11.5 percent of the inventory that were site built homes but inadequate in quality (2008 Housing Market Analysis Update, MCB Camp Lejeune and MCAS New River). An inventory of available and qualified off-base housing for MCB Camp Lejeune and MCAS New River is provided in the Appendix of this report.

Military renters (both accompanied and unaccompanied personnel) assigned to MCB Camp Lejeune and MCAS New River compete with civilian households for adequate rental housing in the community. Any future shortfall in rental housing for military families will be influenced by the quantity, quality, and timing of adequate housing in the private sector.

Cost of Homeownership

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the county.

Purchase Price

The median home value published in the American Community Survey for 2007 was used to estimate the purchase price of a home in the county. Median home price for Onslow County was $134,700.

Mortgage

A conventional, fixed-rate 30-year mortgage was assumed to estimate the typical monthly cost of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15 percent of the purchase price. No down payment was assumed for home loans to military families in order to be consistent with the terms of most VA loans. The loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

Property Taxes

The tax rate in Jacksonville is $01.129 per $100 of value. This rate includes the unincorporated tax rate for Onslow County.

Utilities

Utility costs were estimated from state and local sources. The average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners Insurance

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductible levels, and the insurance company providing the policy. The cost of homeowners insurance was estimated to be 0.75 percent of the purchase price of the home.

Monthly Payment

The monthly payment to afford a home of median value in Onslow County was estimated to be $1,051.04 for civilians and $1,165.24 for military personnel.

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see Appendix D). Average rents assumed for the region are also assumed for the county and are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost-Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active duty military personnel and their dependents buying homes, and active duty military personnel and their dependents renting homes.

For all of these cases, for-sale homes and for-rent apartments were found to be affordable in Onslow County.

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the county. The demand for housing reflects both civilian and military growth. Anticipated demand for for-sale homes and rental homes in the county is as follows: civilian homeowners (3,947), civilian renters (2,843), off-base military homeowners (713), and military renters (1,296).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as 'built' from the Committed Residential Development Database (2005-2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 3,889 for-sale homes and 2,802 rental homes. All manufactured homes and second homes/seasonal rentals inventoried for the county were removed from available housing supply for the gap analysis.

By 2011, Onslow County is forecast to experience a deficit of 2,109 homes. The majority of this gap will occur in the rental market where the deficit is anticipated to be 1,338 housing units. Completion of the yet to be built dwelling units in the committed residential development database prepared by the ECC will help facilitate provision of housing beyond the 2011 planning horizon. Currently, the un-built housing units total 5,242, which, if built, could eliminate the housing deficit in the county. However, the rental housing deficit will continue to be the biggest challenge to providing adequate and affordable housing in the county.

Issues Facing the County

Although the cost-burden analysis reveals that civilians and military personnel moving to the county can afford housing, there will be a deficit of housing in both the rental and for sale markets. In addition to addressing this deficit, there are several critical issues that must be examined in order to ensure that housing is affordable and available beyond the 2011 planning horizon. These issues were identified through stakeholder interviews and included:

- Infrastructure and development activity are not planned concurrently due to the county not managing its own water and sewer
- Traditional single family housing has established a sprawling development pattern.
- Road and infrastructure maintenance have been deferred
- The types of residential development does not generate a large enough tax base to pay for maintenance and extension of infrastructure and services

- Large amounts of flood prone areas and wetlands limit location of development.

- For civilians who chose to rent, finding affordable rental housing is becoming more problematic.

In order to address these challenges, the county has made significant long-term planning efforts. The county is currently updating their CAMA plan to remove density limitations. They are also rewriting their 2005 zoning ordinance to support increased densities and clustering options in areas where infrastructure is available. In concert with municipalities, the county has helped initiate more intergovernmental coordination to consolidate building inspections. The county also remains very supportive of the City of Jacksonville's current Unified Development Ordinance (UDO), which is in the process of being completed and will help support higher densities in Jacksonville. The county sees future opportunities for clustering of development in order to protect the county's natural features (such as wetlands), rural heritage and agricultural operations.

Recommended Strategies and Actions

Critical to the success of the regional growth management plan, are the implementing actions of participating municipalities and counties. Onslow County should continue to plan for long term growth through implementation of its forthcoming UDO. Recommended strategies and actions to be pursued on behalf of the county could also include:

- Implementing the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.

- Adopting adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region.

- Adopting policies or incentives that expedite the construction of new rental and affordable housing.

Additional recommended policies and actions are included in the regional chapter's draft Action Plan Matrix, which identifies recommended actions that extend beyond the responsibility of the county and municipalities within it.

Workforce

Existing Conditions

Onslow County has a labor force that has expanded from 53,845 in 2001 to over 62,000 in 2009. Since 2002, employment growth exceeded labor force growth and drove the unemployment rate down to 4.4 percent in 2006 and 4.5 percent in 2007. However, over the past two years, estimated unemployment has more than doubled, rising from around 2,600 to over 5,600, and the unemployment rate[1] in the first three months of 2009 has risen to between 8.3 and 9.0 percent.

Over the past two years, the county has seen a number of public notices of workforce job losses, as shown in the Announced Business Closings & Permanent Layoffs table. The largest was in the spring of 2008—the Hatteras Yachts company (a division of Brunswick Corporation), which affected 200 employees, due to decreasing sales of recreational boats nationwide. The next largest closing affected 45 employees in the spring of 2009, due to the national closings of Circuit City stores.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	53,845	50,849	2,996	5.6
2002	53,808	50,328	3,480	6.5
2003	53,660	50,170	3,490	6.5
2004	55,462	52,452	3,010	5.4
2005	56,287	53,294	2,993	5.3
2006	58,399	55,809	2,590	4.4
2007	59,798	57,107	2,691	4.5
2008	62,744	59,136	3,608	5.8
J'09	62,144	56,937	5,207	8.4
F'09	62,770	57,118	5,652	9.0
M'09	62,602	57,426	5,176	8.3

Table 2.1 - Employment Trends in Onslow County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics, 2009.

1 Seasonally unadjusted.

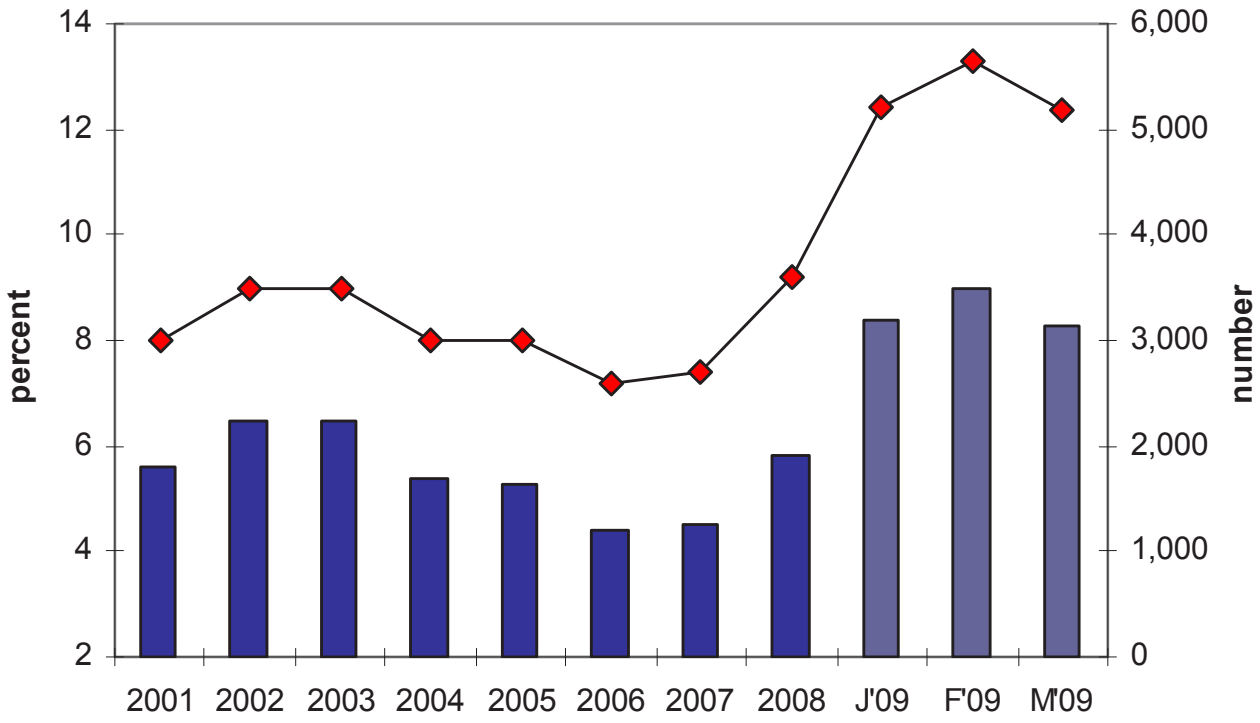


Figure 2.1 - Employment Trends in Onslow County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics, 2009.

NAICS Code	Date	Company	City	Product	Affected	Reason	Closing or Layoff
443112	Feb./March 2009	Circuit City Stores, Inc.	Jacksonville	Electronics Store	45	Liquidation	CL
448140	Feb./March 2009	Goody's Family Clothing	Jacksonville	Clothing Store	18	Liquidation	CL
336612	April/June 2008	Hatteras Yachts, Inc.	Hubert	Boat Building	200	Economic Conditions	CL
445120	May/June 2008	White Oak River Variety	Belgrade	Variety Store	5	Storm Damage	CL

Table 2.2 - Announced Business Closings and Layoffs – Onslow County, 2007-2009

Source: These selected data are derived from a statewide survey of newspaper accounts of closings and layoffs, and from information supplied to the Employment Security Commission of North Carolina by the employing units experiencing the closings/layoffs. The data are not comprehensive, and are not evaluated for accuracy by the Employment Security Commission.

The county registered almost 45,000 private and public-sector employees in 2007, an 11.8 percent increase over the level six years earlier in 2001. The largest industry employers in 2007 were: the retail trade industry, with 7,125 employees; the local governments, with 6,531 employees; and the accommodations and food services industry, with 6,282 employees. While federal government jobs decreased by almost 400, the accommodations and food services industry showed strong growth in employment over the same period of 20 percent, adding over 1,000 employees.

		Establishments		Employees		Average Annual Pay	
		2001	2007	2001	2007	2001	2007
Total Covered		**2,530**	**2,858**	**39,912**	**44,637**	**$21,395**	**$27,005**
Private		**2,450**	**2,781**	**27,400**	**31,964**	**$18,587**	**$23,320**
11	Agriculture, forestry, fishing, and hunting	ND	33	ND	ND	ND	ND
21	Mining, quarrying, and extraction	ND	3	ND	ND	ND	ND
22	Utilities	7	6	204	213	$45,344	$52,025
23	Construction	391	419	2,842	3,158	$22,859	$30,472
31-3	Manufacturing	50	37	1,499	915	$24,414	$31,020
42	Wholesale trade	75	77	459	485	$33,429	$32,754
44-5	Retail Trade	514	516	6,460	7,125	$17,648	$21,882
48-9	Transportation and warehousing	87	79	579	736	$23,698	$32,416
51	Information	38	35	619	520	$24,152	$35,501
52	Finance and insurance	121	115	914	957	$25,552	$34,076
53	Real estate, rental, and leasing	124	154	526	640	$17,852	$22,703
54	Professional and technical services	167	211	901	1,399	$25,559	$33,228
55	Management of companies and enterprises	7	8	86	349	$27,251	$33,760
56	Administrative and waste services	109	144	2,863	3,586	$14,639	$20,689
61	Educational services	18	21	113	163	$12,881	$36,631
62	Health care and social assistance	185	224	2,522	3,482	$25,357	$28,195
71	Arts, entertainment, and recreation	34	32	300	345	$11,280	$12,681
72	Accommodation and food services	250	299	5,225	6,282	$9,090	$11,529
81	Other services, ex. public administration	245	219	1,052	1,167	$16,907	$19,025
99	Unclassified	6	152	7	170	NA	$26,833
Federal Government		**31**	**34**	**5,500**	**5,113**	**$28,252**	**$40,350**
22	Utilities	NA	NA	NA	NA	NA	NA
44-5	Retail Trade	4	3	2,080	1,745	$14,547	$20,772
48-9	Transportation and warehousing	8	9	247	220	$38,143	$50,171
52	Finance and insurance	1	1	3	1	$45,526	$77,396
54	Professional and technical services	NA	1	NA	44	NA	$68,750
61	Educational services	NA	1	NA	503	NA	$51,032
62	Health care and social assistance	1	1	390	431	$34,148	$48,633
71	Arts, entertainment, and recreation	1	1	241	204	$10,445	$15,793
92	Public administration	16	17	2,539	1,964	$39,280	$53,991
State Government		**31**	**24**	**1,012**	**1,029**	**$23,530**	**$28,912**
48-9	Transportation and warehousing	-	-	-	-	-	-
56	Administrative and waste services	ND	1	ND	ND	ND	ND
61	Educational services	ND	1	ND	ND	ND	ND
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	28	22	320	319	$33,474	$40,483
Local Government		**19**	**19**	**6,000**	**6,531**	**$27,573**	**$34,291**
22	Utilities	NA	1	NA	ND	NA	ND
44-5	Retail Trade	7	7	23	34	$21,867	$23,220
48-9	Transportation and warehousing	-	-	-	-	-	-
51	Information	-	-	-	-	-	-
56	Administrative and waste services	-	-	-	-	-	-
61	Educational services	ND	1	ND	ND	ND	ND
62	Health care and social assistance	ND	3	ND	ND	ND	ND
81	Other services, ex. public administration	-	-	-	-	-	-
92	Public administration	ND	7	ND	1,641	ND	$35,549
99	Unclassified	-	-	-	-	-	-

Table 2.3 - Onslow County Employment and Pay – 2001 and 2007

Note: "NA" is Not Available, "ND" is Non-Disclosure, and "-" is not recorded.

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Quarterly Census of Employment and Wages,* 2009.

The Top 25 Employers table provides a recent snapshot of the companies and organizations that employ the highest number of people in the county. As of the third quarter of 2008, a concentration of six organizations employed

more than 1,000 employees. These organizations included: two county organizations, the Onslow County Board of Education and the County of Onslow; two military organizations, the Department of Defense and the MCB Camp Lejeune MCCS; and two private organizations, the Onslow Memorial Hospital and Wal-Mart Associates.[2] It is notable that the county has a number of other service-oriented employers, including education organizations, food services and business services, which are directly or indirectly tied to the impact of MCB Camp Lejeune.

Rank	Company Name	Industry	Employment Range
1	Onslow County Board of Education	Education & Health Services	1,000+
2	Department of Defense	Public Administration	1,000+
3	Camp Lejeune, MCCS	Trade, Transportation, & Utilities	1,000+
4	Onslow Memorial Hospital	Education & Health Services	1,000+
5	County of Onslow	Public Administration	1,000+
6	Wal-Mart Associates, Inc.	Trade, Transportation, & Utilities	1,000+
7	Coastal Carolina Community College	Education & Health Services	500-999
8	Coastal Enterprises of Jacksonville	Education & Health Services	500-999
9	City of Jacksonville	Public Administration	250-499
10	PRC	Professional & Business Services	250-499
11	Food Lion, LLC	Trade, Transportation, & Utilities	250-499
12	McDonald's	Leisure & Hospitality	250-499
13	Convergys Government Solutions	Professional & Business Services	250-499
14	Lowe's Home Centers, Inc.	Trade, Transportation, & Utilities	250-499
15	Marine Federal Credit Union, Inc.	Financial Activities	250-499
16	FSNB Armed Services Bank Service Center	Financial Activities	250-499
17	Stanadyne Corporation	Manufacturing	250-499
18	Mine Safety Appliances Company (A Corp)	Manufacturing	100-249
19	New River MCCS	Leisure & Hospitality	100-249
20	Brynn Marr Hospital	Education & Health Services	100-249
21	Service Source Employment Services	Professional & Business Services	100-249
22	U.S. Postal Service	Trade, Transportation, & Utilities	100-249
23	General Mills Restaurants, Inc.	Leisure & Hospitality	100-249
24	Britthaven, Inc.	Education & Health Services	100-249
25	Staff One, Inc.	Professional & Business Services	100-249

Table 2.4 - Top 25 Employers in Onslow County 2008-QIII

Source: U.S. Department of Labor, Bureau of Labor Statistics. Quarterly Census of Employment and Wages (QCEW), Largest Employers; 2009.

The occupational profile of current jobs in the county provides another view of the workforce structure and the occupations that organizations in the county have emphasized as important. In most cases, the largest occupational categories are the ones in which new job market entrants will also find greater employment opportunities. The Occupational Employment and Wages table shows that, in 2008, Office and Administrative Support workers led all other occupational groups in the county, accounting for 7,630 employees, followed by Food Preparation and Serving-related workers, with 5,880 employees. Specifically, the detailed occupational information in the lower half of the table shows that the most popular jobs in the county were: retail salespersons, food preparers and servers, and cashiers.

2 Primary for business proprietary reasons, the Bureau of Labor Statistics does not release exact employment figures by the organizations, but rather just employment ranges.

Occupational Code	Employment by Occupational Group	Estimated Employment	Estimated Annual Wage-Median
00_0000	Total All Occupations	42,130	$23,293
11_0000	Management Occupations	1,490	$69,451
13_0000	Business and Financial Operations Occupations	1,360	$40,159
15_0000	Computer and Mathematical Occupations	450	$55,544
17_0000	Architecture and Engineering Occupations	200	$52,024
19_0000	Life, Physical, and Social Science Occupations	210	$51,653
21_0000	Community and Social Services Occupations	450	$36,065
23_0000	Legal Occupations	200	$36,517
25_0000	Education, Training, and Library Occupations	3,840	$32,742
27_0000	Arts, Design, Entertainment, Sports, and Media Occupations	190	$26,777
29_0000	Healthcare Practitioners and Technical Occupations	1,890	$48,898
31_0000	Healthcare Support Occupations	1,040	$21,290
33_0000	Protective Service Occupations	780	$34,319
35_0000	Food Preparation and Serving Related Occupations	5,880	$15,076
37_0000	Building & Grounds Cleaning & Maintenance Occupations	1,360	$17,587
39_0000	Personal Care and Service Occupations	980	$18,382
41_0000	Sales and Related Occupations	5,650	$19,389
43_0000	Office and Administrative Support Occupations	7,630	$23,098
45_0000	Farming, Fishing, and Forestry Occupations	80	$26,209
47_0000	Construction and Extraction Occupations	3,060	$26,364
49_0000	Installation, Maintenance, and Repair Occupations	1,630	$30,687
51_0000	Production Occupations	1,450	$21,748
53_0000	Transportation and Material Moving Occupations	2,300	$21,405
	20 Top Occupations		
41_2031	Retail Salespersons	2,110	$18,834
35_3021	Combined Food Preparation and Serving Workers, Inc	1,980	$14,536
41_2011	Cashiers	1,540	$15,375
35_3031	Waiters and Waitresses	1,290	$14,824
43_4051	Customer Service Representatives	1,270	$21,136
43_6014	Secretaries, Except Legal, Medical, and Executive	920	$23,190
25_9041	Teacher Assistants	740	$18,660
41_1011	First-Line Supervisors/Managers of Retail Sales Work	710	$31,800
43_5081	Stock Clerks and Order Fillers	700	$17,604
43_9061	Office Clerks, General	700	$19,887
47_2061	Construction Laborers	680	$18,620
37_2011	Janitors and Cleaners, Except Maids and Housekeeping	630	$17,329
43_3031	Bookkeeping, Accounting, and Auditing Clerks	620	$26,152
29_1111	Registered Nurses	600	$52,576
11_1021	General and Operations Managers	530	$85,610
43_1011	First-Line Supervisors/Managers of Office and Administration	490	$42,595
35_1012	First-Line Supervisors/Managers of Food Preparation	460	$23,503
47_1011	First-Line Supervisors/Managers of Construction Trades	460	$41,710
51_2092	Team Assemblers	460	$18,655
35_2021	Food Preparation Workers	450	$15,363

Table 2.5 - Occupational Employment and Wages in Onslow County – 2008

Note: "*" is non-disclosed; "-" is not reported

Source: U.S. Department of Labor, Bureau of Labor Statistics. Occupational Employment Survey (OES), Occupational Employment and Wages, 2008.

The federal government has an overwhelming presence in the county and the Direct Expenditures or Obligations tables lists the Fiscal Year (FY) 2007 monies transferred into the county. Both the USMC-related monies and the total Navy Department expenditures or obligations are listed, and show that, in FY 2007, over $2.3 billion flowed into the county from the Navy Department, much in the form of USMC active-duty and Navy civilian salaries and wages of almost $1.7 billion. In

addition, during the fiscal year there was almost one-half billion dollars in Navy and USMC contracts and procurements and another $127 million is retirement and disability payments distributed to county residents. As discussed in the Regional Workforce Module, the total Navy (including USMC) financial impact in Onslow is expected to be almost twice as great during the 2009-2012 period.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	127,135	111,761
Grants	-	-
Procurements	485,599	-
Salaries & Wages	1,689,910	1,419,375
Total	**2,302,644**	**1,531,136**

Table 2.6 - Direct Expenditures or Obligations in Onslow County FY 2007 (in thousands of dollars)

Source: U.S. Census Bureau. Consolidated Federal Funds Report

Needs Assessment

The county is projected to grow in population by 4,328 persons from January 2007 to the end of December 2011. With the addition of 9,618 persons due to USMC direct and indirect impacts, the county will experience 4 percent annual average growth over the five-year period. This influx is projected to add an additional demand for almost 12,000 new jobs. This does not include the 10,000 active-duty and civilian personnel who have already arrived in the county with military jobs.

Some of the current impediments to a fully-functioning workforce, low unemployment rates, and economic growth in the county include those listed in the Current Regional Issues section of the Regional Workforce Module, but also include those listed below:

- The county has lost two-thirds of its manufacturing base over the past 20 years and is trying to build that back up to bring in more higher-paying jobs.
- Many of the county's businesses are branches or local offices. They are not national or regional headquarters, and thus they are more sensitive to closings and worker layoffs.
- The county has a large potential to retain much of the talent retiring at the military installations, but needs to have more technically-demanding and higher-paying jobs.
- The county will experience more structural unemployment than other counties in the region as the economy expands due to the military growth; however, the workforce situation is expected to stabilize in four to five years.

Recommended Strategies and Actions

The county and the surrounding region have a number of tools available to mitigate the impacts of military growth on the workforce, while at the same time positioning the county and the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include first and foremost, taking the following actions to increase the economic base of the region so that the new entrants find meaningful and productive employment that matches their skills and desired occupations:

- Acquiring and allocating resources to support and plan for a new Technology Center in the region and a new Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and entrepreneurship.
- Emphasizing industrial clusters that will potentially be available at the two centers, and also at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.
- Supporting private and public efforts such as "Onward Onslow" that encourage new and relocating business to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.

- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through several initiatives:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and others adults who guide and influence teenagers in the region.

- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.

- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before many other areas of the country, and to plan for training and educational requirements of those future green jobs.

- Devoting immediate resources to increasing child care training, certification, and facilities. Not only will this action provide direct employment to child care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.

- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.

- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small- and disadvantaged businesses.

- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.

- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.

- Creating a more military-family-friendly workplace by offering flexible benefit packages, and having the added benefit of reducing the cost of labor to businesses.

Education

Existing Conditions

K-12

The estimated 2008 population of Onslow County is 167,938. Onslow County Schools, with a 2008-09 K-12 enrollment of 23,680 students, is the 14th largest public school system in the state (North Carolina Department of Public Instruction, School Statistical Profile). The average annual growth of enrollment over the past five years is 1.7 percent (**Figure 3.1**) with consistent growth in the elementary-age school students. Annual live births to residents has experienced an increasing trend over the last ten years with 3,528 resident live births in 2006 (**Figure 3.2**) (North Carolina Department of Health and

Human Services, State Center for Health Statistics).

Other characteristics of the school district are:

- Seven high schools with a combined 2008-09 enrollment of 6,613 students.
- Eight middle schools with a combined 2008-09 enrollment of 5,340 students, including the magnet school New Bridge Middle School with an enrollment of 495, which is expected to remain stable.
- Nineteen elementary schools have a combined 2008-09 enrollment of 11,727 students. Stateside Elementary School will open for the 2009-10 school year, serving an area north of Jacksonville and feeding into the Richlands High School cluster.
- Fifty percent of the enrollment is in the Kindergarten to 5th grade range, 22 percent in 6th to 8th grades, and 28 percent in the 9th to 12th grade range.
- During the 2008-09 school year, 9,522 students, or 36 percent of students enrolled in Onslow County Schools were children connected to the military. This is an increase of 603 students from the 2007-08 school year. The one-year increase from the 2006-07 school year was 256 students (Onslow County Schools Federal Impact Aid data).
- The county's per-pupil expenditure is $7,588 with 68 percent coming from state funds, 10 percent from federal funds, and 22 percent from local funds. The per-pupil expenditure is lower than the regional average of $8,758 (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).
- Onslow County Schools operates 230 school buses transporting 12,958 students at a cost of $689 per pupil. Fifty-five percent of students utilize school buses.
- Onslow County Schools employs 1,419 teachers and 365 teacher assistants.

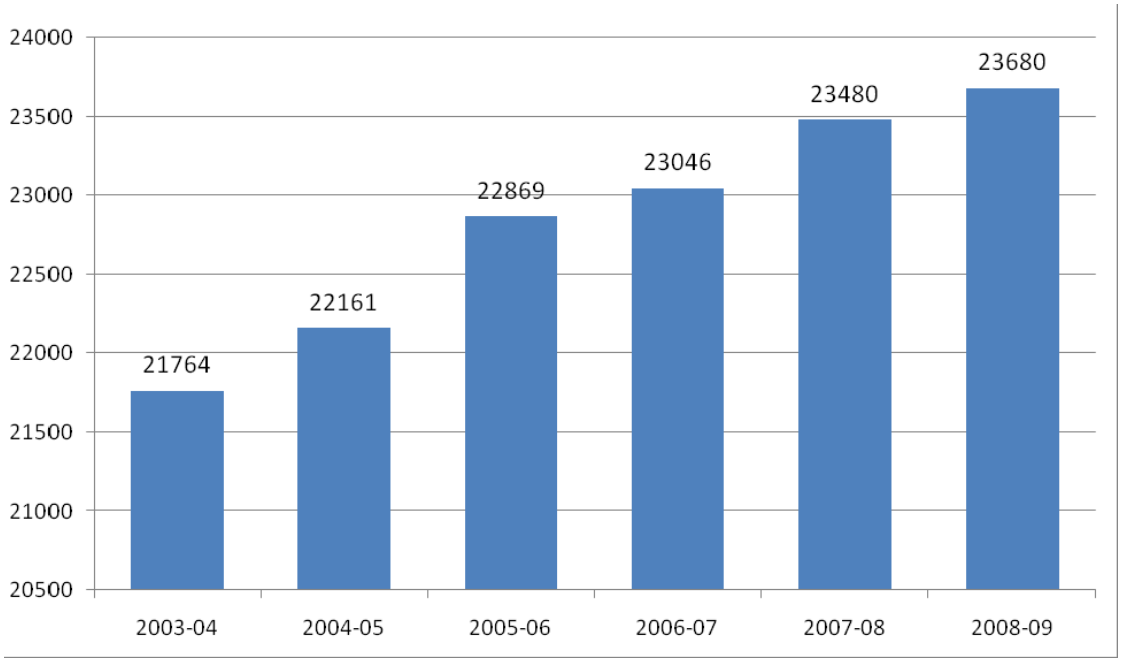


Figure 3.1 - Average Daily Membership for Month-2 in Onslow County Schools

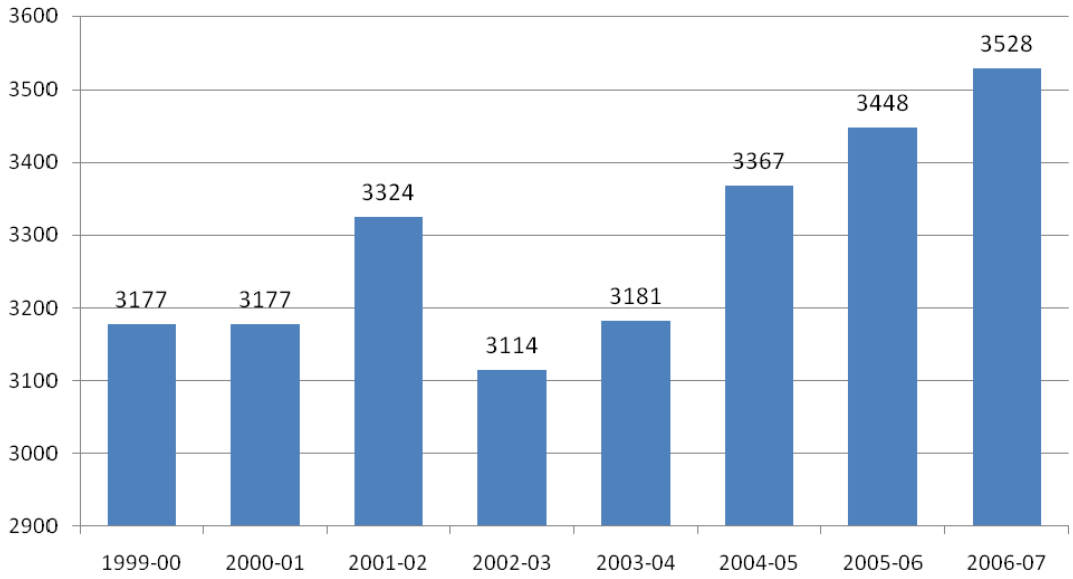


Figure 3.2 - Resident Live Births

Onslow County has 12 private schools with 856 students enrolled during the 2007-08 school year (2008 North Carolina Private School statistics, (http://www.ncdnpe.org/documents/hhh557.pdf)). Nine private schools are religiously affiliated and three are independent. There are no charter schools in the county.

Schools with the highest number of military-connected students (based on 2008-09 data) are:

- Sand Ridge Elementary, 56 percent
- Richlands Primary, 44 percent
- Carolina Forest Elementary, 43 percent
- Silverdale Elementary, 43 percent
- Summersill Elementary, 42 percent
- Morton Elementary, 42 percent
- Parkwood Elementary, 42 percent
- Hunters Creek Elementary, 40 percent
- Jacksonville Commons Elementary, 38 percent
- Richlands Elementary, 35 percent
- Bell Fork Elementary, 35 percent
- Southwest Elementary, 35 percent

- Hunters Creek Middle, 34 percent
- Queens Creek Elementary, 33 percent
- New Bridge Middle, 32 percent
- Blue Creek Elementary, 32 percent
- Trexler Middle, 30 percent
- Jacksonville Commons Middle, 29 percent
- White Oak High, 28 percent
- Swansboro Elementary, 28 percent

The Jacksonville, Northside, White Oak, and Richlands clusters have experienced the highest growth in recent years. Although growth has continued in all areas of the district, the highest concentrations of military-related growth occur along the Gum Branch Road corridor between Jacksonville and Richlands and in the White Oak cluster northeast of Marine Corps Base (MCB) Camp Lejeune. This area continues to have some of the highest growth potential in the county due to numerous large-scale subdivisions attracting families with school-age children.

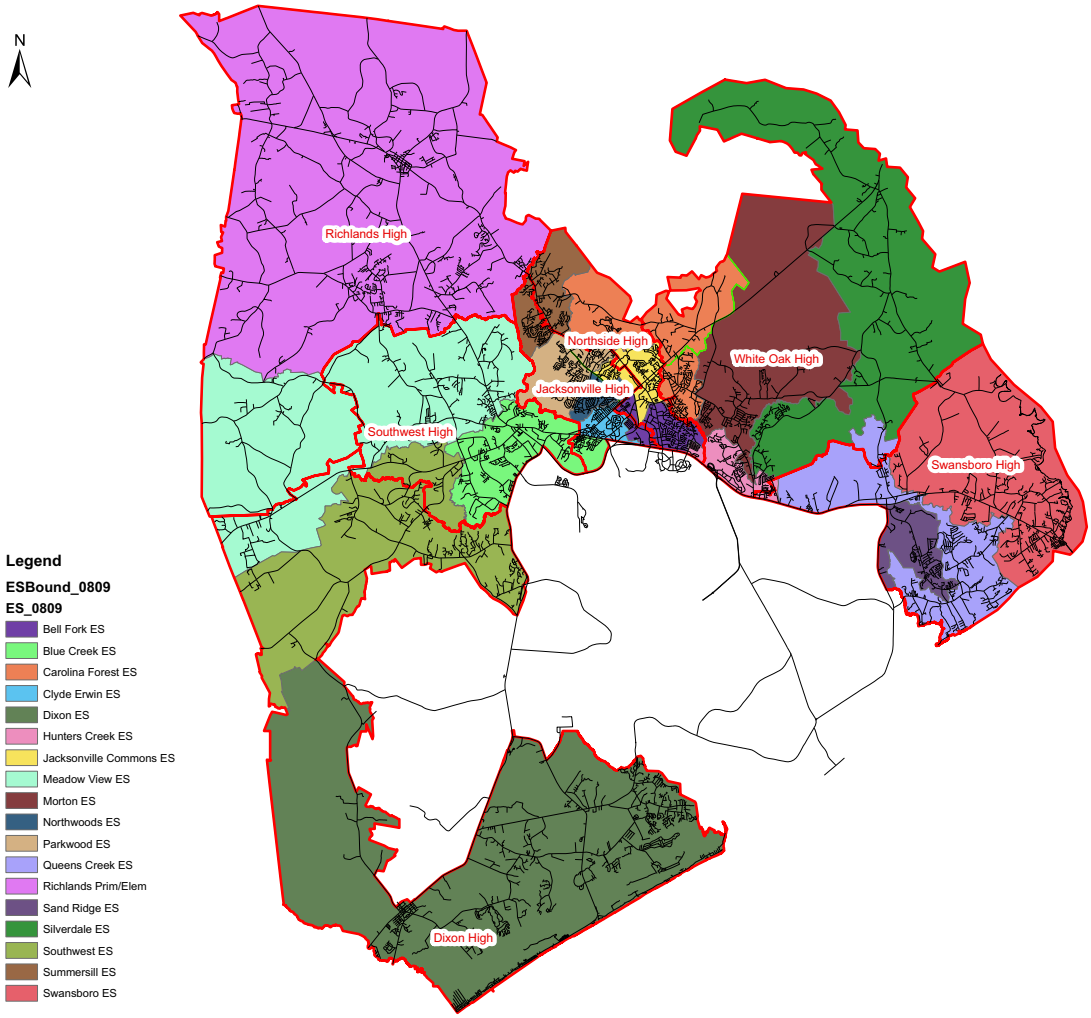


Figure 3.3 - Onslow County Schools Clusters

MCB Camp Lejeune Dependents Schools

Onslow County is the home of MCB Camp Lejeune and Marine Corps Air Station (MCAS) New River. The base operates the MCB Camp Lejeune Dependent Schools (CLDS) system with one high school, one middle school, one intermediate school (grades 3-5), one elementary school at MCB Camp Lejeune (grades K-5), one elementary school at MCAS New River (grades Pre-K-5), and two primary schools (grades Pre-K-2).

The 2008-09 system-wide PreK-12 enrollment for these schools is 3,009 students, which represents a smaller-than-typical enrollment due to current base housing renovation and rebuilding. On-base school building plans typically parallel on-base housing plans and currently include one elementary school serving Pre-K-5 opening in 2010. Possible future plans include one or two additional elementary schools to be built by 2012 (MGTF Workforce Module CLDS data, October 2008).

Child Care

Onslow County has a total of 147 child development facilities with 106 centers and 41 homes. The 147 centers' total enrollment is 3,430 children and the 106 home-based child development facilities have 606 children enrolled. The county-wide combined child care enrollment is 4,036 children, or 10 percent of the total population under the age of 15 (North Carolina Department of Health and Human Services, Child Care Statistical Report, April 2009). The county-wide number of child care slots as of April 2009 is 6,738 with a 60 percent utilization rate.

The child care centers employ a total of 652 and annual employee turnover is approximately 156 (24 percent) (Onslow County Partnership for Children, MGTF Workforce Module, Child Care Industry Data and Information). The student-to-staff ratio is approximately 6.2:1.

MCB Camp Lejeune and MCAS New River have seven facilities that offer child care and after school programs. There are 608 spaces available for child care and 250 available for school-age care.

Community College and Post-Secondary Education

Located in Jacksonville, Coastal Carolina Community College (CCCC) serves Onslow County and the Marine bases at MCB Camp Lejeune and MCAS New River. CCCC offers workforce training and college transfer courses for civilians and military personnel. Originally established in 1963 as an industrial education center, it was granted community college status in 1970. CCCC enrolls over 6,000 students per year in curriculum offerings, and over 18,000 students per year in continuing education programs. It offers a total of 42 Associate Degree programs—in Arts (18), Fine Arts (2), Science (2), and Applied Science (20). In addition, it offers 14 diploma and 41 certificate programs. According to the NC Community College System (NCCCS) data, CCCC enrolled 24,276 students for the 2007-08 total academic year (unduplicated headcounts). For Fall Semester 2008-09, CCCC reported an enrollment of 12,479 students with an average age of 25 (NCCCS 2008-09 Fall Statistical Report).

The college has taken an active role in the development of the Onslow County workforce and continues to be an active partner with the Marine base populations. Partnering with the University of North Carolina at Wilmington (UNCW), CCCC offers an articulation agreement for AA and AS graduates. Realizing the continuing need for teachers, CCCC together with UNCW and Onslow County Schools developed a "2 + 2" program that allows teachers in training to complete coursework at CCCC and help meet the critical demand for Onslow County teachers.

There are military spouses enrolled in virtually every program within the college's curriculum offerings, and large numbers of military spouses enroll in the numerous short-term training opportunities through the Division of Continuing Education. Therefore, changes in the military population, such as the increase of 11,500 additional active duty, spouses, and dependents associated with that growth, is a critical piece, possibly the most critical data in the college's long range planning.

CCCC's goal is to make education as accessible, flexible, and practical as possible for all individuals whose lives are affected by the unpredictable military work schedule — the active-duty Marines and sailors who are home and overseas, retired Marines embarking on new careers, and their family members. This goal is achieved by offering classes on base and on the air station before work, at lunch time, in the evening, and on the weekends.

Needs Assessment

K-12

Onslow County Schools' population is forecasted to grow between 1,800 and 2,150 students from 2007 to 2011 (**Figure 3.4**).

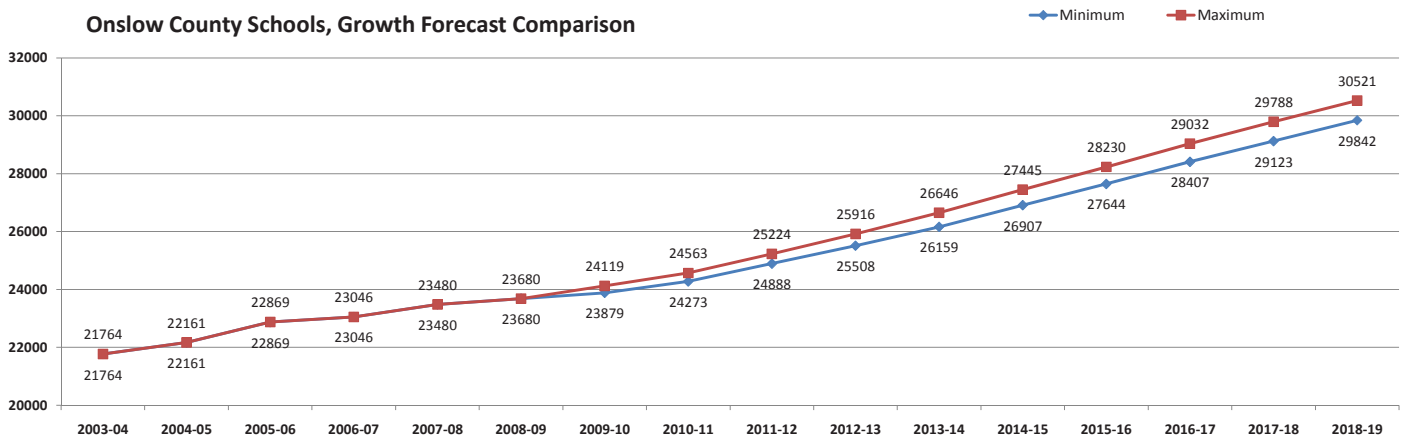


Figure 3.4 - Onslow County Schools, Growth Forecast Comparison

Schools in the White Oak, Richlands, and Jacksonville clusters are expected to experience the largest share of this growth. Although the opening of Stateside Elementary School in 2009 will provide relief for Richlands area elementary schools, Jacksonville Commons and Parkwood Elementary Schools are projected to be significantly over-capacity. System-wide, six elementary schools are projected to be over-capacity by 2011.

Hunters Creek Middle School in the White Oak cluster and Trexler Middle School in the Richlands cluster are currently over-capacity with no immediate plans for relief from the impact of military-related growth. Richlands High School is also projected to be significantly over capacity with no immediate prospect for relief. System-wide, four middle schools and one high school are projected to be over-capacity by 2011.

Overall, there is a projected need for at least one middle school in the district, with the most critical need between Jacksonville and Richlands. Two elementary schools are needed to provide relief to areas north and east of Jacksonville. Although system-wide high school membership is under-capacity at this time, continued growth as a result of military and other forces will soon necessitate a new high school and a widespread re-assignment. Land-banking of a site suitable for a high school or multi-school campus is recommended. Excluding land, the cost of building a new elementary school with a capacity of 650 is approximately $17 to $20 million. The cost of building a new middle school with a capacity of 950 is approximately $25 to $30 million. The cost of building a new high school with capacity of 1,200 is approximately $45 to $50 million (North Carolina Department of Public Instruction, School Planning Section).

A growth of 1,800 students (the lower-end estimate) would require 82 new teachers and 36 new teacher assistant positions, at an annual cost of approximately $5.6 million. The growth would also require adding 14 new school buses at a cost of $1.2 million. If Onslow County Schools' membership growth reaches the maximum projection of 2,150 students, 98 new teachers and 43 new teacher assistant positions may be required at an annual cost of $6.7 million. This growth would require adding 20 new school buses at a cost of $1.6 million.

As is the case for the rest of the impact region, recruiting and retaining qualified teaching and support staff has been a tremendous challenge. It will be a high priority for Onslow County Schools to work with the local and neighboring higher-education institutions to develop a high-quality teaching pool to support the growth.

The MCB Camp Lejeune Dependents Schools will build a new elementary school in the Brewster Boulevard area in summer 2009. There is possibility of two additional elementary schools in the area between Brewster Boulevard, Charles Street, Seth Williams, and Stone Street. Specific site planning for these follow-on projects has not begun. Once these projects are

completed, the overall capacity will be raised from the current 3,009 to between 4,300 and 4,800.

	Capacities			Month-2	Projected Month-2 ADM									
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Elementary Schools														
Bell Fork ES	637	637	637	557	561	565	569	575	582	588	599	606	612	619
Blue Creek ES	626	626	626	564	571	578	588	599	614	628	651	666	680	695
Carolina Forest ES	680	680	680	618	***611***	624	641	664	691	719	763	791	820	847
Clyde Erwin ES	470	470	470	416	418	419	421	423	425	426	429	431	433	434
Dixon ES	720	720	720	702	714	727	744	766	793	819	862	890	917	944
Hunters Creek ES	656	656	656	586	595	610	632	661	698	734	792	830	867	903
Jacksonville Commons ES	656	656	656	735	739	743	748	754	761	768	780	787	794	801
Meadow View ES	765	765	765	675	687	700	717	739	766	792	835	863	890	917
Morton ES	680	680	680	529	542	557	575	599	628	657	704	734	765	794
Northwoods ES	457	457	457	465	468	470	473	476	480	484	490	494	497	501
Parkwood ES	522	522	522	664	***668***	678	690	706	725	744	775	795	815	834
Queens Creek ES	656	656	656	619	627	636	647	661	678	695	722	740	758	775
Richlands Prim (K-2)	637	637	637	799	***639***	655	675	702	735	768	820	854	888	921
Richlands Elem (3-5)	653	653	653	778	***613***	629	649	676	709	742	794	828	862	895
Sand Ridge ES	665	665	665	616	621	627	634	642	652	663	679	689	700	710
Silverdale ES	522	522	522	483	487	492	497	503	511	519	531	539	546	554
Southwest ES	636	636	636	699	712	726	744	767	795	823	868	898	927	955
Stateside ES (open 2009)		746	746		***600***	612	626	649	677	710	763	798	832	865
Summersill ES	720	720	720	730	***527***	534	550	569	602	635	687	721	755	788
Swansboro ES	586	586	586	492	501	512	525	541	562	582	614	635	656	676
Totals	**11944**	**12690**	**12690**	**11727**	**11901**	**12093**	**12345**	**12671**	**13085**	**13497**	**14155**	**14587**	**15014**	**15426**
Middle Schools														
Dixon MS	599	599	599	502	521	560	599	627	637	641	624	651	682	746
Hunters Creek MS	826	826	826	849	877	936	995	1037	1051	1059	1033	1073	1119	1216
Jacksonville Commons MS	826	826	826	690	706	738	771	794	802	806	792	814	839	893
New Bridge MS	520	520	520	495	495	495	495	495	495	495	495	495	495	495
Northwoods Park MS	695	695	695	671	688	724	759	785	793	798	782	807	834	893
Southwest MS	518	518	518	542	554	580	606	624	630	633	622	640	660	702
Swansboro MS	912	912	912	801	821	863	904	934	944	949	931	960	992	1061
Trexler MS	625	625	625	790	815	866	917	954	966	972	950	985	1025	1110
Totals	**5521**	**5521**	**5521**	**5340**	**5476**	**5763**	**6046**	**6250**	**6318**	**6354**	**6229**	**6425**	**6648**	**7116**
High Schools														
Dixon HS	690	690	690	660	674	670	684	702	729	768	796	815	827	810
Jacksonville HS	1390	1390	1390	1203	1221	1216	1233	1256	1289	1338	1373	1396	1411	1391
Northside HS	1105	1105	1105	835	849	845	859	877	904	942	970	989	1000	984
Richlands HS	870	870	870	993	1015	1009	1030	1058	1100	1160	1203	1232	1250	1225
Southwest HS	950	950	950	724	736	732	744	758	781	812	835	851	860	847
Swansboro HS	1170	1170	1170	1025	1046	1040	1061	1087	1128	1185	1226	1255	1272	1248
White Oak HS	1225	1225	1225	1173	1201	1193	1221	1257	1311	1389	1444	1482	1506	1474
Totals	**7400**	**7400**	**7400**	**6613**	**6741**	**6706**	**6833**	**6995**	**7242**	**7595**	**7846**	**8020**	**8127**	**7979**
System Totals	**24865**	**25611**	**25611**	**23680**	**24119**	**24563**	**25224**	**25916**	**26646**	**27445**	**28230**	**29032**	**29788**	**30521**

Capacity Legend			
< 95%	95% - 100%	100% - 105%	> 105%

Table 3.1 - Onslow County Schools Out-of-Capacity Worksheet

Child Care

Onslow County's child care total enrollment is estimated to increase by over nearly 1,500 children by 2011. The increase will raise the child care slots utilization from the current 60 percent to 76 percent.

At the current children-to-staff ratio of 6.2:1 in the county, during the period of 2007 to 2011 the Onslow County child care workforce will require an additional 237 staff to accommodate the projected growth in enrollment of 1,500 children by 2011.

It is estimated that four more child care centers will be brought online at the MCB Camp Lejeune and MCAS New River facilities. This addition will increase the child care space to 1,808 by year 2011. There is no planned increase for school age care.

Community College and Post-Secondary Education

As a part of the 2007-2013 Long Range Plan process, CCCC projected enrollment for curriculum, continuing education, and basic skills program areas through 2013. Based on methodologies provided by the North Carolina Community College System Office, the enrollment models serve as guides for the development of the Long Range Plan. These methodologies

involve a variety of data sources but did not initially include impact related to military expansion.

CCCC used trend data to project military-related growth in the program areas. From six years of historical student data, the numbers of military or military-related enrollments were related to general student population:

- Curriculum: Approximately 50 percent of unduplicated headcount of 6,116 students
- Continuing Education: Approximately 60 percent of unduplicated headcount of 8,700 students
- Basic Skills: Approximately 40 percent of unduplicated headcount of 5,066 students

Table 3.2 below summarizes this information.

Program Type	Unduplicated Headcount 6 Year Average	% of Students who are Active Duty Military/Dependents	% of Onslow County Population
Curriculum	6116	50% = 3058	3.1%
Cont. Ed.	8700	60% = 5220	5.2%
Basic Skills	5066	40% = 2026	2.0%

Table 3.2 - Numbers of Military or Military-Related Enrollments

Combining general population change with the anticipated military growth, CCCC expects the overall student population to increase by 5,322 students or about 24 percent over the 2007-08 to 2012-13 period, with 1,884 of the expected student increase being military-related. The projected (unduplicated) headcount for the 2012-13 academic year is 27,182 students. In terms of Full-Time Enrollment (FTE), this will result in an anticipated 25 percent increase in curriculum, 29 percent increase in continuing education, and 16 percent increase in basic skills by academic year 2012-13. **Table 3.3** provides a summary of the projected growth in FTE enrollment.

Program Type	2007-08	2008-09	2009-10	2010-11	2011-12	2012-2013
Curriculum	3462	3421	3769	3967	4175	4340
Continuing Education	782	835	877	920	935	1005
Basic Skills	266	278	286	294	302	308
Total	**4510**	**4734**	**4932**	**5181**	**5412**	**5653**

Table 3.3 - Enrollment Projections (FTEs)

Note: the above FTE projections include the expected population increase due to BRAC.

To accommodate for the anticipated normal and military growth, CCCC has identified many programs for expansion including teacher training programs, an Arabic language immersion program (primarily for Marines and sailors prior to deployment), Associate Degree in nursing and other healthcare-related programs, Computer Information Systems and technology training, continuing education short-term and customized training, vocational and technical training (particularly in support of military contractors), law enforcement, business administration, early childhood education, and adult basic education.

Specifically, in planning for military and military-related students, several areas of needs were identified:

- There is a strong need to provide additional “2+2” baccalaureate programs with UNCW and build upon the teacher training program to meet the critical teacher shortage, which will only be exacerbated with the increase in population in the county.
- Continuing Education must be prepared to continue to offer a full array of short-term training and to expand the current programs that best prepare military and military-related students. An example of this type of program is the immersion Arabic language course “Survival Arabic”.
- The Associate Degree Nursing program, as well as other health care programs, needs to be expanded to meet critical workplace shortages stemming from this influx.
- Additional short-term training needs to be offered in the technical/vocational fields to support the workforce

needs in the community, as well as with the growth of military contractors.

- High-growth industries will be the federal government, local government, full-service restaurants, childcare services and home health care services. CCCC needs to provide programs in both Curriculum and Continuing Education to support those workforce needs.

Existing facilities will not adequately provide for the projected demand. Program expansions listed above will require additional facilities and increased space including additional classroom space for College Transfer programs, Continuing Education programs, and teacher training; classrooms, labs and clinical space for allied health programs, space for health, wellness and physical education offerings, shops and labs to support technical and vocational skills programs as well as renovation of existing spaces, general purpose classrooms with computers, web access and multimedia, and joint classroom and lab facilities to expand the "2+2" partnership with UNCW.

CCCC has also identified many areas for new curriculum and continuing education programs: culinary arts; hotel and restaurant management; truck driver training; digital effects and animation; therapeutic massage; customized health programs; Homeland Security; and web design.

In light of the recent revelation of the critical need for licensed K-12 and child care (Birth-K) teachers due to projected military growth, UNCW is committed, based on available funding and collaboration with CCCC, to increasing education and licensure programs to meet the imminent demand. Currently, UNCW offers baccalaureate degrees in Onslow County to meet the workforce needs of the area. The degrees currently offered include: Elementary Education; Nursing; Social Work; Business Administration; Criminal Justice; and Clinical Research. Therefore, all of the degree and licensure programs offered through the UNCW Onslow Extension Program are directly related to military growth and workforce needs. In order to meet the child care needs, UNCW would need to establish an on-site early childhood education/licensure program. To adequately accommodate the increased number of projected students who will be seeking early childhood, elementary, middle grades or secondary education/licensure, staffing and facilities will need to be increased significantly. Currently, UNCW shares facilities with CCCC. In order to meet the expected increase in enrollments, a joint-use facility (i.e., a new building) will be necessary.

The following table summarizes the estimated costs for Coastal Carolina Community College.

Program Type	Unduplicated Headcount 6 Year Average	% of Students who are Active Duty Military/Dependents	% of Onslow County Population
Curriculum	6116	50% = 3058	3.1%
Cont. Ed.	8700	60% = 5220	5.2%
Basic Skills	5066	40% = 2026	2.0%

Table 3.4 - Estimated Cost of Military Growth-Related Expenditures

Recommended Strategies and Actions

K-12

In addition to historically steady growth seen by Onslow County Schools, the impact of increased military presence in the area will put a strain on an already burdened system. Facilities, teachers and teaching assistants, support staff, and student transportation will be primary areas of need through 2011 and beyond. To help address these and other growth-related issues, the following should be considered.

The county should identify sites for one middle school and two elementary schools to provide relief to high-impact areas between Jacksonville and Richlands and eastern Jacksonville. Onslow County should also identify a land banking site for a future high school or multi-school campus and a land banking site for a future middle school. The county should develop a school building project plan that will adhere to the Office of Economic Adjustment (OEA) outline on project location, cost, attendances and number of military connected student to be enrolled in the new school(s).

Funding for new schools could be approached several ways. Onslow County should seek community support on a general

obligation bond to support the K-12 needs. In addition, the county should work to obtain special funding from the Department of Defense (DoD) to deal with the special burden imposed on Local Education Agencies (LEAs) due to the military growth. The county also should work with policy makers on legislation such as the Military Children's School Investment Act and the Zero-Interest Loans program to finance construction projects, and work with the Department of Education to seek a higher level of Federal Impact Aid compensation.

Onslow should continue to work with UNCW and CCCC on programs that meet the critical demand for certified K-12 teachers and teaching assistants for Onslow County Schools.

Child Care

Onslow should continue to work closely with UNCW to increase the child care work force pool in the county.

The county should explore reciprocity licensure opportunities to attract qualified out-of-state or DoD child care workers and also explore reciprocity by the NC Division of Child Development for the DoD regulated facilities at MCB Camp Lejeune and MCAS New River.

Community College and Post-secondary Education

CCCC must prepare for substantial growth as a result of the military-related population growth. They should plan to expand Continuing Education offerings to meet military-specific short-term training needs, such as language training and motorcycle training. The county and CCCC should request special funding from DoD to support the expansion of these critical military-related programs (language and motorcycle training) as well as programs such as teacher training that are strongly connected to military growth.

The community college should expand programs currently being offered through the partnership with UNCW that will meet the demands of the growing pre-school and K-12 populations in Onslow County, specifically building upon the template set by the teacher training partnership with UNCW to provide more "2+2" military-related baccalaureate programs in Onslow County.

CCCC should secure adequate facilities – additional classrooms, labs, and office space – to accommodate projected enrollment growth, as well as adequate facilities to accommodate new programs, such as Culinary Arts and Truck Driver Training. The college should explore renovation of existing facilities to meet changing program needs.

Transportation

Introduction

Onslow County is the host county for Marine Corps Base (MCB) Camp Lejeune and Marine Corps Air Station (MCAS) New River. As such, transportation within the county is critical to mission readiness and troop deployment, as well as civilian mobility. Large, system-wide improvements within the county are priorities for improving the efficiency of the transportation system. Gate improvements for the base are critical to safety and security along roadways within the county. US 17 travels through Craven, Jones, Onslow, and Pender Counties in its trek along the eastern seaboard. Within the seven-county Military Growth Task Force (MGTF) Region, it connects Wilmington, Jacksonville, and New Bern. NC 24 provides east-west mobility, connecting Interstate-40 in Duplin County, Jacksonville in Onslow County, and Morehead City in Carteret County.

Existing Conditions

Roadway

The existing roadway system in Onslow County is composed of a network of different streets that perform specific roles. The classification of streets into "functional" categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character

as well as operational features for the movement of vehicles.

Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridor (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The existing public street network in Onslow County is divided into several functional classifications, including arterials, collectors, and locals. The scope of the Regional Growth Management Plan emphasizes the operation of arterials based on NCDOT designation and necessary improvements to ensure the functionality of these corridors.

- **Arterials** provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distances. Arterials include facilities with full access control, such as freeways, as well as boulevards and major thoroughfares. Arterials usually connect to one another or to collector streets, and very few arterials connect to local streets. Arterials include freeway facilities such as:
  - **Freeways** provide the most mobility and least access (only at interchanges). NCDOT did not designate any corridors in Onslow County as a freeway.
  - **Principal arterials** typically have tightly controlled access and few, if any, individual site driveways.These arterials are typically intersected by expressways and freeways as well as minor arterials and other public streets. US 17 is classified as a principal arterial.
  - **Minor arterials** primarily serve a mobility function but often have more closely spaced intersections,some individual site driveways, and generally lower design and posted speeds compared to other arterials. US 258 north of NC 24 is classified as a minor arterial.
- **Collectors** typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater access flexibility with adjacent land uses, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-freeway/ expressway arterials. Collector streets within Onslow County include NC 111, NC 53, and NC 50.
  - **Locals** provide greater access and the least mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Most roads in the county are designated as local streets.

Volumes, Congestion, and Safety

As host to the seven-county region's most populated city, traffic volumes in Onslow County are higher than its neighboring counties. In fact, the region's highest traffic volumes occur on NC 24 in Jacksonville near Corbin Street (52,000 vehicles per day [vpd]). Other roadway segments with high traffic volumes include NC 24 west of NC 172 (21,000 vpd), US 17 south of NC 172 (14,000 vpd), and US 258 south of Richlands (12,000 vpd). However, because traffic volumes do not account for roadway capacity, a better assessment of congestion is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. Not surprisingly, the major roads in the vicinity of Jacksonville (NC 24, US 17, and NC 53) experience the highest levels of congestion. Other corridors operating at or over capacity include NC 210 east of US 17 and NC 24 north of NC 53. Portions of NC 210 nearest the coast are also approaching capacity.

Like congestion, traffic safety should be examined during the development of a transportation strategic plan. Between 2001 and 2005, an average of 3,494 crashes occurred in Onslow County (more than twice the total of any other county in the region). Approximately 36 percent of these crashes resulted in at least one injury. The crash rate (313.50 per 100 million vehicle miles traveled) exceeds the region and state averages, as does the average cost per crash ($12.78 per 100 vehicle miles traveled).

Needs Assessment

TIP Projects

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements. The seven-year document includes funding information and schedules for highway, bicycle, pedestrian, rail, and public transportation projects. Several Onslow County priorities identified by the Transportation Working Group are listed on the current (2009-2015) TIP; the projects are detailed below. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have relatively low impact on the military while others will contribute a positive impact. Other recommendations developed by the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/Funding
U-4906	Widen	Gum Branch Road (SR 1308)	Between Richlands and Jacksonville in Onslow County	East of Richlands to Summersill School Road	Widen to 3 lanes	Unfunded
U-5106	Widen, New Location	Northwest Loop (New Route)	North of Jacksonville in Onslow County	US 258/NC 24 to US 17	Four lanes divided; some on new location	Unfunded
U-4007	Widen	US 17; various other streets	Jacksonville in Onslow County	US 17 Business/Jacksonville Bypass to Drummer Kellum Road	Add additional lanes to US 17; Extend the Jacksonville Bypass to the north to Western Boulevard with side street improvements; Extend Huff Drive to the Jacksonville Bypass	Unfunded
U-4907	Widen	Country Club Road	Jacksonville in Onslow County	North of Office Park Drive to Piney Green Road	Widen to three lanes	Unfunded
U-3810	Widen	Piney Green Road	East of Jacksonville in Onslow County	NC 24 to US 17	Widen to multi-lanes	Unfunded
R-2514	Widen, New Location (Bypasses of Belgrade, Maysville, Pollocksville)	US 17	Northeast of Jacksonville in Onslow and Jones Counties	North of Jacksonville to New Bern Bypass	Widen to multi-lanes with bypasses of Belgrade, Maysville, and Pollocksville	Planning/design in progress; Total cost is $227.9 million; Unfunded portion is $95.9 million.

Table 4.1 - TIP Projects in Onslow County

Modal

As part of the Jacksonville Metropolitan Planning Organization's (MPO) transit plan (currently underway), the Local Coordinated Plan and transit planning for unincorporated Onslow County will also be completed (draft expected in July

2009). This plan will address transit services in the City of Jacksonville, connections to county-wide services, and bike and pedestrian infrastructure. Currently, the Onslow United Transit System (OUTS) and the Jacksonville Transit Service (JTS) both offer fixed-route services. Regionally, each county's public transit options are linked by RouteMatch, administered by the Eastern Carolina Council (ECC). RouteMatch enables transportation providers in surrounding counties to secure a county resident a seat on a public transit vehicle traveling beyond the region (e.g., to locations like Duke Medical Center or Wake Medical Hospital). Existing public transit services are augmented by taxis in the region.

Recommended Strategies and Actions

The transportation network of Onslow County includes a variety of modes. Given the critical need to ensure that people, goods, and services move freely throughout the county and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected officials at the local, regional, and state levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the Transportation Improvement Program projects listed above. Still, more must be done, particularly in light of organic and military-infused growth throughout the seven counties. The recommendations that follow include both roadway recommendations as well as modal recommendations. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position Onslow County to effectively manage future growth.

Roadway

US 17

US 17 is designated a Strategic Highway Corridor by NCDOT, signifying its value to local, regional and state mobility. As a critical connection to Jacksonville, MCB Camp Lejeune, the region's largest cities, other strategic highways, North Carolina ports, and numerous neighborhoods throughout the seven-county region, an urgent need exists to improve the operating capacity of this roadway. US 17 carries up to 34,000 vehicles per day and serves as the primary deployment route from MCB Camp Lejeune to the Port of Wilmington.

Members of the Transportation Working Group identified the connection between New Bern/US 70 and Jacksonville/MCB Camp Lejeune/ MCAS New River as a high priority. Such sentiment acknowledges the corridor's significance to the region's development and transport of military troops in and between Jacksonville/MCB Camp Lejeune and New Bern, as well as the direct connection it provides between US 70 and NC 24.

Widening US 17 would provide the needed capacity relief and regional mobility as most of the corridor currently operates near or over-capacity. Additional benefits include safety improvements for the traveling community and tourists as well as an alternative hurricane evacuation route. The current TIP calls for widening US 17 to multi-lanes with bypasses of Belgrade, Maysville, and Pollocksville (TIP # R-2514) and laying the groundwork for an enhanced route to the west of New Bern (TIP # R-4463 and R-2301A). The following recommendation for US 17 supplements these TIP projects to complete an enhanced corridor throughout the MGTF Region.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
US 17	Widen	near River Bend in Craven County	Jones County Line to US 258/NC 24	4 miles	Widen to multi-lanes	Alleviate congestion; Connects TIP projects R-2514 and R-2301 to create an improved route from Jacksonville to New Bern and points north

Table 4.2 - US 17 Corridor Roadway Recommendations (Onslow County)

NC 24

Within the seven-county region, NC 24 connects Duplin, Onslow, and Carteret Counties. The roadway — a mixture of five-, six-, and seven-lane facilities with no control of access — is identified as an expressway in the Strategic Highway

Corridor Concept Plan. In places, it carries up to 52,000 vehicles per day and is approaching its practical capacity in the non-municipal areas and over-capacity in urban areas. These volumes are the result of several factors: (1) its use by the

military to transport troops, machinery, and equipment between Jacksonville/MCB Camp Lejeune/ MCAS New River and the Port of Morehead City for embarkation and debarkation, (2) its use to access MCAS Cherry Point via US 70, and (3) its use by local traffic to access residencies, businesses, and services, and (4) its use by tourists to access beach communities. NC 24 also serves as the primary deployment route from MCB Camp Lejeune to the Port of Morehead City.

The Transportation Working Group identified the section of NC 24 between US 17 in Jacksonville and US 70 in Morehead City as a high priority for access management enhancements to improve safety and mobility. Operational issues along NC 24 are exasperated during the summer months due to tourist traffic. The urgency for improvements to this particular stretch of NC 24 is not capacity-driven, but related more to the opportunity to protect the corridor. The time is now to properly plan land use and transportation decisions concurrently. The recommendations that follow aim to improve the safety and regional mobility of this strategic connection between I-40 and Morehead City.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 24 (northwest of Jacksonville)	Improve existing	Duplin and Onslow Counties	I-40 in Duplin County to NC 53 near Jacksonville in Onslow County	46 miles	Improve existing roadway—add shoulders, enhance access management and control the number of new signals	Improves safety for motorists traveling from I-40 to Jacksonville, MCB Camp Lejeune, and MCAS New River
NC 24 (southeast of Jacksonville)	Needs improvement	Onslow and Carteret Counties	US 17 in Jacksonville (Onslow County) to US 70 in Morehead City (Carteret County)	38.5 miles	Improve existing roadway—access management, add shoulders	Improves safety for motorists traveling between Jacksonville and Morehead City; improves safety and efficiency of transporting troops, machinery, and supplies between Jacksonville, MCB Camp Lejeune, MCAS New River and the Port of Morehead City

Table 4.3 - NC 24 Corridor Roadway Recommendation (Onslow County)

Other Roadway Projects

Recommendations for both Strategic Highway Corridors within Onslow County are supplemented with improvements to other regionally-significant roadways. The collective result of the following recommendations is improved access and safety between the seven-county region's largest cities, NC ports, MCAS Cherry Point, and MCB Camp Lejeune.

Name	Project Type	General Location	Extents	Approximate Length	Description	Benefits
NC 53	Widen	West of Jacksonville in Onslow County	Holly Shelter Road to Trent Creek Road	4 miles	Widen to multi-lanes	Alleviate congestion on existing two and three lane section for motorists entering Jacksonville or accessing the Jacksonville Bypass
Catfish Lake Road	Improve existing	Northwest of Havelock in Craven and Onslow Counties	NC 58 to US 70	15.5 miles	Improve existing roadway—widen lanes; add shoulders	Provide an enhanced east-west route in the study area; improve access between MCAS Cherry Point/Havelock and Jacksonville; increase mobility for residents, troops, military equipment

Table 4.4 - Other Roadway Projects (Onslow County)

Military Installation Access

Although the TIP projects and the roadway recommendations for the seven-county region will help with the safe and efficient flow of military, civilian, and tourism-based traffic, the region's transportation network will continue to experience critical choke points at the access points to the military installations. The following recommendations aim to supplement corridor-based improvements with a series of measures to improve ingress and egress at existing and proposed gate locations.

MCB Camp Lejeune

Today, two gates along NC 24 provide access to MCB Camp Lejeune. The gates — located at Piney Green Road and Holcomb Boulevard — operate over capacity while providing access for vendors, civilians, and military personnel. Regionally, these gates provide ingress/egress for military operations (i.e., supplies and ammunitions) between the base and Southport via US 17 and the movement of military equipment and troops for deployment between the base and Morehead City and MCAS Cherry Point via NC 24. With the influx of additional military personnel and civilian staff, the operation of the NC 24 gates will continue to degrade. For these reasons, these gates are critical to the efficient and safe operation of MCB Camp Lejeune. Although recommended improvements to the Piney Green Road gate will help, more must be done to disperse military traffic to multiple access points.

To improve the operation and security inspection process, an additional gate has been planned at the Bell Fork Road entrance. This improvement calls for the construction of an inspection area, parking capacity, and a grade-separated flyover into the base. This project is needed to improve the ingress and egress of military operations as well as improve the security and gate operations at MCB Camp Lejeune.

In addition, the City of Jacksonville has been working with base personnel and NCDOT to improve the operation of NC 24. They understand the need to improve this urban primary arterial and have committed to advocate for its improvement. Most recently, the operation of the NC 24 corridor has been improved to include a progression-controlled signal system by NCDOT. This proposed flyover improvement will benefit the users of this facility by providing a higher level of operation along NC 24 and a safer environment for travelers within the community.

Other Improvements

Jacksonville Intelligent Transportation System

Traffic operations within the City of Jacksonville are only as good as the quality of their signal system. The Jacksonville MPO has identified the need to develop and implement a community-wide Intelligent Transportation System (ITS). This project would interconnect approximately 135 existing traffic signals to effectively respond to area-wide traffic demands in real time. This project may include installation of traffic cameras, progression-controlled signal systems, variable message signs, and the creation of a Traffic Management Center.

The community-wide ITS will improve traffic operations along key corridors within Jacksonville as well as the entrances/exits to MCB Camp Lejeune and MCAS New River. The full implementation of this project will benefit the City of Jacksonville by improving traffic flow, limiting travel delay, and improving air quality. This project is unfunded at a total cost of approximately $5.5 million.

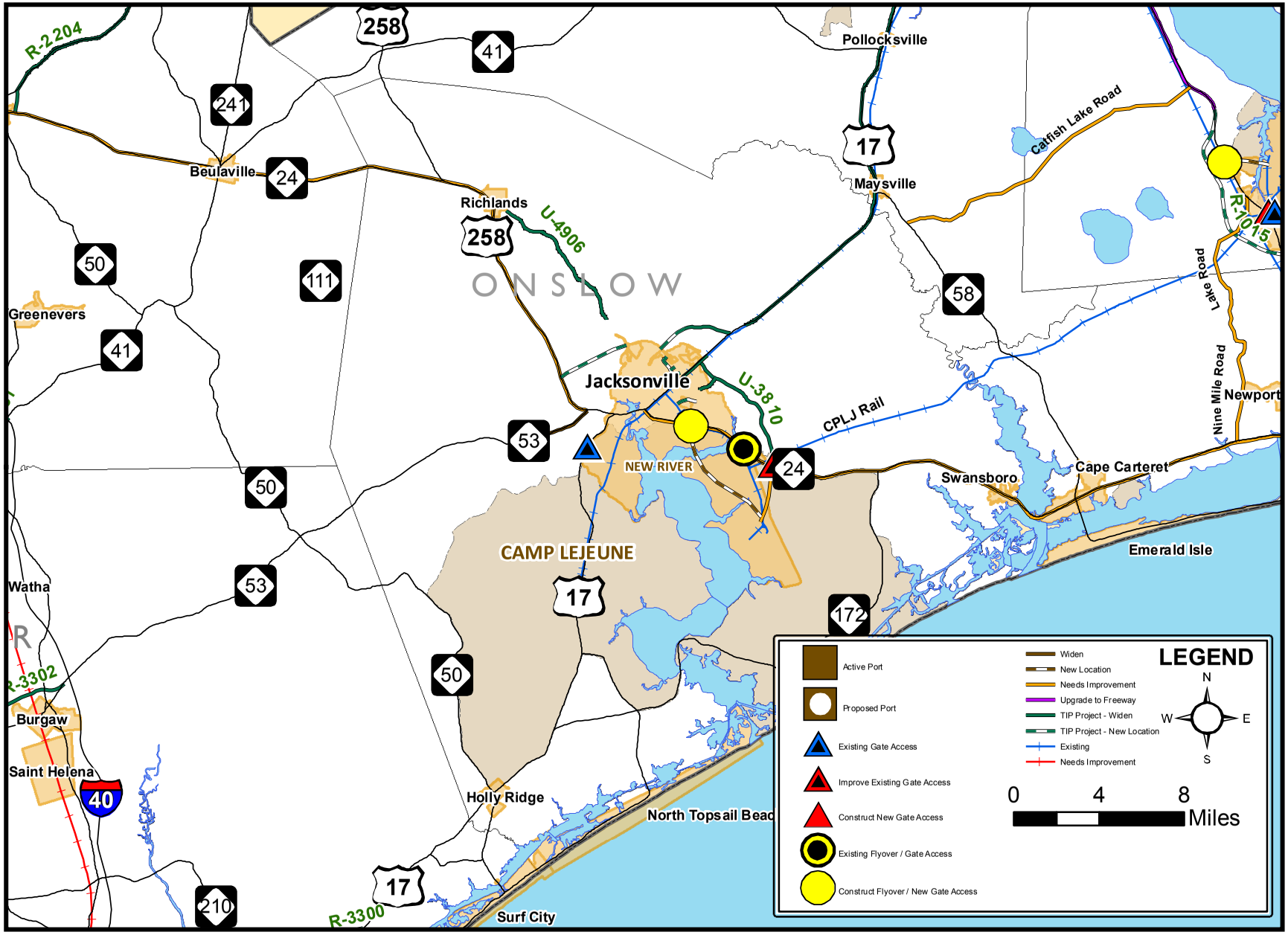
Modal

Across the region, there is an overwhelming demand for transit services to and from MCB Camp Lejeune and MCAS Cherry Point. Expansion of current transit services will allow greater mobility of younger-ranking Marines as well as more residential to base connections. While the ECC facilitates RouteMatch to coordinated intra-county public transit, it is underused and needs enhanced technical support.

Although a draft of the Local Coordinated Plan is not yet complete, a survey to document needs has been initiated. To date, there are identified needs for rural express service, connections to existing services, and a link to New Hanover via OUTS. An ongoing study has been monitoring ridership of public transit in Jacksonville and the county. Historically, only 25 percent of the ridership was military personnel; this percentage has increased to 35 percent. Both daytime and nighttime services (including weekend) need to expand fixed-routes to the base in order to accommodate the increasing military demand.

Although each county is currently served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost-effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases, and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient
- Expand fixed-route services in Onslow County for daytime and nighttime to the base.



ROADWAY AND RAIL RECOMMENDATIONS **Figure 4.1**
Onslow County

Infrastructure

Existing Conditions

Water

Potable water facilities in Onslow County are defined as the structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Utility Companies

Public water is supplied within Onslow County by the City of Jacksonville, Onslow Water and Sewer Authority (ONWASA), MCB Camp Lejeune, and private wells.

Water Supply

Groundwater is the primary source of potable water in Onslow County; The Black Creek Cretaceous aquifer is the major source of potable water. Some public water providers, such as ONWASA, have transitioned to using the Castle Hayne aquifer in response to Black Creek source reductions mandated by the Coastal Plain Capacity Use Area (CCPCUA) (see RGMP Infrastructure module for details on CCPCUA).The City of Jacksonville is in the planning process to add Castle Hayne aquifer wells to their water supply.

The City of Jacksonville has the ability to produce approximately 5.7 millions of gallons (MGD) of water supply, solely from the Black Creek aquifer. Due to the CCPCUA, the current capacity will be reduced by 2 MGD to 3.7 MGD by 2013 and an additional 1 MGD to 2.7 MGD by 2018. The City of Jacksonville water system storage consists of six elevated storage tanks and one ground storage tank, for a total of 2.8 million gallons (MG) in storage. The City Staff considered the distribution lines to be in fair condition, and the city implements a program to identify necessary water distribution system improvements or replacements on an annual basis. The water pressure of the distribution system meets state requirements of 20-80 pounds per square inch (PSI), generally exceed 40 psi.

ONWASA operates two water treatment plants (WTPs)—the Dixon WTP and the Hubert WTP. The Dixon WTP is served by five Castle Hayne aquifer groundwater wells, while the Hubert WTP is served with nine Castle Hayne aquifer groundwater wells. ONWASA also owns and operates 13 Black Creek aquifer groundwater wells. Capacities for the ONWASA water supply facilities are summarized in **Table 5.1**:

Facility	2008 Capacity (MGD)
Black Creek Groundwater Wells	4.20
Black Creek Richlands Wells	0.17
ONWASA Well #13	0.58
Dixon WTP	2.00
Hubert WTP	4.00
Total	**10.95**

Table 5.1 - ONWASA Facility Capacities

ONWASA owns and maintains 11 elevated storage tanks that have a combined 4.125 MG in storage volume with an additional 6 MG in ground storage with 3MG each at the Hubert and Dixon WTP clearwells.

Water Treatment

The City of Jacksonville is currently constructing a four MGD WTP that is expandable to seven MGD. The purpose of this nanofiltration WTP is to treat Castle Hayne aquifer water. This plant was not needed when the city only used the Black Creek aquifer for its water supply because the high quality of the water allowed for treatment directly at the well pump site. Now with required reductions, the city has looked to the Castle Hayne aquifer as an another source of water supply. The quality of water from this aquifer requires additional treatment. Construction of the WTP is slated for completion in Fall, 2009. The city is also in the process of constructing 18 groundwater wells in the Castle Hayne aquifer as well as water transmission mains and raw water mains.

ONWASA operates two WTPs, the Dixon WTP and the Hubert WTP, with design capacities of four and six MGD, respectively. Both plants currently cannot reach full capacity because they lack adequate raw water sources to feed those plants. Dixon

is currently running at two MGD because additional raw water wells are needed to reach the full plant design capacity (see **Figure 5.1**). MCB Camp Lejeune owns and operates a 10.6 MGD water treatment plant and reports approximately 6.5 MGD in actual average daily flow. Based on these flows and capacity, the water use from MCB Camp Lejeune's water system is approximately 61.3 percent of available supply.

Regulations

Onslow County is one of several eastern North Carolina counties subject to the CCPCUA rules. These rules require regulated water users in the county (users pumping more than 100,000 gpd) to gradually limit withdrawals from the Black Creek aquifer over a 16 year period. These water providers in Onslow County are required to reduce withdrawals 25 percent over the first six years (to August 2008), an additional 25 percent over the following five years (August 2008 to August 2013), and a further reduction of 25 percent over the remaining five years (August 2013 to August 2018).

Additionally, regulated water users will be required to implement water conservation which may include:

- Conservation ordinances
- Leak detection programs
- Tiered rate structures to encourage conservation
- Plumbing retrofit programs
- Public education advocating water conservation measures

Details on the rule's impacts on the region are found in the Needs Assessment section of the RGMP infrastructure module. North Carolina Department of the Environment and Natural Resources' (NCDENR's) Division of Water Resources monitors saltwater intrusion in the region through a series of monitoring wells that are sampled every three to four years. There are 28 monitoring wells located in Onslow County.

Pending Regulations

Representative Russell Tucker (Duplin County) has introduced House Bill (HB) 643, which may provide a solution to groundwater contamination issues. By creating a salinity barrier between saltwater and groundwater the legislation could help protect Carteret County's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the Regional Reclaimed Water section in the RGMP module.

Sanitary Sewer

Sanitary sewer facilities are defined as the structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems.

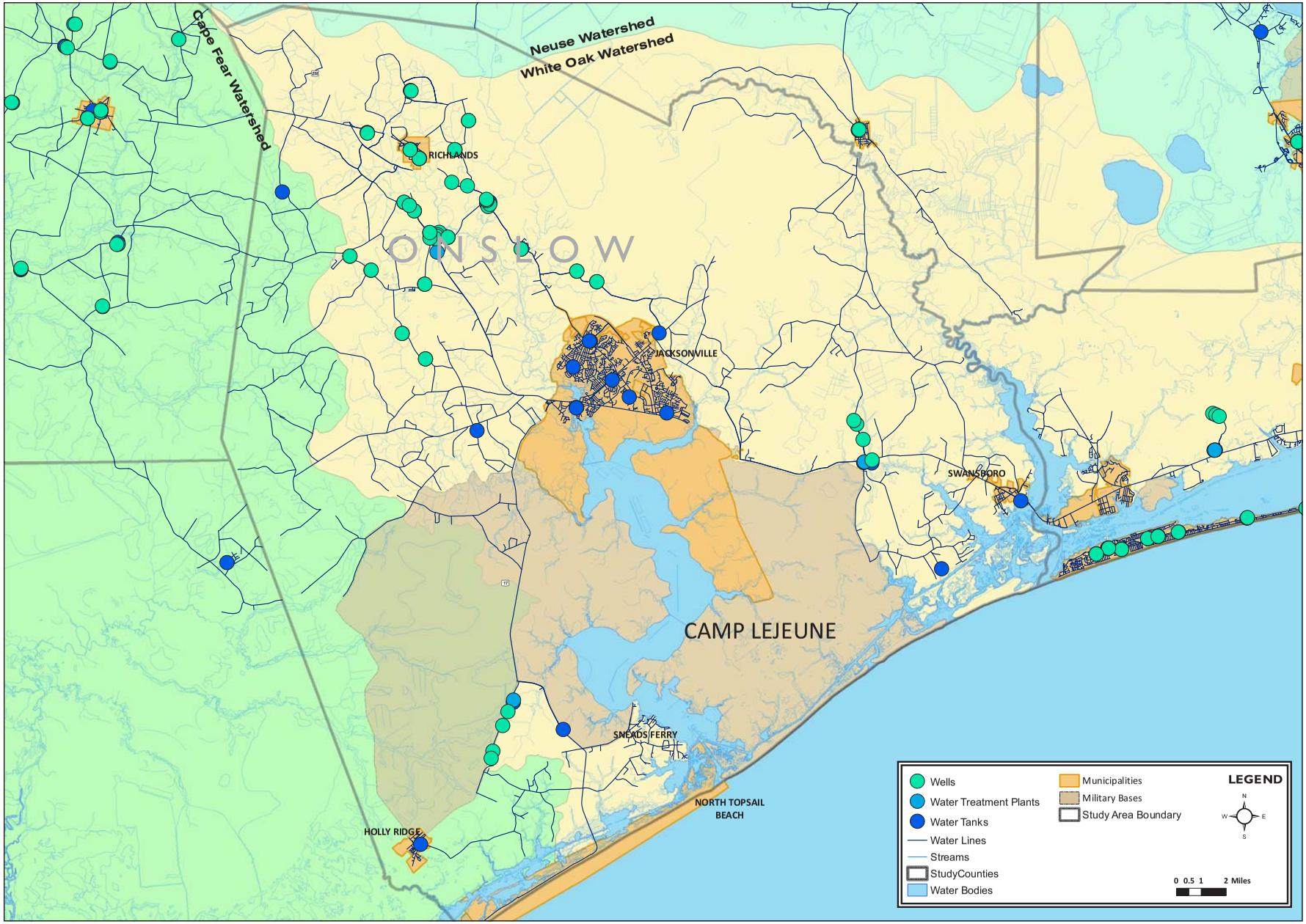
Wastewater Providers

Sewer providers in Onslow County consist of the City of Jacksonville, ONWASA, MCB Camp Lejeune, North Topsail Utilities, and private package WWTPs. Several homes and businesses also use private septic systems.

Wastewater Treatment

A combination of several public utility companies and community private package WWTPs provide sanitary sewer service to residents and businesses in their respective service areas. These service areas generally cover the municipalities of the county while the majority of rural, unincorporated portions of the county are not served with public sewer. **Figure 5.2** shows the sewer providers, their service areas, and WWTP locations in the county. The remainder of the population uses septic systems for the collection, treatment, and disposal of sewage. A brief summary of municipal and private systems is provided below.

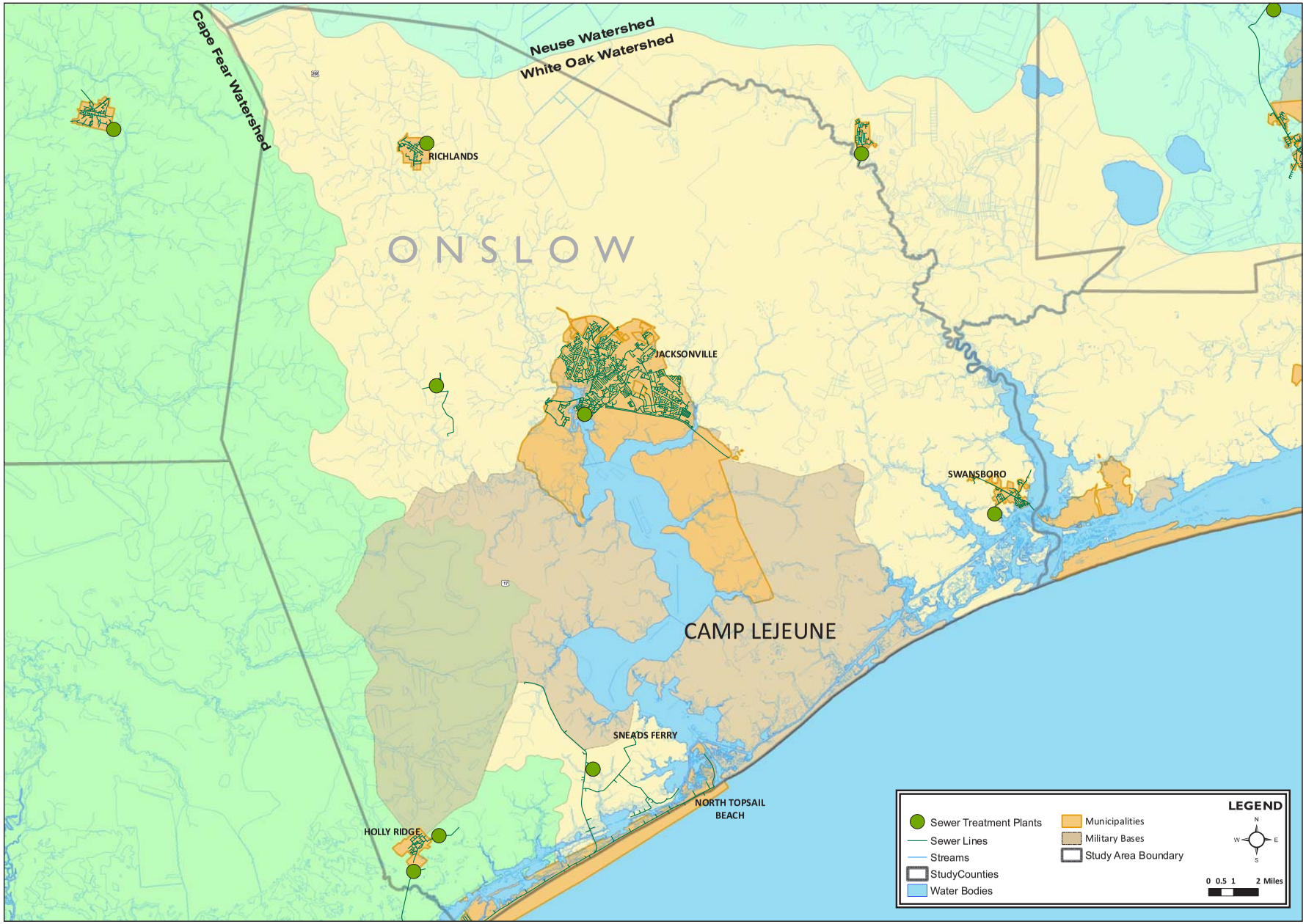
The City of Jacksonville's WWTP is currently being expanded from 6.0 MGD to 9.0 MGD. Construction of the WWTP expansion is slated for completion in December 2009. Currently, the 11-year old WWTP experiences flows of 4.5 MGD, which equates to a 1.5 MGD available capacity. By January 2010, the available capacity should increase to 3.5 MGD. The city staff considers the WWTP to be in excellent condition. It uses land application at the city's 7,200 acre sprayfield site for WWTP effluent disposal. The current permitted capacity of the city's Wastewater Land Treatment System (LTS) is 6.6 MGD, and the permitted capacity of the LTS will increase to 9.0 MGD once the expansion is complete. The city's inflow/



ONSLOW COUNTY WATER

Figure 5.1

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE



ONSLOW COUNTY SEWER **Figure 5.2**

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

infiltration is monitored annually, and problem areas are remedied through on-going rehabilitation work performed annually.

MCB Camp Lejeune, wastewater effluent is discharged as a point source in streams or rivers. These point discharges are regulated through the state's National Pollutant Discharge Elimination System (NPDES) program, and waste load allocations are approved on an individual basis based on the biological, chemical, and physical characteristics of the wastewater effluent and of the body of water in which the effluent is discharged. **Table 5.2** details the characteristics of the seven WWTPs currently owned and operated by ONWASA.

ONWASA WWTPs	Capacity	Current Usage (gal)	% Use of Capacity
Richlands	340,000	250,000	73.5
Kenwood	49,000	35,000	71.4
Holly Ridge	226,000	120,000	53.1
Hunter's Creek	250,000	193,000	77.2
Springdale Acres	75,000	75,000	100
Hickory Grove	22,500	12,800	56.9
Summerhouse	400,00	0	0
Total	**962,500**	**685,800**	**71.3**

Table 5.2 - Characteristics of ONWASA WWTPs

North Topsail Utilities (NTU) owns and operates a 773,000 GPD WWTP. The WWTP experiences flows of 367,000 GPD, which equates to 47.5 percent of capacity. The NTU staff considers the 30-year old WWTP is to be in good condition. It uses land application for WWTP effluent disposal. Conditions of the sewer collection lines are considered by staff to be in good condition.

MCB Camp Lejeune owns and operates a 15-MGD WWTP that discharges into the New River. Actual flows to the plant are approximately 5.31 MGD. Based on this capacity and flow, the WWTP flows are 35.4 percent of available WWTP capacity.

Private Package WWTPs

Several private package wastewater treatment plants are located throughout the county.

Septic Systems

For portions of the county where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work very well with proper siting, design, installation, operation, and maintenance. However poor soil conditions limit the installation of many new septic systems. Poor soil conditions result in an inability to percolate, rendering properties without access to sewer undevelopable. This could have a significant impact on growth in the county. All new septic systems in the region require a permit from the Onslow County Health Department prior to construction.

Regulations

Sewer providers in Onslow County are subject to the 80 percent/90 percent rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities) administered by North Carolina Department of the Environment and Natural Resources' (NCDENR's) Division of Water Quality. Details on these rules can be found in the RGMP infrastructure chapter. If either the 80 percent or 90 percent rules are not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system. To allow for military growth and to avoid moratoriums, it is important for the sewer providers in Onslow County to meet these 80 percent/90 percent requirements.

In Onslow County, several bodies of water are listed on the Clean Water Act's Section 303d Impaired Waters List (see **Table 5.3**). For many of these streams and rivers, total maximum daily loads (TMDLs) are developed such that the point discharge of wastewater effluent is not a feasible option. Additionally, the coastal portion of Onslow County has brackish or saltwater surface waters, and the discharge of wastewater effluent in these surface waters is not allowed and is considered freshwater pollution into saltwater estuaries. Because of these sensitive surface waters, sewer providers have few options to discharge wastewater and historically opt for land application or spray irrigation.

AU Number	Stream Name
18-87	Intracoastal Waterway
18-87-(5.5)	Intracoastal Waterway
18-87-0.5	Stump Sound ORW Area
18-87-10b	Topsail Sound
18-87-10c	Topsail Sound
18-87-10d	Topsail Sound
18-87-1a	Turkey Creek
18-87-1b	Turkey Creek
18-87-2	Everett Bay
18-87-3	Stump Sound
18-87-6	Batts Mill Creek (Barlow Creek)
18-87-6-1	County Line Branch
18-87-6-2	Cypress Branch
19-(27)b	New River
19-(27)c	New River
19-12	Brinson Creek
19-16-(0.5)	Northeast Creek
19-16-2	Little Northeast Creek
19-30-1	Mill Creek
19-30-2	Muddy Creek
19-30-3	Stones Creek
19-30-3-1	Millstone Creek
19-30b	Stones Bay
19-32	Everett Creek
19-34	Fannie Creek
19-35	Wheeler Creek
19-36b	Courthouse Bay
19-39-(0.5)	Intracoastal Waterway
19-39-(3.5)a	Intracoastal Waterway
19-39-(3.5)b	Intracoastal Waterway
19-39-1	Rogers Bay
19-39-2	Goose Bay
19-39-3-1	Mill Creek
19-39-3a	Alligator Bay
19-39-3b	Alligator Bay
19-39-3c	Alligator Bay
19-39-4	Chadwick Bay
19-39-4-1-1	Biglins Creek
19-39-4-1-2	Charles Creek
19-39-4-1-3	Bumps Creek

AU Number	Stream Name
19-39-4-1a	Fullard Creek (Salt Branch)
19-39-4-1b	Fullard Creek (Salt Branch)
19-39-4-1c	Fullard Creek (Salt Branch)
19-41-(0.5)b	Intracoastal Waterway
19-41-(0.5)c	Intracoastal Waterway
19-41-(0.5)d	Intracoastal Waterway
19-41-(0.5)e	Intracoastal Waterway
19-41-(14.5)a	Intracoastal Waterway
19-41-(15.5)a	Intracoastal Waterway
19-41-11-1	Mill Creek
19-41-11a	Bear Creek
19-41-11b	Bear Creek
19-41-14	Goose Creek
19-41-16-1	Bell Swamp
19-41-16-2	Pasture Branch
19-41-16-3	Halls Creek
19-41-16-4a	Parrot Swamp
19-41-16-4b	Parrot Swamp
19-41-16-5	Dicks Creek
19-41-16a	Queen Creek
19-41-16b	Queen Creek
19-41-16c	Queen Creek
19-41-16d	Queen Creek
19-41-18b	Bear Island ORW Area
19-41-2b	Mile Hammock Bay
19-41-3	Salliers Bay
19-41-3-1	Holover Creek
19-41-4	Gillets Creek
19-41-5	Freeman Creek
19-41-5-1	Browns Swamp
19-41-5-2	Clay Bank Branch
19-41-5-3	Mirey Branch
19-41-8	Browns Creek
20-(18)d	White Oak River
20-21	Pitts Creek (Hargetts Creek)
20-26	Holland Mill Creek
20-26-1	Cartwheel Branch
20-28	Stevens Creek

Table 5.3 - Impaired Streams in Onslow County (2006)

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how WWTPs capable of producing reclaimed, water quality effluent can discharge effluent and will save additional space in land application facilities. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in ASR systems. Additional discussion on these rule changes along with HB 643 is included under the Reclaimed Water section of this portion of the module.

Reclaimed Water

Reclaimed water is an emerging technology and water resource in North Carolina and is often referred to as reuse water or recycled water. By definition, reclaimed water is:

- Reclaimed water, sometimes called recycled water, is former "Wastewater" that has been treated to remove solids and certain impurities, and then allowed to recharge the aquifer rather than being discharged to surface water. This recharging is often done by using the treated wastewater for irrigation.
- Water that is used more than one time before it passes back into the natural water cycle; wastewater that has been treated to a level that allows for its re-use for a beneficial purpose.
- Reclaimed water is generated at wastewater treatment plants or water reclamation facilities (WRF) by treating wastewater effluent to tertiary levels to reclaimed water quality standards where it is able to be used in place of potable water for approved non-potable uses. Reclaimed water projects in the region have largely been initiated over the last 5 to 10 years, with several reclaimed water projects and capabilities currently underway in the region.

The benefits of reclaimed water for the 7-County region include:

- Decreased potable water demand for irrigation
- Decreased nutrient loading based on decreased point discharges to waterways
- Assists water providers by alleviating peak summer irrigation conditions on the potable water system
- Treats highly treated reclaimed water as a water resource rather than waste
- Decreases demands on land application sites

Providers

Owner	Facility	Permitted Flow (gpd)
ONWASA (formerly Town of Swansboro)	Swansboro WWTF	600,000
Aqua North Carolina Inc	Alligator Bay WWTF	117,090
Carolina Investments Inc	Southwest Plantation and Bear Trail Golf Course WWTF	250,000
Blue Marlin LLC	Mimosa Bay WWTF	118,080
ONWASA (purchased from RA North Development 1 Inc)	Summerhouse on Everett Bay WWTF	392,680

Table 5.3 - Facilities in Onslow County Permitted for Reclaimed Water

Reclaimed water or "reuse water" is relatively new to Onslow County as well as the region and the State of North Carolina. In Onslow County, several sewer providers are already using reclaimed water for irrigation as summarized in Table 5.3 (NCDENR 2009):

Capacities

Based on permitted flows, the capacity of Onslow County to produce reclaimed water is approximately 1.48 MGD.

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems.

These regulations are described in the RGMP infrastructure module.

Pending Regulations

Two pending regulatory changes, if approved, will alter the ways that reclaimed water can be used in the State of North Carolina and have a significant impact on Onslow County: updated 15ANCAC Reclaimed Water Rules and HB 643 – Authorize Aquifer Storage of Reclaimed Water. Information on these pending regulations can be found in the RGMP infrastructure module.

Stormwater

Pollution associated with storm water runoff is the number one water quality problem in the region, and the state as a whole. As a result, several regulations have been initiated to manage storm water. The regulations that apply in Onslow County are described below:

Stormwater Management Program (Coastal Stormwater Rules)

As with all coastal counties and their municipalities, Onslow County and the City of Jacksonville are subject to State Stormwater Management Program (Coastal Stormwater Rules) requirements. The program applies to all development in the county that disturbs one or more acres of land or requires a Coastal Area Management Authority (CAMA) major permit. Recent amendments to the rule address coverage, low density thresholds, design storm requirements, wetlands and impervious surface calculations, and vegetative buffer size, especially as they apply to SA and ORW classified watersheds. (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/coastal.htm)

NPDES Phase II Storm Water Program

In July 2007 Onslow County became subject to Phase II storm water requirements. The county was "tipped in" to the requirements because it contained an area designated as an urbanized area by the US Census (Jacksonville) and had a population growth rate that exceeded the State population growth rate between 1995 and 2004.

The City of Jacksonville is also subject to Phase II stormwater requirements. The city was authorized to discharge stormwater from its MS4 under a National Pollutant Discharge Elimination System (NPDES) Permit issued by the State that became effective March 1, 2007.

As part of the Phase II storm water requirements, development projects in the City of Jacksonville and unincorporated Onslow County must apply for and receive a permit for post-construction storm water control if it disturbs an acre or more of land, is located in an unincorporated area beyond a Phase II municipality, and is located within an MSI, urban areas, or county that was "tipped in."

The NPDES Phase II Permits issued by North Caroline Department of Water Quality (NCDWQ) requires the city and county to provide the following:

- Public education and outreach on storm water impacts
- Public involvement/participation
- Illicit discharge detection and elimination
- Construction site storm water runoff control
- Post-construction stormwater management in new development and redevelopment
- Pollution prevention/good housekeeping for municipal operations (N.C. Division of Water Quality, http://h2o.enr.state.nc.us/su/NPDES_Phase_II_Stormwater_Program.htm)

In the county, NCDENR enforces stormwater regulations.

In the City of Jacksonville, the city implemented and enforces a stormwater management program to meet the requirements listed above. The city has already implemented a number of the practices and is working to make sure that all others are completed within the time frames listed on the permit. For example, the city developed a Storm Water Ordinance and adopted it in February 2009. The city has also created a Storm Water Manager position and has written an administrative manual that serves as a guide for storm water permits potential applicants. Applications for storm water permits are reviewed by the Storm Water Manager and Planning Board during the development review process.

The city also established a stormwater management utility in May 2006. This utility is a separate enterprise fund that is funded through stormwater fees charged within the city limits. These fees were implemented in July 2006. The revenues from the collected fees are designated solely for costs incurred by the city in rendering stormwater related services. (City of Jacksonville, http://www.ci.jacksonville.nc.us/opencms/export/download/WasteWater/StormwaterAdministrativeManualApproved3-1-09.pdf)

The city has also initiated a water quality improvement program for Wilson Bay which includes reducing pollutants in the storm water runoff that enter the bay (see www.sturgeoncity.org). They created Sturgeon City, transforming an old plant into an environmental education center and headquarters for water quality initiatives. The city no longer discharges waste into the New River, but treats waste in a land application plant which has significantly helped to restore water quality in Wilson Bay. (The City of Jacksonville, http://www.ci.jacksonville.nc.us/opencms/export/download/CommonDownloads/stormwater.pdf)

Finally, City creek cleaning crews remove debris from the city drainage ditches and clogged storm drain inlets. (N.C. Division of Water Quality)

401 Water Quality Certification/Neuse Buffer Requirements

A tiny portion of Onslow County is in the Neuse River Basin. Any activity in the basin that impacts wetlands, streams, and/or protected riparian buffers is subject to the Neuse Buffer Requirements. Details on these requirements can be found in the RGMP infrastructure module.

CAMA Requirements

As part of Coastal Area Management Authority (CAMA) requirements, cities and counties must identify key issues and concerns that may affect the growth and the natural environment throughout the planning horizon. At two Issues Identification Meetings during the development of the Onslow County CAMA Plan, residents listed incentives for low-impact development and storm water pond alternatives and storm water control as two of their top priorities.

In response, the county developed a series of stormwater control policies as well as subsequent implementing actions to address these policies. Policies include: supporting federal, state, and local efforts to protect water quality, wetlands, and control stormwater runoff, supporting development of best management practices, encouraging the use of constructed wetlands, supporting low impact development, and being proactive in the development of design standards that control stormwater runoff. To execute these policies the county developed the following implementing actions: include stormwater consideration in the UDO, formulate educational programs, develop a program to support the clearance of streams following major storm event, and acquire strategic sites and properties to protect and restore water quality. (Onslow County CAMA Core Land Use Plan, Draft)

In Jacksonville, many respondents believe that stormwater management is an issue, with 83.6 percent in agreement that the city should become more aggressive in the regulation and monitoring of stormwater management practices applicable to new development, and only 5.5 percent disagreeing.

The City of Jacksonville also developed policies and implementing actions that pertain to stormwater in its CAMA Plan. The policies include establishing options for the re-use of stormwater, establishing a streamside buffer requirement, requiring commercial and industrial uses to detain stormwater, and increasing the development of greenways and green infrastructure in the city.

To implement these policies, the city developed the following implementation actions: adopting concurrency standards for new development for stormwater management, revising development regulations to include performance standards for the retention and filtering of stormwater and the development of sufficient natural vegetative buffers, establishing riparian corridor protection standards, and revising the city's existing stormwater program. (The City of Jacksonville Coastal Area Management Act Land Use Plan, Revised Review Draft)

Once the CAMA plan is adopted, these strategies become the policy guidelines for local stormwater management.

Solid Waste

Solid Waste Management

Solid waste management in Onslow County encompasses the collection, recycling, and disposal of solid waste generated by local residents, businesses, and the military base.

This section of the report will describe solid waste management in Onslow County, the City of Jacksonville, and MCB Camp Lejeune.

Collection

Onslow County does not offer curbside trash collection. Residents living in the unincorporated areas of the county transport their solid waste to one of 10 convenience sites located throughout the county. Five convenience centers are open four days a week while the other five centers are open one day a week. Convenience center drop-off locations charge trash disposal fees of $1.50 for up to a 30 gallon bag of trash. (Onslow County. http://www.co.onslow.nc.us/landfill/default.aspx)

The City of Jacksonville offers weekly curbside garbage collection. The Sanitation Division operates six 3-member trash collection crews with designated residential/small business refuse collection routes. The city provides each residence with one 96-gallon container. The city also offers weekly yard waste collection which includes grass clippings, leaves, hedge trimmings, and tree limbs and branches. The Dial-A-Truck Program is another collection service offered by the city. On a first-call/first-scheduled basis, residents can reserve the truck at no cost when they have to dispose of an excessive amount of yard waste, household junk or building material. The city also has bulk item collection for specific items such as yard waste, household junk, construction/remodeling material, tires and large appliances. Finally, the city offers two types of commercial business collection services: small business service and commercial dumpster service. Service options are based on the type and location of the business and the amount of trash generated. (City of Jacksonville.http://www.ci.jacksonville.nc.us/opencms/opencms/publicservices/sanitation/)

Residents living on base at MCB Camp Lejeune receive curbside waste pickup through a government contractor. All other solid waste generated on base is picked up by government personnel or taken directly to the Camp Lejeune Municipal Solid Waste Landfill (MSWLF). (Email message from S. Andrew Smith, Environmental Engineer MCB Camp Lejeune. April 24, 2009)

Recycling

Residents in unincorporated Onslow County can bring recyclables to the same convenience sites where they bring their garbage. Accepted recyclables include all paper, phonebooks, corrugated cardboard, steel cans, plastic bottles, glass containers, aluminum, and white goods. Recycling at these centers is free of charge. Onslow County also initiated a school recycling program. The program was initiated in 2006 and 16 schools currently participate. Participating schools recycle all kinds of paper, aluminum and steel cans, glass and plastic bottles, newspaper, phone books, and file folders. (Onslow County. http://www.co.onslow.nc.us/landfill/default.aspx)

The City of Jacksonville also offers weekly recycling service. Two 3-member collection crews typically collect recyclables on the same day as trash collection. The city provides its residents with a recycling container. The city accepts a variety of paper, glass, plastic, and metals. (City of Jacksonville. http://www.ci.jacksonville.nc.us/opencms/export/download/CommonDownloads/stormwater.pdf)

MCB Camp Lejeune has several convenience sites on base for the collection of recyclables. The sites accept a variety of recyclables including glass, plastics, and aluminum. All recyclables collected at the convenience sites are consolidated at the Base Materials Recovery Facility (MRF) and sold to material processing and recycling companies. Recyclable commodities collected via curbside pick-up in base housing areas are transported to a private processor. Cardboard and shrink wrap collected by major processing operations (commissary, Marine Corps Exchange, Supply Division, etc.) on base are taken directly the landfill. Scrap metal, tires, vehicles, and other similar items are taken to the Defense Reutilization Marketing Office (DRMO) at Lot 203. These materials are either reutilized within the Department of Defense (DoD), transferred to other federal agencies, or donated to state and local governments or other qualified organizations. When appropriate, items may be sold to the general public. (Phone Interview with S. Andrew Smith, Environmental Engineer MCB Camp Lejeune. April 24, 2009)

Disposal Facilities

Solid waste collected at the convenience sites in Onslow County or curbside in Jacksonville is taken to the Onslow County Landfill located at 415 Meadowview Road. The landfill accepts a variety of items, but it bans the following: yard trash, white goods, scrap tires, aluminum cans, batteries, and used oil. (Onslow County. http://www.co.onslow.nc.us/landfill/default.aspx, City of Jacksonville. http://www.ci.jacksonville.nc.us/opencms/export/download/CommonDownloads/stormwater.pdf)

Solid waste generated on MCB Camp Lejeune is transported to the Camp Lejeune MSWLF. (Phone Interview with S. Andrew Smith, Environmental Engineer MCB Camp Lejeune. April 24, 2009)

Landfill Capacity

NCDENR publishes an annual solid waste report that details the remaining capacity for each of the state's landfills. According to the 2007-2008 Solid Waste Annual Report for the Onslow County Landfill, 134,127 tons of solid waste were disposed of in the Onslow County Landfill between 2007 and 2008. The remaining capacity of the landfill is 37,381.31 tons (this total includes landfill volume constructed and permitted to operate). The total volume for the landfill site at final design is 2,357,279.98 tons. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 0.28 years of capacity remaining. If the landfill was built to its maximum design size, the landfill could continue operating for 17.57 years. (N.C. Department of Environment and Natural Resources. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf)

According to the county, however, they have permitted and opened an additional cell at the landfill. This cell increases the capacity of the landfill another ten years. (Phone Interview with Lionell Midgett Onslow County Commissioner, April 23, 2009)

According to the 2007-2008 Solid Waste Annual Report for MCB Camp Lejeune, 40,672.008 tons of solid waste were disposed of in the Camp Lejeune Landfill between 2007 and 2008. The remaining capacity of the landfill is 101,580.33 tons (this total includes landfill volume constructed and permitted to operate). The total capacity of the landfill site at final design is 1,300,001.63 tons. (N.C. Department of Environment and Natural Resources. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf)

Because of the fluctuation of the compaction and loading rates, the base primarily measures landfill capacity in cubic yards. Between March 2008 and March 2009, 102,238 cubic yards of waste were collected at the landfill. In total, the base has used 1,097,227 cubic yards of the 1,331,000 cubic yards of constructed landfill space. However, it is in the process of constructing Phase 3 of the landfill. When complete, the landfill will have approximately 2,758,000 cubic yards of airspace available. The addition of Phases III-V (all remaining phases) will increase the remaining airspace by 1,986,000 cubic yards. In total, the landfill has a total permitted capacity of 4,089,000 cubic yards of waste. (Phone Interview with S. Andrew Smith, Environmental Engineer MCB Camp Lejeune. April 24, 2009)

With the construction of Phase III of the landfill, the completed portion of the facility will have a remaining capacity of approximately 6.5 years. NCDENR estimates that the remaining capacity of the landfill in years (based on estimates derived from annual tons of waste generated) is 31.96 years. Measuring capacity in terms of cubic yards, and assuming recent disposal rate trends remain steady, the base estimates the overall capacity at closer to 19 years. (Phone Interview with S. Andrew Smith, Environmental Engineer MCB Camp Lejeune. April 24, 2009)

Telecommunications

Onslow County is slightly below the state average for connectivity. A total of 78.71 percent of households in Onslow County are connected, compared with 83.33 percent at the state level. According to the e-NC Authority, Onslow County is a Rural, Tier 3 Community with a connectivity speed of between 3-6 Mbps.

Access Providers

Cable

Charter Communications and Time Warner have cable TV franchises in Onslow County. Charter provides cable modem

access in MCB Camp Lejeune, Holly Ridge, North Topsail Beach, Richlands, Sneads Ferry, Tarawa Terrace and areas of Onslow County. Time Warner provides cable modem access in Hubert, Jacksonville, Midway Park and Swansboro. In total, 78.71 percent of households have access to cable.

Telcos

AT&T and Embarq provide telephone service in Onslow County. A total of 51 percent of households have access.

AT&T serves a small area of Onslow County with its Burgaw exchange. It does not have DSL access. Embarq provides DSL access in the Holly Ridge (87 percent), Jacksonville (85 percent), Richlands (62 percent), Sneads Ferry (98 percent) and Swansboro (87 percent) exchanges. The area served by the Newport exchange does not have DSL access. The areas served by the Maysville (65 percent) and Topsail Island (67 percent) have DSL access.

Satellite

Customers with clear views have access to Direcway & Starband high-speed Internet service.

Wireless

There are no wireless high-speed Internet access providers in Onslow County. (The e-NC Authority. http://www.e-nc.org/100_County_Report/Onslow.pdf.)

Needs Assessment

Water

Challenges and Needs

On a regional level, Onslow County and the City of Jacksonville face several challenges relating to water including meeting the requirements of the CCPCUA rules, combating saltwater intrusion, and having the infrastructure in place to meet increasing water demands. These problems are described in the RGMP Infrastructure module. Specifics on these challenges in Onslow County, as well as additional challenges at the local level, are detailed below:

CCPCUA rules

- The two major providers of water in the county (ONWASA and the City of Jacksonville) historically used the Black Creek Cretaceous aquifer; therefore, several existing groundwater sources will be reduced over time due to the CCPCUA rules.

- Current water demands on the City of Jacksonville's water supply system are 3.592 MGD for an average month with the highest month being May 2008 at 4.458 MGD (PlanningWorks, 2009). The City of Jacksonville has the ability to produce approximately 5.7 MGD of water supply, all from the Black Creek aquifer. Due to the CCPCUA, the current capacity will be reduced by 2 MGD to 3.7 MGD by 2013 and an additional 1 MGD to 2.7 MGD by 2018. With proposed CCPCUA decreases, the highest month demand would be 120.5 percent of available water supply in 2013. With proposed developments currently being reviewed and proposed to be developed by 2011 totaling 1.46 MGD minimum in water demand projections, the average month could be 88.6 percent of existing capacity. The highest month would be 103.8 percent of existing capacity. With CCPCUA rules and a decrease of 2 MGD by 2013, the average and highest months would be 136.5 percent and 159.9 percent of existing capacity, respectively.

Increasing Water Demands

- Based on existing demands and potential water demands through the planning period ending in 2011 Onslow County needs a greater water supply. Estimates for additional water are as high as 2.10 MGD. Coupled with a reduction of supply based on the CCPCUA rules for ONWASA, the use of water supply will exceed 80 percent of available capacity. Current average use at the Dixon WTP is 1.2 MGD, which is 60 percent of available capacity.

WTP estimates for 2010 are 65 percent and 95 percent of available capacity for average and highest monthly demands, respectively (Arcadis, 2009). With the addition of 2.1 MGD to the county, and assuming only 0.5 MGD are attributed to the Dixon WTP service area, 2011 estimates would be 90 percent and 120 percent of available capacity for average and highest monthly demands, respectively.

Sewer

On a regional level, Onslow County and the City of Jacksonville face several challenges relating to sewer including limited land supply for land application systems and current expansion policies. These problems are described in the Regional Infrastructure Chapter beginning in the RGMP infrastructure module. Specifics on these challenges in Onslow County, as well as additional challenges at the local level, are detailed below:

- Onslow County in particular has an extremely limited supply of land available for land application systems. A significant portion of land, owned by MCB Camp Lejeune and MCAS New River. The county cannot perform a land application of wastewater effluent to lands owned by Department of Defense. Additionally, Onslow County is the home of the Hoffman State Forest, where sewer providers are currently not allowed to apply effluent. These large land mass restrictions, coupled with environmental constraints due to jurisdictional wetlands and soil limitations, make it difficult to find suitable land application sites in the county. Where land is available, it can be expensive and the county has to weigh the costs of using the land for application systems versus some form of tax-generating development.

- Several of the area's land application sites that provide wastewater effluent disposal are approaching capacity. The City of Jacksonville estimates short term allocated flows to its LTS system exceeding 6.96 MGD, and its 80 percent requirement occurs at 7.2 MGD; the city's LTS may, therefore, reach 80 percent of capacity prior to 2011. ONWASA has limited land application facilities. Alternative disposal methods for the region's wastewater effluent are necessary for growth to continue.

- Private package plant providers are not required to meet with ONWASA during the plan review with the county to determine if sewer can be provided through the public system. Often, ONWASA finds out about the project when the developer inquires about ONWASA providing water to the development. In some cases, failing package WWTPs have become problematic to the point that NCDENR has asked public providers to take ownership of these failing facilities, which creates additional operations and maintenance activities for sewer provider staff. In at least one case in Onslow County, NCDENR has asked public sewer providers to take over operations and maintenance of a failing package treatment plant—. ONWASA was asked and agreed to take over the Springdale Acres WWTP.

- There are failing septic systems in portions of the county and particularly some neighborhoods in the Piney Green area. The Onslow County Health Department has documented health concerns in this area due to failing septic tanks and rain events.

Needs

- Future land application sites or disposal methods need to be identified to save capacity at existing land application facilities.

- ONWASA system-wide WWTP capacities are at 71.3 percent. With the potential of an additional 1.89 MG of wastewater flow for Onslow County, capacities could triple ONWASA's current capacity of 0.96 MGD (over 400 percent of existing capacity). The Richlands area in particular is anticipated to see significant growth, and the Richlands WWTP currently operates at 73.5 percent of capacity.

- Additionally, the Hunters Creek WWTP is currently operating at 77.2 percent of capacity. This WWTP is located in the Piney Green area, which is anticipated to have significant growth primarily attributed to the military because of its close proximity to the gates of MCB Camp Lejeune. Public sewer in this area can also take failing septic systems off-line.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For Onslow County, several accepted methods of beneficial use of reclaimed water employed elsewhere in coastal and neighboring states could benefit both water and sewer systems within Onslow County. The protection of existing groundwater sources from saltwater intrusion is of primary importance.

Irrigation is the primary means of applying reclaimed water; however, suitable land application sites are costly and scarce, and using developable land for spray irrigation does little to help local economies and fails to provide a tax base to the jurisdictions where they are located.

Needs

Both the re-write of the current NCDENR reclaimed water regulations and the approval of the proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary for the expansion of reclaimed water usage within Duplin County. The beneficial use of reclaimed water can decrease potable water demands positively impacting water needs in the region and could be used to protect the Onslow County's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed NCAC updated regulations would allow reclaimed water to be treated as a valuable water resource allowing it to be applied to more end users. The expanded uses will also reduce the demand on land application sites.

Stormwater

Challenges

The biggest challenges facing the region for stormwater management are funding, enforcement, and threats to affordable housing. These challenges are also Onslow County's greatest challenges and are described in the RGMP Infrastructure chapter.

The City of Jacksonville has also identified stormwater drainage as a challenge in certain areas of the city. The city is working to address these problems by identifying some as capital projects and categorizing others as anticipated to be addressed by the Streets Division Staff. **Table 5.4** shows lists areas experiencing drainage problems in the city, describes the problem, and reveals whether funding has been identified to address the problem.

Project	Capital Project	Project Description
David Place and Marlo Circle	Yes	Street and private property flooding due to ditch overflow and surface flow from surrounding properties, including Jacksonville High School, two streets from Cardinal Village, and Gum Branch Road.
Elizabeth Lake at Dewitt Street	Yes	The City has made temporary repairs where the street floods and two separate sink holes have formed.
Zack Circle	Yes	Street floods during heavy rain events and drains into a private backyard on South Shore Drive. Possible solution is installation of another storm drain with pipe toward Highway 17 to capture water before it gets to flood zone.
Davis and Elm Streets	Yes	Streets flood at every heavy rain event.
McDaniel Drive	Yes	Low area in elevation. Recent inspections revealed some blockages that were cleared.
Liberty Road	Yes	Several streets send water to Liberty Road. Area floods due to increased flow from upstream during heavy rain events. Inspections reveal excavation of open ditches may relieve some flooding, but a detailed inspection of area near Highway 24 must be completed before appropriate maintenance actions can be taken.
School Street and Henderson Drive	Yes	Area floods during heavy rain events.
Country Club Hills/Pine Valley Road	Yes	Stormwater backs up in a private backyard during heavy rain events. This flooding appears to be caused by the existing drainage pipe's inability to absorb the volume of water needed to go through the pipe. This drainage area covers a large distance.
Huff Drive, Near Fire Station #3	unfunded	Street floods during ever heavy rain event. Inspection of the problem has suggested installation of another storm drain with an additional drainage pipe within the existing 20 foot easement using a 45 degree turn at or near the open ditch for outflow.
Nelson Court	unfunded	The open ditch floods at heavy rain events. The flooding is in private backyards and not in the street.
Welsh Lane and Scottsdale	unfunded	Area floods a private backyard and then overflows to streets. This area does not have developed drainage swales.
Commerce Road and Workshop Lane	unfunded	Area floods during heavy rain events. Ditch maintenance is required, but will be rather lengthy due to downstream requirements. Area has extensive excavation requirements within drainage ditch.
Bell Fork Homes/Wooten Park	unfunded	The 18 inch CMP is too small to take a three inch rainfall event. The CMP needs to be removed or replaced to stop flooding on two streets in the rear of the subdivision.
Brynn Marr Road	unfunded	The catch basin and 18 inch CMP require maintenance, as the area is prone to flooding in heavy rain events.
Carmen/Schall Place	unfunded	Street floods due to drainage system alignment and open ditch fill in with sediment on an annual basis. New drainage line needs to be installed and ditch excavation is required.

Table 5.4 - Areas Experiencing Drainage Problems in Jacksonville

Needs

For the City of Jacksonville to support additional NPDES Phase II stormwater requirements, an entire stormwater department needs to be created to enforce stormwater ordinances and to provide public education and outreach, public involvement and participation, illicit discharge detection & elimination, construction site runoff control, post-construction runoff control, and pollution prevention.

Solid Waste

Challenges

Onslow County has a challenge that is unique to the region. The landfill in Onslow County is approaching capacity. With the opening of the new cell, the county has one cell remaining of the final design. Development in the surrounding area prevents any expansion of the landfill from its final design plans. One way to reduce waste is to require mandatory recycling, but this has become a very political issue in the county.

Onslow County has begun taking steps to expand capacity in the county. The county is exploring future landfill sites. Two sites were identified: one at Albert Ellis Airport and one on the Onslow County/Pender County Line. The airport site was not feasible because of its proximity to the runway and the other has environmental constraints (i.e. wetlands) and the prohibitively high transportation costs. No additional sites have been identified. The county plans to conduct a feasibility study for the site on the Pender County Line.

After much debate, the current Board of Commissioners voted to remain in the landfill business. These Commissioners are concerned about how the privatization of solid waste management would jeopardize the county's control of costs and disposal options. Other commissioners support the privatization of solid waste management and are considering constructing a transfer station at the existing landfill. The Board of Commissioners will likely revisit the issue after its next election.

The transfer station could be built in addition to the remaining cell of the landfill. The county has initiated conversations with the private management company of the Sampson County Landfill, Waste Industries, to discuss costs. The Board of Commissioners will likely request presentations from private companies concerning the costs associated with development of a transfer station and transport to a landfill located outside of the county.

The county has discovered that the landfill is more valuable to private companies when existing cells remain. As a result, the decision as to whether to construct an additional landfill or a transfer station at the existing landfill site needs to be made in the near future. Otherwise, a new landfill could not be constructed before capacity was depleted at the existing landfill, forcing the county to privatize their solid waste management.

Needs

In order for the county to have options for future solid waste management, they need to either identify a site for construction of a future landfill and begin construction or begin discussions with private management companies to solidify cost and disposal options. If the county waits until the last cell of the landfill is under construction before determining future solutions, the landfill will be less appealing to private companies. If the county waits too long to identify a future landfill site, the landfill may not be able to be constructed before the existing landfill reaches capacity. Although the construction of Phase III of the landfill has bought the county more time, all of their future alternatives take numerous years to plan and implement. All feasibility studies and discussions with private management companies need to take place in the short term to guarantee affordable and efficient management in the future.

Telecommunications

Challenges

Onslow County is slightly below the state average for connectivity. A total of 78.71 percent of households in Onslow County are connected, compared with 83.33 percent at the state level. The county is faced with the challenge of increasing

connectivity in the rural, remote areas of the county.

Needs

Onslow County needs to work to meet or exceed the state average for connectivity.

Recommended Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help Onslow County solve its infrastructure problems. Additionally, responsible parties are identified as well as the time frame for the need in short term (urgent by 2011), near term (less than 10 years), or long term. Funding opportunities for these strategies are detailed in the RGMP Infrastructure Module.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Sewer	Northwest Service Area WWTP Expansion	ONWASA	$18.9M	Urgent	This infrastructure project will expand wastewater treatment capacity in the Northwest Service Area of Onslow County where significant military growth is anticipated and where existing facilities are operating at 80-90 percent of capacity (approaching moratorium status)
Sewer	Piney Green Interceptor	City of Jacksonville/ ONWASA	$7.5M	Urgent	Several housing projects are anticipated in and around the main gate for MCBCL. To allow for this anticipated development that will be mostly attributed to military growth, the installation of a wastewater collection main along Piney Green Road from the Hunters Creek pump station to the intersection of Piney Green and Country Club Roads is necessary. The project will also provide a means to take some failing septic tanks and private package plants off-line and put these subdivisions onto the public sewer system.

Table 5.5.1 - Recommended Actions Matrix

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.
Water	Dixon Region Water Improvements	ONWASA	$2.2M	Urgent	Based on military growth, CCPCUA rule reductions, and saltwater intrusion, additional water supply is needed in the Dixon region which serves the highly growing US 17 area in Onslow County. This project includes 2 wells in the Castle Hayne aquifer and 9,900 LF of raw water line and will ultimately add a minimum of 500,000 gpd in water supply to the Dixon region.
Water	Jacksonville Water Treatment Plant	City of Jacksonville	$45M	Urgent	Based on CCPCUA rules, the city will lose 2 MG in water supply by 2013. For the planning period ending in 2011, additional water supply will be needed to serve military growth and to replace the 1MG already lost to the CCPCUA rules in the city's service area. The city has designed a 4 MG WTP with corresponding raw water lines and Castle Hayne wells to meet water supply needs.

Table 5.5.2 - Recommended Actions Matrix

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Stormwater	Increase in Enforcement Personnel for Stormwater Management	City of Jacksonville	$3.35M	Urgent	Under NPDES Phase II Stormwater regulations, the city created a stormwater ordinance which is required to be enforced for the proposed developments in the city and will be effective during the planning period ending in 2011. The city currently does not have personnel available to enforce this program. Funding of $1.1M for additional enforcement personnel is needed. Additionally, it is estimated that it will cost approximately $10,000-$20,000 per pond to bring existing ponds into compliance with these regulations. With approximately 153 ponds estimated to be non-compliant, costs to upgrade the ponds may total $2.25M. Many smaller entities will not have the funds to implement the required improvements, resulting in a violation of the city NPDES permit.
Solid Waste	Onslow County Landfill Expansion	Onslow County	N/A	Near term	Due to recent plant expansions, the Onslow County landfill has approximately 10 years remaining in capacity. Due to the extensive permitting process to site new landfill sites or to expand the existing landfill site, it is recommended that additional capacity options be studied at the 10-year mark, which is 2009.

Table 5.5.3 - Recommended Actions Matrix

References

N.C. Division of Water Quality. Land Application Unit: Reclaimed Utilization Systems. http://h2o.enr.state.nc.us/lau/reclaimed.html.

North Carolina General Assembly. House Bill 643. http://www.ncga.state.nc.us/Sessions/2009/Bills/House/PDF/H643v1.pdf.

NCDENR Division of Water Resources. Central Coastal Plain Capacity Use Area Rules. http://www.ncwater.org/Permits_and_Registration/Capacity_Use/Central_Coastal_Plain/CCPCUA_rule_summary_FAQ.php.

N.C. Division of Water Quality. Stormwater Runoff and Nonpoint Source Pollution. http://h2o.enr.state.nc.us/Stormwater.html.

N.C. Division of Water Quality. Stormwater Unit: State Stormwater Management Program. http://h2o.enr.state.nc.us/su/state_sw.htm

N.C. Division of Water Quality. Coastal Stormwater: Revised Rule Effective Oct. 1, 2008. http://h2o.enr.state.nc.us/su/coastal.htm.

N.C. Division of Water Quality. Stormwater Unit: NPDES Phase II Stormwater Program. http://h2o.enr.state.nc.us/su/NPDES_Phase_II_Stormwater_Program.htm.

Randall, Mike. N.C. Division of Water Quality. Phone Interview. May 28, 2009.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/Onslow.pdf.

ARCADIS G&M of North Carolina, Inc., 2009. *Onslow Water & Sewer Authority Water and Wastewater Resources Plan. Raleigh: ARCADIS.*

PlanningWorks, 2009. The City of Jacksonville CAMA Land Use Plan (Revised Review Draft). Jacksonville: Planning Works. http://www.ourplanningworks.com/docs/jacksonville/CAMA/State%20Review%20Draft/CAMA%20Plan%201-1-09.pdf.

Onslow County. Solid Waste/Landfill. http://www.co.onslow.nc.us/landfill/default.aspx.

City of Jacksonville. Welcome to the Sanitation Division! http://www.ci.jacksonville.nc.us/opencms/opencms/publicservices/sanitation/.

Smith, S. Andrew. Camp Lejeune. Personal Interview. April 24, 2009.

Wilson, Nat. N.C. Department of Environment and Natural Resources. Email Message pertaining to saltwater intrusion monitoring wells. May, 28, 2009.

City of Jacksonville, North Carolina. Stormwater Pollution. http://www.ci.jacksonville.nc.us/opencms/export/download/CommonDownloads/stormwater.pdf.

City of Jacksonville, NC. Phase II Stormwater Administrative Manual. March 1, 2009. http://www.ci.jacksonville.nc.us/opencms/export/download/WasteWater/StormwaterAdministrativeManualApproved3-1-09.pdf.

Medical, Health, and Social Services

Medical and Health Services

Existing Conditions

Department of Defense Health Services

Naval Hospital Camp Lejeune

Naval Hospital Camp Lejeune (NHCL) is the only full-service Department of Defense (DoD) hospital in the region, and is the military treatment facility (MTF) for all active-duty service members and their family members stationed at MCB Camp Lejeune.[3] In addition, when capacity is available, NHCL provides medical services for military retirees and their family members located in the region. When appropriate, NHCL provides inpatient services to TRICARE Prime[4] enrollees stationed at MCAS Cherry Point and MCAS New River.

All active-duty Marines stationed at MCB Camp Lejeune receive primary care management through a physician located at NHCL, or one specifically assigned to their unit. Active-duty Marines stationed at MCAS New River receive primary care management at the NHCL branch clinic located on the installation. Active-duty family members, retirees, and retiree family members may have a primary care manager located on base as well. NHCL is also in the process of developing a primary care clinic in the community that will offer easier access for dependents. Due to the limited availability of Naval Medicine physicians, some non-active duty TRICARE enrollees must utilize a TRICARE network provider in the civilian community.

The supply of primary care physicians at NHCL is benefited greatly by the presence of a family medicine residency program at the hospital. The hospital benefits from the presence of residents and the attending staff physicians required to train residents. As of February 2009, 94 physicians and 18 family medicine residents practiced at NHCL, as shown in the table below. The majority of those physicians are uniformed clinicians who are subject to deployment to other locations for up to one year in support of military operations. The supply of these physicians, therefore, is often in flux, particularly as combat operations continue overseas. In addition, NHCL has contracted with civilian providers to fill needs in key specialties, and one civil service physician specifically provides psychiatry services.

3 Family members utilize services at NHCL at varying rates, depending on their TRICARE enrollment status and on the avilability of physicians at NHCL.

4 TRICARE is a regionally managed health care program for Active-Duty, Activated Guard and Reserves, Retired members of the uniformed services, their families, and survivors. There are three TRICARE options, including TRICARE Prime, where Military Treatment Facilities are the primary source of care. TRICARE Plus and TRICARE Standard enrollees have other primary treatment locations.

Type of Provider	Uniformed	Civil Service	Contractor	Total
Anesthesiologist	5	0	0	**5**
Cardiologist	2	0	0	**2**
Dermatologist	2	0	0	**2**
Emergency Medicine Physician	7	0	3	**10**
Family Medicine Physician (Faculty)	6	0	1	**7**
Family Medicine Physician (Non Faculty)	1	0	2	**3**
Family Medicine Interns/Residents	18	0	0	**18**
Gastroenterologist	1	0	0	**1**
General Surgeon	7	0	0	**7**
Internist	3	0	0	**3**
Neurologist	1	0	0	**1**
Orthopedic Surgeon	6	0	0	**6**
Oral Surgeon	2	0	0	**2**
Ophthalmologist	3	0	0	**3**
Otorhinolaryngologist	3	0	0	**3**
OB/Gyn	9	0	0	**9**
Pain Management	1	0	0	**1**
Pathologist	3	0	0	**3**
Pediatrician	5	0	1	**6**
Psychiatrist (Deployment Health)	0	0	4	**4**
Psychiatrist (Mental Health)	5	1	0	**6**
Radiologist	5	0	1	**6**
Sports Medicine Physician	2	0	1	**3**
Urologist	1	0	0	**1**
TOTAL	**98**	**1**	**13**	**112**

Table 6.1 Naval Hospital Camp Lejeune Physicians

Source: Naval Hospital Camp Lejeune

NHCL has been an active participant in the planning process regarding growth in the number of Marines stationed at MCB Camp Lejeune and has already been analyzing its clinical support needs. Over the summer of 2009, NHCL will add the following physicians:

- One orthopedic surgeon,
- One pediatrician,
- One developmental pediatrician,
- One obstetrician,
- One neurologist,
- One radiologist, and

- Three emergency medicine physicians.

However, NHCL will continue to have physician needs. For example, the hospital will continue to be supported by only one physician in some specialties, including gastroenterology, urology, and pain management. These physicians have no on-call back up, and often, patients needing services must be sent to a community physician and/or hospital for services. In addition, the hospital does not have many sub-specialists. Active-duty Marines, because they have combat- and non-combat-related injuries, tend to heavily utilize orthopedic surgeons. NHCL currently provides specialty hand services and has identified a need for a spine specialist. Additional specialists are required to ensure local access to necessary services.

Service	Beds
Medical/Surgical	18
Obstetrics	27
ICU	8
Psychiatry	12
TOTAL	**65**

Table 6.2 - Inpatient Bed Capacity

Source: Naval Hospital Camp Lejeune

NHCL has 65 total inpatient beds, including 53 acute care beds and 12 psychiatric beds, as shown in **Table 6.2** below:

Based on the utilization of these beds in 2006, 2007, and 2008, NHCL has the greatest capacity constraints in its medical/surgical unit. There is currently sufficient capacity in the obstetrics unit to meet utilization needs. Contrary to the regulatory constraints placed on civilian hospitals (such as Certificate of Need); however, the Naval Hospital does have surge capacity to meet additional inpatient needs in times of high utilization.

Although the inpatient psychiatric unit at NHCL is not highly utilized, the capacity for outpatient services has been significantly stretched. While the number of mental health cases at NHCL is remaining steady, the cases are becoming increasingly complicated. At least one psychiatrist is assigned directly to the 2nd Marine Expeditionary Force, and other active-duty service members receive treatment at NHCL for behavioral health issues. NHCL has an extensive outpatient substance abuse program and has recently focused increasingly on dual diagnosis[5] patients. The substance abuse clinic is currently under renovation. The renovation is intended to improve throughput of the clinic; however, this will not likely offer a long-term solution to the space constraints for mental health and substance abuse at the hospital.

The Naval Hospital has a total of eight operating rooms, one of which is dedicated to C-Sections, and two of which are dedicated outpatient operating rooms. NHCL is currently in the process of developing additional emergency department and outpatient clinical capacity, as well as needed support space. This expansion will include the purchase of additional radiology equipment.

MCB Camp Lejeune also provides a Naval Dental Center for active-duty Marines. The center combines resources with non-deployed providers assigned to the 2nd Dental Battalion to provide services for all active-duty personnel. The following dental providers serve this clinic:

Type of Provider	Uniformed	Civil Service	Contractor	Total
General Dentist	1	0	7	8
Comprehensive Dentist	1	0	0	1
Oral Surgeon	2	0	0	2
Exodontist	1	0	0	1
Endodontist	1	0	0	1
Periodontist	0	0	0	0
Prosthodontist	0	0	0	0
TOTAL	**6***	**0**	**7**	**13**

Table 6.3 - Naval Dental Center Camp Lejeune

(Please note that eight active duty Dental Officers are allocated to the Dental Center, but only 5 positions have been filled.)

Source: Naval Hospital Camp Lejeune

5 Patients with both mental health and substance abuse diagnoses.

TRICARE

TRICARE network providers are an essential part of the health system in Onslow County. Because NHCL does not have enough primary care and specialty physicians to serve the needs of active-duty Marines, active-duty dependents, retirees, and retiree dependents, many TRICARE beneficiaries seek care in the community. Approximately 47 percent of the total Onslow County population is enrolled in TRICARE and, according to Health Net Federal Services, approximately 95 percent of all physicians in Onslow County are TRICARE network providers. The dependence of the military health system on its TRICARE network partners cannot be overemphasized. Since the beginning of the Marine Corps Plus-up, TRICARE Prime enrollment to civilian network providers has grown significantly in an environment where the number of primary care providers is already insufficient to support the growing community population.

As stated in the Medical, Health, and Social Services Regional module, TRICARE reimbursement is a significant concern for local providers. Although TRICARE is now one of the fastest payers (99.9 percent of claims are processed and paid within a week), the payments remains low, causing a substantial disincentive to provide services to TRICARE beneficiaries. While the vast majority of providers in Onslow County are TRICARE network providers, it is not profitable to serve a full panel of TRICARE patients. As such, physicians have limited appointments for these patients. Further, due to low overall profitability in the market, providers often defer capital improvements and practice expansions.

As a result of its sole community hospital status, TRICARE reimbursement for inpatient services at Onslow Memorial Hospital is reasonable. As described in the Medical, Health, and Social Services Regional module, hospital-based outpatient services are reimbursed under a different model and are substantially less favorable. The Department of Defense recently mandated that TRICARE move to the Outpatient Prospective Payment System (OPPS), which will cut payment to hospitals for outpatient services provided to TRICARE patients. Although DoD has made provisions that will soften the impact on hospitals that receive over $1.5 million in TRICARE reimbursement (such as Onslow Memorial Hospital), the change will still have a significant negative financial impact on the hospital. The estimated economic impact resulting from the implementation of OPPS has not yet been determined.

Veterans Affairs

Veterans Affairs services in Onslow County are located at a Community-Based Outpatient Clinic (CBOC) in Jacksonville. The clinic employs three primary care physicians and one mental health social worker. The VA also has plans to hire an additional mental health provider for this location. Additional CBOCs are located in Wilmington, Greenville, and Morehead City, and are accessible for patients in this region. The Wilmington CBOC will open an expanded facility in 2011 with additional specialty services, which will greatly enhance the VA services in eastern North Carolina. Expansion is also planned for the Greenville CBOC.

Patients in Onslow County access inpatient VA hospitals in Fayetteville and Durham. Due to the distance to these facilities, VA patients may be referred to a local community hospital if emergency services are needed.

Health Care Providers

In addition to the physicians listed above at NHCL and the Jacksonville CBOC, Onslow County has 42 FTE primary care providers,[6] 18 FTE medical specialists, 13.5 FTE surgeons, and 55 dentists in the community. Onslow County has physician shortages in nearly all specialties. Even without USMC growth, Onslow County has a need for an additional 22.4 FTE primary care providers, 25.9 FTE medical specialists, 18 FTE surgical providers, and 14.6 FTE dentists. This need assumes that all uniformed providers have 50 percent-capacity because of their additional duties beyond patient care.

In particular, Onslow County has needs for: allergists, cardiologists, dermatologists, gastroenterologists, nephrologists, general surgeons, neurosurgeons, and urologists. Onslow County has a sufficient supply of obstetrics/gynecology physicians (OB/GYNs) and ophthalmologists.

Behavioral Health

Onslow Carteret Behavioral Healthcare Services (OCBHS) is the Local Management Entity covering Onslow County. The LME provides a central access center located on Memorial Drive in Jacksonville, and provides the following services:

6 Health care providers include physicians, as well as physician extenders such as nurse practitioners and physicians assistants.

- 24-hour crisis/emergency services
- Appointment scheduling
- 24-hour, non-hospital Detox Unit
- Alcohol and Drug Education Traffic School/Driving While Impaired
- Counseling
- Psychotherapy services
- Medication management

OCBHS has reported a recent increase in persons seeking behavioral health services due to the troubled economy, which is placing a great amount of stress on families. Onslow County providers have experienced an increase in the number of persons seeking both outpatient and crisis services as a result. In addition, the LME has experienced growth in the number of Vietnam era veterans seeking services for the first time. This is presumed to be a result of the intense media attention on Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). [Please see the Medical, Health, and Social Services Regional module for additional discussion.]

Onslow County currently has 22 FTE behavioral health providers, including psychiatrists, psychologists, clinical social workers and licensed counselors. Without USMC population growth, this supply appears to be sufficient to meet the needs of the Onslow County population. The majority of the current supply of providers, however, is located at NHCL-- only five psychiatrists provide services in the civilian community. As the needs of the civilian community increase, this will not be sufficient. In addition, regional providers acknowledge that there is a stigma surrounding Marines and their family members who seek behavioral health services at an MTF. As such, while there is likely no need for providers at NHCL, there is a need for additional providers in the civilian sector to meet the needs of the civilian community, as well as Marines seeking services off base.

Type of Bed	Number of Beds
Adolescent Psychiatric (ages 0-17)	26
Adult Psychiatric (ages 18+)	4
Adult Substance Abuse (ages 18+)	12

Table 6.4 - Brynn Marr Hospital Inpatient Psychiatric Beds

Source: Brynn Marr Hospital 2009 Hospital License Renewal Application.

Inpatient behavioral health services are provided at Brynn Marr Hospital in Jacksonville. Brynn Marr provides the number of beds as shown in **Table 6.4**,

There is currently a surplus of inpatient substance abuse and inpatient adolescent psychiatric beds in the community; however, it is important to acknowledge that Brynn Marr serves a much wider service area than Onslow County alone for inpatient adolescent psychiatric services. In federal fiscal year 2009, Brynn Marr treated adolescent patients from 76 of North Carolina's 100 Counties. The adult inpatient psychiatric beds at Brynn Marr are highly utilized and the *2009 State Medical Facilities Plan* identified a need for 12 additional adult inpatient beds in the Onslow-Carteret region. Even without USMC growth, there is a need for eight additional adult inpatient psychiatric beds in Onslow County. As such, the facility-based need at Brynn Marr may be greater than the population-based need for services.

Inpatient Acute Care

Inpatient acute care services are provided at Naval Hospital Camp Lejeune and Onslow Memorial Hospital (OMH) in Onslow County. OMH has the following inpatient capacity:

Type of Bed	Number of Beds
Medical/Surgical	93
Pediatric	10
Obstetric	10
Gynecology	19
Neonatal Level III	4
Neonatal Level II	14
ICU	12
TOTAL	**162**

Table 6.5 - Inpatient Acute Care Beds

Source: Onslow Memorial Hospital 2009 Hospital License Renewal Application

In fiscal year 2008, the acute care beds at OMH operated at 55.3 percent occupancy, suggesting that there is sufficient capacity to serve additional patients over the next several years. OMH recently opened a new Emergency Services and Surgical Pavilion, which provides increased convenience for patients accessing these services. The

new emergency department features all private rooms and technology enhancements. The surgical pavilion provides four modern operating suites and a new surgical navigation system. These services are expected to enhance the health services offered to Onslow County residents.

Approximately 41 percent of the patient days provided to Onslow County residents are provided outside of Onslow County, including Pitt County Memorial Hospital, New Hanover Regional Medical Center, CarolinaEast Regional Medical Center and the academic medical centers located in the Triangle.[7] These patients seek services in other counties primarily due to a shortage of specialty physician services in Onslow County. If OMH and NHCL were able to treat all Onslow County patients, the county would have a need for approximately 43 additional inpatient beds. Until additional specialty physician services are available in the county, however, out-migration is likely to continue. Assuming a reasonable reduction in out-migration for projection purposes, the county will have a sufficient number of acute care beds for the foreseeable future.

Inpatient Rehabilitation Care

There are no providers of inpatient rehabilitation services in Onslow County; county residents primarily seek these services at Pitt County Memorial Hospital, CarolinaEast Regional Medical Center, and New Hanover Regional Medical Center.

Hospital	County	Rehabilitation Beds
Pitt County Memorial Hospital	Pitt	75
CarolinaEast Regional Medical Center	Craven	20
New Hanover Regional Medical Center	New Hanover	60

Table 6.6 - Inpatient Rehabilitation Beds

Source: *2009 State Medical Facilities Plan.*

There is no need for inpatient rehabilitation services in the county. In the *2009 State Medical Facilities Plan, each of these facilities is projected to* have a surplus of rehabilitation beds. The Craven County module in this report also shows a projected surplus at the county-level, indicating that capacity at nearby existing providers will be sufficient to treat the needs of Onslow County residents.

Outpatient Services

Outpatient services in Onslow County are primarily located in Jacksonville as shown in the **Table 6.7** below.

The facilities listed above offer services sufficient to meet most of the current needs of the regional population. The *2009 State Medical Facilities Plan* identified a need for one additional MRI scanner in Onslow County. Certificate of Need Applications for the MRI scanner are currently under review.

Regional Coordination

Coordination between military and civilian providers has improved significantly over the past several years. Although services at NHCL often fluctuate due to deployments and changing assignments, the hospital, in conjunction with Health Net Federal Services, has made great strides toward giving community providers advanced notice of changes in capacity. This communication allows civilian providers to respond to needs prior to reaching excessive utilization levels at their own facilities and physician practices. Providers at OCBHS have no

Facility Name	City
Outpatient Rehabilitation	
Onslow Memorial Hospital‡	Jacksonville
Naval Hospital Camp Lejeune	Jacksonville
Diagnostic Imaging Centers*	
Jacksonville Diagnostic Imaging/ Coastal Diagnostic MedQuest	Jacksonville
Onslow Memorial Hospital	Jacksonville
Naval Hospital Camp Lejeune	Jacksonville
Hospital-Based Ambulatory Surgery Centers	
SurgiCare of Jacksonville	Jacksonville
Naval Hospital Camp Lejeune	Jacksonville
Urgent Care Centers	
Pediatric Urgent Care	Jacksonville
Family Urgent Care	Jacksonville
MedCare	Jacksonville
Surf City Urgent Care	Holly Ridge

Table 6.7 - Outpatient Services

± Includes outpatient cardiac rehabilitation program

*Please note that this includes major diagnostic imaging centers, specifically those with either mobile or fixed MRI offices. This list is not exhaustive and does not include imaging services provided at physician offices

Source: *2009 State Medical Facilities Plan* and www. yellowpages.com

7 Hospitals listed in the order in which they treat Onslow County patients.

current concerns with communication in the behavioral health sector; however, the organization continues to extend its support to provide greater coordination, particularly as it relates to transition services.

The Department of Veterans Affairs is currently working with Department of Defense facilities to complete pre-discharge examinations. These exams have historically been completed by the DoD prior to discharge. By involving the VA physicians in this process, however, the VA can plan for future needs. NHCL is one of the first facilities to begin developing this partnership, and is serving as a model for other MTFs across North Carolina.

Needs Assessment

Department of Defense Health Services

NHCL's greatest need will continue to be physician resources. As demonstrated in the Health Care Providers section below, Onslow County faces physician shortages in nearly every specialty. The hospital has the financial resources to contract with civilian physicians in some needed areas, but has historically had difficulty recruiting physicians to the region. In addition, when NHCL recruits civilian physicians to the area, they must compete with other local providers who are also recruiting physicians. As such, there are significant advantages for NHCL to utilize Naval Medicine physicians rather than civilian contract physicians.

NHCL is currently in the process of renovating parts of its outpatient clinical space as part of a multi-million dollar project; however, the renovated space will not be sufficient over the long term. The hospital will continue to experience space constraints in many of its outpatient clinics, which will hamper NHCL's ability to treat additional patients.

As stated in the Medical, Health, and Social Services Regional module, increased TRICARE reimbursement will also remain one of the greatest needs in Onslow County. Health care providers across the region, including in Onslow County, are already experiencing declining revenue and are initiating cost cutting measures, thereby limiting their ability to make necessary investments in quality care, such as workforce development, health information technology, and medical equipment. A 2007 American Medical Association study found that 54 percent of physicians would have to reduce staff and 67 percent would defer purchasing information technology if Medicare payments were cut. TRICARE reimbursement is linked to Medicare reimbursement. As such, it is reasonable to believe that a reduction in TRICARE reimbursement would have a similar effect. If TRICARE reimbursement is not enhanced, TRICARE beneficiaries in the MGTF Region will continue to find it difficult to access appropriate health care services locally and in a timely manner.

Veterans Affairs

The VA has identified the need for one additional mental health provider at the CBOC in Jacksonville. There are no additional needs for direct care VA services in the region. Given that there are an increasing number of veterans of OEF and OIF, there will be a need for the DoD and the VA to create partnerships. The Obama Administration has already indicated that creating a single electronic medical record for both the VA and DoD is a high priority over the next several years. Local VA leadership supports these goals.

Health Care Providers

Onslow County has substantial existing physician needs that will be further exacerbated by military growth in the region. Following USMC growth, Onslow County will have a need for an additional 32.7 FTE primary care providers, 32 FTE medical specialists, 23.2 FTE surgeons, and 26.8 dentist. Onslow County has particularly acute needs for nephrologists, general surgeons, orthopedic surgeons, and otolaryngologists. Again, this need was calculated assuming that uniformed physicians have half of the capacity of civilian physicians. These needs were verified through interviews with NHCL and OMH.

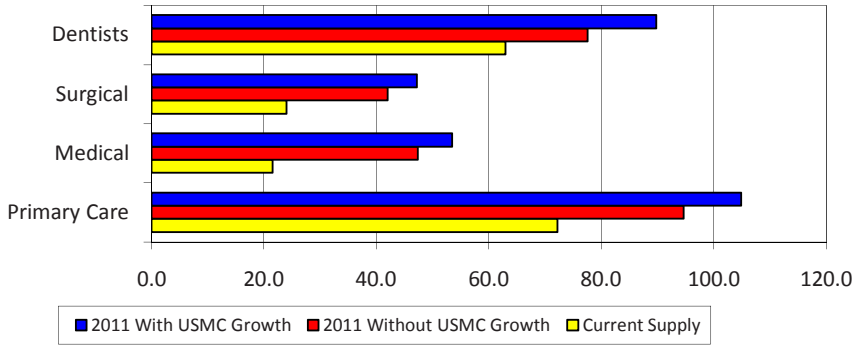


Figure 6.1 - Health Care Provider Needs (FTEs)

Source: Health Net Federal Services, regional providers and HPS Demand Model.

Behavioral Health

OCBHS believes that, as a greater number of people remain in Jacksonville following their discharge from the military, behavioral health

needs in the area will increase. Veterans often find it difficult to transition into the civilian community after completing their military service, and there will be a need to provide services that help veterans integrate into the community in the near future. A key factor in preventing behavioral health issues is ensuring that veterans develop relationships with other people and services in the community. Through these relationships, veterans find a greater sense of self and a lesser sense of isolation, and they are more likely to have potential behavioral health concerns quickly identified, thus mitigating the future need for inpatient or crisis services.

Following USMC growth, Onslow County will have an additional need for 3.7 FTE behavioral health providers. As noted above, the majority of the current supply of providers is located at NHCL. Only five psychiatrists provide services in the civilian community. As the needs of the civilian community increase, this will not be sufficient. In addition, regional providers acknowledge that there is a stigma surrounding seeking behavioral health services at an MTF. As such, while there is likely no need for providers at NHCL, there is a need for additional providers in the civilian sector.

Following USMC growth, there will be a need for 11 additional adult inpatient psychiatric beds in Onslow County alone. As noted above, the *2009 State Medical Facilities Plan* identified a need for 12 additional adult inpatient beds in the Onslow-Carteret region in 2011. Moreover, following USMC growth, there will be a need for nine adult inpatient psychiatric beds in Carteret County, where there are no existing psychiatric providers. [This is shown in the Carteret County module.]

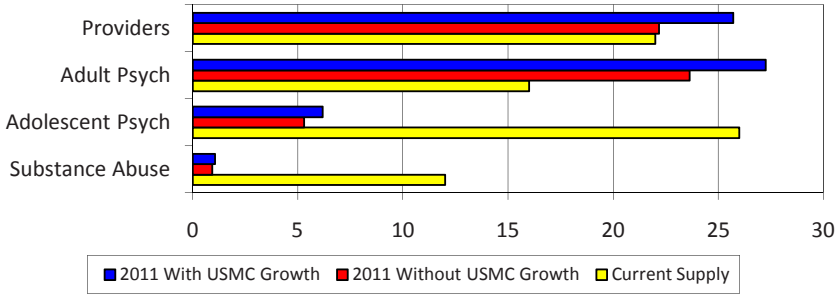


Figure 6.2 - Behavioral Health FTEs and Beds

Source: Health Net Federal Services, regional providers, 2009 Hospital License Renewal Applications

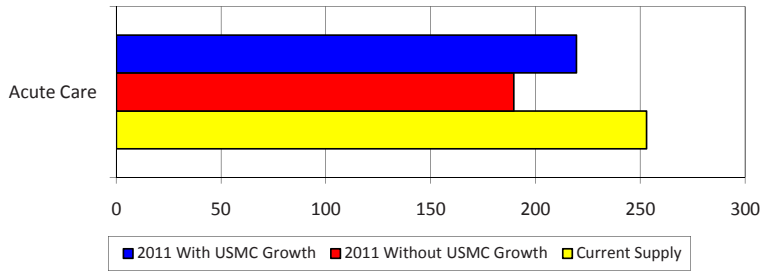


Figure 6.3 - Inpatient Acute Care Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model

County must augment physician support. Currently, there are no physical medicine and rehabilitation physicians in Onslow County, and developing inpatient rehabilitation services would require a substantial capital investment.

Outpatient Services

Military population growth is not expected to have an impact on the need for diagnostic centers, ambulatory surgery centers, or urgent care centers in Onslow County. The development of additional outpatient rehabilitation services is largely dependent on the county's ability to recruit additional

Following USMC growth, there will be a surplus of inpatient substance abuse and inpatient adolescent psychiatric beds in the community. It is important to acknowledge, however, that Brynn Marr treats a much wider service area than Onslow County alone for inpatient adolescent psychiatric services. As such, the facility-based need at Brynn Marr may be greater than the population-based need for services.

Inpatient Acute Care

Due to the expected out-migration rates[8], an apparent surplus of inpatient acute care beds will remain in Onslow County following USMC growth. Both NHCL and OMH have the capacity to serve additional inpatients.

Inpatient Rehabilitation Care

The population of Onslow County could support the addition of 9.6 inpatient rehabilitation beds following USMC growth.

As noted above, many patients are already appropriately receiving inpatient rehabilitation services in other counties. In order to develop additional inpatient rehabilitation beds, Onslow

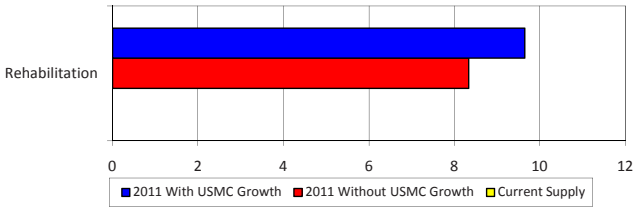


Figure 6.4 - Inpatient Rehabilitation Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model

8 A function of historical outmigration rates.

physicians to support the service.

Regional Coordination

As stated above, coordination between military and civilian providers in Onslow County is generally very good. As utilization of local health services continues to increase, providers must continue to work collaboratively to best meet the needs of military and civilian patients.

Recommended Strategies and Actions

Onslow County needs will be met through the execution of regional strategies and actions, in addition to those listed below.

Action 1: Pursue regional partnerships for health care provider recruitment.

Rationale

Onslow County has a need for over 100 additional providers and these needs will not be met within a short timeframe. As such, Onslow County providers will need to employ creative recruitment techniques to begin to slowly address the needs. One such technique is to jointly recruit providers in partnership with another provider (or providers) in the seven-county region. Onslow County providers, both physician groups and the hospital, should partner with other regional providers to recruit needed physicians to practice part-time in each county.

Responsible Party

Onslow Memorial Hospital and Onslow County physicians

Funding

None Requested

Action 2: Pursue private grant funding targeted at covering medical school debt in exchange for service in a region with a large TRICARE population.

Rationale

Recent medical school graduates have virtually no financial incentive to practice in an area with a significant TRICARE population. The physicians in the Onslow County are aging, raising concerns about future provider supply in the region. As such, it is imperative that incentives be put in place to attract younger physicians to the region. The region faces similar concerns related to dentists.

Federal and state loan repayment programs exist to incentivize physicians and dentists to practice in rural and health professional shortage areas for a stated period of time (two to four years). However, Onslow County is not eligible for this type of funding. The addition of requirements to state and federal loan repayment programs for heavily populated TRICARE areas is not a likely funding resource because of existing commitments to rural communities. Private foundations (such as The Duke Endowment and the Robert Wood Johnson Foundation) provide grants targeted at improving the health of communities. In addition, foundations seek to develop programs which can be replicated in other locations. TRICARE physician recruitment grants could be replicated in other heavy TRICARE populations in North Carolina, as well as in other states.

The proposed grants should mirror North Carolina loan repayment programs, which offer $70,000 to a physician in exchange for four years of service. In addition, these programs include tax stipends to help offset the provider's increased tax liability.

Responsible Party

Onslow Memorial Hospital and Onslow County physicians in partnership with the Military Growth Task Force.

Funding

In order to address approximately one fourth of the Onslow County health care provider shortage, the county needs approximately 30 additional providers. At $70,000 per provider, this requires grant funding of $2,100,000. This may be part of an Onslow County-specific grant, or a regional grant.

Social Services

Existing Conditions

MCB Camp Lejeune and MCAS New River Marine and Family Services

Marine and Family Services is a division of the department of Marine Corps Community Services (MCCS), and provides a variety of services in order to strengthen the military community at each Marine installation throughout the country. Marine and Family Services programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or by visiting the Marine and Family Services offices, located on MCAS New River on Curtis Road, and MCB Camp Lejeune, on Brewster Boulevard. Marines and their family members can access services voluntarily or via referral from a commander or another division of military services, such as a health care provider. Marines are briefed on available services during the required base orientation, *Welcome Aboard,* upon arrival at any Marine Corps installation. Services and special events are advertised on the base television channel, the MCCS installation's Website, and on flyers around base, including at the commissary, shops, and restaurants. Marine spouses living off base rely on information relayed from their spouse if they do not visit the base frequently.

The following table outlines the specific services offered by MCAS New River and MCB Camp Lejeune Marine and Family Services*:*

Program	Services
Marine Corps Family Team Building	▪ New Parent Support Program ▪ Family relationship development programs ▪ Deployment support ▪ Family Readiness
Exceptional Family Member	▪ Placement coordination ▪ Respite care
Counseling	▪ Clinical counseling services ▪ Victim advocacy ▪ Victim support groups
Personal Readiness & Community Support	▪ Relocation assistance ▪ Transition assistance ▪ Career resource center ▪ Family member employment assistance ▪ Volunteer and skills development ▪ Retired Affairs Office
Child, Youth & Teen Programs	▪ Hourly care ▪ Resource and referral ▪ School age care site ▪ Youth center ▪ Teen programs
Financial Management	▪ Personal finance classes

Table 6.8 -- Camp Lejeune Marine and Family Services

Source: Marine Corps Base Camp Lejeune Marine and Family Services website (http://www.mcclegeune.com/marinefamily.html) and MCAS New River Marine and Family Services website (http://www.newriver.usmc-mccs.org/)

The central aim of all Marine and Family Services is to support mission readiness: to strengthen the individual Marine and his or her family for mental and emotional fitness, allowing the Marine to be fully prepared for optimal performance during mission deployment. To this end, Marine and Family Services offers the range of support programs listed above, which are available to active-duty and retired Marines, as well as their legal spouses and dependents. Due to its integration into the military structure, staff coordination with official military channels and staff understanding of military life, Marine and Family Services is able to address social service needs from the context of military culture.

Personal Readiness & Community Support and Marine Corps Family Team Building

Marine readiness is central to all Marine and Family Services as it strives to strengthen and support Marines, their families, and the military community. To ensure that Marines are mission-ready, Marine and Family Services provides classes, workshops, and counseling to mentally prepare the service member and his or her family for deployment through the following programs:

- Lifeskills courses provide workshops on a wide range of topics that are crucial to healthy individuals, marriages, and families.

- Lifestyle, Insights, Networking, Knowledge, and Skills (L.I.N.K.S.) program provides military members, spouses, and children with mentoring and guidance through Marine and Family Services staff, chaplains, Marine Corps Retention Services, and volunteer military spouses.

- Chaplain's Religious Enrichment Development Operation (CREDO) is a weekend retreat program for military members and their families that addresses topics such as personal growth, character development, team building, and ethical leadership. Workshops are also offered to address issues such as marriage enrichment and spiritual growth.

- New Parent Support Program (NPSP) provides education and training for new parents including parenting, baby safety, and play times.

- Family OverComing Under Stress (FOCUS) program assists families with techniques and services to cope with the stress that results from serving in the military and being deployed during times of war.

- Command Team Training provides training for Marines for community leadership in family readiness.

- Before "I Do" Marriage Foundation Workshop provides a two-day workshop for engaged or newly-married Marines to develop positive communication and relationship skills.

- Deployment Support provides guidance for Marine families on managing the transitions involved in Marine deployment and return.

Deployment puts a strain on the Marine and his or her family and, in particular, his or her spouse, who must manage household and child responsibilities on his or her own. Marine and Family Services is essential to helping identify and prevent potential crises before they require intervention. These Marine and Family Readiness Programs address issues related to deployment, and are currently operating at capacity because the demand for these services has increased as more troops deploy for OIF and OEF.

Exceptional Family Member Program

The Exceptional Family Member Program (EFMP) is a mandatory program for families who have children and spouses with special needs. EFMP staff provides placement coordination, family support, and 40 hours of monthly respite care. MCAS New River and MCB Camp Lejeune's EFMPs have been growing quickly over the past few years, and are currently operating at capacity levels that present barriers to providing optimal care. Seventy percent of EFMP participants are living off base. Onslow County school system crowding issues impact the EFMP as teachers' capacity to respond to the personal educational plan of EFMP participants is limited. In addition, many families in the EFMP program are experiencing challenges with accessing local health services for their exceptional family members. Many specialty services are available only in Greenville, or the Triangle at Duke University Hospital or the University of North Carolina Hospitals. Accessing services at these facilities requires an all-day trip, which places burdens on parents and children alike. Since transportation services are not available to these facilities, parents must take a day off of work to travel to Greenville or the Triangle, and may also have to pull other children out of school for the day because they do not have before- or after-school day care options. Further, although TRICARE reimburses families for any trip in excess of 100 miles, payment is made well after the trip is made. For some families, even paying for the initial cost of gas and parking up front is a financial hardship.

Child Development Centers

Access to child development center options plays a central role in the need for, and delivery of, social services. Access is particularly crucial for military spouses because it allows for increased opportunities for employment outside the home, time to care for personal needs such as routine medical appointments, community involvement, and opportunities to pursue continued training and education. The need for child development options is most acute when a service member is deployed, leaving all household and family responsibilities to one spouse. For all of these reasons, access to affordable child development options is critical. It allows military families—in particular, military spouses—to be more financially independent, maintain physical and mental health, and develop professional skills. In turn, these opportunities often lead to a decreased need for other social services such as food assistance, counseling, and child welfare services.

Marine and Family Services has a range of child development options for children from six weeks to 14 years of age; fees are based on a sliding scale. Options include:

- Full-time care for children ages six weeks to 12 years
- Before- and after-school care
- Hourly care
- Saturday night care
- Boys & Girls Clubs of America programs at the Youth Pavilions

In addition to the above options, child care is organized for special base events and for select Marine and Family Services programs.

Currently, child development center demand greatly exceeds capacity. Slots are limited and reservations must be made often weeks ahead of the needed service. Weekday child care services are not available on second or third shifts, limiting employment options for military spouses during deployment. Emergency child care is available but only on a limited basis. Private facilities do exist, but slots are limited and are often unaffordable to Marine families. Many families must arrange non-licensed child care options with friends or neighbors due to the lack of child development slots on and off base.

Counseling Services & Family Advocacy

Marine and Family Services provides individual and family counseling and victim advocacy to address challenges individuals and families are experiencing. Counseling services are experiencing an increase in demand for individual and family counseling as a result of Marine experiences in OIF and OEF.

Marine and Family Services counseling services are meant to address short-term counseling needs such as child-parent and spouse relationship issues. Long-term mental health needs caused by traumatic brain injuries (TBI), post-traumatic stress disorder (PTSD), and combat stress are provided for in the Marine or community medical facilities by psychologists and psychiatrists. Regardless of the length of counseling needs, these issues often have an effect on marriages and families as combat experiences and deployment transitions often lead to family relationship strains and even domestic violence and child abuse.

Marine and Family Services also coordinates victim support, including support groups and a volunteer-based program to provide support in crisis situations. Marine and Family Services responds to family crisis situations, including spousal and child abuse. Staff coordinates with command and counseling services as appropriate.

A number of barriers inhibit Marines from accessing mental health services. Some Marines fear that seeking treatment for mental health issues will negatively impact their careers. Other Marines do seek mental health services, but are confused as to how to access medical or counseling services. Finally, demand for mental health services currently exceeds supply, resulting in long wait times for services for both on- and off-base providers. Due to difficulties accessing appointments, many mental health issues remain un-treated, placing additional stress on a Marine and his or her family. Mental health needs are more fully addressed in the medical and health section above.

Semper Fit

Substance abuse becomes a particular concern during times of deployment as Marines and their families cope with the stress of separation from family and experiences of war. MCB Camp Lejeune's substance abuse program is part of Semper Fit, a program that aims to build and maintain physical and mental fitness. Other health and wellness topics included in Semper Fit include nutrition, self-esteem, stress management, and suicide prevention.

Additional Marine and Family Services

Other Marine and Family Services programs expect a less significant impact as a result of the military influx, including the following programs:

- ***Food Assistance*** – While most Marine families do not qualify for food assistance based upon their income and family size, financial counselors screen eligibility and provide referrals when appropriate. The military provides assistance through the Family Subsistence Supplemental Allowance (FSSA), a program that provides additional income dedicated to food purchases. Marine and Family Services staff also refer eligible Marines to Food and Nutritional Services (FNS), commonly known as "food stamps," accessed through County DSS offices, and to Women Infant Children (WIC), a Department of Agriculture program to meet crucial food needs of pregnant, post-

partum, and breastfeeding women and children under the age of five.

- ***Relocation & Transition Assistance*** – When Marines and their families are arriving to or departing from MCAS New River or MCB Camp Lejeune, Marine and Family Services staff assist them with information and logistical support to facilitate a smooth move. Information on housing, schools, and available resources is provided to new Marines and their families. When a Marine is departing from the military, similar assistance is available, including resume preparation, employment assistance, and training on accessing civilian services. Transition staff coordinates with the Marine for Life program, available to all service members, and with the Transition Assistance Program through the Department of Labor. While these programs offer a range of services to assist Marines and their families, many Marines currently do not seek these services.
- ***Lifelong Learning*** – In order to provide Marines and their spouses with opportunities for personal and professional development, this program provides and facilitates access to continued education and occupational training. Career and educational counseling, testing, online classes, and referrals to local educational centers are available.
- ***Retired Affairs Office*** – Retired Marines are eligible for continued support and assistance, provided at this office. Staff assists retired Marines with information regarding benefits available, including health care, education, casualty assistance, VA disability compensation, and social security.

OneSource

Military OneSource is a resource contracted through the Department of Defense for military members and their families that is intended to supplement existing military support services through the Internet or by phone. Military OneSource complements Military and Family Services, providing a central location for information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs. OneSource offers counseling sessions over the phone and online, and refers to local counselors for in-person counseling. Local counselors in the communities surrounding MCAS New River and MCB Camp Lejeune often have limited availability and waiting lists are frequent and wait times lengthy.

Department of Social Services

Services Provided – County Department of Social Services

North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[9] All County Departments of Social Services (County DSS) provide the following social services; for a full description of DSS services, please see the Medical, Health, and Social Services Regional module.

- ***Adult & Family Services*** – supports disabled adults with a range of services such as guardianship, transportation to medical facilities, services for the blind and adult care home monitoring.
- ***Child Welfare*** – covers the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.
- ***Crisis Intervention*** – helps low-income households with heating or cooling-related emergencies to reduce the risk of health or safety problems as well as the risk of eviction.
- ***Day Care*** – provides free and/or subsidized child day care for low-income families.
- ***Food and Nutrition Services*** -- offers food assistance to eligible families.
- ***Pregnancy Services*** – supports low-income individuals with unplanned pregnancies, addressing medical, social, education and psychological issues.
- ***Refugee Assistance*** – assists newly-arrived refugees.

9 North Carolina Department of Social Services, available at http://www.ncdhhs.gov/dss/about/

- ***Senior Services*** – offers meal assistance and health promotion activities to eligible adults over 60 years of age.
- ***Work First*** – provides temporary assistance to needy families and supports their ability for self-sufficiency.

Military and civilian populations in Onslow County access DSS services by phone, Internet, or in-person at the County DSS office, located in Jacksonville.

As discussed previously, while Marine and Family Services is meant to be the primary avenue by which military members and their families access services, military families living off base access social service programs through the County DSS. Military populations comprise almost 30 percent of Onslow's current population but utilize some programs at disproportionate rates, including Child Protective Services and Child Support Enforcement. Military families also use Day Care and, to a lesser extent, Food and Nutritional Services (FNS), commonly known as "food stamps," programs through Onslow DSS. Finally, affordable transportation is a current need for both military and civilian populations that greatly impacts access to social services.

While Onslow County DSS expects programs used by military populations to experience increased demand as a result of the military growth, the military impact will be compounded by the increased demand as a result of the current economic conditions. Onslow County has not experienced as much unemployment as other North Carolina counties due to its economic ties to MCAS New River and MCB Camp Lejeune; nonetheless, Onslow DSS has experienced an increase in demand for its services, stretching thin funds and staff capacity. In particular, demand for FNS services has increased sharply among the civilian population. With County DSS capacity already stretched in the current economic climate, adding further Marine populations will further exacerbate already-existing funding, staff, and facility capacity challenges.

Day Care

Access to day care is important for the family unit and in particular provides increased opportunities for military spouses. Active military families currently comprise 17 percent of total families enrolled in public-supported child care.

The vast majority of military families receive day care assistance through the Child Day Care Subsidy Program, a program in which DSS provides subsidies for day care costs through private providers. Onslow County also provides child care through a program called Parenting, Empathy, Rapport, and Support (PEERS) that offers child care as part of its development center. The center provides child care and limited respite care on a drop-in basis, and assists with transportation. Special programs are available for teen mothers aged 17 or younger. Other educational programs are offered, including parenting and mentoring components, that seek to prevent child abuse or neglect. The demand for PEERS services and other affordable child care is higher than current capacity, and many families are placed on waiting lists for available slots. Current respite care capacity is only five children per day. Necessary facilities to expand access are available, but increased funding for staff and administration to support additional day care slots is needed.

Onslow County DSS is also part of a public-private partnership with Onslow County Partnership for Children, providing Smart Start and other child development-focused programs to children and youth. Smart Start aims to provide early childhood education to at-risk children, to enrich their educational and life opportunities, and to prevent child abuse and neglect. Onslow County Partnership for Children also provides child care referral.

Child Welfare

Military families, particularly younger, junior-enlisted military families, use DSS child welfare services at higher rates than civilian populations. This higher use rate is due to factors discussed fully in the Medical, Health, and Social Services regional module, including lack of support networks due to frequent moves and separation from extended families. In addition, families living in the civilian community often feel isolated from the military population and might perceive that the civilian population does not understand the unique challenges they face. Finally, they might not be knowledgeable about on-base services and resources, or not be able to access those services, exacerbating their sense of isolation.

All of these factors lead to military families requiring a disproportionate amount of child welfare services in Onslow County. Military families currently comprise 45 percent of child protective services cases but only 30 percent of Onslow's population. Child abuse and child neglect cases exist at high rates among the military community, and military families often constitute some of the most severe cases. In order to prevent or reduce these cases, Onslow County DSS involves military families in its programs to prevent child abuse and neglect, including parenting classes, PEERS, and Smart Start, as described above.

Child Support Enforcement

Military families currently comprise 35 percent of all child support enforcement cases in Onslow County. Last year Onslow County DSS collected almost $18 million in child support payments; military families accounted for over one third of these payments. Military child support payments require fewer program resources because payments are easier to collect due to positive coordination with military structures.

Transportation

Jacksonville's public transportation system, Jacksonville Transit, has a bus line that provides access to all residents. The bus line runs from MCB Camp Lejeune into Jacksonville proper, providing access to shopping, the public library, and Coastal Carolina Community College. Day buses run from 6 a.m. until 6 p.m., and on the weekends from 10 a.m. until 6 p.m. Evening schedules run from 6 p.m. until 2 a.m. Daytime and weekday fares are $1.25 per adult, $0.60 per child or senior citizen, and evening and weekend fares are $3 per adult. Despite the existence of this public transportation system, many military families find transportation a challenge. Jacksonville public transport has a limited route, particularly on base. MCB Camp Lejeune families with children often find that the distance between their homes and the bus route is too far to walk.

Onslow United Transit System (OUTS) is another public transportation system that serves Onslow County residents with 16 vehicles. OUTS requires advanced reservations to schedule a pick-up and offers rides from 7 a.m. until 9 p.m. While transportation can be scheduled up to seven days in advance, appointments must be made by 10:30 the day before transportation is requested. Appointments are made depending on availability. Any cancellations must be made two hours before scheduled pickup. Fares range from $1.00 to $4.00 one-way, depending on distance traveled.

Private transportation, such as taxis, does exist, but is too expensive for most residents.

Coordination – Marine and Family Services & Department of Social Services

Onslow County DSS offices report active coordination with both military systems and local community organizations, and the military reports positive coordination in the delivery of social services. This cooperation between MCAS New River, MCB Camp Lejeune, and Onslow DSS is particularly crucial in cases of child support enforcement and child abuse. If the offender is a military service member, his or her commanding officer is notified and the service member may be removed from the home temporarily and/or placed in custody on base. This coordination is particularly important because military families often do not have extended families in the area and, without the removal of the offender, Onslow County DSS must find temporary housing for the victims following allegations of child abuse. With the removal of the offender through the military discipline system, the child can remain in the home while follow-up investigation and counseling are conducted. Please note that spousal abuse cases are not handled by DSS.

Needs Assessment

Marine and Family Services and Onslow County DSS

As discussed in the regional Medical, Health, and Social Services module, the military community already uses social services at higher rates than does the civilian population, especially younger, junior-enlisted service members and their families. Onslow County is expecting over 27,702 Marines and family members in the military population influx. Many families have young children and are still learning life and coping skills to address the challenges they are facing and the stresses of military life. Current wartime deployments to OEF and OIF have resulted in increased stress on military service members and their families, as are injuries and mental health conditions such as TBIs, PTSD cases and combat stress, adding to the need for additional social service capacity.

The influx is not expected to create needs for new services. Rather the increased military population is expected to exacerbate resource needs already present, both on base at MCAS New River and MCB Camp Lejeune Marine and Family Services and off -base through County DSS services. Marine and Family Services expect all services to experience increased demand, and expect Day Care, Individual and Family Counseling, Family Advocacy, and the Exceptional Family Member Program to be particularly impacted by the military growth. Onslow County DSS increased demand is expected for Child Welfare and Day Care programs. Current barriers to access for the expected Marine population are also expected to be increased—particularly transportation.

Transportation

As discussed previously, access to affordable public transportation and increasing geographic access is a major need for both the civilian and military populations in Onslow County. In particular, needs include:

- Increased ability for military families living off base to access social services in their own communities.
- Increased mobility around base and to/from Jacksonville, to/from MCAS New River, and MCB Camp Lejeune.
- Transportation that can be accessed daily and without advance reservations.

Child Welfare

Onslow County expects that Child Welfare services will see the greatest increase in demand as a result of the USMC population growth. As discussed previously, military families use a disproportionate amount of child welfare services as compared to the civilian population. In addition, Onslow County reports that military families also comprise some of the most severe cases of child abuse and neglect, which require additional resources. Increased capacity to address issues that cause this demographic group to need child protective services and increased resources for child neglect and abuse cases is a significant need. These preventative and response programs, staff, and systems are in place, but will need increased funding and targeted initiatives to address expected upcoming need. In particular:

- Increased capacity for preventative programs currently in place through Marine and Family Services and Onslow County DSS will need increased funding, including classes, workshops, and counseling on topics including parenting, anger management, positive communication, and healthy relationships.
- Increased capacity for targeted programs that address specific needs for the expected Marine demographics, including recognizing and addressing mental health conditions incurred during combat, addressing relationship and family challenges before/after deployment, and life and coping skills for military spouses during deployment.
- Increased capacity for preventative initiatives targeted to decrease the sense of physical and cultural isolation that many off-base military families feel, is needed to increase the well-being of these families and decrease their need for child protective services, including mentoring programs for military spouses and youth as well as support groups.
- Increased knowledge about services available to military families, in particular those living off base. While military service members do receive information about Marine and Family Services as part of their base orientation, many military service members and their families do not know about, or do not know how to access, available resources.
- Increased capacity for child protective services for both MCB Camp Lejeune Marine and Family Services and Onslow County DSS. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly and that adequate follow up (counseling, legal coordination, coordination with military Command) is thorough and timely. Onslow County estimates that a new Child Protective Unit comprised of 6.5 case workers is needed, along with the following funding as outlined in **Table 6.9**:

Child Protective Services Financial Impact	Foster Care Financial Impact	Total Expected Child Welfare Services impact
$97,065	$850	$97,915

Table 6.9 - Child Welfare Services Funding Needs
Source: Onslow County Department of Social Services.

Child Development

While the increased military population is expected to have a relatively minor impact on the demand for child development center slots, the increased military population is expected to contribute to already-existing child care capacity issues. As discussed previously, Onslow County DSS offices already have the necessary facilities to increase child care availability, but lack the necessary funding to provide adequate staff and administrative support. Onslow County DSS already coordinates with programs such as Smart Start to provide positive child development

opportunities, but additional capacity for these programs is needed.

While MCAS New River and MCB Camp Lejeune have on-base facilities, demand exceeds capacity as both bases have a substantial number of children on waiting lists. Additional facility space has been approved for military construction (MILCON) in the next two years but it is possible that future demand will even exceed this new capacity. Marine and Family Services provides referrals to other providers off base but not enough off-base providers are available to meet current demand.

The following child development center needs reflect current needs that will be exacerbated by the influx of military population:

- Expanded child development center slots and qualified staff to support this capacity.
- Expanded child development center slots and capacity for children with special needs, such as extreme ADHD.
- Increased day care availability at second and third shift times. Access to day care at these times would greatly increase military spouses' ability to find employment outside the home, increasing financial independence and decreasing needs for other social services such as FNS.
- Increased access to respite care is needed, particularly for single parents, military spouses whose spouses are deployed, and parents with children who have special needs.
- Increased child development center availability for parents needing urgent or last-minute day care options, particularly for single parents or military spouses whose spouses are deployed.
- Increased child development center slots within programs such as Smart Start that provide child care while engaging parents, working toward the prevention of child abuse and neglect.

The following chart outlines current and anticipated day care need for Onslow County:

	Child Care Enrollment - 2007	Expected Child Care Enrollment due to Normal Population Growth - 2011	Additional Slots Expected Due to the Military Increase - 2011	Total Expected 2011 Child Care Enrollment
Children aged 5-12	868	1,062	154	1,216
Children under 15 years old	3,403	4,178	605	4,783

Table 6.10 - Projected Child Care Enrollment
Source: Education Working Group, Military Growth Task Force

Onslow County estimates the cost of these additional slots due to the military increase to be approximately $6,615.

Food and Nutritional Services

Many Marine families do not qualify for FNS services; military families comprise roughly two percent of all Onslow County FNS cases. Onslow County anticipates a minor impact on FNS services due to the military population increase, and increased funding of $712.

Marine and Family Services

In addition to the needs listed above, Marine and Family Services programs have the following specific needs.

Counseling Services & Family Advocacy

Counseling resources are currently in place to meet the needs of Marines and their families who are facing challenges in areas such as pre- and post-deployment family transitions, anger management, positive communication, and healthy

relationships. The need for increased counseling services capacity is also linked to a need for increased mental health services, provided through the health system. Unmet need for mental health treatment spills over into Marine and Family Services counseling, family advocacy, and child protective services. Increasing overall capacity for all mental health services is needed—clinical and non-clinical.

- Increased capacity for clinical counseling services for Marines and families members.
- Improved continuity of care between the medical services and Marine and Family Services would address both the mental health condition as well as any social service spillover into family issues that require counseling or the intervention of family advocacy services.
- Increased capacity for family advocacy programs to ensure timely and appropriate response to acute families issues including domestic violence, child abuse, and child neglect.
- Increased clinical staff capacity—namely through increasing clerical staff to support administrative tasks.
- Increased training for providers and command to more effectively recognize and treat TBIs and combat stress.

Exceptional Family Member Program

MCB Camp Lejeune's Exceptional Family Member program is operating at full capacity and additional resources are needed even at current program levels. EFMP program needs include:

- Increased capacity—staff and facilities—to provide respite care.
- Increased case management staff capacity to provide sufficient EFMP program support, taking into account the enhanced advocacy role for EFMP case workers.
- Increased resources to assist families who must travel to Durham or Chapel Hill to access appropriate medical services, specifically day care for EFMP siblings, and up-front payment to pay for gas and parking during the trip.

Recommended Strategies and Actions

Onslow County needs will be met through the execution of regional strategies and actions in addition to those listed below.

Action 1: Increase access to services by addressing limited mobility.

Rationale

Despite Jacksonville's public transit system, military and civilian populations continue to experience challenges in accessing public transportation, resulting in many military families encountering challenges in accessing services. Families accessing services for children or spouses with special needs must travel to Greenville or the Triangle at considerable cost.

Supporting activities

- Reduce or eliminate geographic access barriers by bringing services to military communities in Onslow County. This can be achieved by forming community action teams through Onslow County DSS and Marine and Family Services. These action teams can serve military families at accessible locations throughout Onslow County in locations such as community facilities, schools, and churches. Preventative programs such as workshops could be particularly successful in these venues, and child care could be provided on site. The appropriateness of providing services requiring confidentiality, such as individual or family counseling, will depend on the capacity of the community facility.
- Provide a public transportation option to EFMP families to Greenville and Chapel Hill. Purchase a multi-passenger van that would have scheduled travel once a week to Greenville and the Triangle. This van could be

considered for other uses on the remaining three week days. For example, the van could be used to provide transportation to Marine and Family Services programs or events, or to transport the community action teams described above.

Funding

- The EFMP transportation option is estimated at $22,900 for the initial cost of a multi-passenger van, and approximately $38,000 in operating costs per year, assuming the van is in operation two days a week.
- Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 2: Increase preventative program capacity through Marine and Family Services and Onslow County DSS.

Rationale

Many military families access services at a point of crisis—addressing causal issues through preventative programs can reduce the need for emergency services.

Supporting activities

- Target military members most at risk for needing emergency social services, such as young and junior-enlisted military families with young children.
- Provide local, accessible outreach programs to the military community residing in Onslow County.
- Increase the number of qualified staff to serve these programs. Maximize capacity of clinical staff through increasing administrative support.
- Increase capacity of the Onslow County Smart Start program.

Funding

- Additional funding needed to increase preventative program capacity should be pursued through the State budgeting process for the Department of Social Services.
- Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 3: Increase program capacity for child welfare, particularly child protective services.

Rationale

Due to the expected demographic characteristics of the military population, substantial increases are expected in child abuse and neglect cases, requiring immediate intervention.

Supporting activities

- Allocate additional funding for Onslow County DSS and Marine and Family Services to address the increase in child welfare resources needed to support the expected population growth, as detailed in the Needs

Assessment, Child Welfare, section above.

- Increase clerical staff of MCAS Marine and Family Services to support the administrative element of programs, allowing clinical staff to devote more time to clinical functions.

Funding

- Administration and program increase support, estimated at $100,000 for Onslow County DSS, allocated through the State budgeting process.

- Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Action 4: Increase program capacity for day care through Onslow DSS and MCB Camp Lejeune.

Rationale

Much of the expected Marine population is under the age of 26, and many have young families; increased capacity for day care will address this need, as well as provide increased opportunities for military spouses to pursue employment outside the home, thus increasing self-sufficiency.

Supporting activities

- Allocate additional funding of $6,615 for Onslow County DSS to meet the expected program increase.

- Allocate additional funding for Marine and Family Services to meet current and expected program demand for quality and accessible child day care.

- Allocate additional funding to increase the capacity of providers who provide child day care for children with special needs.

Funding

- Administration support for Onslow County DSS through the State budgeting process for the Department of Social Services. Increased facility space for Marine and Family Services.

- Points of contact at MCB Camp Lejeune for further discussion of funding through MCB Camp Lejeune and MCAS New River's Community Services: Deputy Director of Marine Corps Community Services, John Olson and Chief Financial Officer of Marine Corps Community Services, Michael Smith.

Public Safety and Emergency

Existing Conditions

Onslow County is the county in the MGTF Region most affected by the Grow the Force initiative.

Emergency Management

Military-Civilian Task Force for Emergency Response

The Military-Civilian Task Force for Emergency Response (MCTFER) was established in 1998, subsequent to a poorly coordinated response to a helicopter crash in Onslow County. MCTFER, consisting of military and civilian response agencies from the county and the five municipalities within, aims to improve public safety in Onslow County by coordinating emergency management and response resources between the base and the community. Through mutual aid agreements, letters of support, and letters of intent, the county's emergency services agencies have facilitated coordinated, efficient response efforts to local disaster events.

MCTFER is an especially valuable tool because its low costs are far outweighed by its benefits. Training integration between local, state, and federal entities has enhanced operational readiness. Furthermore, new efficiencies in training, coordination, and preparation have a force multiplier effect, rendering the partnership a valuable long-term investment.

MCTFER holds annual emergency exercises during which the member agencies respond to a simulated emergency; past examples include chemical attacks, hostage situations, and high-risk rescues. During these events, the county and base alternate lead planning roles, allowing each to monitor their capacity to head disaster responses or provide support.

In recognition of the fact that disasters impacting Onslow County are often regional in scope, MCTFER has held "Regional Response" exercises aimed at coordinating disaster response on a larger scale. Involving as many as 1,000 responders from 75 different agencies representing 10 eastern North Carolina counties, these drills are a model for regional emergency preparedness within the MGTF study region (Brill and Goodman, 2003). Coordinating such drills more frequently would be mutually beneficial to each county in the region, ensuring cooperative preparedness and readying newly hired emergency responders for coordination during regional disasters.

Emergency Medical and Fire Services

Onslow County's primarily volunteer emergency services departments are buckling under the strain of new growth, facing a significant increase in demand for services that dwarfs current recruiting capacity. Current budget shortfalls in Onslow County have left these departments with few options to address these challenges.

Onslow County is covered by 20 volunteer fire departments and nine volunteer rescue squads, fully funded by the county. These departments are reporting significant increases in calls for service since the onset of the Grow the Force Initiative.

A specific area of concern to the county's emergency services is their declining capacity to provide daytime coverage. Increasingly, fire and EMS volunteers are working day jobs that, for varying reasons, do not allow the flexibility for daytime responses. Increases in military and civilian personnel at MCB Camp Lejeune make daytime responses increasingly important, as commuters cause a significant increase in county population during working hours that is not reflected in the county's actual population. Representatives of Onslow County Emergency Services report that an increase in daytime traffic accidents is evidence that military and related growth is already causing increases in daytime service needs.

Among the county's volunteer and municipal fire departments, these challenges in daytime responses pose a threat to community development as well. The Insurance Services Office (ISO) of the Department of Insurance provides ratings to insurance companies based on a community's fire response capabilities which are in turn used to determine homeowner's insurance rates; a rating of one indicates the highest level of service, while a 10 indicates no service available. Two non-responses or two responses exceeding 12 minutes from the receipt of the initial service call can cause a rating of 10, and a subsequent insurance cost increase of up to 30 percent. Currently, Onslow County's municipal volunteer departments have ratings between four and seven, while the volunteer departments have ratings between five and nine. The ability to maintain good ratings will only be further challenged by the current population growth patterns, with higher rated departments at risk of losing their ISO rating altogether.

The state of interoperable communications among volunteer fire and EMS departments is also in need of improvement. The county's rescue services currently utilize an 800 MHz communications system, but fire departments are still on VHF. Onslow County's Emergency Services relates a need to transition the county's fire departments to an 800 MHz system. This would allow for communications interoperability among 90 percent of the county's first responders (Onslow County Emergency Services 2009).

Onslow County Sheriff's Office

The Onslow County Sheriff's Office is already feeling the strain of growth related to the Grow the Force initiative. Approximately 12,000 people have come to Onslow County since the initiative began as either direct or induced military population growth, with an additional 15,000 expected. According to the Federal Bureau of Investigations, counties classified as metropolitan, such as Onslow, on average maintain a police force of 2.6 personnel per 1000 residents. Accordingly, the Sheriff's Office should have added approximately 31 employees since 2007 to stay in line with national averages.

Although Onslow County, with its high percentage of military and civilian citizens employed by MCB Camp Lejeune and MCAS New River, is considered more recession-resistant than other areas of the country, the economy here has nonetheless been impacted by the current global downturn. Some law enforcement officers believe an increase in criminal activity is likely to parallel economic problems here. This creates an especially difficult situation where the county has less money to expand a police force that is facing substantial increases in service demands. While the Sheriff's Office is not facing the hiring freeze affecting many county agencies, the capacity to hire new deputies is still limited by funding deficiencies and a small pool of qualified applicants.

Jacksonville Police Department

Jacksonville Police Department (PD) faces many of the same issues as the Onslow County Sheriff's Office, although perhaps more acutely due to the city's adjacency to MCB Camp Lejeune.

Jacksonville PD owns and utilizes a 7-channel, 800MHz, trunked radio system which it shares with the City of Jacksonville. Although this system is similar to VIPER specifications, the PD does not tap into the VIPER system and no plans are in place to do so in the future. The agency currently has enough portable and mobile radio to meet their communications needs; any issues with communications interoperability are more likely to result from other local agencies using less powerful, incompatible systems. Jacksonville PD, Jacksonville Fire, and Onslow County Emergency Services communicate through special events channels on the Jacksonville PD system. According to PD representatives, the system is near end of life and should be upgraded to ensure reliability.

Crime rates in Jacksonville have steadily risen in the past five years, greatly increasing demands on police service and subsequently the Onslow County courts system. Since 2004, the department has seen the following trends in criminal activity (Jacksonville PD 2009):

- 11 percent increase in reported crimes
- 17 percent increase in arrests
- 400 percent increase in rapes
- 197 percent increase in robberies
- 111 percent increase in aggravated assaults
- 150 percent increase in Part I violent crimes

Workload indicator data for Jacksonville PD further suggest that the service demands on Jacksonville PD are intensifying. Since 2004, the department has reported the following workload trends (Jacksonville PD 2009):

- 12 percent increase in response times
- 22 percent increase in calls for service

Different factors can affect these crime and workload trends. The unemployment rate in the Jacksonville Metropolitan Statistical Area rose from 5.2 percent to 7.8 percent between April 2004 and April 2009 (Employment Security Commission of North Carolina 2009). Furthermore, population growth in the area attributable to Grow the Force has likely induced an influx of transient construction workers, retail workers, and service workers to meet the housing and quality of life

demands of new citizens. The level to which military growth and induced population growth are contributing factors is difficult to define, but it can be safely said that Grow the Force is further straining a police department that faces significant deterioration in levels of service.

These sobering statistics are further complicated by the fact that personnel levels are not increasing commensurate with demand for service in the area. Since 2004, the PD has grown from 107 to 115, an increase of approximately 7.5 percent. Furthermore, the PD has lost nine employees to MCB Camp Lejeune due to privatization of law enforcement services at Marine Corps installations, accounting for nearly 8 percent of the total force. A brief look at the aforementioned statistics suggests that demand for service is greatly outpacing the modest increases in service capacity, a trend that could spell dire consequences for the safety and security of Jacksonville's citizen and law enforcement officers in the coming years.

Courts

The Onslow County court system faces major challenges that are greatly compromising its ability to fulfill service needs. Generally, these challenges can be attributed to inadequate staff levels, a lack a facility space, and deficiencies in court security.

Prior to the Grow the Force initiative, Onslow County's District Court had existing issues with meeting demands for service. Court representatives estimate that the court was already short one to two District Court judges. Anecdotal reports indicate that court facilities were already approaching maximum capacity in terms of both staffing and facility space.

Since 2007, Onslow County courts have seen a significant increase in demands for service. Between 2007 and 2008, court filings for infractions increased by nearly 13 percent, while general civil filings increased by 54 percent. Since 2004, these filings have jumped 38 percent and 106 percent, respectively. Though specific statistics were not available, Onslow District Court representatives anecdotally reported significant increases in adoptions, domestic violence cases, and child support cases, among others.

The staffing levels of Onslow County's courts have remained static in the face of such significant service demand increases. With the exception of a part-time position filled in the Trial Court Administrator's Office, personnel levels have remained static or decreased since 2004. Two positions in the Clerk's Office are indefinitely vacant due to Onslow County's hiring freeze. Despite personnel challenges, District Court representatives related that even were these personnel deficiencies overcome, there would not be sufficient space for new employees. Office space is currently at capacity, and storage space is beyond capacity. In the Clerk's Office, for example, cabinets for case filings are now located in the hallways outside courtrooms and offices; some cabinets are even stacked, requiring the use of a ladder to access them. This situation poses safety hazards to the court's employees and greatly challenges their ability to keep up with increases in service demands.

Security measures in Onslow's court facilities, though more extensive than other courts in the study region, remain inadequate. The court currently utilizes security cameras on a full-time basis and electronic scanning devices on a case-by-case basis. Plans are underway, however, to upgrade security measures here.

Public Health

Onslow County's Environmental Health department is facing increases in service demands, though not at the level of other departments in the county's PS/ES sector. The department currently has 20 employees and four vacant, frozen positions. Although performance measures show a substantial increase in food and lodging inspections between 2007 and 2008, department representatives attribute most of this increase to a recent change from state-mandated quarterly inspections to risk-based inspections. In the face of current rapid growth, this change could greatly strain the capabilities of their small staff to maintain inspection levels.

Needs Assessment

Communications Interoperability

Emergency Services

In order to achieve communications interoperability among the county's first responders, the twenty volunteer fire departments need to be upgraded from a VHF system to 800 MHz. According to Onslow County Emergency Services, seven handheld radio units and five mobile units for each department would allow for interoperable communications among 90 percent of the county's first responders. This project is estimated to cost approximately $1.1 million.

Law Enforcement

Jacksonville PD related a need to upgrade its current communications system, as it is nearly out-of-life. In order to achieve full compatibility, for which no plans currently exist, the department estimates additional engineering costs of $120,000.

Personnel

Emergency Services

Onslow County's emergency service providers are in dire need of shoring up their volunteer recruiting pool, especially to meet daytime service demands. County Emergency Services representatives estimate that the following personnel levels are needed to meet increased service demands:

- 8 emergency medical personnel
- 4 E911 operators
- 20 Firefighters
- 4 rescue service personnel

Law Enforcement

The county's law enforcement providers are far behind the power curve in dealing with increases in crime and demand for services. In order to meet these demands, law enforcement representatives estimate a need for the following personnel.

Sheriff's Office

- 20 new deputies, including five deputies to meet court security needs
- 2 civilian support positions

Jacksonville PD

- 24 sworn officers
- 8 civilian support positions

Courts

Onslow County's District Court faces substantial personnel needs, some of which existed prior to current population growth trends. These needs are based on total expected growth in Onslow County of 30,000 residents.

- 4 to 5 District Court judges
- 4 to 5 deputy clerks
- 2 magistrates
- 4 assistant district attorneys
- 1 Superior Court judge

Public Health

- One Office Assistant IV
- One Environmental Health Specialist – Food and Lodging
- Two Environmental Health Specialists – On-site Water Protection

Facilities

Emergency Services

- EMS building ($2.27 million)

Law Enforcement

- Jacksonville PD facilities upgrade expansion from 16,000 square feet to 65,000 square feet

Courts

- One courtroom and chambers per additional judgeship
- Office space and storage space per each additional employee

Public Health

- Office space for 7 additional environmental health employees

Recommended Strategies and Actions

Action 1: Transition all fire departments to 800MHZ, P25-Compliant trunked radio systems.

Funding

- State appropriations
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 2: Upgrade Jacksonville PD communications system before it expires.

Funding

- State appropriations
- Federal grants to DCC&PS

- State Homeland Security Appropriations

Action 3: Increase the recruitment and training of qualified personnel, institutionalizing interest at a younger age.

Supporting activities

- Work with Onslow County high schools to develop Law Enforcement, Fire, and EMS recruitment and training programs. Explore the possibility of reciprocal benefits, including allowing students to claim class credits for time spent training and volunteering. Such programs could be presented to students as an opportunity to learn and gain experiences outside of traditional classrooms.

- Produce literature explaining the educational benefits available to fire and EMS volunteers, including college scholarship opportunities. Explore new scholarship opportunities with North Carolina state universities to incentivize student volunteerism.

Funding

- Matching funds between school districts and individual departments

- OEA community development funding

Action 4: Develop new interagency agreements aimed at mitigating the effects of attrition of law enforcement personnel to higher-paying agencies, including MCB Camp Lejeune

Supporting activities

- Hold summits among representatives of the county's law enforcement agencies.

- Discuss the state of attrition in the county and develop an agreement in which any department engaging in intraregional recruiting reimburses some training costs to the department from which it is recruiting.

Action 5: Initiate measures to update and expand court facilities to ensure quality of service and enhance the safety of court personnel. Backfill frozen positions and create new positions to meet service demands.

Supporting activities

- Initiate planning for new court facilities

- Seek funding for personnel to meet service demands

Funding

- OEA community development funding

Quality of Life

Existing Conditions

Parks and Recreation and Sports Venues

Seven county-managed parks cover over 970 acres of land in Onslow County, most of which offer picnic areas, walking trails, and outdoor sports facilities, and some of which include water access for canoeing, kayaking, and boating recreation. The county generally ranks moderately well in the state for most recreation facilities, according to the North Carolina SCORP. A comparison of Onslow County's facilities and state standards can be found in **Table 8.1** below.

Facilities	North Carolina Standard	# in Onslow	Recommended # based on 2006 population (161,224)	Over (+) and Under (-)
Baseball Fields	1/8000	17	19	-2
Soccer Fields	1/6000	7	25	-18
Softball Fields	1/4000	15	38	-23
Tennis Courts	1/1200	28	126	-98
Outdoor Swimming Pools	1/14,000	0	11	-11
Community Centers	1/14,000	4	11	-7

Table 8.1 - Comparison of Recreation Facilities Managed by Onslow County Parks and Recreation Department and Jacksonville Recreation and Parks Department with State Standards (2007)
Note: Does not include public school and military facilities, or privately-run facilities. **Does** include facilities operated by the Jacksonville Recreation and Parks Department.

In addition to the facilities listed in Appendix B, Onslow County has two recreational bike loops: the Richlands Loop bike route (with both 20 and 50 mile loops) and the "Jacksonville City to Sea" bike route (21 miles).

The county sponsors youth, adult, and senior sports programs, as well as a variety of instructional classes and special events, including an annual "Senior Games."

The county has a cooperative agreement with the 35 public schools in the county, which provide athletic fields, meeting rooms, playgrounds, and tracks as available. However, it is increasingly difficult to coordinate field use with the schools, and it would be more appropriate for the county to have its own facilities, rather than competing with the schools. School budget cuts also have created a need for the schools to charge the county for use of their facilities.

Figure 8.1 is a map of the major parks and water access within the county.

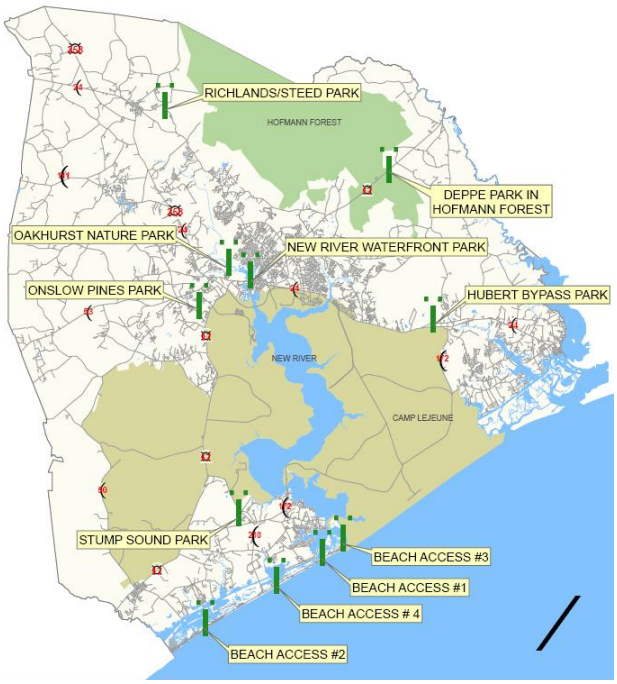


Figure 8.1 - Park Facility Locations
Source: Onslow County Parks and Recreation

City of Jacksonville

The City of Jacksonville manages approximately 268 acres of land for park and recreation use. Jacksonville's jurisdiction contains nine neighborhood parks, five community parks, three district/metro area parks, and three special use recreation areas. Amenities offered by Jacksonville Parks and Recreation sites include picnic areas, playgrounds, bike and walking trails, sports fields (tennis courts, soccer fields, basketball courts, volleyball courts, horseshoe pits, shuffleboard courts, baseball/softball fields, disc golf, multi-purpose athletic fields, and practice fields), and docks. Several of the parks have waterfront areas. [A table showing Jacksonville's facilities as compared to state standards is located in **Appendix B**.]

Within Jacksonville's community parks, there are several indoor centers, including an arts and crafts center, Boys and Girls Club, gymnasiums, and recreation centers with meeting rooms.

In addition to the city-managed parks, Jacksonville has 48 separate trails and greenways that are either fully constructed or in planning stages. These trails are on-road, off-road, and on waterways. The intention of the trail system is to develop a series of greenway loops throughout the city.

The city runs adult and youth recreational programs, including athletic leagues, after school programs, summer camps, and instructional classes. Senior programs are available throughout the city, and Jacksonville also has recreation programs for people with disabilities, as well as a Junior Olympic competition.

Eleven of the city's public schools and the Coastal Carolina Community College allow use of their facilities by the Parks and Recreation Department, limited to after-school hours and based on availability. The department has access to indoor facilities at the schools if requested (typically through an agreement with the principal). Public use of the school facilities is secondary to the functions of the schools.

The Sea Gull Recreation Center in Jacksonville offers miniature golf and batting cages. Swingin' Things offers miniature golf, batting cages, and an arcade, and Wheels Roller Skating Rink is another available recreational facility in the city.

Current Plans

Onslow's Park and Recreation system-wide comprehensive plan lists short- and long-term goals for the county's parks and recreation department. Short-term goals include a coordinated partnership with another entity (YMCA, local municipality, etc.) to construct a multi-purpose recreation center with a swimming pool on the southeastern side of the county (between Sneads Ferry and Jacksonville). Another short-term goal for the county is to initiate and complete development at all parks as needed (hiking trails and picnic shelters at Deppe Park, and additional land for a district park purchased in Hubert/Swansboro area for development).

The long-term goals outlined for the county also include a partnership with another entity (YMCA, local municipality, etc.) for construction of a multi-purpose recreation center in areas where rapid growth is expected (one between Jacksonville and Richlands, and one between Swansboro and Jacksonville). A new district park in the Hubert/Swansboro area of the county is an additional goal.

The parks and recreation comprehensive plan also includes a long-term goal of linking greenways and trails to parks, subdivisions, schools, and shopping centers. It was also recommended that the county develop a "Trails and Greenway Plan."

City of Jacksonville

The 2007 Comprehensive System-wide Recreation/Park and Shoreline Access Plan for Jacksonville, NC includes short-term goals for the recreation program, including increased development of programs and facilities at the Brynn Marr area (to expand the existing neighborhood park to serve as more of a community park) and the Carolina Forest. Additional recreational programs for youth, adults, and seniors were also included as a goal.

Water-based recreational opportunities were included as a short-term goal for the city's recreation program, including access to water for boating, camping, canoeing, fishing, kayaking, sailing, swimming, and wading. Developing a beach at one of the waterfront park locations was identified as a goal. A public swimming pool was identified as a need through various meetings and surveys, and the Jacksonville comprehensive parks and recreation plan recommended a splash pad as an economic alternative to a pool. The possibility of a cooperative agreement with the military bases, private club, or developer was suggested.

It was noted that a recreation center could provide better programs and activities to people with disabilities, who have special needs to be addressed (transportation, equipment, restroom facilities, etc.).

One of the long-term goals in the comprehensive plan is construction of a recreation center on the northern side of town,

which would address public growth and development in the Williamsburg Plantation, Carolina Forest, Cypress Creek, and Rhodestown areas.

Also among the long-term goals was the development of the Williamsburg Plantation area and renovation of several parks (including three recreation centers that are over 50 years old and may contain asbestos). The parks and recreation department also has the goal of increasing its greenway/trail system to include water-based or paddle trails. Listed potential sites include Chaney Creek, Mill Creek, and Northeast Creek.

Water Access and Parking

Onslow County has four major beach accesses, as well as 13 wooden public beach crosswalks (located from 2nd St. North to Reeves St. at the Surf City line). The four main access points are located at:

- SR 1568, sound side, 4 miles north of the North Topsail Beach high-rise bridge
  - Ramp and walkway to ocean, restrooms, showers, and parking lot for 30 vehicles on one acre
  - This site is not used very often and is fairly quiet. Parking is sufficient at this site.
- NC 210, 4 miles southeast of North Topsail Beach high-rise bridge
  - Elevated wooden pavilion, handicapped ramp to the beach, concession areas, restrooms, showers, and parking lots for 250 vehicles on four acres
  - The parking is located on both sides of the road and is considered sufficient at this site.
- Past St. Regis Hotel at the mouth of the New River at North Topsail Beach
  - A favorite spot for surf fishing – 700 ft. of frontage facing New River Inlet, and vehicular beach access (but no parking lot)
- SR 1568, 1 mile from NC 210
  - Elevated wooden observation deck, restrooms, showers, concession area, parking for 150 vehicles
  - The parking lot is typically very full in the summertime. There is a park across the street for some overflow parking.

There is no parking available at the wooden beach public crossways because they used for pedestrian traffic from the local area.

Onslow County also has two boat ramp sites and a pier at the New River Waterfront Park. Boat trailers typically take up a lot of space in the parking lot, but parking is considered sufficient at the park. In addition, the Onslow County Parks and Recreation Department provides four access points to 16.85 miles of paddle trail:

- Cow Horn Creek – about 15 parking spaces
- McAllister Landing – five or six parking spaces
- Burton Industrial Park Primitive Landing – accessible only by 4x4s
- Oak Hurst Nature Park – plenty of parking available

City of Jacksonville

The Sturgeon City cultural area has canoe and kayak water access, and the L.P. Willingham recreation area has a pier and ramp access. The Mill Creek Green recreation area also has fishing access.

Current Plans

The county's parks and recreation comprehensive plan recommends a long-term goal of providing more water-based recreation and park opportunities, such as fishing, boating, kayaking, canoeing, sunbathing, and nature study. This could involve acquiring new park land or development of new water access points in existing parks.

City of Jacksonville

The parks and recreation comprehensive plan lists water-based or paddle trails as part of its long-term goals, but parking and put in/take out access points would be important in the planning process. The plan also recommended that a paddle trail be designated with access points along the New River north/northeast from the New River Waterfront Park toward the Cow Horn-New River Paddle Trail (access points provided by Onslow County).

Arts and Culture

The Onslow County public library system currently operates four branches and a law library. The main branch and law library are located in Jacksonville, with supplementary branches in Richlands, Sneads Ferry, and Swansboro. Their square footage is listed below and compared to the state standard (State Library of North Carolina 2007, 53):

Onslow County Public Library (Jacksonville):	13,875 SF
Law Library (Jacksonville):	600 SF
Richlands Public Library:	3,000 SF
Sneads Ferry Branch Library:	1,845 SF
Swansboro Branch Library:	5,489 SF
TOTAL:	24,809 SF

Based on the 2007 population of Onslow (167,918) and the state recommendations for library square footage (0.65 per capita), the suggested area for libraries in Onslow County is 109,146 SF. This shows a deficit of about 84,337 square feet in the county.

According to the library's 2006 master plan, the main branch "has been stretched and overused to the point that its effectiveness is compromised." Descriptions of the Richlands and Sneads Ferry branches echo that of the main branch – stretched to capacity. The Swansboro branch was expanded in 2003, and comfortable when compared to the other branches. It is important to note that the public libraries are very significant to the military population because many young families rely on the public library for children's services and library materials.

In addition to the library system, Onslow County also offers many cultural programs. The Onslow County Council for the Arts is very involved in the community, offering youth programs and a space for shows and galleries. There are two museums located in the county, the Onslow County Museum and Topsail Island's Missiles and More Museum. The Kuumba Festival was located in Onslow in 2007, and there is an annual Swansboro Festival. Coastal Carolina Community College also brings cultural events to the county, including theater and other cultural programs. The Onslow County Community Concert Association also brings a concert series to the county.

Several facilities are available for cultural events. The Onslow County Council for the Arts building holds workshops, and art galleries are located around the county, with several specifically in Jacksonville. Local high school auditoriums are used for plays and other performances, as well as the Sneads Ferry Community Theater. The UNCW Campus Auditorium, though not located within Onslow County, is used for the concert series.

City of Jacksonville

Jacksonville maintains two historical/cultural areas: the Riverwalk Crossing Park and Sturgeon City. Riverwalk Crossing Park is a linear open space park with flower beds and a train depot with a railroad caboose and stage. The Sturgeon City area (about 11 acres) contains an amphitheatre, butterfly garden, boardwalk trail system, picnic areas, and other amenities.

The Lynnwood Park Zoo in Jacksonville has over 80 exhibits, and is open Friday-Monday and other days by appointment.

The libraries in Jacksonville are sponsored by the Onslow County public library system, outlined above.

Current Plans

The Onslow County public library system is in need of new space, as evidenced in the library master plan. The master plan outlines goals, priorities, and phasing for the different library branches. The first priority is the replacement of the Sneads Ferry Branch Library, with a recommended new facility location in the vicinity of Four Corners. The replacement of the Main Library is listed as the second priority; the Commons property is recommended as the location for the replacement Main Library, if the soil conditions are considered suitable. The third priority listed is to expand and/or replace the Swansboro and Richlands Branch Libraries, because both are constrained by their small size. The master plan also recommends, as a fourth priority, that the county acquire land for a Southwest Branch library in the short term; the actual construction of the facility can be deferred until the population in the area justifies a facility (estimated to be 10-15 years). The recommended site for the Southwest Branch is west of Jacksonville, on approximately two acres of land. The recommended project timeline and expenditures are listed as follows:

Project	Year	Expenditure
Sneads Ferry	2007	$2,799,534
Main Phase 1*	2009	$10,190,946
Richlands	2012	$2,245,427
Swansboro	2016	$3,652,757
West Area	2019	$3,991,466
Main Phase 2*	2021	$6,014,307

Table 8.2 - Recommended Project Timeline
*The recommendations for the Main Library were broken into two phases: Phase 1 would be the initial construction of 35,000-38,000 square feet. It would include the majority of staff support spaces and about 50 percent of the public spaces. Phase 2 would complete the facility to the end size of 50,826 square feet.

City of Jacksonville

The City of Jacksonville is planning to establish a Surgeon City Educational and Environmental Center (15.34 acres) at the Sturgeon City cultural area. Also in planning stages are the Williamsburg Plantation and Carolina Forest.

The Museum of the Marine is also under construction in Jacksonville, and a Children's Museum of Jacksonville is in the planning stages.

Hotels and Meeting Space

Onslow County has 27 hotels [listed in **Appendix E**]. There are a total of 1,891 hotel rooms within the county, and the hotels have about a 65-percent average annual occupancy rate.

Onslow County does not have meeting space that can accommodate groups larger than 200 people. There is one meeting facility that can accommodate groups of up to 350 people, Infant of Prague-Parrish Hall, but this is a religiously-affiliated building that is used for school lunches during the week and would not accommodate business meetings as such.

City of Jacksonville

Hotels located within the City of Jacksonville are included in the Onslow County table in Appendix E, denoted with an asterisk. There are approximately 1,575 hotel rooms within Jacksonville (about 83 percent of the total hotel rooms in the county).

Current Plans

There is one hotel under construction, the Candlewood Suites, which is already included in the county's hotel room count.

Shopping

Generally within the county, there is adequate shopping for the current population. While there are enough stores, the quality of these shops and restaurants is not up to the standard that the population desires. The county only has lower-end shopping alternatives, and many of its citizens typically travel to Raleigh, Greenville, or Wilmington to shop at better stores.

Needs Assessment

The county currently has a need for two baseball and 23 softball fields, 18 soccer fields, 98 tennis courts, 11 public outdoor swimming pools, and seven community centers within the county (based on per-capita standards), and the military-induced growth will only intensify demand for these facilities.

Facilities	State Standard	Onslow County (27,702 people)
Baseball Fields	1/8,000	4
Soccer Fields	1/6,000	5
Softball Fields	1/4,000	7
Tennis Courts	1/1,200	23
Outdoor Swimming Pools	1/14,000	2
Community Centers	1/14,000	2

Table 8.3 - Sports Venue Facilities Needed To Support Military-Induced Growth In Onslow County

Table 8.3 shows which facilities would be necessary due *just to the military-induced growth.*

Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
27,702	166-222 acres	277 acres	554-2,270 acres

Table 8.4 - Parks Needed To Support Military-Induced Growth In Onslow County

Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
27,702	18,006 SF	27,702 SF

Table 8.5 - Library Space Needed To Support Military-Induced Growth In Onslow County

Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items/ capita)	User Seating (2.5 seats/1000 residents)	Programming/Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF)
27,702	14	55,404	69	92	90

Table 8.6 - Additional Library Needs To Support Military-Induced Growth In Onslow County

A couple of community centers/sports complexes with indoor and outdoor athletic facilities (ball fields, soccer fields, and tennis courts) and a gymnasium are needed. In addition to athletic fields and venues, additional park space is needed to accommodate the military-induced growth. The county is already lacking in the recommended amount of park space per capita; therefore, steps need to be taken to preserve open space within the county. **Table 8.4** shows which types of parks would be necessary due just to the military-induced growth.

Libraries in the county, which are already lacking enough space per capita (by about 84,337 square feet), will experience additional strain as a result of military-induced growth. Library expansion plans that are already outlined in the library's comprehensive plan should be followed through on, since they chart ways to deal with expected growth in the county. These plans may need to be modified to include additional military growth, but the general concepts would remain the same. **Table 8.5** shows the estimated square footage that will be needed within the county just to accommodate the military-induced growth.

In addition to this lack of square footage, current library programs will also be strained; steps should be taken to increase available programs within the libraries. Computers and Internet access within the libraries will need to be sufficiently maintained and/or increased to support the population, as well as parking for the library buildings.

Recommended Strategies and Actions

Recommendation 1: Build three new recreation complexes, located between Sneads Ferry and Jacksonville; between Jacksonville and Richlands; and between Swansboro and Jacksonville.

A feasibility study to site the complexes, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of complexes should be initiated in FY 11, with completion planned for FY 12. The estimated cost for each complex would be $5 million - $30 million, depending on its size.

Rationale

Onslow County is already lacking in the number of athletic fields it offers, based on state standards, and the military-induced growth will only place further stress on existing recreational programs and facilities. The county will need new or expanded recreation facilities that include new sports fields and gymnasiums.

Funding

Grants and other funding sources available for parks and recreation projects are listed below.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: (www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: (www.ils.unc.edu/parkproject/trails/home.htm).

North Carolina Adopt-A-Trail Program – Grant is awarded annually to government agencies, non-profits, and private trail groups. 100-percent funding is available up to $5,000. Contact the Trails Program at: http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – State program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php (919-715-8699).

Land and Water Conservation Fund – Federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone) 202-343-9563.

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories including acquisition, landscaping, bicycling, and pedestrian facilities. www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – Community grants program supports local health departments in NC in efforts to development community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example: Carteret County Health Department in collaboration with County Parks and Recreation and other community partners will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project. For information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Recommendation 2: Onslow County's library space seems to be adequate based on state standards, but additional library programs and amenities are needed, as outlined above.

The anticipated cost for new library space is $255 per square foot. This cost includes construction and related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, copiers), contingency construction and uplift, and library collections (books for 50-percent fill rate and A/V materials).

Rationale

Libraries and their programs are an important, low-cost activity for military families in Craven County. The county is not up to state space standards, and is lacking in the number of computers and other programs or amenities that it offers. Libraries are becoming increasingly like community centers, and as a free resource, are very important to military families.

Library Funding

Below is a list of funds and grants that are available for library projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries are located in counties that have either a 10-percent or greater poverty level in the

Foundation-defined service area OR more than 3,000 persons living in poverty. http://statelibrary.ncdcr.gov/gates/gates.html Libraries in Onslow County that have been established as eligible by the Foundation:

- Law Library
- Onslow County Public Library
- Richlands Public Library
- Sneads Ferry Branch Library
- Swansboro Branch Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. For available grants, contact: http://www.neh.gov/grants/index.html

National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. Is the nation's largest funding agency for the Arts. For grant information, contact: http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – North Carolina organization whose mission is to promote the social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities through building up the capacity of nonprofits, historically, supports fundraising campaigns to build capital projects (e.g., libraries, museums, community centers). http://www.kresge.org/index.aspx

Kellenberger Historical Foundation (based in Craven County)

Recommendation 3: Build a civic/cultural center in Jacksonville (to fit 500-800 people). A feasibility study to site the civic/cultural center, determine appropriate size and functions, and identify public-private partnership financing opportunities, should be undertaken in FY 10. Design and construction schedule should be initiated in FY 11.

Rationale

There is a widely-recognized lack of meeting space to accommodate large groups in the vicinity of MCB Camp Lejeune. The base is a magnet for those with some affiliation to the service (e.g. retiree groups), as well as those doing business with the Marines. It is expected that USMC and/or DoD-related conferences will increase as the base expands its mission. It can be expected that the shortage of meeting facilities for large groups will only get worse as the military-induced growth proceeds.

The civic/cultural center will provide much-needed space for large, military-related, or other gatherings, thereby enabling conferences, meetings, and cultural events to take place near MCB Camp Lejeune. The convention/cultural center could be expected to stimulate the growth of other businesses that provide ancillary services – restaurants, bistros, and higher-end hotels.

Recommendation 4: Recruit higher-quality hotels that have better amenities and attached meeting space.

Rationale

Although large meeting spaces are generally available, Onslow County lacks meeting space with attached hotels. The county should work to recruit full-service hotels that would offer meeting space, rather than hotels that do not offer restaurants, meeting facilities, etc.

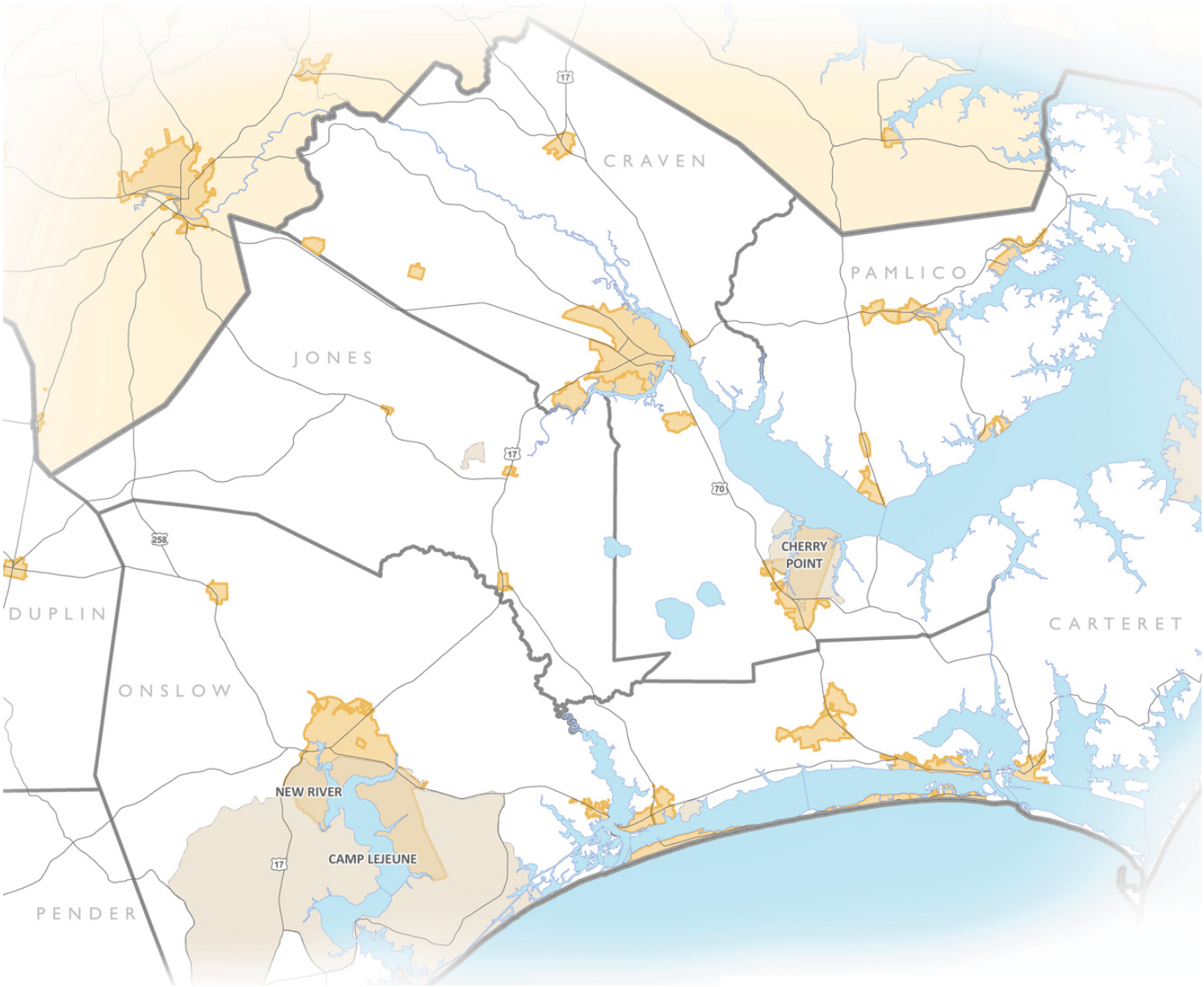
Recommendation 5: Conduct a retail leakage study to identify the need for higher-end shopping in the county, and to produce a strategy to attract the quality of shopping that is desired in the county.

The typical cost of such a study is $100,000. A retail leakage study that would identify the magnitude of the need for higher-end shopping should be undertaken in FY 09. A strategy to attract appropriate shopping and retail services should be initiated in FY 10.

Rationale

Citizens in the county generally need to drive to Raleigh, Greenville, or Wilmington to shop at higher-quality stores than are currently available within Onslow County. To try to keep the county's resisdents shopping within county limits, provide convenience to citizens, and keep tax revenues in the counties, higher-quality retail needs to be explored.

THIS PAGE INTENTIONALY LEFT BLANK.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Pamlico County

Submitted to the:
North Carolina Eastern Region's
Military Growth Task Force

www.nceastmgtf.org

Marstel-Day, LLC

In Partnership with:

Kimley-Horn and Associates, Inc.

URBAN RESOURCE GROUP
A DIVISION OF KIMLEY-HORN AND ASSOCIATES, INC.

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

Housing

Pamlico County, although not a host county for Marine Corps Installations (MCI) East, will experience civilian influx in the coming years. A large component of this demand will be due to retirees moving to the region, and construction of second homes for out-of-state owners will continue to occur along the waterfront, where the majority of development is higher-end, predominantly large-lot, and single family. Civilian demand for new housing will total 88 households by 2011, and military demand for new housing will be negligible. The following section examines the provision of adequate and affordable housing in the county with respect to incoming civilians and military personnel. It also includes an assessment of the needs and issues facing the county, with recommended strategies and actions.

Existing Conditions

Housing Supply

Housing supply impacts pricing and the competition for homes in the county. In 2007, there were 6,781 housing units reported for Pamlico County. The preference for housing types and neighborhood styles varies across the county and the region. This section focuses on four general home categories prevalent in the county: for-sale homes, rental homes, manufactured homes, and second homes/seasonal rentals.

Housing unit estimates for the county were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this chapter was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the county include the impacts of cities and towns within it.

A summary of each general housing category follows.

Manufactured Homes

A manufactured home is built on an integral chassis in a factory, transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). One in four homes in Eastern North Carolina is a manufactured home.

In 2007, there were 2,117 manufactured homes in Pamlico County. This represents 1 percent of all the housing units reported for the county.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

For-Sale Homes

For-sale homes are occupied by the owner of the unit. They are site built homes, typically purchased using a mortgage. For-sale homes in subdivisions are the dominant housing type in the county.

In 2007, there were 2,927 occupied for-sale homes in the county. This represents 63 percent of all the housing units reported for the county.

For-sale homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see **Appendix G**). Based on the foregoing, 703 for-sale homes are available for new residents coming to Pamlico. The number of for-sale homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

For-sale housing in the county, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site built home in the county is $106,309, which is below the state average ($278,943).

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time (usually one calendar year). In 2007, there were 634 occupied rental homes in the county. This represents 14 percent of all the housing units reported for the county.

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (see Appendix G). Based on the foregoing, 152 available rental homes were estimated for Pamlico. The number of rental homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

Rents in the region were collected from an internet and telephone survey of apartments available in the seven counties. The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy at rental homes in the region was estimated at 92 percent based on US Census Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98 percent). These trends are reflected at the county level as well.

The magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases unless new units are constructed soon.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment property, hoping to retire to the home once it was paid off (National Association of Realtors, 2004). When asked why they bought a second home, respondents to the National Association of Realtors survey reported they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home because they had the extra money to spend.

The hottest reported markets for second homes are the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates.

In 2007, 621, or approximately 13 percent of the total housing units in Pamlico County, were listed as seasonal rental units.

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 1,870 dwelling units were approved in Pamlico County between 2005 and 2009. Of these, 1,407 dwelling units were approved but not yet built in 2007. Many of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. The Committed Residential Development Database prepared by the ECC is included in **Appendix G** of this report.

Cost of Homeownership

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the county.

Purchase Price

The median home value published in the American Community Survey for 2007 was used to estimate the purchase price of a home in the county. Median home price for Pamlico County was $106,309.

Mortgage

A conventional, fixed-rate 30-year mortgage was assumed to estimate the typical monthly cost of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15 percent of the purchase price. No down payment was assumed for home loans to military families in order to be consistent with the terms of most VA loans. The

loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

Property Taxes

The tax rate in Pamlico County is $0.650 per $100 of value.

Utilities

Utility costs were estimated from state and local sources. The average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners Insurance

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductible levels, and the insurance company providing the policy. The cost of homeowners insurance was estimated to be 0.75 percent of the purchase price of the home.

Monthly Payment

The monthly payment to afford a home of median value in Pamlico County was estimated to be $827.98 for civilians and $918.11 for military personnel.

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see Appendix D). Average rents assumed for the region are also assumed for the county and are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active duty military personnel and their dependents buying homes, and active duty military personnel and their dependents renting homes.

For military personnel choosing to live in Pamlico County, renting and purchasing homes are both affordable. However, for civilians choosing to live in the county, although purchasing a home remains affordable, renting a three bedroom apartment requires slightly more than 30 percent of the average monthly salary ($22.90).

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the county. The demand for housing reflects both civilian and military growth. Anticipated demand for for-sale homes and rental homes in the county is as follows: civilian homeowners (73), civilian renters (16), military homeowners (0), and military renters (1).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as 'built' from the Committed Residential Development Database (2005-2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 703 for-sale homes and 152 rental homes. All manufactured homes and second homes/ seasonal rentals inventoried for the county were removed from available housing supply for the gap analysis.

By 2011, 766 housing units of the currently available housing stock will remain available. This margin of surplus is large enough to ensure long-term availability of housing. Completion of the yet to be built dwelling units in the committed residential development database prepared by the ECC will also help facilitate provision of housing beyond the 2011

planning horizon, and create a surplus that could potentially eliminate housing deficits in other counties.

Issues Facing the County

Although the cost-burden and housing gap analysis reveal that civilians and military personnel moving to the county can generally afford most types of property and find available housing, there are several critical issues that must be addressed in order to ensure that housing is affordable and available beyond the 2011 planning horizon. These issues were identified through stakeholder interviews and included:

- Affordable housing for middle- to low-income households is rare and there are no plans underway for development of any affordable housing.
- There is no housing authority or active nonprofit agencies in the county to advocate on behalf of affordable housing issues.
- The only military personnel who could afford the majority of housing in the area are military officers looking to live in private, gated communities or higher end housing developments.
- No county-wide sewer and availability is limited to some towns and areas of the county from Grantsboro to Stonewall toward Oriental.
- Non percolating soils and limited sewer limit the amount of developable land in the southeastern portions of the county.

Although these challenges exist, no long-term planning efforts are underway to specifically combat them. The Group Housing Ordinance and CAMA plan were created to protect the waterfront from over-zealous development and to promote growth in areas with existing infrastructure. However, without a zoning ordinance, enforcement and implementation of these growth management strategies has not been possible. There is no county zoning in place, and because of the expense required to implement zoning, it will probably not be done in the next few years.

Recommended Strategies and Actions

Critical to the success of the regional growth management plan, are the implementing actions of participating municipalities and counties. Pamlico County should strive to plan for long term growth through implementation of its group housing ordinances and CAMA policies. Recommended strategies and actions to be pursued on behalf of the county could also include:

- Implementing the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.
- Adopting adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region.
- Adopting policies or incentives that expedite the construction of new rental and affordable housing.

Additional recommended policies and actions are included in the regional chapter's draft Action Plan Matrix, which identifies recommended actions that extend beyond the responsibility of the county and municipalities within it.

Workforce

Existing Conditions

Pamlico County has a labor force that expanded from 5,316 in 2001 to over 5,721 in 2005, but the labor force has been contracting slightly since then through 2008. Employment growth also occurred from 2001 through 2005, but has steadily fallen since then, reaching just over 5,000 in the first three months of 2009. The county's unemployment rate fell from a high of 5.7 percent in 2002 to a very low rate of 4.3 percent in 2007. However, over the past two years, estimated unemployment has more than doubled, having risen from 240 to well over 500, and the unemployment rate[1] in the first three months of 2009 has risen to between 8.9 and 9.7 percent.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	5,316	5,019	297	5.6
2002	5,443	5,133	310	5.7
2003	5,551	5,243	308	5.5
2004	5,612	5,353	259	4.6
2005	5,721	5,463	258	4.5
2006	5,664	5,405	259	4.6
2007	5,592	5,352	240	4.3
2008	5,448	5,115	333	6.1
J'09	5,521	5,029	492	8.9
F'09	5,567	5,028	539	9.7
M'09	5,535	5,032	503	9.1

Table 2.1 - Employment Trends in Pamlico County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment.

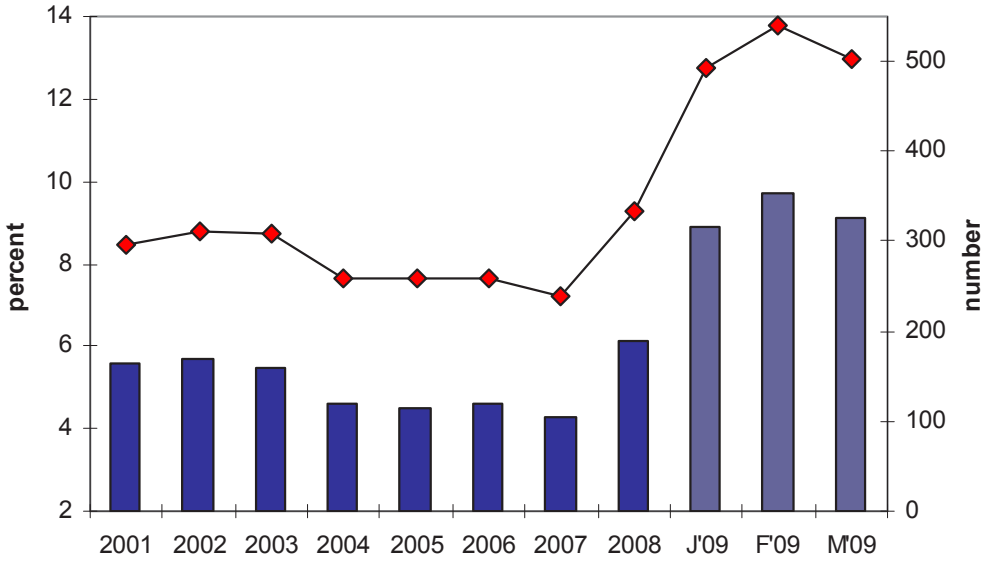


Figure 2.1 - Employment Trends in Pamlico County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics, 2009

1 Seasonally unadjusted

Over the past two years, the county has registered one public notice of workforce job losses, as shown in the Announced Business Closings & Permanent Layoffs table. Many job gains and job losses were experienced across the county, though most have not been captured by this survey, as compared to counties with a larger workforce.

NAICS Code	Date	Company	City	Product	Affected	Reason	Closing or Layoff
812990	Jan./Feb. 2008	DMV Contract Office	Alliance	Contract Office	1	Underperformance	CL

Table 2.2 - Announced Business Closings & Permanent Layoffs - Pamlico County, 2007-2009

Source: These data are derived from a statewide survey of newspaper accounts of closings and layoffs, and from information supplied to the Employment Security Commission and North Carolina by the employing units experiencing the closings/layoffs. The data are not comprehensive, and not evaluated for accuracy by the Employment Security Commission.

The county registered almost 3,200 private and public-sector employees in 2007, an 11 percent increase over the level six years earlier in 2001. The largest industry employers in 2007 were: the local government organizations, with 526 employees; the retail trade industry, with 465 employees; and the North Carolina state government, with 329 employees. While agricultural-related employment dropped by 50 percent over the 2001-2007 period, significant gains in employment occurred in the retail trade industry (up 22 percent), construction (up 32 percent), and state government offices (up 23 percent), adding over 200 jobs to the workforce.

		Establishments		Employees		Average Annual Pay	
		2001	2007	2001	2007	2001	2007
Total Covered		**285**	**307**	**2,886**	**3,200**	**$20,526**	**$25,282**
Private		239	271	1,987	2,312	$18,411	$22,965
11	Agriculture, forestry, fishing, and hunting	17	11	161	81	$22,052	$30,069
21	Mining, quarrying, and extraction	-	-	-	-	-	-
22	Utilities	ND	2	ND	ND	ND	ND
23	Construction	32	36	195	258	$26,438	$32,904
31-3	Manufacturing	19	13	181	187	$14,420	$21,030
42	Wholesale trade	16	14	85	79	$17,327	$25,833
44-5	Retail Trade	46	53	381	465	$16,770	$20,171
48-9	Transportation and warehousing	ND	13	ND	ND	ND	ND
51	Information	8	5	43	31	$20,804	$20,001
52	Finance and insurance	7	9	32	32	$26,646	$34,179
53	Real estate, rental, and leasing	3	10	8	32	$17,017	$22,318
54	Professional and technical services	ND	16	ND	61	ND	$45,969
55	Management of companies and enterprises	-	-	-	-	-	-
56	Administrative and waste services	ND	3	ND	12	ND	$15,113
61	Educational services	ND	3	ND	ND	ND	ND
62	Health care and social assistance	ND	21	ND	ND	ND	ND
71	Arts, entertainment, and recreation	9	12	34	51	$18,449	$19,263
72	Accommodation and food services	21	20	235	270	$8,968	$10,300
81	Other services, ex. public administration	24	19	260	259	$16,938	$21,773
99	Unclassified	1	13	1	12	NA	$40,048
Federal Government		13	13	34	34	$27,747	$36,225
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	-	-	-	-	-	-
48-9	Transportation and warehousing	7	10	27	27	$27,754	$36,561
52	Finance and insurance	-	-	-	-	-	-
54	Professional and technical services	1	NA	NA	NA	NA	NA
61	Educational services	-	-	-	-	-	-
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	5	3	NA	7	$27,720	$34,992
State Government		15	8	267	329	$24,915	$30,026
48-9	Transportation and warehousing	-	-	-	-	-	-
56	Administrative and waste services	-	-	-	-	-	-
61	Educational services	ND	1	ND	ND	ND	ND
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	ND	7	ND	ND	ND	ND
Local Government		18	16	599	526	$25,173	$31,800
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	ND	1	ND	ND	ND	ND
48-9	Transportation and warehousing	-	-	-	-	-	-
51	Information	ND	1	ND	ND	ND	ND
56	Administrative and waste services	-	-	-	-	-	-
61	Educational services	5	6	342	301	$29,097	$37,182
62	Health care and social assistance	4	NA	27	NA	$28,344	NA
81	Other services, ex. public administration	ND	1	ND	ND	ND	ND
92	Public administration	ND	6	ND	ND	ND	ND
99	Unclassified	-	-	-	-	-	-

Table 2.3 - Pamlico County Employment and Pay - 2001 and 2007

Note: "NA" is Not Available, "ND" is Non-Disclosure, and "-" is not recorded.

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009.*

The Top 25 Employers table provides a recent snapshot of the companies and organizations that employ the greatest number of people in the county. As of the third quarter of 2008, four of the county's top five employers were government organizations. The Pamlico Board of Education was the largest public employer, with an employment range of 250-499 employees, followed by the State of North Carolina, County of Pamlico, and Pamlico Community College, all with between 100 and 249 employees. The private organization with the largest number of employees was the YMCA, also with 100-249 employees. All of the other employers, although economically diverse and wide-ranging in their products and services provided, are relatively small, employing fewer than 100 employees.

Rank	Company Name	Industry	Employment Range
1	Pamlico County Board of Education	Education & Health Services	250-499
2	State of North Carolina	Public Administration	100-249
3	County of Pamlico	Public Administration	100-249
4	Y M C A	Other Services	100-249
5	Pamlico Community College	Education & Health Services	100-249
6	Food Lion, LLC	Trade, Transportation, & Utilities	50-99
7	Arapahoe Charter School	Education & Health Services	50-99
8	Britthaven, Inc.	Education & Health Services	50-99
9	Pamlico Packing Company, Inc.	Manufacturing	50-99
10	Home Life Care, Inc.	Professional & Business Services	50-99
11	Flockhart Grocery, Inc.	Trade, Transportation, & Utilities	50-99
12	Pamlico Home Builders & Supplies	Trade, Transportation, & Utilities	Below 50
13	Aramark Food and Supply Services	Leisure & Hospitality	Below 50
14	S. F. McCotter & Sons, Inc.	Natural Resources & Mining	Below 50
15	Scott Plumbing & Heating, Inc.	Construction	Below 50
16	W. O. White, LLC	Construction	Below 50
17	The Gardens of Pamlico	Education & Health Services	Below 50
18	Wade Cary Enterprises, Inc.	Leisure & Hospitality	Below 50
19	Fulcher's Point Pride Seafood, Inc.	Manufacturing	Below 50
20	M&M's In Oriental	Leisure & Hospitality	Below 50
21	Toucan Grill and Fresh Bar, LLC	Leisure & Hospitality	Below 50
22	In Home Aid Care, Inc.	Education & Health Services	Below 50
23	Oriental Harbour Deli & Bistro	Leisure & Hospitality	Below 50
24	Hardison Tire Company (A Corp)	Trade, Transportation, & Utilities	Below 50
25	U.S. Postal Service	Trade, Transportation, & Utilities	Below 50

Table 2.4 - Top 25 Employers in Pamlico County 2008-QIII

Source: U.S. Department of Labor, Bureau of Labor Statistics. Quarterly Census of Employment and Wages (QCEW), Largest Employers; 2009

The occupational profile of current jobs in the county provides another view of the workforce structure and the occupations that organizations have emphasized as important. In most cases, the largest occupational categories are the ones in which new job market entrants find the greatest employment opportunities. The Occupational Employment and Wages table shows that, in 2008, Education, Training and Librarian occupations led all other occupational groups in the county, accounting for 690 employees, followed by Food Preparation and Serving-related occupations, with 420 employees.

Specifically, the detailed occupational information in the lower half of the table shows that the most popular jobs in the county were: meat, poultry, and fish cutters and trimmers; laborers and material movers; janitors; retail salespersons; and office clerks and drivers of large trucks.

Occupational Code	Employment by Occupational Group	Estimated Employment	Estimated Annual Wage-Median
00_0000	Total All Occupations	3,050	$22,873
11_0000	Management Occupations	100	$51,667
13_0000	Business and Financial Operations Occupations	30	$25,551
15_0000	Computer and Mathematical Occupations	10	$39,662
17_0000	Architecture and Engineering Occupations	-	-
19_0000	Life, Physical, and Social Science Occupations	*	$43,342
21_0000	Community and Social Services Occupations	*	$31,469
23_0000	Legal Occupations	-	-
25_0000	Education, Training, and Library Occupations	690	$40,394
27_0000	Arts, Design, Entertainment, Sports, and Media Occupations	10	$42,093
29_0000	Healthcare Practitioners and Technical Occupations	40	$45,754
31_0000	Healthcare Support Occupations	-	-
33_0000	Protective Service Occupations	*	$21,735
35_0000	Food Preparation and Serving Related Occupations	420	$15,715
37_0000	Building & Grounds Cleaning & Maintenance Occupations	80	$19,857
39_0000	Personal Care and Service Occupations	*	$21,379
41_0000	Sales and Related Occupations	300	$17,826
43_0000	Office and Administrative Support Occupations	300	$23,386
47_0000	Construction and Extraction Occupations	240	$26,964
49_0000	Installation, Maintenance, and Repair Occupations	100	$37,431
51_0000	Production Occupations	-	-
53_0000	Transportation and Material Moving Occupations	210	$18,950
	20 Top Occupations		
51_3022	Meat, Poultry, and Fish Cutters and Trimmers	150	$14,224
53_7062	Laborers & Freight, Stock & Material Movers, Hand	100	$15,321
37_2011	Janitors and Cleaners, Except Maids and Housekeeping	50	$18,946
41_2031	Retail Salespersons	50	$24,974
43_9061	Office Clerks, General	50	$21,430
53_3032	Truck Drivers, Heavy and Tractor-Trailer	50	$23,681
35_1012	First-Line Supervisors/Managers of Food Preparation	40	$22,556
43_3031	Bookkeeping, Accounting, and Auditing Clerks	40	$16,046
43_6014	Secretaries, Except Legal, Medical, and Executive	40	$19,969
11_1021	General and Operations Managers	30	$50,078
35_2021	Food Preparation Workers	30	$17,311
43_4171	Receptionists and Information Clerks	30	$21,110
29_1111	Registered Nurses	20	$48,267
43_3051	Payroll and Timekeeping Clerks	20	$24,146
43_6011	Executive Secretaries & Administrative Assistants	20	$32,561
47_1011	First-Line Supervisors/Managers of Construction Trades	20	$45,444
11_9131	Postmasters and Mail Superintendents	10	$50,960
25_4021	Librarians	10	$40,836
43_5052	Postal Service Mail Carriers	10	$37,960
43_5053	Postal Service Mail Sorters and Processors	10	$33,800

Table 2.5 - Occupational Employment and Wages in Pamlico County – 2008

"*" is non-disclosed. "-" is not reported

Source: U.S. Department of Labor, Bureau of Labor Statistics. Occupational Employment Survey (OES), Occupational Employment and Wages, 2008.

The federal government has a negligible presence in the county and the Direct Expenditures or Obligations tables lists the Fiscal Year (FY) 2007 monies transferred into the county. Both the USMC-related monies and the total Navy Department expenditures or obligations are listed, showing that in FY 2007, $2.2 million flowed directly into the county from the Navy Department, all in the form of Navy (including USMC) retirement and disability payments distributed to county residents.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	2,200	626
Grants	-	-
Procurements	<1	-
Salaries & Wages	-	-
Total	2,200	626

Table 2.6 - Direct Expenditures or Obligations in Pamlico County FY 2007 (in thousands of dollars)

Source: U.S. Census Bureau. Consolidated Federal Funds Report, Fiscal Year 2007.

Needs Assessment

The county is projected to stabilize its population at just under 13,000 residents during the period from January 2007 to the end of December 2011. However, with the addition of 212 persons due to USMC direct and indirect impacts, the county will experience 0.3 percent annual average growth over the five-year period. This military-related growth is projected to create a net additional 58 new jobs by the end of 2011.

Some of the current impediments to a fully-functioning workforce, low unemployment rates, and economic growth in the county include those listed in the Current Regional Issues section of the Regional Workforce Module, but also include those listed below:

- Pamlico Community College is a tremendous resource to the county, but it is currently underutilized because many of the county high school graduates do not take advantage of the spectrum of education and training that it offers.
- A paradox exists, whereby successfully challenging younger residents to seek two- and four-year college degrees often leads to a “brain drain” once the higher education is completed and the residents seek opportunities in other regions.
- The county has no developed public transportation system, making it difficult for many residents to take advantage of military-related jobs outside the county.
- There is a lack of mid-range priced housing to attract military employees or those associated with military-related growth.
- The county is small, and thus unable to afford business incentives and marketing activities that potentially would capture new business opportunities, or to capitalize on potential tourism growth.

Recommended Strategies and Actions

The county and the surrounding region have a number of tools available to mitigate the impacts of military growth on the workforce, while at the same time positioning the county and the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include first and foremost, taking the following actions to increase the economic base of the region so that the new entrants find meaningful and productive employment that matches their skills and desired occupations:

- Acquiring and allocating resources to support and plan for a new Technology Center in the region and a new Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and entrepreneurship.

- Emphasizing industrial clusters that will potentially be available at the two centers, and also at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.
- Supporting private and public efforts in neighboring counties encourage new and relocating businesses to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.
- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through several initiatives:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and others adults who guide and influence teenagers in the region.
- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.
- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before many other areas of the country, and to plan for training and educational requirements of those future green jobs.
- Devoting immediate resources to increasing child-care training, certification, and facilities. Not only will this action provide direct employment to child-care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.
- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.
- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small- and disadvantaged businesses.
- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.
- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.
- Creating a more military-family-friendly workplace by offering flexible benefit packages, and having the added benefit of reducing the cost of labor to businesses.

Education

Existing Conditions

K-12

The estimated 2007 population of Pamlico County is 12,577. Pamlico County Schools, with a 2008-09 K-12 enrollment of 1,429 students, is the 8th smallest public school system in the state (North Carolina Department of Public Instruction, School Statistical Profile). The school district membership has shown an annual average decline of four percent in recent years (Figure 3.1). The annual resident live birth rate has remained stable for several years, averaging 107 live births per year (Figure 3.2) (North Carolina Department of Health and Human Services, State Center for Health Statistics).

Other characteristics of the school district are:

- Pamlico County Schools has one high school with an enrollment of 584 students, one middle school with an enrollment of 296 students, one primary school that serves Kindergarten to 2nd graders with an enrollment of 276 students, and one elementary school that serves 3rd to 5th graders with an enrollment of 273 students.
- Thirty-eight percent of the enrollment in Pamlico County Schools is in the Kindergarten to 5th grade range, 21 percent in 6th to 8th grades, and 41 percent in the 9th to 12th grade range.
- Pamlico County Schools did not collect Federal Impact Aid surveys during the 2008-09 school year. This data was collected in past years but the numbers were reported to be very low.
- The per-pupil expenditure is $10,247 with 76 percent state funding, 14 percent federal funding, and 10 percent local funding (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).
- Pamlico County Schools operates 29 school buses transporting 854 students at a cost of $892 per pupil. Sixty percent of students utilize school buses.
- Pamlico County Schools employs 125 teachers and 23 teacher assistants.
- Arapahoe Charter School was founded in 1997 and is North Carolina's first charter school. The school serves grades Kindergarten to 8th with a reported enrollment of 347 students. The Arapaho Charter School is located on Highway 306 in the town of Arapaho.
- There are no private schools in Pamlico County.

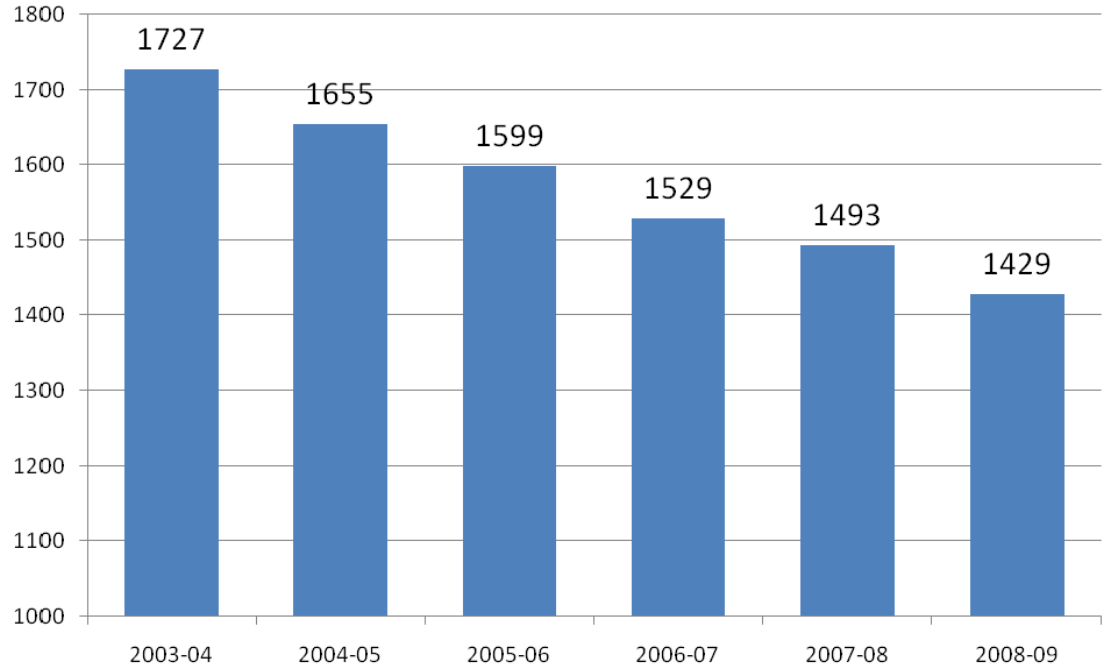


Figure 3.1 - Average Daily Membership for Month-2 in Pamlico County Schools

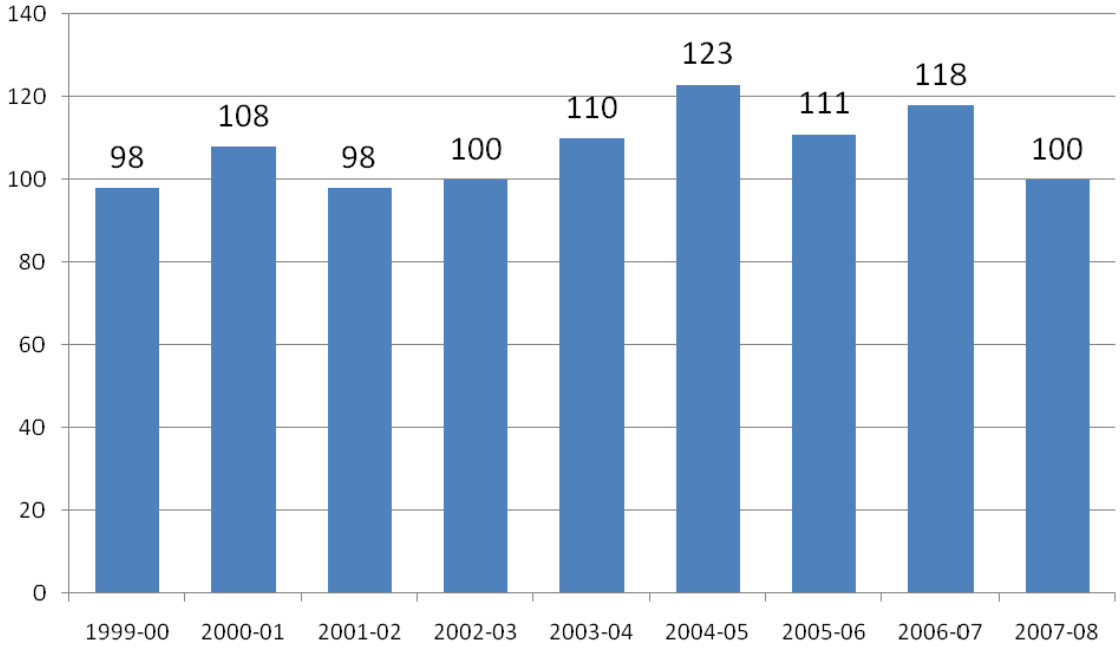


Figure 3.2 - Resident Live Births

Child Care

Pamlico County has a total of 14 child development facilities with seven centers and seven homes. The seven centers' total enrollment is 239 children and the seven home-based child development facilities have 50 children enrolled. The county-wide combined child care enrollment is 289 children, or 15 percent of the total population under the age of 15 (North Carolina Department of Health and Human Services, Child Care Statistical Report, March 2009). The county-wide number of child care slots as of April 2009 is 520, resulting in a 56 percent utilization rate.

The child care centers and homes in Pamlico County employ a total of 50 with a student-to-staff ratio of 5.8:1.

Community College and Post-Secondary Education

Pamlico Community College (PCC) primarily serves Pamlico County. However, because the county is a small, rural county with limited employment opportunities, 46.7 percent of the working residents commute, including PCC graduates, to jobs in surrounding counties.

The college began as an industrial education center in 1962. Since then, PCC has grown to become a fully accredited two-year community college with programs in disciplines varying from Computer Technology to Accounting to Allied Health Programs. Twelve academic programs are offered along with a broad selection of Continuing Education courses ranging from GED instruction to the US Coast Guard Captain's Licensing program. There is also a college transfer program with East Carolina University which enables students in appropriate programs to transfer for a four-year education.

Program Type	2005-06	2015-16	Increase
Curriculum	299	399	100
Basic Skills	106	128	22
Occupational Extension	91	133	42
Total	**496**	**660**	**164**

Table 3.1 - Enrollment Projections (FTEs)

Source: Long Range Plan, Appendix 4-2H

PCC appears to be closely aligned with both the enrollment projections and the service area data associated with predicted critical and high-growth occupations. According to Economic Modeling Specialists, Inc. (EMSI), the predicted high growth industries in the region are local government, home health care services, state government, physicians' offices, and temporary help services.

A review of the college catalog shows the following curriculum programs currently in place at the college *that would serve these anticipated needs:*

- Early Childhood Education for school teachers and assistants;
- Certified Nurse Aide I and II for nursing aides, orderlies and attendants;
- Accounting for bookkeeping, accounting, and auditing clerks;
- Business Administration and Small Business Administration for executive secretaries, administrative assistants, and office managers; and
- Computer Information Technology and Office Systems Technology for business operation specialists.

Needs Assessment

K-12 Education

The military impact to Pamlico County is unlikely to produce sufficient growth to reverse the declining trend in the school enrollment by 2011.

Child Care

Pamlico County's total child care enrollment is estimated to increase by 12 children by 2011. The increase will raise the slot utilization from the current 56 percent to 58 percent and will require 2 additional child care staff.

Community College and Post-Secondary Education

PCC's Long Range Plan shows an increase in enrollment throughout the 2005-06 to 2015-16 period (Pamlico County Community College, Long Range Plan, 2007-2012). Curriculum is anticipated to grow by 33.4 percent, or 100 full-time equivalent (FTE) students. Continuing Education is projected to increase 46.2 percent, or 42 FTE students. Finally, Basic Skills was projected to add an additional 22 FTE students for a 20.8 percent increase. This growth is summarized in the table below.

The greatest interest in new programs identified across the various data sources included additional medical programs (Associate Degree in Nursing; Physical Therapist Assistant; Radiography; Medical Office Administration; Cardiovascular Technology), vocational trades programs (Carpentry; Masonry; Plumbing) offered through the dual-enrollment program with the high school, and business technology.

The college's Long Range Plan included a "gap analysis" that examined the impact of projected growth on the need for additional space. This analysis outlined criminal justice and early childhood education as two existing curriculums anticipated to experience growth.

The major outcome of military growth for PCC will be an acceleration of existing population projections and facility needs. PCC currently has no formal tracking procedure for military-connected enrollments.

Access to PCC is increasing based on the Distance Learning communities. The program has grown from 12 percent of courses offered in Fall 2004 to over 32 percent in Fall 2008.

Recommended Strategies and Actions

K-12 and Child Care

Pamlico County should reinstitute the collection of Federal Impact Aid surveys among schools, recording and tracking the growth history at each school.

The county should also work closely with Pamlico County Community College to increase the child care work force pool in the county.

In addition, Pamlico should explore reciprocity licensure opportunities to attract qualified out-of-state or Department of Defense child care workers.

Community College and Post-Secondary Education

PCC's facility master plan currently does not have a specific facility designed to address unique needs based on the military community growth. Renovations of existing facilities and enhancing technology capabilities will be required to address the new learning community.

Transportation

Introduction

Pamlico County's transportation network helps connect the entire region and serves to move both troops and civilians throughout the area. Most critical to enhancing the efficiency of transportation in Pamlico County are roadway and public transit improvements. Other modes, such as rail, are addressed as part of the regional context of the Regional Growth Management Plan.

Existing Conditions

Roadway

The existing roadway system in Pamlico County is composed of a network of different streets that perform specific roles. The classification of streets into "functional" categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character as well as operational features for the movement of vehicles.

Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridor (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The existing public street network in Pamlico County is divided into functional classifications, including collectors and locals. The scope of the Regional Growth Management Plan emphasizes the operation of arterials based on NCDOT designation and necessary improvements to ensure the functionality of these corridors.

- **Arterials** provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distances. Arterials include facilities with full access control, such as freeways, as well as boulevards and major thoroughfares. Arterials usually connect to one another or to collector streets, and very few arterials connect to local streets. Arterials include freeway facilities such as:
  - **Freeways** provide the most mobility and least access (only at interchanges). Local examples of freeways include Interstate-40.
  - **Principal arterials** typically have tightly controlled access and few, if any, individual site driveways. These arterials are typically intersected by expressways and freeways as well as minor arterials and other public streets. US 17 is classified as a principal arterial.
  - **Minor arterials** primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. US 421 is classified as a minor arterial.
- **Collectors** typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater access flexibility with adjacent land uses, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-freeway/expressway arterials. Collector streets within Pamlico County include NC 53, NC 210, and US 117.

- **Locals** provide greater access and the least mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Most roads in the county are designated as local streets.

Volumes, Congestion, and Safety

The lack of major roadway corridors in Pamlico County keeps traffic volumes low in comparison to other counties in the seven-county Military Growth Task Force (MGTF) Region. NC 53, the county's main east-west route carries the most traffic (13,000 vehicles per day). This volume, however, is well below the busiest corridors in neighboring counties. Because traffic volumes do not account for roadway capacity, a better assessment of congestion is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. Using the V/C ratio method shows that NC 53, while experiencing with relatively low traffic volumes, still experiences high levels of congestion from Craven County to Bayboro.

Like congestion, traffic safety should be examined during the development of a transportation strategic plan. With fewer vehicles on the road, Pamlico County has the lowest crash rates in the region. Between 2001 and 2005, an average of 228 crashes occurred in Pamlico County. However, the percentage of crashes resulting in an injury or death is higher in Pamlico County than any other county in the region and outpaces the state average.

Needs Assessment

TIP Projects

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements. The seven-year document includes funding information and schedules for highway, bicycle, pedestrian, rail, and public transportation projects. One critical Pamlico County priority identified by the Transportation Working Group is listed on the current (2009-2015) TIP; the project is detailed below. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have relatively low impact on the military while others will contribute a positive impact. Other recommendations developed by the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/Funding
R-2539	Widen	NC 55	east of New Bern in Craven and Pamlico Counties	US 17 at Bridgeton to NC 304 in Bayboro	Widen to multi-lanes	Unfunded

Table 4.1 -TIP Projects in Pamlico County

Modal

Craven, Jones, and Pamlico Counties are jointly served by the Craven Area Rural Transit System (CARTS), which provides public transit for the general public, with special emphasis on provision of services to the elderly and/or handicapped. Regionally, each county's public transit options are linked by RouteMatch, administered by the Eastern Carolina Council (ECC). RouteMatch enables transportation providers in surrounding counties to secure a county resident a seat on a public transit vehicle traveling beyond the region (e.g., to locations like Duke Medical Center or Wake Medical Hospital). Existing public transit services are augmented by taxis in the region.

Recommendations

The transportation network of Pamlico County includes a variety of modes. Given the critical need to ensure that people, goods, and services move freely throughout the county and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected officials at the local, regional, and state

levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the Transportation Improvement Program projects listed above. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position Pamlico County to effectively manage future growth. Roadway projects are most critical to the county; other modes, such as rail, must be addressed from a regional perspective.

Roadway

The TIP project identified above will enable Pamlico County to provide enhanced transportation for Marine Corps missions as well as civilian mobility. Completion of these projects will also position the county well within the regional transportation network.

Modal

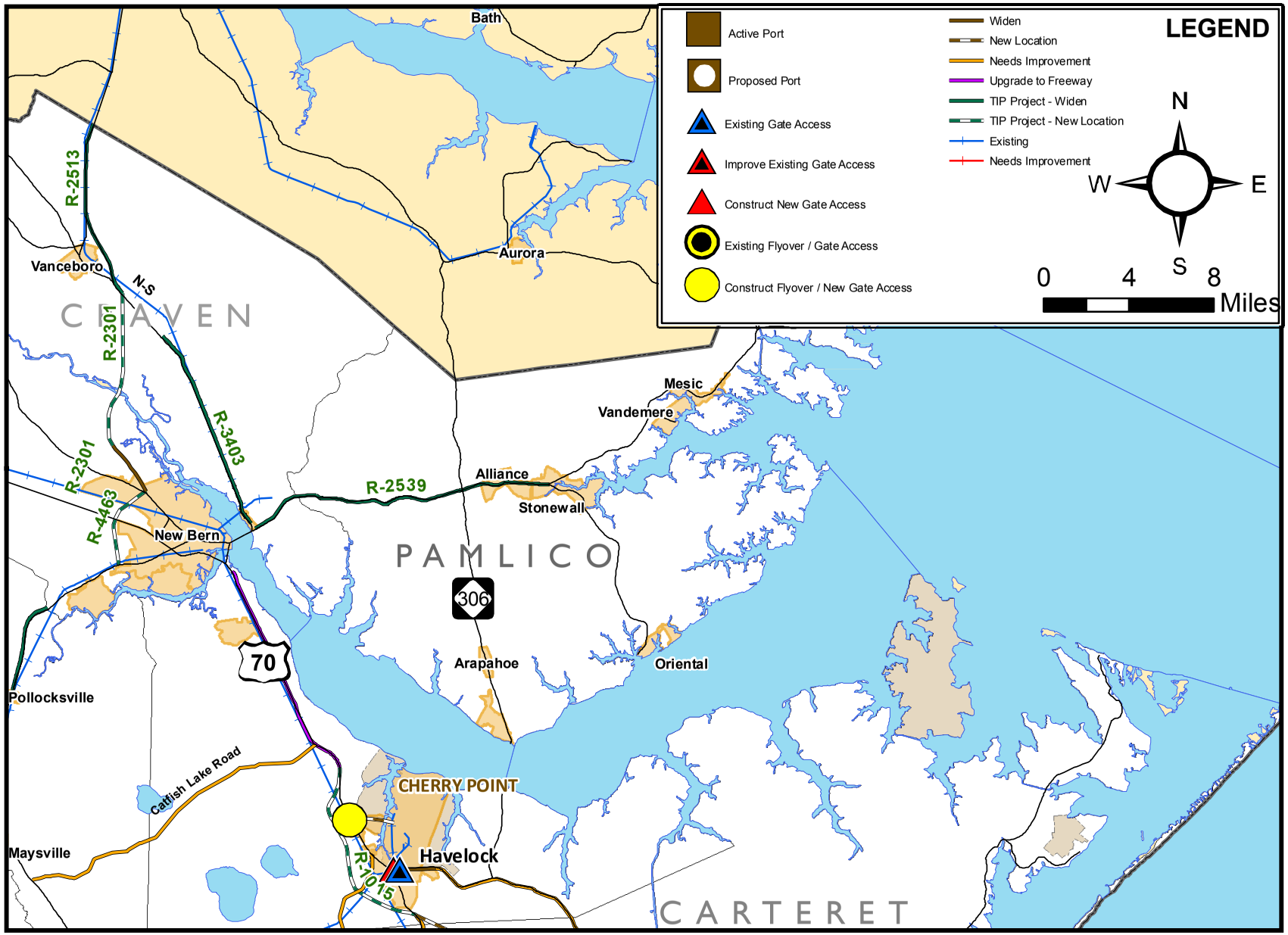
The Pamlico County Local Coordinated Plan stresses greater coordination with CARTS and Craven County on administration, management, dispatch, planning, and marketing of CARTS. Highest priorities for both counties relative to CARTS include:

- Expansion of services to include night and weekend hours
- Expansion of fixed routes
- Greater inter-county and inter-agency coordination on public transit

Although each county is currently served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost-effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases, and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient

Across the region, there is an overwhelming demand for transit services to and from Marine Corps Base Camp Lejeune and Marine Corps Air Station Cherry Point. Expansion of current transit services will allow greater mobility of younger-ranking Marines as well as more residential to base connections. Although the ECC facilitates RouteMatch to coordinated intra-county public transit, it is underused and needs enhanced technical support.



ROADWAY AND RAIL RECOMMENDATIONS
Pamlico County

Figure 4.1

Infrastructure

Existing Conditions

Water

Potable water facilities in Pamlico County are defined as structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Utility Companies

Pamlico County provides water to portions of the unincorporated county. The majority (99 percent) of the county's 5,100 metered connections are residential. Commercial property makes up the remaining one percent of connections. Individual private wells serve most of Pamlico County (Pamlico County, 2004). **Figure 5.1** shows the water service areas in Pamlico County.

Water Supply and Treatment

Groundwater is the primary source of potable water in Pamlico County from the Black Creek and Castle Hayne aquifers. Pamlico County provides water to its customers through 12 wells located throughout the county and water treatment facilities at well sites in Bayboro, Mill Pond Road, Grantsboro, Kershaw, Minnesott Beach, and Vandemere. The water supply consists of 3.3 million gallons per day (MGD) with the average daily use reported at 0.8 MGD, which equates to 1.5 MGD in available supply. Pamlico County estimates that the average daily demand will increase to 1.6 MGD by 2020, which equates to 48 percent of available supply. The system has approximately 2.1 million gallons in storage capacity. The southeastern area of the county has low water pressure and flow issues. To address this problem, the county is planning additional storage and water main connections (Pamlico County, 2004).

Regulations

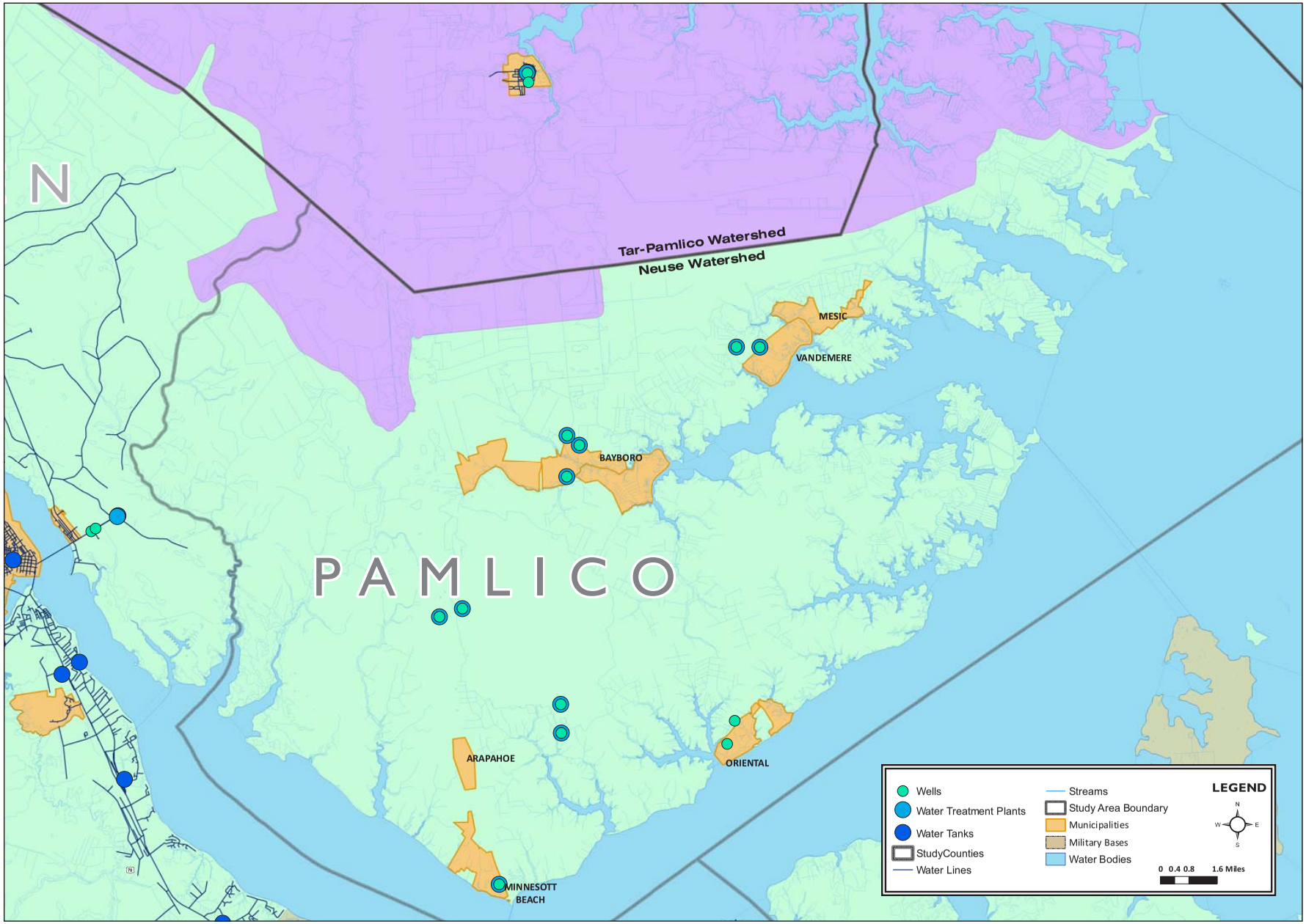
Pamlico County is one of several eastern North Carolina counties subject to the Central Coastal Plain Capacity Use Area (CCPCUA) rules. These rules require regulated water users in the county (users pumping more than 100,000 gallons per day (gpd)) to gradually limit withdrawals from the Black Creek aquifer over a 16-year period. Water providers in Pamlico County are required to reduce withdrawals by 25 percent over the first six years (to August 2008), an additional 25 percent over the following five years (August 2008 to August 2013), and a final 25 percent over the remaining five years (August 2013 to August 2018).

Additionally, regulated water users will be required to implement water conservation methods, which may include:

- Conservation ordinances
- Leak detection programs
- Tiered rate structures to encourage conservation
- Plumbing retrofit programs
- Public education advocating water conservation measures

Details on the rule's impacts on the region are found in the Needs Assessment section of the Regional Growth Management Plan (RGMP) Infrastructure Module.

The North Carolina Department of Environment and Natural Resources (NCDENR), Division of Water Resources, monitors saltwater intrusion in the region through a series of monitoring wells that are sampled every three to four years. There are 26 monitoring wells located in Pamlico County.



PAMLICO COUNTY WATER **Figure 5.1**

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Pending Regulations

Representative Russell Tucker (Duplin County) has introduced House Bill (HB) 643, which may provide a solution to create a salinity barrier between saltwater and groundwater that could protect Pamlico County's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the Regional Infrastructure Chapter.

Sanitary Sewer

Sanitary sewer facilities are defined as structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems.

Wastewater Providers

Pamlico County is served with wastewater treatment by Bay River Municipal Sewer District (MSD) and by individual private septic systems. MSD generally serves the areas in and around Oriental, Bayboro, Alliance, Stonewall, Mesic, Vandemere, Gransboro, and Reelsboro.

Wastewater Collection and Treatment

A combination of public utility companies and community private package waste water treatment plants (WWTPs) provide sanitary sewer service to residents and businesses in their service areas. These service areas generally cover the municipalities of the region while the majority of rural, unincorporated portions of the region are not served with public sewer. **Figure 5.2** shows the sewer providers, the wastewater treatment plants, and their service areas in Pamlico County. The remainder of the population use septic systems for the collection, treatment, and disposal of sewage.

Bay River Municipal Sewer District (MSD) operates the 0.5 MGD Oriental and 0.3 MGD Bayboro WWTPs. The Oriental WWTP was recently constructed and has actual flows of 0.11 MGD, which equates to 0.39 MGD in excess capacity. The Bayboro WWTP is approximately 20 years old and currently sees flows of 0.26 MGD, which equates to 0.04 MGD (40,000 gpd) in excess capacity. Bay River MSD plans to expand the Bayboro WWTP to a 0.5 MGD plant. Both WWTPs use land application to dispose of WWTP effluent.

Facility Name	Characteristics
Town of Oriental collection system	Gravity sewer, low-pressure sewer systems
Bay River collection system	Gravity sewer, pump stations, force mains, low-pressure sewer systems
Oriental WWTP	0.5 MGD
Bayboro WWTP	0.3 MGD
Arapahoe Effluent Spray Site	500 acres, 0.5 MGD

Table 5.1 - Facilities Operated by MSD

Table 5.1 reveals the wastewater facilities owned and operated by MSD (Pamlico County, 2004).

The majority of wastewater treatment plants in Pamlico County use some form of land application or spray irrigation for wastewater effluent.

Private Package WWTPs

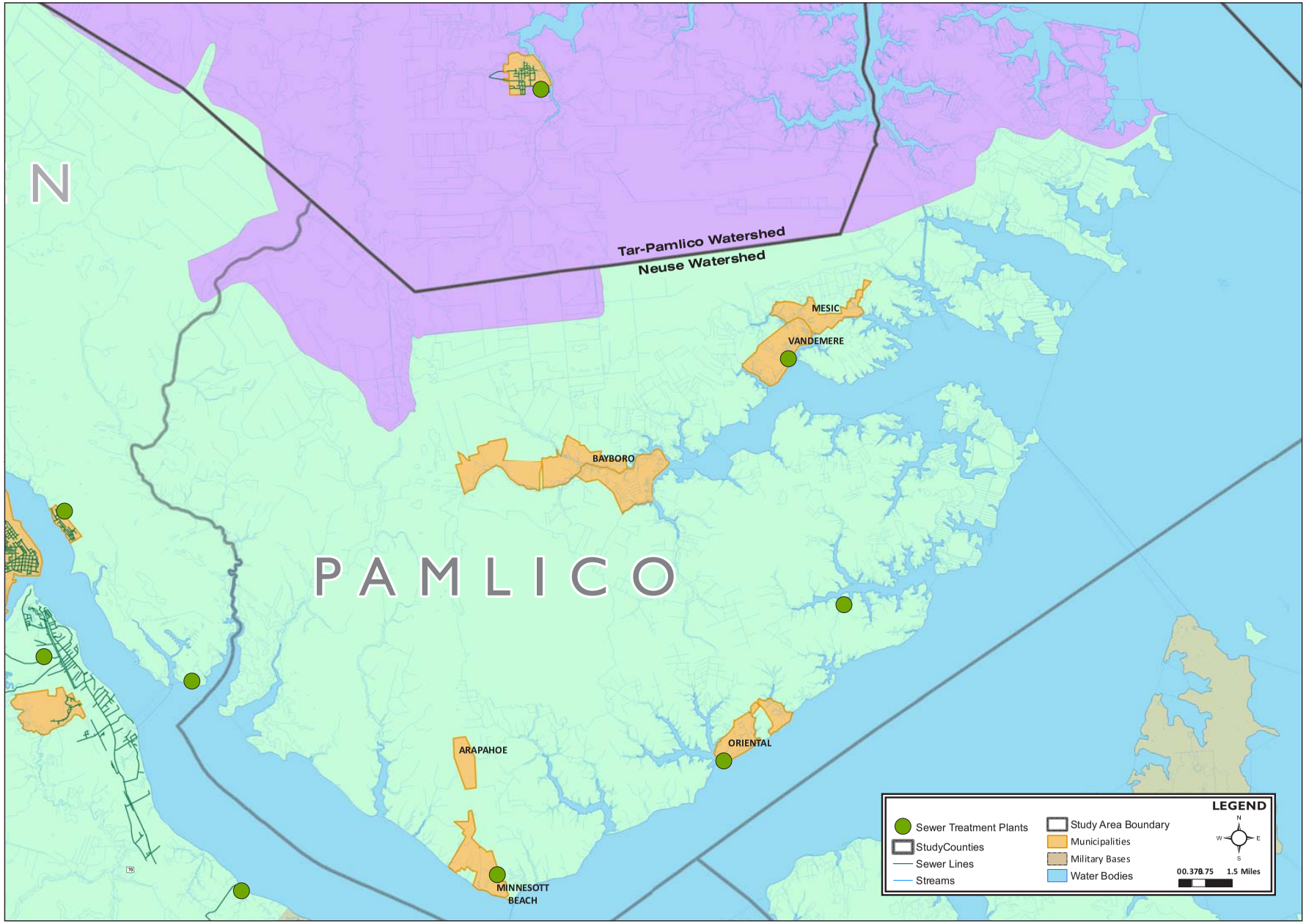
Several private package wastewater treatment plants are located throughout Pamlico County.

Septic Systems

For portions of the county where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work very well with proper siting, design, installation, operation, and maintenance. . All new septic systems in the region require a permit from the Pamlico County Health Department prior to construction. Poor soil conditions, however, limit the installation of many new septic systems and result in an inability to percolate, rendering properties without access to sewer undevelopable. This could have a significant impact on growth in the county.

Regulations

Sewer providers in Pamlico County are subject to the 80 percent/90 percent rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities) administered by NCDENR's Division of Water Quality. Details on these rules can



PAMLICO COUNTY SEWER Figure 5.2

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

be found in the Regional Infrastructure Chapter. If either the 80 percent or 90 percent rules are not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system. To allow for military growth, it is important for the sewer providers in Pamlico County to meet these 80 percent/90 percent requirements to avoid moratoriums.

Across Pamlico County, several bodies of water are listed on the Clean Water Act's Section 303d Impaired Waters List (see **Table 5.2**). For many of these streams and rivers, total maximum daily loads (TMDLs) are developed such that the point discharge of wastewater effluent is not a feasible option. Additionally, the coastal portions of Pamlico County have brackish or saltwater surface waters, and the discharge of wastewater effluent in these surface waters is not allowed and is actually considered freshwater pollution into saltwater estuaries. Because of these sensitive surface waters, sewer providers have few options to discharge wastewater and typically opt for land application or spray irrigation.

AU Number	Stream Name
27-(118)c	Neuse River
27-(118)d	Neuse River
27-125-(6)	Dawson Creek
27-130	Whittaker Creek
27-133	Pierce Creek
27-134-1	Bright Creek
27-134a	Orchard Creek
27-141-1	Ship Creek
27-141-2	Gideon Creek
27-141-3	Brown Creek
27-141-3-1	Spice Creek
27-141-3-2	Coffee Creek
27-141-4	Tar Creek
27-141a	Broad Creek

AU Number	Stream Name
27-150-(9.5)b	Bay River
27-150-10	Harper Creek
27-150-28-1	Bennett Creek
27-150-28a	Bear Creek
27-150-31a	Gale Creek
27-152-3	Bills Creek
29-33-3-1	Alligator Creek
29-33-3-2	Long Creek
29-33-3a	Eastham Creek
29-35-1	Bill Daniels Gut
29-35-2	Bill Gut
29-35-3	River Ditch
29-35a	Oyster Creek

Table 5.2 -Impaired Streams in Pamlico County

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how WWTPs capable of producing reclaimed water quality effluent can discharge effluent and will save additional space in land application facilities. Additional discussion on these rule changes, along with HB 643 is included under the Reclaimed Water section of this portion of the RGMP. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in Aquifer Storage and Recovery (ASR) systems.

Reclaimed Water

Providers and Capacity

Reclaimed water or "reuse water" is relatively new to the seven-county Military Growth Task Force (MGTF) Region and to the State of North Carolina. In Pamlico County, there are currently no active reclaimed water capabilities and, therefore, no reclaimed water capacities.

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems. These regulations are described in detail in the Regional Infrastructure Chapter.

Pending Regulations

There are currently two pending regulatory changes that will alter the ways that reclaimed water can be used in the State of North Carolina. These regulations may have significant impact to Pamlico County: updated 15ANCAC Reclaimed Water Rules and HB 643 – Authorize Aquifer Storage of Reclaimed Water. Information on these pending regulations can be found in the Regional Infrastructure Chapter.

Stormwater

Pollution associated with stormwater runoff is the number one water quality problem in the region, as well as the state as a whole. As a result, several regulations have been initiated to manage stormwater. The regulations that apply in Pamlico County are described below:

Stormwater Management Program (Coastal Stormwater Rules)

Like all coastal counties, Pamlico County is subject to State Stormwater Management Program (Coastal Stormwater Rules) requirements. The program applies to all development in the county that disturbs one or more acres of land or requires a Coastal Area Management Act (CAMA) major permit. Recent amendments to the rule address coverage, low density thresholds, design storm requirements, wetlands and impervious surface calculations, and vegetative buffer size, especially as they apply to SA and ORW classified watersheds (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/coastal.htm). Details on the program can be found in the Regional Infrastructure Chapter.

401 Water Quality Certification/Neuse Buffer Requirements

Pamlico County is in the Neuse River Basin. Any activity in the basin that impacts wetlands, streams, and/or protected riparian buffers is subject to the Neuse Buffer Requirements (N.C. Division of Water Quality). Details on these requirements can be found in the Regional Infrastructure Chapter.

CAMA Requirements

During the development of their CAMA Plan, the county identified stormwater pipes that have or could have a significant impact on water quality. They also developed a series of stormwater policies that concentrated on agriculture operations and education of the construction community. These policies include: 1) providing educational materials to owners and developers, 2) requiring an approved stormwater management application prior to issuance of building permits, 3) identifying effective solutions that address drainage existing drainage problems, and 4) encouraging the use of pervious paving material (Pamlico County Joint CAMA Land Use Plan, 2004).

Solid Waste

Solid Waste Management

Solid waste management encompasses the collection, recycling, and disposal of solid waste generated by local residents and businesses.

Collection

Pamlico County does not offer curbside trash collection. Individuals located in unincorporated Pamlico County that want curbside pickup must contact a private carrier. Residents can dispose of their waste at the Grantsboro Transfer Station located at 3291 Highway 306 North. The transfer station accepts municipal solid waste, yard waste, construction and demolition waste, and scrap tires. The transfer station is operated by the Coastal Regional Solid Waste Management Authority (CRSWMA) and is a “Pay As You Throw” facility where residents pay a fee based on the amount of garbage they generate.

Recycling

The county does not offer weekly recycling pick up, but residents can bring their recyclables to the Pamlico County Recycling Center located at 3192 Highway 306 North. The center is operated by Pamlico County and accepts batteries, cans, plastics, motor oil, magazines, newsprint, mixed paper, office paper, cardboard, glass, tires, and yard waste.

Portable roll-off recycling containers are also located at six locations within the county. Residents can recycle glass and plastic at these locations. Additionally, residents can take their recyclables directly to the Grantsboro Transfer Station when they are disposing of their garbage.

Disposal Facilities

Solid waste collected at the Grantsboro Transfer Station is transported to the Tuscarora regional landfill at 7400 Old Highway 70 West in New Bern. This facility accepts inert debris in addition to all waste accepted at the transfer station. Both facilities are operated by CRSWMA, which was formed in 1990 as a partnership between Carteret, Craven, and Pamlico counties (Pamlico County: http://www.co.pamlico.nc.us/Departments_Recycling.aspx).

Landfill Capacity

NCDENR publishes an annual solid waste report that details the remaining capacity for each of the state's landfills. According to the 2007-2008 Solid Waste Annual Report, 217,482.78 tons of solid waste was disposed of in the CRSWMA Regional Landfill between 2007 and 2008. Based on the constructed and permitted size of the landfill, the remaining capacity is 1,213,771.43 tons. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 5.58 years of functional capacity remaining. The total volume for the landfill site at final design, however, is 9,058,533.64 tons. If the landfill was built to its maximum design size, the landfill could continue operating for 41.65 years. CRSWMA has also purchased land contiguous to the existing landfill and identical in size. Although this land is not yet permitted, the overall remaining capacity of the landfill has roughly doubled to over 18 million tons (N.C. Department of Environment and Natural Resources: http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf).

Telecommunications

Pamlico County is below the state average for telecommunication connectivity. With 54.69 percent connectivity (state average is 83.33 percent), Pamlico County is considered "Connectivity Challenged" by the e-NC Authority. According to the e-NC Authority, Duplin County is a Tier 3 Community, with a connectivity speed of between three and six Mbps.

Access Providers

Cable

Time Warner has the cable TV franchise in Pamlico County. Time Warner provides cable TV service in 10 communities and areas of Pamlico County.

Telcos

Embarq provides telephone service in Pamlico County. In total, 54.69 percent of households have access.

Embarq provides DSL access in the Bayboro (70 percent) and Oriental (39 percent) exchanges. The area served by the New Bern exchange does not have DSL access.

Satellite

Customers with clear views have access to Direcway and Starband high-speed Internet service.

Wireless

Pamlico Information Network Enterprise, Inc. provides wireless high-speed Internet access in the Arapahoe, Janerio, Low Lands, Mele, Minnesott Beach, Oriental, Smith, and Vandemere areas of Pamlico County. According to the e-NC Authority, Pine Link also provides limited wireless Internet access in the county.

In March 2009, e-NC Authority awarded incentive grants to Embarq and Verizon to fund expansion of high-speed Internet services in Pamlico County. Expansion will bring the number of connected households from 54.69 percent to over 70 percent (The e-NC Authority: http://www.e-nc.org/100_County_Report/Pamlico.pdf).

Needs Assessment

Water

Challenges

On a regional level, Pamlico County faces several challenges related to water including meeting the requirements of the CCPCUA rules, combating saltwater intrusion, and having infrastructure in place to meet increasing water demands. These problems are described in the Regional Infrastructure chapter. Specifics on these challenges in Pamlico County, as well as additional challenges at the local level, are detailed below:

- CCPCUA's will affect some of Pamlico County's groundwater sources including the Town of Oriental's well (capacity 0.36 MGD) and Pamlico County Water System's wells (3.456 MGD).
- Saltwater intrusion was documented during the Environmental Management Commission (EMC) and NCDENR studies associated with the creation of the CCPCUA. Based on these studies, the freshwater/saltwater interface may have migrated significantly along the coastal plain and in Pamlico County, leaving large portions of the county with potential for saltwater intrusion. Saltwater intrusion occurs either laterally from the ocean or upwards from deeper salty aquifers. Water treatment to eliminate saltwater from the water supply is most accepted to be reverse osmosis/desalination. To date, only one North Carolina desalination plant is in operation (Kill Devil Hills in Dare County, NC). Existing water treatment infrastructure is not in place in Pamlico County to treat saltwater. If reverse osmosis/desalination were the only option, several (if not all) of the public water providers within Pamlico County would require new water treatment plants (WTP) or significant and expensive modifications to existing WTPs.

Required Infrastructure

At the same time water users are expected to reduce withdrawals for the CCPCUA, the region is anticipated to experience significant growth, increasing water demands in the region. Pamlico County is challenged with meeting increasing demands based on military growth combined with decreases in current supply based on CCPCUA rules and the potential for saltwater intrusion. The CCPCUA rules require water providers to find alternative sources for water supply, and these alternative sources require new infrastructure including wells, raw water lines, and water treatment plants. The new water treatment plants and well sites have additional land acquisition costs.

Military Growth

Generally, development in Pamlico County is located along the waterfront with high-end homes and second homes. While Pamlico County may have growth due to the military, it is expected to be localized in the Minnessott Beach area where homeowners can take the ferry to Marine Corps Air Station (MCAS) Cherry Point. In the next 10 years, it is possible that some developments east of New Bern and Bridgeton will occur in Pamlico County, but these developments are outside of the planning horizon for the MGTF.

Based on proposed housing due to military growth, it is estimated that additional water demands could increase by 0.6 MGD by 2011. With current excess capacity of 1.5 MGD, water supply and treatment is sufficient for the anticipated growth.

Needs

- Public water providers in Pamlico County need to continue to monitor the CCPCUA rules as it relates to the Town of Oriental and the Pamlico County Water System withdrawals.
- Saltwater intrusion along the coast needs to continue to be monitored. To protect groundwater from saltwater intrusion, accepted measures need to be implemented where practical.

Challenges

Limited Land Supply for Land Application Systems

Land application systems have become increasingly difficult to find and/or expand over recent years due to environmental, geographic, and economic constraints. Because much of the land in Pamlico County is dotted with jurisdictional wetlands and because only certain soil types allow for land-applied wastewater effluent to percolate, sewer providers are limited in their ability to find suitable land on which to discharge. These large land mass restrictions, coupled with soil limitations, make it difficult to find suitable land application sites in the region. Due to the economic boom of the mid 2000s, sewer providers also have to compete with developers for land. By creating sizeable land application sites, those jurisdictions lose valuable land that could generate taxes and income for the region and local community.

Existing Expansion Policies

Package WWTPs funded with private monies are subject to less stringent environmental regulations by NCDENR than public WWTPs. Based on decreased permitting times, developers have the ability to move ahead of public WWTP plans, new construction, and expansions which makes it difficult to properly plan for sewer needs. In many cases, if public water or sewer is unavailable at the proposed development, developers opt to construct their own package WWTP or septic system in lieu of paying for the public sewer infrastructure extensions that would be required to connect to the public system. From a land use planning perspective, the location of developer-driven package WWTPs changes the desired land use patterns. In some municipalities, private package plant providers are required to meet with the public sewer agencies at plan review time to determine if sewer can be provided through the public system. In some cases, failing package WWTPs have become problematic to the point that NCDENR has asked public providers to take ownership of these failing facilities, which creates additional operations and maintenance activities for sewer provider staff.

Military Growth

MSD studies indicate that by year 2020, wastewater demands are projected to be 0.4 MGD in the Oriental area and 0.36 MGD in the Bayboro area. A Bayboro WWTP expansion is being planned, which will add an additional 0.2 MGD of capacity (to 5 MGD WWTP capacity). Included in this growth could be a maximum of 0.54 MGD of wastewater flow. Currently, MSD has 0.63 MGD in available capacity.

Package WWTPs are often designed, permitted, and constructed by developers. At the time of development completion, they are typically turned over to the developments' homeowners association or purchased by private wastewater treatment plant companies for operation and maintenance. Although design and discharge effluent requirements are regulated by NCDENR in the same manner as publicly-owned WWTPs, the permitting process for private package WWTPs is significantly streamlined because only private-sector money is used. When public monies are used for WWTPs, the State Environmental Protection Act (SEPA) permitting process is initiated which tends to add at least six months to the permitting process. If only private sector money is used, then the SEPA process is not triggered, so individual private package WWTPs can be designed, permitted, and constructed quicker than publicly-owned plants. It is not uncommon for developers, who want to sell product as quickly as possible, to move ahead with private package WWTPs instead of extending sewer lines to existing public sewer collection systems or waiting on local governments to create or expand public WWTPs.

Needs

- Land suitable for spray irrigation is scarce, expensive, and not conducive to economic development or tax-generating development. Alternative disposal methods for the region's wastewater effluent are necessary for growth to continue with a current land application facility capacity of 0.5 MGD, but additional land application sites may be necessary.
- If military growth were to continue in the service areas of the Oriental and Bayboro WWTPs, a plant expansion would likely be needed within the next 10 years.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. There are important lessons to be learned from other coastal or neighboring states on the beneficial reuse of reclaimed water. Of primary importance is the protection of existing groundwater sources from saltwater intrusion.

Needs

Both the revised NCDENR reclaimed water regulations and the proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary to allow for expanded use of reclaimed water within Pamlico County. The beneficial use of reclaimed water can decrease potable water demands, positively impacting water needs in the region and could be used to protect Pamlico County's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed North Carolina Administrative Code (NCAC) updated regulations would allow reclaimed water to be treated as a valuable water resource, allowing it to be applied to more end-users. The expanded uses will also reduce the demand on land application sites.

Additionally, the implementation of a reclaimed water facility could ease the usage of the Arapahoe land application facility, which is expected to meet capacity within the next 10-year period.

Stormwater

Challenges

The biggest challenges facing the MGTF region for stormwater management are funding, enforcement, and threats to affordable housing. These same challenges are also Pamlico County's greatest challenges; they are described in the Regional Infrastructure Chapter.

Solid Waste

Challenges

Pamlico County is one of three counties in the seven-county region involved in a partnership for solid waste management. Pamlico County is a member of the Coastal Regional Solid Waste Management Authority (CRSWMA) and has representation on a seven-member Board of Directors that governs the authority. As discussed in the Existing Conditions section above, CRSWMA recently purchased land to expand the existing landfill. This expansion will roughly double the capacity of the landfill. As a result, solid waste management will be ensured well beyond the planning horizon.

Pamlico County will be focusing on meeting its local waste reduction goal of 16 percent as established in their 10-year Solid Waste Plan (N.C. Department of Environment and Natural Resources Solid Waste Management Plans: http://www.wastenotnc.org/swhome/swmplans.asp).

Telecommunications

Challenges

Pamlico County is below the state average for telecommunication connectivity. The e-NC Authority Grant will increase connectivity by over 70 percent, but it will still remain below the state average of 83.33 percent. The county is faced with the challenge of increasing connectivity in rural, remote areas of the county.

Needs

Pamlico County needs to work with service providers to meet or exceed the state average for connectivity.

Recommended Strategies and Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help Pamlico County address identified infrastructure problems. Responsible parties, as well as short-term (urgent by 2011), near-term (less than 10 years), and long-term needs, are identified below.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.

Table 5.3 - Recommended Actions Matrix

Funding opportunities for these strategies are detailed in the RGMP Infrastructure Module.

References

N.C. Division of Water Quality. Coastal Stormwater: Revised Rule Effective Oct. 1, 2008. http://h2o.enr.state.nc.us/su/coastal.htm.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/Pamlico.pdf.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

N.C. Department of Environment and Natural Resources. Solid Waste Management Plans. http://www.wastenotnc.org/swhome/swmplans.asp.

Pamlico County, 2004. *Pamlico County Joint CAMA Land Use Plan. Pamlico County.* http://www.co.pamlico.nc.us/client_resources/pdfs/planning-econdev/Pamlico%20Land%20Use%20Plan.pdf

Pamlico County. Pamlico County Recycling & Solid Waste. http://www.co.pamlico.nc.us/Departments_Recycling.aspx.

Wilson, Nat. N.C. Department of Environment and Natural Resources. Email Message pertaining to saltwater intrusion monitoring wells. May, 28, 2009.

Medical, Health, and Social Services
Medical and Health Services

Introduction

Pamlico County has a small medical community and does not have a facility that offers inpatient services. The county has minimal needs for additional health services because providers in Craven County and other counties serve Pamlico County patients.

Existing Conditions

Department of Defense Health Services

There are no Department of Defense (DoD) facilities located in Pamlico County. Military residents of Pamlico County who seek treatment at a military treatment facility travel to the Naval Health Clinic Cherry Point in Havelock and Naval Hospital Camp Lejeune in Jacksonville, which are a minimum of six miles[2] and 35 miles away, respectively, from most county residents. Of Pamlico County's 546 TRICARE-eligible residents, approximately 30 percent are enrolled. Almost three quarters of these enrollees choose to have a military treatment facility primary care manager.

	2008
Enrolled to a Military Treatment Facility Primary Care Manager	116
Enrolled to Network Civilian Primary Care Manager	45
Total Enrolled	**161**
Total Eligible	**546**

Table 6.1 - Tricare Eligible
Source: health net Federal Services

TRICARE beneficiaries account for one percent of Pamlico County's approximately 12,000 residents. As a percentage of total county population, Pamlico County has the smallest TRICARE population in the MGTF Region. According to Health Net, only one third of Pamlico County's physicians are in the TRICARE network.

Veterans Affairs

The Department of Veterans Affairs has two community-based outpatient clinics (CBOC) within the region, located in Jacksonville and Morehead City. The Morehead City CBOC, the nearest to Pamlico County residents, offers primary care, mental health services, and dental services; the Jacksonville CBOC also offers primary care and mental health services. Specialty services are available in this region by telemedicine.

Patients in Pamlico County access inpatient VA hospitals in Fayetteville and Durham. Due to the distance to these facilities, VA patients may be referred to a local community hospital if emergency services are needed.

Health Care Providers

Pamlico County has been designated as a Health Professional Shortage Area by the Health Resources and Services Administration (HRSA) for primary and dental care. Pamlico County has approximately 5.5 FTE primary care providers,[3] no medical specialists, no FTE surgeons, and five FTE dentists.

Assuming no military population growth, there is an additional need for three FTE primary care providers, 5.4 FTE medical specialists, 4.7 FTE surgeons and 0.7 FTE dentists in 2011. Physicians at larger medical centers in Craven and Pitt Counties provide care to Pamlico County residents. As such, a portion of the physician needs of the Pamlico County population are already being met by providers located outside of the county. If Pamlico County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.

2 Pamlico County residents traveling to the Naval Health Clinic Cherry Point can use a ferry from Minnesott Beach to Havelock.
3 The 5.5 FTE primary care providers include four FTE physicians and three physician extenders, which are estimated to be .5 FTE per extender for a total of 1.5 extender FTEs.

Behavioral Health

Behavioral health services in Pamlico County are managed by the East Carolina Behavioral Health LME, based in New Bern, which also manages services in Beaufort, Bertie, Craven, Gates, Hertford, Jones, Northampton, and Pitt Counties.

Currently, Pamlico County has no behavioral health providers. The behavioral health needs of Pamlico County are primarily met by Craven County providers. Assuming no military population growth, there is an additional need in Pamlico County for 1.8 FTE behavioral health providers in 2011.

There are no providers of inpatient behavioral health services in Pamlico County; county residents seeking these services primarily receive care at CarolinaEast Regional Medical Center in Craven County. Furthermore, there is no need for inpatient behavioral health services in the county for the foreseeable future, given the small size of the population. The region as a whole is projected to have a surplus of inpatient adolescent psychiatric and substance abuse beds in 2011. In addition, Craven County is projected to have a surplus of adult inpatient psychiatric beds, as shown in the Craven County module. Thus, capacity will be available in nearby counties to treat the needs of Pamlico County residents.

Inpatient Acute Care

There are no providers of inpatient acute services in Pamlico County, and there is no need for inpatient services in the county for the foreseeable future given the small size of the population. County residents primarily seek these services at CarolinaEast Regional Medical Center and, to a lesser extent, at Pitt County Memorial Hospital:

Hospital	County	Acute Care Beds	Pamlico County Residents Admitted in FY 2008
CarolinaEast Regional Medical Center	Craven	270	1,334
Pitt County Memorial Hospital	Pitt	628	120

Table 6.2 - Inpatient Acute Care
Source: 2009 State Medical Facilities Plan and 2009 Hospital License Renewal Applications.

Assuming no military population growth, Craven County is projected to have a surplus of acute care beds in 2011, as shown in the Craven County module. In addition, in the 2009 State Medical Facilities Plan, the facilities in Craven and Pitt Counties are projected to have a surplus of acute care beds. Thus, capacity at nearby existing providers will be sufficient to treat the needs of Pamlico County residents.

Inpatient Rehabilitation Care

There are no providers of inpatient rehabilitation services in Pamlico County, and there is no need for inpatient rehabilitation services in the county for the foreseeable future, given the small size of the population. County residents primarily seek these services at CarolinaEast Regional Medical Center and Pitt County Memorial Hospital.

Hospital	County	Rehabilitation Beds
CarolinaEast Regional Medical Center	Craven	20
Pitt County Memorial Hospital	Pitt	75

Table 6.3 - Inpatient Rehabilitation Care
Source:2009 State Medical Facilities Plan

Assuming no military population growth, Craven County is projected to have a surplus of rehabilitation beds, as shown in the Craven County module. In addition, in the 2009 State Medical Facilities Plan, each of the facilities in Craven and Pitt Counties is projected to have a surplus of rehabilitation beds. Thus, capacity at nearby existing providers will be sufficient to treat the needs of Pamlico County residents.

Outpatient Services

There are no providers of outpatient rehabilitation, diagnostic imaging, or ambulatory surgery in Pamlico County. Pamlico County patients seek these services primarily in Craven County. Nova Urgent Care, an urgent care center, is located in the county.

Regional Coordination

Pamlico County providers work with military treatment facilities and other regional providers as necessary to meet the health care needs of the county's population. Due to the geography of the region, providers often serve Pamlico County in conjunction with Craven and Jones Counties by moving between the counties to deliver care on a daily basis. The level of integration between the providers of the three counties has fostered effective collaboration.

Needs Assessment

Department of Defense Health Services

As stated in the regional summary, TRICARE reimbursement is a current and future concern. However, Pamlico County's needs are not as acute as other counties' in the region.

Veterans Affairs

As stated in the regional summary, the current Veterans Affairs services are reasonable to meet current and projected needs in the region, including Pamlico County's. Leadership at the VA has indicated that there are currently no plans to expand services in the region.

Health Care Providers

Pamlico County currently faces physician shortages in several areas. Following the projected increase in the military population, the projected 2011 physician needs in the county indicate an additional need for 3.1 FTE primary care providers, 5.4 FTE medical specialists, 4.8 FTE surgeons, and 0.8 FTE dentists. Physicians at larger medical centers in Craven and Pitt Counties provide care to Pamlico County residents. As such, a portion of the physician needs of the Pamlico County population are already being met by providers located outside of the county. If Pamlico County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.

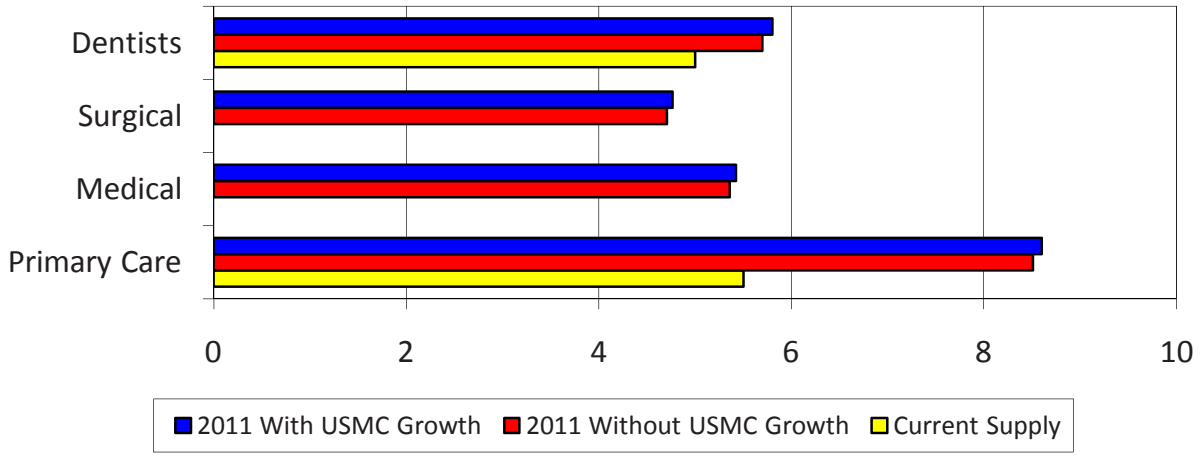


Figure 6.1 - Inpatient Rehabilitation Care

Source: Health net Federal Services, regional providers and HPS Demand Model.

Behavioral Health

The growth in the military population will not change the need for behavioral health services in Pamlico County. Following the projected increase in the military population, the projected 2011 behavioral health visits in the county indicate an additional need for 1.8 FTE behavioral health providers.

For the foreseeable future, Pamlico County residents will access inpatient behavioral health services in neighboring counties where they are currently being appropriately treated.

Inpatient Acute Care

The growth in the military population will not change the low level of need for inpatient acute care services. For the foreseeable future, Pamlico County residents will access these services in neighboring counties where they are currently being appropriately treated.

Inpatient Rehabilitation Care

The growth in the military population will not change the low level of need for inpatient rehabilitation services in Pamlico County. For the foreseeable future, Pamlico County residents will access these services in neighboring counties where they are currently being appropriately treated.

Recommended Strategies and Actions

Pamlico County needs will be met through the execution of regional strategies and actions in addition to those listed below.

Action 1: Continue efforts to recruit and retain primary care providers.

Rationale

Pamlico County (both with and without military population growth) has a need for behavioral health providers.

Responsible Party

Local physician leadership

Funding

According to the Merritt Hawkins 2008 Survey of Physician and CRNA Recruiting Incentives, the average cost of recruiting an internal medicine physician in 2008 was $176,000. The cost of recruiting an obstetrics/gynecologic physician (OB/GYN) was $255,000. The cost of recruiting nurse practitioners and physician's assistants is considerably less.

Action 2: Continue efforts to recruit and retain dentists

Rationale

Pamlico County (both with and without military population growth) has a need for additional dentists.

Responsible Party

Local physician leadership

Funding

None requested.

Social Services

Existing Conditions

Marine and Family Services

Marine and Family Services is a division of the department of Marine Corps Community Services (MCCS) that provides a variety of services to strengthen the military community at each Marine Corps installation throughout the country. Marine and Family Service programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or by visiting their local offices on base at Camp Lejeune, MCAS Cherry Point, and MCAS New River. Marines and their family members can access these services voluntarily, or via referral to social services by a commander or a division of military services, such as a health care provider. Upon arrival at any Marine installation, Marines are briefed on available services during the required base orientation, Welcome Aboard. Services and special events are also advertised on the base television channel and on flyers distributed around the base, including at the commissary, shops, and restaurants.

Very few active-duty Marines who reside in Pamlico County access social services through Marine and Family Services due to the distance to the base. MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River are approximately 30, 80, and 90 miles, respectively, from central Pamlico County. [For a full description of Marine and Family Service Programs, please see the Regional Medical, Health, and Social Services module.]

OneSource

Military OneSource is a resource contracted through the Department of Defense (DoD) for military members and their families, and intended to supplement existing military support services through the Internet or by phone. Military OneSource compliments Military and Family Services, providing a centralized location to access information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs, not long-term medical needs. OneSource offers counseling sessions over the phone and online, and refers to local counselors for in-person counseling. These services are ideal for Pamlico County residents who live a significant distance from each of the local installations. However, local counselors in the communities surrounding MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River often have limited availability, and waiting lists and lengthy wait times are commonplace.

Departments of Social Services

Services Provided – County Departments of Social Services

The North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[4] All County Departments of Social Services (County DSS) provide the following social services. [For a full description of DSS services please see the Regional Medical, Health, and Social Services module.]

- *Adult & Family Services* – supports disabled adults with a range of services such as guardianship, transportation to medical facilities, services for the blind, and adult care home monitoring.
- *Child Welfare* – covers the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.
- *Crisis Intervention* – helps low-income households that have heating or cooling-related emergencies reduce the

4 North Carolina Department of Social Services, available at http://www.ncdhhs.gov/dss/about/

risk of health or safety problems, as well as the risk of eviction.

- *Day Care* – provides free and/or subsidized child day care for low-income families.
- *Food and Nutrition Services* -- offers food assistance to eligible families.
- *Pregnancy Services* – supports low-income individuals with support for unplanned pregnancies, addressing medical, social, education, and psychological issues.
- *Refugee assistance* – assists newly-arrived refugees.
- *Senior Services* – offers meal assistance and health promotion activities to eligible adults over 60 years of age.
- *Work First*- provides temporary assistance to needy families and supports their ability for self-sufficiency.

Military and civilian populations in Pamlico County may access DSS services by phone, Internet, or in person at the County DSS office, located in Bayboro.

As discussed previously, while Marine and Family Services are meant to be the primary avenue by which military members and their families access services, military families living off base access social service programs through the County DSS. However, the military does not have a major impact on the development or provision of Pamlico County DSS programs.

Needs Assessment

Pamlico County is expecting its military population to increase with the addition of 212 marines and their families. However, Pamlico County is not expecting any resulting impact in association with its military population influx.

Recommended Strategies and Actions

Pamlico County does not expect any impact on its social services as a result of the Marine population influx; therefore, no action is necessary at this time.

Public Safety and Emergency Services

Existing Conditions

Data provided to MGTF by the County of Pamlico Department of Planning and Economic Development does not provide compelling evidence that military-related growth from the Grow the Force initiative is straining the county's Public Safety and Emergency Services (PS/ES) sector.

Communications Interoperability

Pamlico County's first responders utilize a VHF communications system. A VIPER communications tower has been constructed here but access to the system is limited by the small number of VIPER-compliant devices currently available.

Emergency Services

Of the nine volunteer fire departments in Pamlico County, seven have an Insurance Services Office (ISO) rating of nine. If response capacity decreases, these departments are at risk of losing their ISO ratings altogether, risking a substantial increase in local homeowner's insurance. However, response time data provided by Pamlico County Fire suggests that level of service is in some ways improving among fire departments in the county. In 2006, response times averaged 11 minutes, 18 seconds. For January through May 2009, response times averaged 10 minutes, 43 seconds. Nonetheless, with nearly 40 percent of responses exceeding ten minutes from the initial call receipt, much room for improvement remains in the level of fire service available to most of the county's citizens.

Needs Assessment

Communications Interoperability

Emergency Services

In order to achieve communications interoperability among the county's first responders, all law enforcement, fire and EMS departments should be updated to trunked, P25 Compliant, 800 MHz communication systems prior to the onset of FCC bandwidth limitations in 2013.

Recommended Strategies and Actions

Action 1: Transition all fire, EMS, and law enforcement departments to 800MHZ, P25-Compliant trunked radio systems.

Funding

- State appropriations
- Assistance to Firefighters Grant (FEMA)
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Quality of Life

Existing Conditions

Parks and Recreation and Sports Venues

Pamlico County is made up of about 225 square miles of water, so water-based recreation is very important to the county. The county has over 50 paddle trails on about 150 miles.

The county's Parks and Recreation Department controls five parks, a total of approximately 109.5 acres. Of these, one is considered a district park (based on acreage alone, not on development level) and the other four are mini-parks. The parks offer amenities such as athletic fields (baseball, softball), playgrounds, picnic areas, walking trails, boardwalks, and a pier. **Table 8.1** below shows the number of sports fields available within the county compared to state standards.

Facilities	North Carolina Standard	# in Pamlico	Recommended # based on 2007 population (12,968)	Over (+) and Under (-)
Baseball Fields	1/8,000	3	2	+1
Soccer Fields	1/6,000	1	2	-1
Softball Fields	1/4,000	3	3	0
Tennis Courts	1/1,200	0	11	-11
Outdoor Swimming Pools	1/14,000	0	1	-1
Community Centers	1/14,000	0	1	-1

Table 8.1 - Comparison of Recreation Facilities Managed by Pamlico County Parks and Recreation Department with State Standards (2005)
Note: Does not include public school and military facilities, or privately-run facilities.

Five schools within the county allow the county to use their facilities, including fields (softball, baseball, football, soccer, and multi-purpose), playgrounds, gyms, and trail systems. However, school facilities are increasingly difficult for county-run programs to use because school programs are the top priority. The school charges by the hour for adult athletic programs, and as a result, county-run athletic programs have suffered. The parks and recreation department has had to drop an adult sports program in the past year due to the increasing cost of using these school facilities.

The Town of Oriental has three parks (19.5 acres) and the Town of Bayboro has one park (2.25 acres). The Oriental parks offer tennis and volleyball courts, a soccer field, a multi-purpose field, a walking trail, playgrounds, and a pier; the Bayboro Park has tennis and basketball courts, and a playground.

Private or non-profit recreation options within the county include five camping facilities, four hunting facilities, seven marinas, one golf course, and an exercise club. There are also two YMCA camp facilities in Pamlico County (Camp Seafarer and Camp Seagull). These camps provide scholarships and are an important youth summer program. Camp Don Lee is a church-affiliated camp that offers youth camps and programs during the summer.

The county's parks and recreation comprehensive plan indicated that the public is frustrated because its recreation has been restricted during school hours, and because of the limited indoor recreational opportunities available in the county. The public also indicated that the lack of signage has affected usage of parks because many patrons are unaware of park rules or parks locations.

Current Plans

The county plans to develop one new baseball/softball field in 2009, and has also applied for a state grant to build new picnic shelters and soccer fields.

The county's Parks and Recreation Department Comprehensive System-Wide Master Plan (2007) suggests development at several of the existing parks within the county. Alliance Recreation Park is a district park, but is not developed as such. The master plan recommends the development of athletic fields, walking trails, camping area, concession areas, etc. It also notes that this park provides a good, centralized location for a community center and a good trail head location for a greenway system because it is close to schools, government buildings, homes, commerce, and a possible rail-to-trail site.

The master plan also identified new park development in the following locations as a need:

- Mini-Parks
  - **Northeast area of county**
  - **Alliance Area**
- Neighborhood Parks
  - **Minnesott Beach area (with beach access) – close to ferry service to/from Cherry Point**
  - **Western area of county**
  - **Vandemere/Mesic area**
  - **Eastern area of the county**
  - **Oriental area (with beach access)**
- Community Park
  - **Arapahoe/Minnesott Beach area**

Water Access and Parking

Newton Creek Park in Bayboro has a boat launch site. The Raccoon Creek Park in Bayboro has kayak/canoe access, but has inadequate parking (Pamlico Comprehensive System-Wide Master Plan 2007).

There are two beach access points in the county: Dawson's Creek Beach Access lacks adequate parking, and the Styron Beach Access has ample parking (Pamlico Comprehensive System-Wide Master Plan 2007). There are also two piers in the county.

The second most requested facility in Pamlico County (according to the parks and recreation 2007 master plan) was beach access with boat ramps. The plan notes that this could also aid the local tourism industry.

Current Plans

The county's Parks and Recreation Department Comprehensive System-Wide Master Plan recommends adding paddle trail access to the Alliance Recreation Park. It also suggests adding a boat launch area to the Styron Beach Access Park. The Lou Mac Park in Oriental is waterfront with a pier, but has no boating access; the master plan identifies this as an opportunity for the park.

Arts and Culture

The Craven-Pamlico-Carteret Regional Library System operates nine libraries, one of which is located within Pamlico County. The Pamlico County Library is located in Bayboro, on the campus of Pamlico County High School. Its square footage is listed below and compared to the state standard (State Library of North Carolina 2007, 18):

Pamlico County Library: 13,875 SF

Based on the 2007 population of Pamlico County (12,968) and the state recommendations for library square footage (0.65 per capita), the suggested area for libraries in Pamlico is 8,429 SF. This indicates a surplus of about 5,446 square feet in the county.

Although the figures show that there is a surplus of library space within the county, based on per capita area standards, it

should be noted that because the Pamlico Library is located within the high school, it has significant parking, access, and space constraints. The library has a limited amount of space for storage and computer stations, and it is further limited in the way it can configure that space. Because of its location in the high school, parking is generally unavailable during school hours, when it is used by students, teachers, and staff; consequently, there is no convenient place for library visitors to park.

The library at the Pamlico County Community College, located in Arapahoe, is open to the public for use. Between the two libraries, the county is sufficiently served.

There are two annual festivals in Pamlico County – the Fossil Festival in Aurora and the Croaker Festival in Oriental.

The Pamlico County Civic and Cultural Center hosts plays, concerts, art exhibits, and other performances in "The Old Theater."

The Pamlico County Arts Council brings in outside entertainment groups (typically music, dance, drama, or visual art) to the schools each year.

Current Plans

The Craven-Pamlico-Carteret Regional Library System's 2008-2013, five-year plan outlines plans for a demographic study/needs assessment of library facility needs in the county in 2011-2012.

Hotels and Meeting Space

Pamlico County has six motels [**listed in Appendix Q**]. These motels would not likely be used by military families and visitors.

Pamlico Community College has a meeting facility that is available to the public for cultural or civic events. The Ned Everett Delamar Center has a large conference room and a 650-seat auditorium and multi-purpose building. It can be rented out for banquets, receptions, conferences, stage productions, and other events.

Needs Assessment

There is already a need for a soccer field, 11 tennis courts, a public outdoor swimming pool, and a community center in Pamlico County, and military-induced growth will only add to the demand. **Table 8.2** below shows which facilities would be necessary due *only to the military-induced growth.*

Facilities	State Standard	Pamlico County (212 people)
Baseball Fields	1/8,000	-
Soccer Fields	1/6,000	-
Softball Fields	1/4,000	-
Tennis Courts	1/1,200	1
Outdoor Swimming Pools	1/14,000	-
Community Centers	1/14,000	-

Table 8.2 - Sports Venue Facilities Needed To Support Military-Induced Growth in Pamlico County

Pamlico County needs a community center and sports complex with indoor and outdoor athletic facilities (ball fields, soccer fields and tennis courts) and a gymnasium. In addition to athletic fields and venues, parks are also needed to accommodate the projected increase in population. The county is already lacking in recommended park space per capita; therefore, steps need to be taken to preserve open space within the county. **Table 8.3** below shows which types of parks would be necessary due just to the military-induced growth.

Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
212	1-2 acres	2 acres	4-21 acres

Table 8.3 - Parks Needed to Support Military Induced Growth in Pamlico County

The county's public library, which may currently have enough space per capita, will still be strained by additional military-induced growth. **Table 8.4** below shows the estimated square footage that will be needed within the county to accommodate the military-induced growth.

Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
212	138 SF	212 SF

Table 8.4 - Library Space Needed To Support Military-Induced Growth In Pamlico County

Since there is already a surplus of approximately 5,400 square feet of library space in Pamlico County, additional space is unnecessary to accommodate the military-induced growth. However, library programs will likely be inadequate to handle additional population growth, so steps should be taken to increase available library programs. More library computers and Internet access will also be needed to serve the growing population, and parking at libraries is a major problem that will need to be addressed.

Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items/ capita)	User Seating (2.5 seats/1000 residents)	Programming/Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF)
212	o	424	0.5	1	1

Table 8.5 - Additional Library Needs To Support Military-Induced Growth In Pamlico County

Pamlico County only has four motels to offer visitors, none of which are really suitable choices for visitors to military families. The county needs a family-oriented hotel, especially to accommodate visitors to the county's two YMCA camps each summer. Tourists also have a difficult time finding suitable accommodations within the county, and often stay outside of county limits. Ideally, a new hotel should be placed in either Grantsboro or Oriental.

Recommended Strategies and Actions

Recommendation 1: Build one new recreation complex that includes enough sports fields to bring the county up to state standards, and includes gymnasiums.

A feasibility study to site the complex, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of complex should be initiated in FY 11, with completion planned for FY 12. The estimated cost for the complex would be $5 million - $30 million, depending on its size.

Rationale

Pamlico County is already lacking in the number of athletic fields it offers, based on state standards, and the military-induced growth will only place further stress on existing recreational programs and facilities. The county will need new or expanded recreation facilities to include new sports fields and gymnasiums.

Funding

Grants and other funding sources available for parks and recreation projects are listed below.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: (www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: (www.ils.unc.edu/parkproject/trails/home.htm).

North Carolina Adopt-A-Trail Program – This grant is awarded annually to government agencies, non-profits, and private

trail groups. 100-percent funding is available up to $5,000. Contact the Trails Program at: http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – State program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php (Phone: 919-715-8699)

Land and Water Conservation Fund – Federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone) 202-343-9563.

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories including acquisition, landscaping, bicycling, and pedestrian facilities. www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – Community grants program supports local health departments in NC in efforts to development community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example: Carteret County Health Department in collaboration with County Parks and Recreation and other community partners will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project. For information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Harold H. Bate Foundation – Offers financial support to Craven, Pamlico, and Jones Counties. The foundation administers charitable gifts to enhance education, youth and recreation, and the quality of life for the three counties. Grants are not awarded for purposes ordinarily supported by tax funds, b*ut may be used in public-private partnerships. Grants are also discouraged for services that the public sector "should be reasonably expected to provide."* http://www.batefoundation.org/Grant_Guidelines.pdf) (http://www.batefoundation.org/index.html

Recommendation 2: Add new paddle trail access sites to the Alliance Recreation Park, a new boat launch area at Styron Beach Access Park, and a new boat launch at Lou Mac Park in Oriental, and expand parking at current water access sites wherever possible.

Rationale

There will continue to be problems with enough water and beach access, and associated parking, as the county population grows. Because water-front property is difficult to acquire, the county needs to be proactive in acquiring land as it becomes available, specifically looking at land that has been condemned to ensure that there are enough water access sites that meet CAMA guidelines.

Funding

Funds and Grants available for Water Access projects:

North Carolina Waterfront Access and Marine Industry (WAMI) Fund – Created by the North Carolina General Assembly to acquire waterfront properties or develop facilities to provide, improve, or develop public and commercial waterfront access. In 2007, $20 million was approved, and in 2008, 13 sites were selected for funding.

Land and Water Conservation Fund – A federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of

Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

Clean Water Management Trust Fund – Will fund projects that: 1) enhance or restore degraded waters; 2) protect unpolluted waters; and/or 3) contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits. www.cwmtf.net

Recommendation 3: Pamlico County's library space seems to be adequate, based on state standards, but additional library programs and amenities are needed, as outlined above.

The anticipated cost for new library space is $255 per square foot. This cost includes construction and related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, copiers), contingency construction and uplift, and library collections (books for 50-percent fill rate and A/V materials).

Rationale

Libraries and their programs are an important, low-cost activity for military families in Pamlico County. The county is not up to state space standards, and is lacking in the number of computers and other programs or amenities that it offers. Libraries are becoming increasingly like community centers, and as a free resource, are very important to military families.

Library Funding

Below is a list of funds and grants that are available for library projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries are located in counties that have either a 10-percent or greater poverty level in the Foundation-defined service area OR more than 3,000 persons living in poverty. http://statelibrary.ncdcr.gov/gates/gates.html

Libraries in Pamlico that have been established as eligible by the Foundation: Pamlico County Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. For available grants, contact: http://www.neh.gov/grants/index.html

National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. Is the nation's largest funding agency for the Arts. For grant information, contact: http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – North Carolina organization whose mission is to promote the social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities through building up the capacity of nonprofits, historically, supports fundraising campaigns to build capital projects (e.g., libraries, museums, community centers). http://www.kresge.org/index.aspx

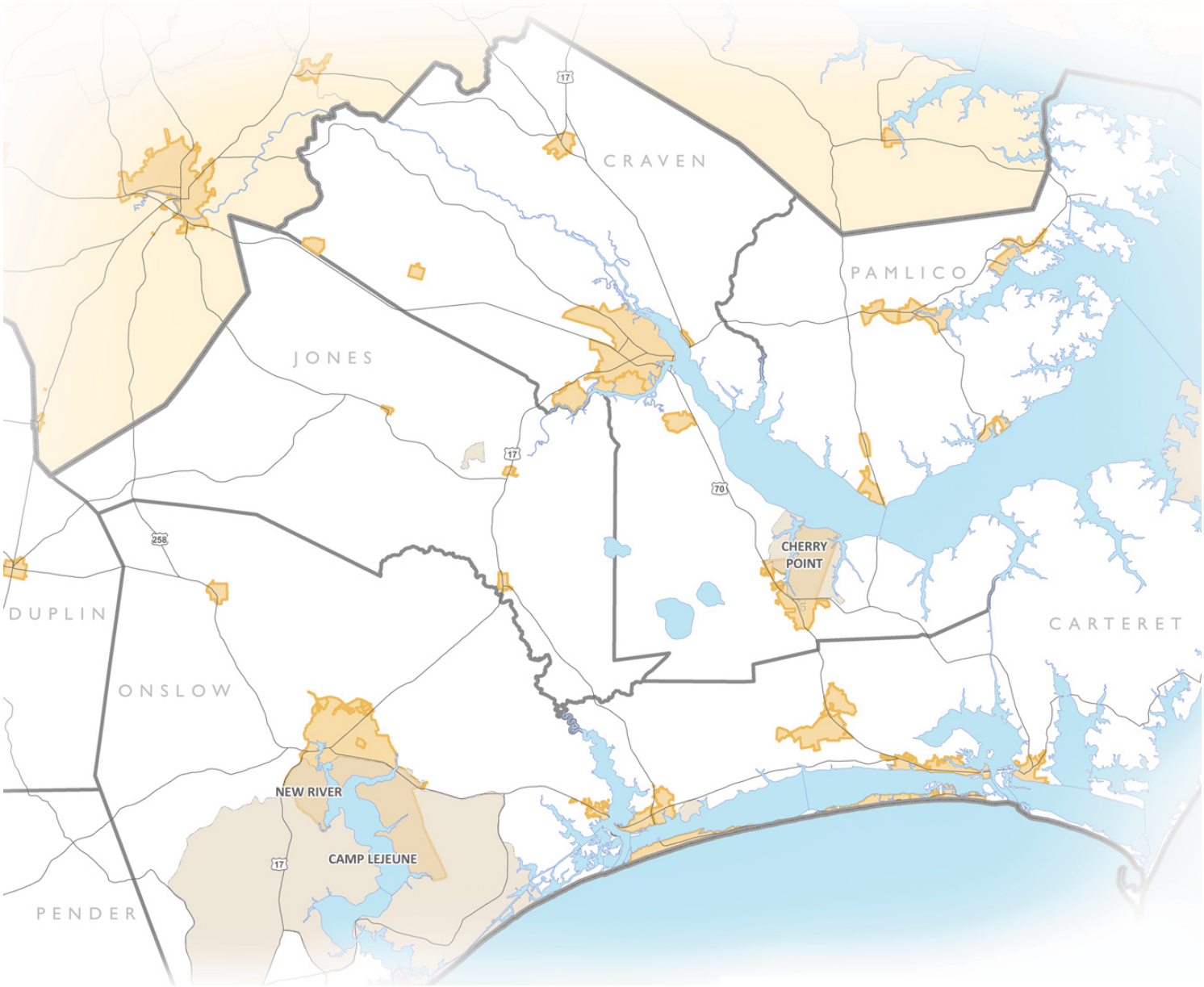
Kellenberger Historical Foundation (based in Craven County)

Recommendation 4: Add one new hotel within the county.

Rationale:

There are only motels within the county, and with the increased population growth from the military and induced growth, there will be a need for a new hotel either in Grantsboro or Oriental. The county hosts several popular summer camps annually, and there is typically nowhere for parents and families to stay within the county. The county should work to recruit a new hotel to accommodate families traveling to the area.

THIS PAGE INTENTIONALY LEFT BLANK.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Pender County

Submitted to the:
North Carolina Eastern Region's
Military Growth Task Force

www.nceastmgtf.org

Marstel-Day, LLC

In Partnership with:

Kimley-Horn and Associates, Inc.

URBAN RESOURCE GROUP
A DIVISION OF KIMLEY-HORN AND ASSOCIATES, INC.

Impact Communications, Inc.

Health Planning Source, Inc.

Operations Research / Education Lab, NC State University

Management Information Services, Inc.

DISCLAIMER

This plan is intended as an aid to planners, managers, elected officials, and decision makers in the seven North Carolina counties that comprise the region surrounding Marine Corps Base Camp Lejeune, Marine Corps Air Station Cherry Point, and Marine Corps Air Station New River, as well as state and federal elected officials and staff. The objective of this plan is to capture the most pressing regional growth issues and provide suggestions for ways in which local governments can address these issues.

The information in this plan has been collected through public sources and the projections made herein are based only on best analytical practices and estimates drawn from this existing data. Neither the Military Growth Task Force, Marstel-Day, LLC or its subcontractors guarantee or warrant that these projections will, in fact, occur.

Persons using the information in this plan for personal or business decisions should review all publicly available data for themselves, in addition to the information and conclusions of this plan.

This study was prepared under contract with North Carolina's Eastern Region, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of North Carolina's Eastern Region and does not necessarily reflect the views of the Office of Economic Adjustment.

Housing

Pender County occupies a unique position in the region. Its location, near both MCB Camp Lejeune and MCAS Cherry Point, ensures that there is an overwhelming demand for civilian and active-duty housing. Currently, higher military officers live in Coastal Pender because it is perceived to have better schools and higher end homes. Civilian demand for new housing will total 3,538 households by 2011 and military demand for new housing will total 164 households. The following section examines the provision of adequate and affordable housing in the county with respect to incoming civilians and military personnel. It also includes an assessment of the needs and issues facing the county, with recommended strategies and actions.

Existing Conditions

Housing Supply

Housing supply impacts pricing and the competition for homes in the county. In 2007, there were 24,317 housing units reported for Pender County. The preference for housing types and neighborhood styles varies across the county and the region. This section focuses on four general home categories prevalent in the county: for-sale homes, rental homes, manufactured homes, and second homes/seasonal rentals.

Housing unit estimates for the county were published by the North Carolina Economic Development Intelligence System (2007). The regional housing profile presented in this chapter was developed using information published in the 2000 Decennial Census (US Census Bureau). All estimates reported for the county include the impacts of cities and towns within it.

A summary of each general housing category follows.

Manufactured Homes

A manufactured home is built on an integral chassis in a factory, transported in one or more sections to the home site. All manufactured homes must be built in accordance with the Manufactured Housing Construction and Safety Standards established by the US Department of Housing and Urban Development (HUD). One in four homes in Eastern North Carolina is a manufactured home.

In 2007, there were 8,561 manufactured homes in Pender County. This represents 4 percent of all the housing units reported for the county.

For this analysis, all manufactured homes were removed from the inventory of available housing supply when quantifying the expected housing gap in 2011.

For-Sale Homes

For-sale homes are occupied by the owner of the unit. They are site built homes, typically purchased using a mortgage. For-sale homes are the dominant housing type in the county.

In 2007, there were 10,050 owner-occupied homes in the county. This represents 64 percent of all the housing units reported for the county.

For-sale homes ready for move-in were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for sale from existing inventory (2007) plus dwelling units reported as 'built' and 'for sale' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (**see Appendix G**). Based on the foregoing, 1,418 for-sale homes are available for new residents coming to Pender. The number of for-sale homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

For-sale housing in the county, which is substantially more affordable than most areas of the United States, has a history of housing price appreciation. The average listing price for a site built home in the county is $162,568, which is below the state average ($278,943).

Rental Homes

A rental home is occupied by a tenant through a lease agreement, which gives the tenant the right to use the rental property for a period of time (usually one calendar year). In 2007, there were 2,115 occupied rental homes in the county. This represents 13 percent of all the housing units reported for the county.

Rental homes ready for rent were estimated using information published in the 2000 Decennial Census. Available supply includes vacant homes for rent from existing inventory (2007) plus dwelling units reported as 'built' and 'for rent' from the Committed Residential Development Database (2005 - 2007) created by the Eastern Carolina Council (**see Appendix G**). Based on the foregoing, 298 available rental homes were estimated for Pender. The number of rental homes available in the county was validated using Multiple Listing Service data collected by Housing Working Group.

Rents in the region were collected from an internet and telephone survey of apartments available in the seven counties. The price of rental housing averages $500 to $700 for a one-bedroom unit, $600 to $900 for a two-bedroom unit, and $750 to $1,000 a month for a three-bedroom unit. Occupancy at rental homes in the region was estimated at 92 percent based on US Census Data; however, the telephone survey of apartments conducted for this analysis and comments from large property managers in the region confirm much higher occupancy rates around the three military bases (as high as 98 percent). These trends are reflected at the county level as well.

The magnitude and timing of newly-arriving, military and civilian populations could exacerbate the shortage of adequate and affordable rental housing surrounding the three military bases unless new units are constructed soon.

Second Homes/Seasonal Rentals

Second homes typically fall under the category of vacation home or rental property. Since 2000, buyers also started buying second homes as investment property, hoping to retire to the home once it was paid off (National Association of Realtors, 2004). When asked why they bought second homes, respondents to the National Association of Realtors survey reported they wanted to diversify their investments (30 percent), earn rental income (28 percent), have a personal retreat (14 percent), or have a place to vacation (6 percent). Approximately 5 percent said they bought a second home because they had the extra money to spend.

The hottest reported markets for second homes are the beach, mountains, or other highly-desirable vacation locations. Buyers of second homes are generally faced with larger down payments and higher interest rates.

In 2007, 8,561, or approximately 13.8 percent of the total housing units in Pender County were listed as seasonal rental units.

Committed Residential Development

The Eastern Carolina Council (ECC) estimates 1,500 dwelling units were approved in Pender County between 2005 and 2009. Of these, 1,194 dwelling units were approved but not yet built in 2007. Almost all of these dwelling units are located in the housing market analysis areas established for MCAS Cherry Point, MCB Camp Lejeune, and MCAS New River. The Committed Residential Development Database prepared by the ECC is included in **Appendix G** of this report.

Cost of Homeownership

The cost of owning a home is represented by five general categories: purchase price, mortgage, property taxes, utilities, and homeowners insurance. Costs within the five general categories vary depending on the size, condition, and location of the home in the county.

Purchase Price

The median home value published in the American Community Survey for 2007 was used to estimate the purchase price of a home in the county. Median home price for Pender County was $162,568.

Mortgage

A conventional, fixed-rate 30-year mortgage was assumed to estimate the typical monthly cost of principle and interest on a home loan. The down payment for a civilian loan was assumed to be 15 percent of the purchase price. No down payment was assumed for home loans to military families in order to be consistent with the terms of most VA loans. The

loan amount for the mortgage was determined by subtracting the down payment from the purchase price.

Property Taxes

The tax rate in Pender County is $0.650 per $100 of value.

Utilities

Utility costs were estimated from state and local sources. The average monthly cost for electric, water, and sewer service was estimated at $193.00 per housing unit across the region.

Homeowners Insurance

Homeowner insurance provides financial protection against natural disasters. It generally insures the home and the things in it. The price of homeowners insurance varies, influenced by the location of the home, deductible levels, and the insurance company providing the policy. The cost of homeowners insurance was estimated to be 0.75 percent of the purchase price of the home.

Monthly Payment

The monthly payment to afford a home of median value in Pender County was estimated to be $1,163.67 for civilians and $1,301.49 for military personnel.

Cost of Renting in the Region

The cost of renting a home in the region was estimated using average rents collected from an internet and telephone survey of apartments available in the seven counties (see **Appendix D**). Average rents assumed for the region are also assumed for the county and are as follows: $600 for a one-bedroom unit, $750 for a two-bedroom unit, and $875 for a three-bedroom unit.

Needs Assessment

Cost Burden Analysis

Cost-burden for affordable housing is measured as the ratio between payments for housing (including property taxes, utilities, and insurance) and reported gross household income (US Housing and Urban Development Department, 2009). A cost-burden analysis for the region was prepared for civilian populations purchasing homes, civilian populations renting homes, active duty military personnel and their dependents buying homes, and active duty military personnel and their dependents renting homes.

For military personnel, both owning and renting in Pender County are affordable options; however, for civilians, home ownership requires $117.54 more than the recommended 30 percent of the average monthly salary that is generally the upper limit for lenders.

Housing Gap Analysis

A housing gap analysis measures the difference between housing supply and forecasted demand for the county. The demand for housing reflects both civilian and military growth. Anticipated demand for for-sale homes and rental homes in the region is as follows: civilian homeowners (2,923), civilian renters (615), military homeowners (58), and military renters (106).

Housing supply includes vacant homes for sale or rent from existing inventory plus dwelling units reported as 'built' from the Committed Residential Development Database (2005-2007) created by the Eastern Carolina Council. In 2007, available housing supply was estimated at 1,418 for-sale homes and 298 rental homes. All manufactured homes and second homes/ seasonal rentals inventoried for the county were removed from available housing supply for the gap analysis.

By 2011, a deficit of 1,985 homes is expected. Completion of the yet to be built dwelling units in the committed residential development database prepared by the ECC will help to eliminate this deficit.

Issues Facing the County

The cost-burden and housing gap analysis reveal that home ownership affordability is an issue for civilians in Pender County and there will be both a rental and for-sale deficit of housing units. These and other critical issues must be addressed in order to ensure that housing is affordable and available beyond the 2011 planning horizon. These issues were identified through stakeholder interviews and included:

- Affordable housing is one of the biggest issues in the county. There has been a waiting list for subsidized housing since 2007. The county has a maximum of 217 housing vouchers and is currently serving 203, due to cap on funding.
- The county currently has no regulatory ability to promote compact development, and larger lots make housing less affordable.
- In 2008 there were 144 foreclosures in the county, which far exceeds typical rates for rural counties.
- The economy has basically halted all forms of development (residential, commercial, and industrial).
- There is no support for high density or multifamily housing in the county, which has lead to a lack of condos and apartments. The current zoning ordinance is not amenable to multi-family and lacks open-space requirements for development.
- Infrastructure also limits development—there is no central sewer. Sewer is available in Rocky Point, but it is being reserved for commercial development. Surf City has sewer service, but must annex into the city to get it.
- All other development must use individual drain fields or package plants.
- Pender County currently receives water service from the Town of Wallace, and the town has less than 1 million gallons per day of capacity remaining.
- Lack of water and sewer is a hindrance to commercial, industrial, and higher density residential development and has resulted in a scattered, low density sprawling development pattern, characterized by 1 acre lots on well and septic systems.

In order to address these challenges, the county has made significant long-term planning efforts. The county is currently creating a Unified Development Ordinance (UDO) (anticipated adoption date March/April 2010) and a Comprehensive Land Use Plan (anticipated adoption date January 2010). These plans are intended to promote growth in a sustainable pattern. However, their zoning ordinance remains outdated (1988) and Coastal Pender and areas along Route 17 remain resistant to growth.

As part of its long term planning efforts, the county is planning sewer expansion for the 421 Corridor, Rocky Point, and Scott's Hill and Coastal Pender. These areas are close to Wilmington and are the focus of economic development and growth initiatives in the county. There is a water plant and commerce park planned for a county owned property in the southern 421 corridor. There is also an emphasis on intergovernmental coordination between counties and towns. The county relies on water and sewer provision in Surf City and Burgaw to absorb excess growth.

In addition, the county is making efforts to educate citizens on avoiding foreclosures and to partner with Habitat for Humanity to encourage construction of affordable single family homes. There are several nonprofit agencies that advocate for affordable and responsible home ownership; these include Pender Housing Initiative Board, Safe Haven of Pender, Cape Fear Habitat for Humanity, Affordable Housing Committee, Cape Fear Land Trust, and the 10 year Homeless Plan.

Recommended Strategies and Actions

Critical to the success of the regional growth management plan are the implementing actions of participating municipalities and counties. Pender County should continue to plan for long term growth through implementation of its growth management plan by updating its zoning ordinance. Pender County must also ensure that provision of infrastructure does not eliminate opportunities for building affordable housing and providing choice in housing type and location.

Recommended strategies and actions to be pursued on behalf of the county could also include:

- Implementing the principles of smart growth to reduce or reverse the trends of urban sprawl and its consequences.
- Adopting adequate public facilities ordinances (APFO) to manage the type, intensity, and timing of development in the region.
- Adopting policies or incentives that expedite the construction of new rental and affordable housing.

Workforce

Existing Conditions

Pender County has a labor force that has expanded from 19,785 in 2001 to over 24,000 in 2009. Since 2002, employment growth has exceeded labor force growth and driven the unemployment rate down to a very low level of 4.2 percent in both 2006 and 2007. However, over the past two years estimated unemployment has almost tripled, rising from around 1,000 in 2001 to 2,927 in February 2009, and the unemployment rate[1] in the first three months of 2009 rose to between 11.2 and 12.1 percent.

Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2001	19,785	18,658	1,127	5.7
2002	20,362	18,806	1,556	7.6
2003	20,622	19,245	1,377	6.7
2004	21,098	20,059	1,039	4.9
2005	22,028	20,975	1,053	4.8
2006	23,480	22,503	977	4.2
2007	23,554	22,554	1,000	4.2
2008	24,080	22,576	1,504	6.2
J'09	23,810	21,133	2,677	11.2
F'09	24,145	21,218	2,927	12.1
M'09	23,905	21,180	2,725	11.4

Table 2.1 - Employment Trends in Pender County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

1 Seasonally unadjusted

Figure 2.1 - Employment Trends in Pender County, 2001-2009

Source: U.S. Department of Labor, Bureau of Labor Statistics. Local Area.

Over the past two years, the county has seen a single public notice of workforce job losses, as shown in the Announced Business Closings & Permanent Layoffs table. This occurred at the Long Creek Farms & Nursery and affected an announced 23 employees. Many county job gains and losses are not covered by this survey, though other sources of industry and occupational information are explored below.

NAICS Code	Date	Company	City	Product	Affected	Reason	Closing or Layoff
111421	Oct./Nov 2008	Long Creek Farms & Nursery, LLC	Rocky Point	Nursery	23	Not Stated	-

Table 2.2 - Announced Business Closings and Permanent Layoffs - Pender County, 2007-2009

Source: These data are derived from a statewide survey of newspaper accounts of closings and layoffs, and from information supplied to the Employment Security Commission of North Carolina by the employing units experiencing the closings/layoffs. The data are not comprehensive, and are not evaluated for accuracy by the Employment Security Commission.

The county registered almost 11,000 private and public-sector employees in 2007, a substantial total increase of 24 percent over the level six years earlier in 2001. The largest industry employers in 2007 were: the local government organizations, with 1,844 employees; the retail trade industry, with 1,398 employees; and the wholesale trade industry, with 1,083 employees. While the manufacturing industry has seen employment declines over the six-year period, those losses were more than superseded by gains in the wholesale trade industry (up 400 percent), the construction industry (up 70 percent), and the health care and social assistance industry (up 25 percent), which together added 1,400 new net jobs in the county.

		Establishments		Employees		Average Annual Pay	
		2001	2007	2001	2007	2001	2007
Total Covered		847	1,062	8,622	10,687	$22,519	$28,000
Private		779	999	6,263	8,230	$20,550	$26,044
11	Agriculture, forestry, fishing, and hunting	ND	35	ND	ND	ND	ND
21	Mining, quarrying, and extraction	ND	3	ND	ND	ND	ND
22	Utilities	ND	5	ND	ND	ND	ND
23	Construction	170	218	564	961	$23,562	$29,155
31-3	Manufacturing	38	42	982	855	$26,887	$34,324
42	Wholesale trade	33	45	274	1,083	$33,170	$33,886
44-5	Retail Trade	130	137	1,083	1,398	$17,750	$20,757
48-9	Transportation and warehousing	ND	28	ND	ND	ND	ND
51	Information	9	7	14	ND	$50,686	ND
52	Finance and insurance	21	31	104	117	$32,128	$47,205
53	Real estate, rental, and leasing	25	49	71	134	$22,748	$24,952
54	Professional and technical services	63	72	292	257	$22,599	$34,677
55	Management of companies and enterprises	ND	1	ND	NA	ND	NA
56	Administrative and waste services	ND	55	ND	361	ND	$22,303
61	Educational services	ND	4	ND	3	NA	$38,003
62	Health care and social assistance	52	66	831	1,041	$18,525	$24,791
71	Arts, entertainment, and recreation	14	18	167	169	$13,452	$15,417
72	Accommodation and food services	65	65	822	773	$10,211	$11,994
81	Other services, ex. public administration	47	56	149	179	$19,057	$26,123
99	Unclassified	NA	65	1	ND	NA	ND
Federal Government		17	14	96	97	$29,288	$42,356
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	-	-	-	-	-	-
48-9	Transportation and warehousing	8	7	76	77	$28,693	$41,410
52	Finance and insurance	1	NA	NA	NA	NA	NA
54	Professional and technical services	1	NA	NA	NA	NA	NA
61	Educational services	-	-	-	-	-	-
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	1	1	6	8	$37,254	$49,175
92	Public administration	6	6	13	13	$28,962	$44,055
State Government		24	16	551	516	$29,394	$35,558
48-9	Transportation and warehousing	-	-	-	-	-	-
56	Administrative and waste services	NA	NA	NA	NA	NA	NA
61	Educational services	ND	NA	ND	NA	ND	NA
62	Health care and social assistance	-	-	-	-	-	-
71	Arts, entertainment, and recreation	-	-	-	-	-	-
92	Public administration	ND	16	ND	516	ND	$35,558
Local Government		27	33	1,712	1,844	$27,128	$33,856
22	Utilities	-	-	-	-	-	-
44-5	Retail Trade	ND	1	ND	ND	ND	ND
48-9	Transportation and warehousing	-	-	-	-	-	-
51	Information	-	-	-	-	-	-
56	Administrative and waste services	-	-	-	-	-	-
61	Educational services	15	22	1,004	ND	$29,434	ND
62	Health care and social assistance	4	3	265	ND	$23,614	ND
81	Other services, ex. public administration	-	-	-	-	-	-
92	Public administration	ND	7	ND	ND	ND	ND
99	Unclassified	-	-	-	-	-	-

Table 2.3 - Pender County Employment and Pay - 2001 and 2007

Note: "NA" is Not Available, "ND" is Non-Disclosure, and "-" is not recorded.

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009.*

The Top 25 Employers table provides a recent snapshot of the companies and organizations that employ the highest number of people in the county. As of the third quarter of 2008, the largest two employers were the Pender County Board of Education, with over 1,000 employees, and Coty, LLC, with between 500 and 999 employees.[2]

The next tier of employers are comprised of those with payrolls ranging from 250 to 499, and include two public-sector organizations, Pender County and the State of North Carolina, and two private organizations, Pender Memorial Hospital, and Food Lion. Smaller companies in the county are very diverse in the range of products and services they offer and primarily span the key industries of manufacturing, education, and retail trade.

Rank	Company Name	Industry	Employment Range
1	Pender County Board of Education	Education & Health Services	1,000+
2	Coty, LLC	Manufacturing	500-999
3	Pender County, NC	Public Administration	250-499
4	State of North Carolina	Public Administration	250-499
5	Pender Memorial Hospital, Inc.	Education & Health Services	250-499
6	Food Lion, LLC	Trade, Transportation, & Utilities	250-499
7	L.L. Building Products (A Corp)	Manufacturing	100-249
8	Genlyte Thomas Group, LLC	Manufacturing	100-249
9	Lowe's Home Centers, Inc.	Trade, Transportation, & Utilities	100-249
10	Pender Adult Services, Inc.	Education & Health Services	100-249
11	Smithfield Foods, Inc.	Manufacturing	100-249
12	Hardee's	Leisure & Hospitality	100-249
13	Huntington Health Care & Retirement	Education & Health Services	100-249
14	Kohl's Department Stores	Trade, Transportation, & Utilities	100-249
15	Gomez Harvesting, LLC	Natural Resources & Mining	100-249
16	Pender Volunteer EMS and Rescue, Inc.	Education & Health Services	100-249
17	Woodbury Wellness Center, Inc.	Education & Health Services	100-249
18	North Carolina Department of Transportation	Public Administration	50-99
19	Eastern Environmental, Inc.	Professional & Business Services	50-99
20	U.S. Postal Service	Trade, Transportation, & Utilities	50-99
21	Johnson Nursery	Trade, Transportation, & Utilities	50-99
22	Piggly Wiggly	Trade, Transportation, & Utilities	50-99
23	Regent Security Services, Inc.	Professional & Business Services	50-99
24	Four County Electric	Trade, Transportation, & Utilities	50-99
25	Town of Surf City, NC	Public Administration	50-99

Table 2.4 - Top 25 Employers in Pender County 2008-QIII

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009 (QCEW), Largest Employers; 2009*

2 Primarily for business proprietary reasons, the Bureau of Labor Statistics does not release exact employment figures by the organizations, but rather just employment ranges.

The occupational profile of current jobs in the county provides another view of the workforce structure and the occupations that organizations in the county have emphasized as important. In most cases, the largest occupational categories are the ones in which new job market entrants will also find the greatest employment opportunities. The Occupational Employment and Wages table shows that, in 2008, Office and Administrative Support workers led all other occupational groups in the county, accounting for 1,690 employees, followed by Construction and Extraction workers, with 1,460 employees. Specifically, the detailed occupational information in the lower half of the table shows that the most popular jobs in the county were: cashiers, carpenters, hand packers and packagers, and home health aides.

Occupational Code	Employment by Occupational Group	Estimated Employment	Estimated Annual Wage-Median
00_0000	Total All Occupations	10,650	$25,012
11_0000	Management Occupations	330	$70,710
13_0000	Business and Financial Operations Occupations	150	$43,986
15_0000	Computer and Mathematical Occupations	30	$43,314
17_0000	Architecture and Engineering Occupations	*	$37,276
19_0000	Life, Physical, and Social Science Occupations	*	$45,644
21_0000	Community and Social Services Occupations	100	$34,346
23_0000	Legal Occupations	-	-
25_0000	Education, Training, and Library Occupations	*	$33,900
27_0000	Arts, Design, Entertainment, Sports, and Media Occupations	40	$22,500
29_0000	Healthcare Practitioners and Technical Occupations	460	$38,975
31_0000	Healthcare Support Occupations	340	$18,353
33_0000	Protective Service Occupations	*	$26,117
35_0000	Food Preparation and Serving Related Occupations	810	$15,039
37_0000	Building & Grounds Cleaning & Maintenance Occupations	370	$22,019
39_0000	Personal Care and Service Occupations	110	$17,859
41_0000	Sales and Related Occupations	1,280	$23,608
43_0000	Office and Administrative Support Occupations	1,690	$24,265
47_0000	Construction and Extraction Occupations	1,460	$29,727
49_0000	Installation, Maintenance, and Repair Occupations	400	$33,250
51_0000	Production Occupations	*	$23,012
53_0000	Transportation and Material Moving Occupations	960	$17,227
	20 Top Occupations		
41_2011	Cashiers	360	$15,624
47_2031	Carpenters	300	$33,591
53_7064	Packers and Packagers, Hand	270	$14,362
31_1011	Home Health Aides	260	$18,071
35_3031	Waiters and Waitresses	250	$14,415
51_2092	Team Assemblers	250	$21,332
43_9061	Office Clerks, General	230	$20,675
47_1011	First-Line Supervisors/Managers of Construction Trades	230	$45,742
37_3011	Landscaping and Groundskeeping Workers	180	$23,226
43_6011	Executive Secretaries & Administrative Assistants	180	$30,131
41_1011	First-Line Supervisors./Managers of Retail Sales Work	160	$34,584
43_3031	Bookkeeping, Accounting, and Auditing Clerks	130	$27,845
11_1021	General and Operations Managers	110	$135,315
43_5071	Shipping, Receiving, and Traffic Clerks	90	$21,774
43_5081	Stock Clerks and Order Fillers	90	$17,531
53_3032	Truck Drivers, Heavy and Tractor-Trailer	80	$30,334
37_2011	Janitors and Cleaners, Except Maids and Housekeeping	70	$18,405
47_2111	Electricians	70	$37,820
29_2061	Licensed Practical and Licensed Vocational Nurses	60	$35,762
43_4171	Receptionists and Information Clerks	60	$26,209

Table 2.5 - Occupational Employment and Wages in Pender County - 2008

"*" is non disclosed; "-" is not reported

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Quarterly Census of Employment and Wages 2009 (QCEW), Largest Employers; 2009*

The federal government has a presence in the county and the Direct Expenditures or Obligations tables lists the Fiscal Year (FY) 2007 monies transferred into the county. Both the USMC-related and the total Navy Department expenditures or obligations are listed. They show that in FY 2007, slightly over $5.2 million flowed into the county from the Navy Department, almost all in the form of retirement and disability payments distributed to county residents.

Expenditures/Obligations	Navy	USMC
Retirement & Disability Pay	5,194	3,167
Grants	-	-
Procurements	15	-
Salaries & Wages	-	-
Total	5,209	3,167

Table 2.6 - Direct Expenditures or Obligations in Pender County FY 2007 (in thousands of dollars)

Source: U.S. Census Bureau. Consolidated Federal Funds Report, Fiscal Year 2007. http://harvester.census.gov/cffr/index/html

Needs Assessment

The county is projected to grow in population at one of the highest rates in the seven-county region. North Carolina State projects that without the military increase, county population will increase by 7,648 persons from January 2007 to the end of December 2011. With the addition of 1,267 persons due to USMC direct and indirect impacts, the county will experience 3.4 percent annual average growth over the five-year period. This influx is projected to add an additional demand for almost 3,300 new jobs in the county.

Some of the current impediments to a fully-functioning workforce, low unemployment rates, and economic growth in the county include those listed in the Current Regional Issues section of the Regional Workforce Module, but also include those listed below:

- Many county residents travel outside the county to jobs, and there is not a developed public transportation system that would help facilitate the workforce.
- Some county residents do not have the skills and training to apply for the higher-paying jobs in the county and outlying region. As many as 30 percent of the county's high school students drop out of school, effectively ending any hopes of obtaining a high-paying job, or even qualifying for some training programs.
- Current plans just announced by Coty to close a factory this year may put as many as 400-500 employees out of work.
- Tourism and recreation play a part in the county's economic health, but the full potential of this boost to economic growth has not yet been fully developed.

Recommended Strategies and Actions

The county and the surrounding region have a number of tools available to mitigate the impacts of military growth on the workforce, while at the same time positioning the county and the region where it needs to be in the out-years, beginning in 2012. Recommended strategies include first and foremost, taking the following actions to increase the economic base of the region so that the new entrants find meaningful and productive employment that matches their skills and desired occupations:

- Acquiring and allocating resources to support and plan for a new Technology Center in the region and a new Business/Entrepreneurship Center. The centers would be operated in close conjunction with existing or planned community college resources, but would also include a private business presence and research facilities. Each would focus on a particular need within the region: the first, on an increased emphasis on high technology and IT, and the second, on a shift in long-term US economic trends to greater business acumen within the workforce and entrepreneurship.
- Emphasizing industrial clusters that will potentially be available at the two centers, and also at current industrial parks in the region. Clusters bring the potential for economies of scale, as well as business synergies that help to boost the long-run success of businesses and research.

- Supporting private and public efforts such as "Onward Onslow" that encourage new and relocating business to the region, by emphasizing clean environment, water resources, housing market, low traffic, and the other benefits in the region.
- Increasing the marketing of tourism and recreational opportunities in the ecologically-diverse region.

Additional recommended strategies and actions revolve around the preparation, education, and training of the workforce through several initiatives:

- Creating a new program, or adjusting current programs, to focus students in the 7th-9th grades on graduating with at least a high school degree and preserving a clean personal and financial record. This same message needs to be transmitted to the parents and other adults who guide and influence teenagers in the region.
- Expanding specific community college programs, and university collaborations and programs, to accommodate education and certification in medical/health fields, aerospace technology, IT, specialized trade, advanced manufacturing, and other technical and professional financial fields.
- Expanding community college and university class offerings to accommodate the changing needs of the local economy and influence the future knowledge of the population and workforce to better match where the region will be in five years. A key example would be to monitor the dispersion and expansion of green technologies that are expected to arrive in the region before many other areas of the country, and to plan for training and educational requirements of those future green jobs.
- Devoting immediate resources to increasing child-care training, certification, and facilities. Not only will this action provide direct employment to child-care specialists, but also additional, indirect employment, by freeing spouses and single parents to seek employment and cope financially with conditions in today's economy.
- Creating bridge training at community colleges for certification and licensing issues, while monitoring and lobbying organizations to reduce reciprocity barriers.

Some recommended strategies and actions specifically target the military business and workforce presence in the region:

- Monitoring and attempting to expand business opportunities to gain USMC procurements and contracts.
- Supporting small business incubators to assist small businesses that are seeking government contracts, including a focus on small- and disadvantaged businesses.
- Continuing to emphasize and support the North Carolina Military Business Center, which assists businesses, as well as MatchForce and on-base job fairs, which assist military dependents with local employment.
- Expanding marketing through the Transition Assistance Program and other avenues to increase the percentage of retiring military employees staying in the region.
- Creating a more military-family-friendly workplace by offering flexible benefit packages, and having the added benefit of reducing the cost of labor to businesses.

Education

Existing Conditions

K-12

The estimated 2007 population of Pender County is 49,865. Pender County Schools, with a 2008-09 K-12 enrollment of 8,178 students, is the 47th largest public school system in the state (North Carolina Department of Public Instruction, School Statistical Profile). The average annual growth in enrollment in the past five years was three percent (**Figure 3.1**). The numbers of elementary-age and high school-age students have been increasing at an average of over 100 students per year since 2003-04. The annual live births to county residents averaged over 500 births per year in the last 10 years with an increasing number since 2006. The most recent data for 2007 reported 620 new births in Pender County (**Figure 3.2**) (North Carolina Department of Health and Human Services, State Center for Health Statistics).

Other characteristics of the school district are:

- Three high schools with a combined enrollment of 2,387 students. Topsail High School is the largest high school in the county with 1,034 enrolled; it is also the fastest growing high school in the county. Pender High School, which covers the west part of the county, is the smallest with 692 enrolled. Heide Trask High School, with 841 enrolled, serves the northeast and central part of the county. The Early College program has enrollment of 147 and is expected to grow.
- Four middle schools with combined enrollment of 1,666 students. Topsail Middle School with an enrollment of 747 students is the fastest growing middle school in the county. It shares an identical attendance area with Topsail High School.
- Forty-six percent of the enrollment in Pender County Schools is in the Kindergarten to 5th grade range, 23 percent in 6th to 8th grades, and 31 percent in the 9th to 12th grade range.
- During the 2008-09 school year, 129 students, or 1.6 percent of students enrolled in Pender County Schools were children connected to the military. Pender County Schools does not maintain historical data on military-connected students but realizes that they are increasing due to the military growth in the region (Craven County Schools Federal Impact Aid data).
- The county's per-pupil expenditure is $7,466 with 69 percent state funding, 11 percent federal funding, and 20 percent local funding. The per-pupil expenditure is the lowest in the region (North Carolina Department of Public Instruction, School Statistical Profile, 2006-07 Expense Expenditures by Source of Funds).
- Pender County Schools operates 98 school buses transporting 4,417 students at a cost of $497 per pupil. Fifty-four percent of students utilize school buses.
- Pender County Schools employs 441 teachers and 110 teacher assistants.
- There are no charter or private schools in Pender County.

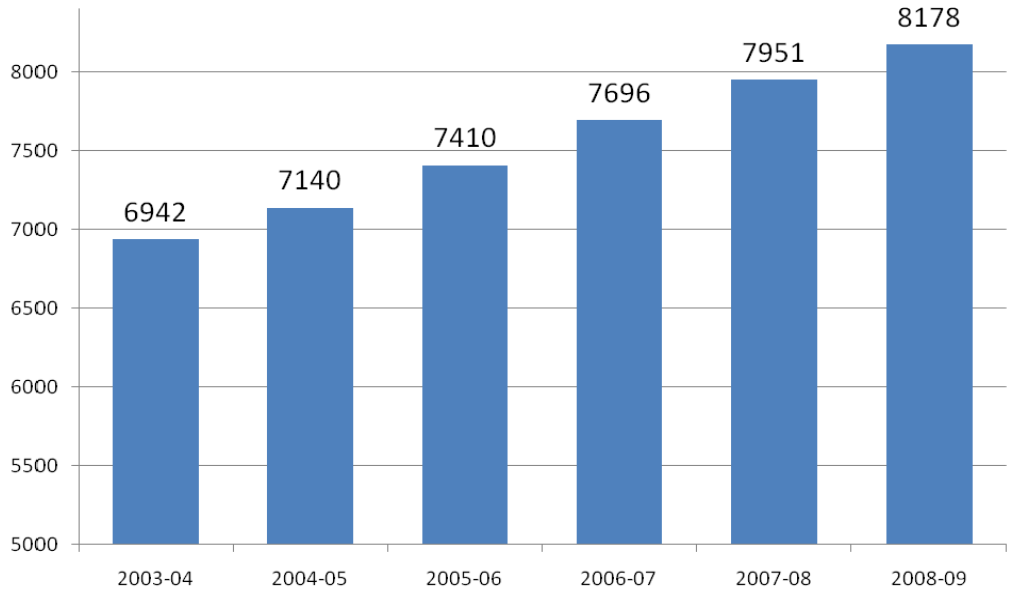


Figure 3.1 - Average Daily Membership

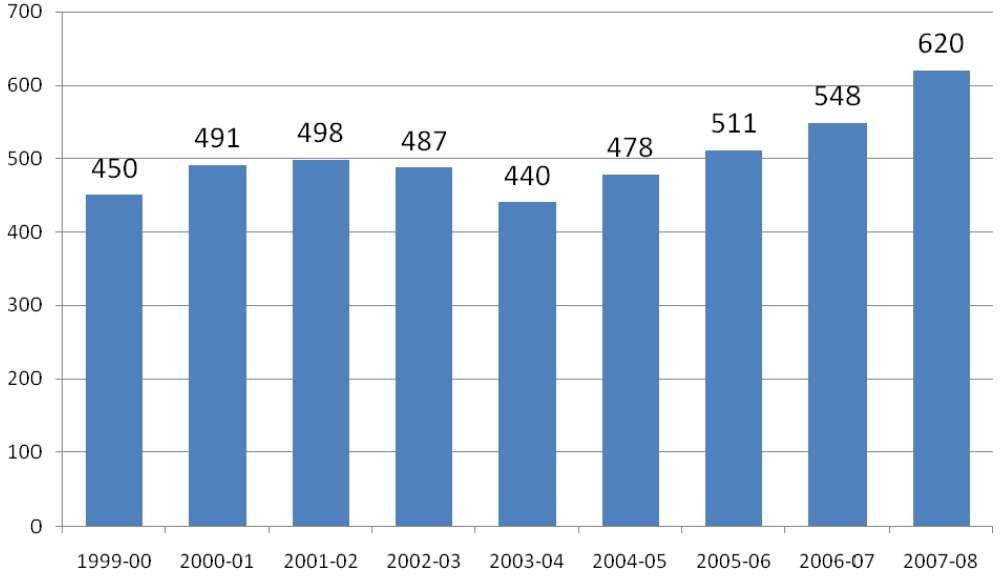


Figure 3.2 - Resident Live Births

The Topsail school cluster situated in the southeast part of the county has been the fastest growing area for school population in recent years. This area is served by North Topsail, South Topsail, and the newly-opened Central Topsail elementary schools. These elementary schools saw a combined growth of over 200 students since the 2005-06 school year, which can be attributed to neighboring New Hanover County to the southwest and an easy commute to Marine Corps Base (MCB) Camp Lejeune to the northeast. The Highway 17 corridor between Hampstead and Holly Grove is dotted with subdivisions that attract families with school-age children. In the 2008-09 school year, 104 out of the 129 military-connected students (approximately 80 percent) lived in the Topsail cluster.

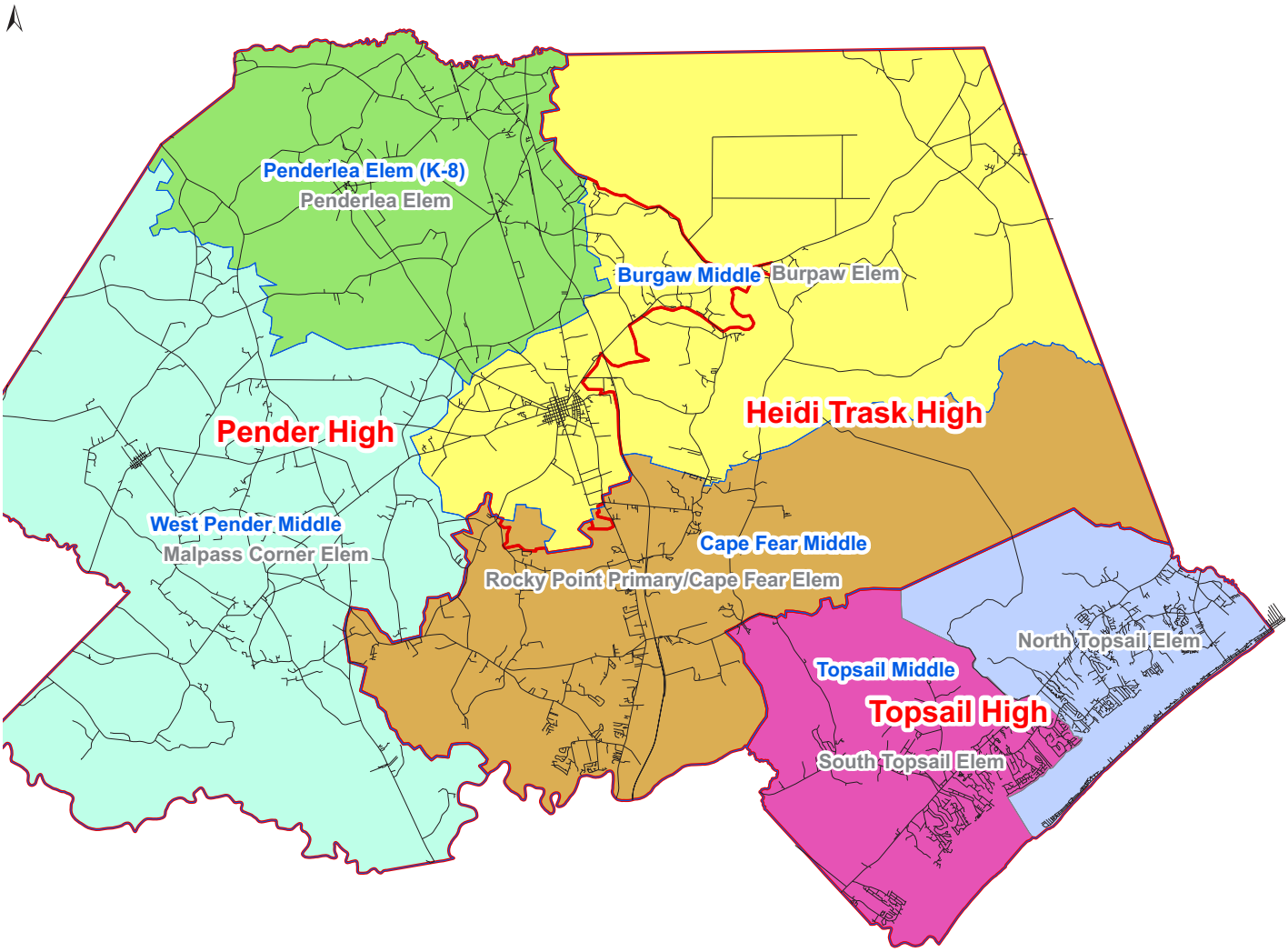


Figure 3.3 - Pender County Public School System Cluster

The Heidi Trask school cluster is the second fastest growing area in the county; growth in this cluster is roughly one-third that of the Topsail cluster. This area has active subdivision growth along NC 117 and NC 113 in close proximity to the Rocky Point community; this growth is mostly attributable to growth in New Hanover County.

Child Care

Pender County has a total of 55 child development facilities with 19 centers and 36 homes. The 19 centers' total enrollment is 897 children, and the 36 home-based child development facilities have 208 children enrolled. The county-wide combined child care enrollment is 1,105 children, or 13 percent of the total population under the age of 15 (North Carolina Department of Health and Human Services, Child Care Statistical Report, March 2009). The county-wide number of child care slots as of April 2009 is 1,752, a 63 percent utilization rate.

The child care centers employ a total of 195 and the annual employee turnover is approximately 46 (24 percent) (Onslow County Partnership for Children, MGTF Workforce Module, Child Care Industry Data and Information).

Community College and Post-Secondary Education

Cape Fear Community College (CFCC) was founded in 1958. With over 26,500 students enrolling in classes every year, CFCC is the fifth largest community college in the state and is a major economic development partner in southeastern North Carolina. The college's enrollment in credit programs topped 7,500 in the fall 2007 semester. The college has 434

full-time employees and also employs several hundred part-time employees. CFCC's main campus is in Wilmington and offer classes for Pender County residents in Burgaw and Surf City.

CFCC offers trainings in over 60 technical programs, two-year college transfer degree, and customized employee training opportunities for businesses and industries planning to expand or relocate to the greater Wilmington area. Most recent training partnerships included companies such as Verizon Wireless and GE Hitachi.

CFCC also offers hundreds of continuing education courses as well. Free programs include basic skills, adult literacy, GED preparation, job skills preparation, adult high school, and English as a second language. In the college's Center for Business, Industry and Government (B.I.G.), low-cost classes are offered in computer training, construction, foreign languages, leadership, and management. The B.I.G. Center even runs customized seminars which can be specialized for individual businesses. CFCC's Small Business Center offers scores of free seminars for entrepreneurs and small businesses as well as free business counseling services.

Needs Assessment

K-12 Education

Pender County School's population is forecasted to grow between 950 to 1500 students from 2007 to 2011 (**Figure 3.4**).

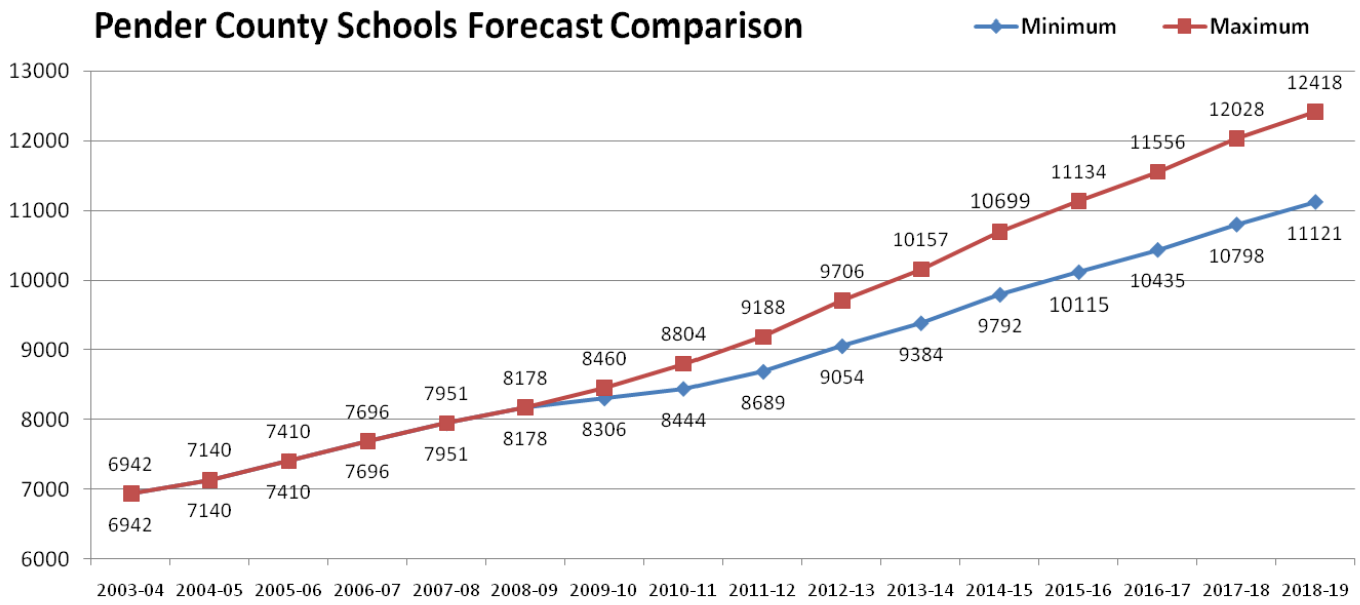


Figure 3.4 - Pender County Schools Forecast Comparison

An average student population growth of 200 per year is projected using a conservative calculation. A more aggressive forecast method results in a potential gain averaging 300 per year for the same period. The three elementary schools in the Topsail cluster will soon be out-of-capacity under either assumption. A new elementary school will therefore be needed to relieve overcrowding for this area. The cost of building a new elementary school with capacity of 650 is approximately $17 to $20 million (North Carolina Department of Public Instruction, School Planning Section).

	Capacities	Month-2	Projected Month-2 ADM									
	2008-09	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Elementary Schools												
Burgaw Elementary	720	547	551	564	573	582	591	601	616	624	631	633
Cape Fear Elem (3-5)	525	428	437	465	485	504	524	546	580	598	614	616
North Topsail Elem	533	459	477	534	573	611	650	696	763	800	831	836
Malpass Corner Elem	653	500	504	517	526	535	544	554	569	577	584	586
Penderlea Elem (K-8)	527	501	520	563	589	624	661	690	708	734	764	807
Rocky Point Primary (K-2)	493	508	518	549	570	591	612	637	674	694	711	713
South Topsail Elem	512	447	459	498	525	551	578	608	654	679	700	704
Central Topsail Elem	500	513	530	581	616	651	687	728	789	823	851	855
Totals	**4463**	**3903**	**3997**	**4270**	**4456**	**4649**	**4846**	**5060**	**5353**	**5530**	**5686**	**5750**
Middle Schools												
Burgaw Middle	298	247	269	302	319	355	393	410	384	403	436	516
Cape Fear Middle	483	443	474	521	544	595	648	672	635	661	707	820
Topsail Middle	1000	747	788	850	880	947	1018	1049	1000	1035	1096	1245
West Pender Middle	313	229	235	243	247	256	266	270	263	268	276	296
Totals	**2094**	**1666**	**1767**	**1915**	**1990**	**2154**	**2325**	**2402**	**2282**	**2367**	**2515**	**2876**
High Schools												
Heide Trask High	780	692	713	694	725	764	784	846	910	949	990	982
Pender High	810	661	677	663	686	716	731	777	826	855	886	880
Topsail High	1500	1034	1084	1039	1110	1202	1249	1392	1541	1632	1728	1708
Totals	**3090**	**2387**	**2474**	**2397**	**2520**	**2682**	**2763**	**3015**	**3277**	**3436**	**3605**	**3570**
Special/Alternative Schools												
Pender Success Academy (6-12)		31	31	31	31	31	31	31	31	31	31	31
Pender Early College		147	147	147	147	147	147	147	147	147	147	147
System Totals	**9647**	**8134**	**8416**	**8760**	**9144**	**9662**	**10113**	**10655**	**11090**	**11512**	**11984**	**12374**

Capacity Legend

< 95%	95% - 100%	100% - 105%	> 105%

Table 3.1 - Pender County Schools Out-of-Capacity Worksheet, Maximum Growth Forecast

Because of the historical and forecasted growth near the Rocky Point area, Cape Fear Middle School will be over-capacity in the near future. Burgaw Middle will also be over-capacity because of its low building capacity. Topsail Middle is the largest middle school in the county with a surplus capacity of 253; however, this surplus will diminish quickly and has the potential to be over-capacity in five years under the maximum forecast model. Pender County Schools should exercise a land-banking policy for a suitable middle school site to relieve the future overcrowding in Topsail Middle and Cape Fear Middle schools.

A growth of 950 students would require 43 new teachers and 19 new teacher assistant positions at an annual cost of approximately $3 million. This growth would also require adding seven new school buses at a cost of $640,000. If as many as 1,500 new students arrive in Pender County Schools, 68 new teachers and 30 new teacher assistant positions may be required at an annual cost of $4.5 million. This growth would require adding 14 new school buses at a cost of $1.2 million.

Just as in the rest of the region, recruiting and retaining qualified teaching staffs has been a tremendous challenge. It will be a high priority for Pender County Schools to work with the local and neighboring higher-education institutions to develop a high-quality teaching pool to support the growth.

Child Care

Pender County's total child care enrollment is estimated to increase by 217 children by 2011. The increase will raise the child care slot utilization from the current 63 percent to 77 percent. At the current children-to-staff ratio of 5.7:1 in the county, during the period of 2007 to 2011 the Pender County child care work force will require an additional 38 staff to accommodate the increased growth.

Community College and Post-Secondary Education

Cape Fear Community College is attuned to the regional work force needs, especially in the areas of health care, accounting, business administration, and other construction due to regional growth. The projected enrollment is shown in **Table 3.2** below (Cape Fear Community College, Long Range Plan, 2007-2012). However, CFCC's Long Range Plan did not outline specific needs that are directly linked to the military or to Pender County.

UNCW also has extensive collaborative relationship with Coastal Community College in Onslow County. Their activities are outlined in the Region Module of the plan.

Program Type	2007-08	2008-09	2009-10	2010-11	2011-12	2012-2013
Curriculum	5,518	5,664	5,880	6,212	6.556	6,902
Occupational Extension	682	698	717	740	764	793
Basic Skills	399	427	457	489	521	553
Total	6,599	6,789	7,054	7,441	7,841	8,248

Table 3.2 - Projected Enrollment Growth

Source: Long Range Plan, Appendix 7

Recommended Strategies and Actions

K-12

To address military growth-related issues, Pender County should identify a site for a future elementary school to relieve overcrowding in Topsail cluster elementary schools. The county should also begin land banking for a future middle school site to relieve overcrowding in Topsail and Cape Fear middle schools. Pender should develop a school building project plan that will adhere to the Office of Economic Adjustment (OEA) outlines on project location, cost, attendances, and number of military connected student to be enrolled in the new school.

To obtain funding for the proposed school construction, the county should work to obtain special funding from the Department of Defense (DoD) to deal with the special burden imposed on Local Education Agencies (LEAs) due to military growth. Pender should also seek community support on a general obligation bond to support K-12 needs, and work with policy makers on legislation such as the Military Children's School Investment Act and the Zero-Interest Loans program to finance construction projects. The county also should work with Department of Education to seek a higher level of Federal Impact Aid compensation.

Pender should continue the improvement in the collection of Federal Impact Aid surveys among schools, and record and track the growth history at each school.

Child Care

Pender County should collaborate with the local and neighboring higher education institutions to develop a high-quality teaching pool to support projected growth, as well as work closely with Cape Fear Community College to increase the child care work force pool in the county.

The county should also explore reciprocity licensure opportunities to attract qualified out-of-state or DoD child care workers.

Transportation

Introduction

Transportation through Pender County is critical for mission readiness and deployment as well as citizen mobility. Major roadways traverse the county. Interstate-40 travels roughly north-to-south through Duplin and Pender Counties, connecting Wilmington with Raleigh and points west. US 117 parallels I-40 through Duplin and Pender Counties. US 17 travels through Craven, Jones, Onslow, and Pender Counties in its trek along the eastern seaboard. Within the seven-county Military Growth Task Force (MGTF) Region, US 17 connects Wilmington, Jacksonville, and New Bern.

Existing Conditions

Roadway

The existing roadway system in Pender County is composed of a network of different streets that perform specific roles. The classification of streets into "functional" categories aids in communication among policy makers, planners, engineers, and citizens for evaluating and expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system defines the street in terms of roadway design and character as well as operational features for the movement of vehicles.

Two major considerations for classifying all types of roadways are access and mobility. The primary function of arterials is to provide mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. These roadways are designed to carry more traffic than is generated within their corridor (i.e., higher speeds, higher volumes, and longer distances). The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e., low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The existing public street network in Pender County is divided into several functional classifications, including arterials, collectors, and locals. The scope of the Regional Growth Management Plan emphasizes the operation of arterials based on NCDOT designation and necessary improvements to ensure the functionality of these corridors.

- **Arterials** provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distances. Arterials include facilities with full access control, such as freeways, as well as boulevards and major thoroughfares. Arterials usually connect to one another or to collector streets, and very few arterials connect to local streets. Arterials include freeway facilities such as:
  - **Freeways** provide the most mobility and least access (only at interchanges). Local examples of freeways include I-40.
  - **Principal arterials** typically have tightly controlled access and few, if any, individual site driveways. These arterials are typically intersected by expressways and freeways as well as minor arterials and other public streets. US 17 is classified as a principal arterial.
  - **Minor arterials** primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. US 421 is classified as a minor arterial.

- **Collectors** typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater access flexibility with adjacent land uses, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-freeway/expressway

arterials. Collector streets within Pender County include NC 53, NC 210, and US 117.

- **Locals** provide greater access and the least mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Most roads in the county are designated as local streets.

Volumes, Congestion, and Safety

With two major corridors supplemented by a variety of lower-level facilities, traffic volumes in Pender County vary greatly. I-40, which divides the county from north to south, carries up to 25,000 vehicles per day (vpd) in the county. However, the highest traffic volumes occur on US 17 (up to 34,000 vehicles per day). Other corridors with high traffic volumes include US 117 near New Hanover County (7,900 vpd), NC 53 west of Burgaw (5,300 vpd), and NC 210 east of I-40 (5,200 vpd). Because traffic volumes do not account for roadway capacity, a better assessment of congestion is volume-to-capacity (V/C) ratios. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of the roadway. This process for Pender County shows high levels of congestion on US 17 as it enters New Hanover County. Corridors that are at capacity include US 117 near NC 210 and NC 50 near Surf City. US 117 in south of Burgaw is approaching capacity.

Like congestion, traffic safety should be examined during the development of a transportation strategic plan. Between 2001 and 2005, an average of 1,184 crashes occurred in Pender County. Slightly more than one-third of these crashes resulted in at least one injury. The crash rate (189.41 per 100 million vehicle miles traveled) and severity (percentage of crashes resulting in an injury) are below regional and state averages.

Needs Assessment

TIP Projects

The Transportation Improvement Program (TIP) provides a financially constrained list of the most immediate priority transportation improvements. The seven-year document includes funding information and schedules for highway, bicycle, pedestrian, rail, and public transportation projects. Several Pender County priorities identified by the Transportation Working Group are listed on the current (2009-2015) TIP; the projects are detailed below. Based on each TIP project's relative impacts to the military influx and base operations, some projects will have relatively low impact on the military while others will contribute a positive impact. Other recommendations developed by the Transportation Working Group aim to address system-wide congestion not alleviated through these TIP projects alone.

Name/TIP	Project Type	Road Name	General Location	Extents	Description	Progress/ Funding
R-3302	Widen; New Location	Burgaw Bypass (New Route)	Pender County near Burgaw	NC 53 at New Savannah Road to NC 53 west of I-40	Two lanes with paved shoulders, some new location	Unfunded
R-3300	New Location	Hampstead Bypass (New Route)	northeast of Wilmington in Pender and New Hanover Counties	US 17 near Long Leaf Drive in Pender County to US 17 (John Jay Burney Jr. Freeway) in New Hanover County	Multi-lanes on new location	Planning/ design in progress

Table 4.1 - TIP Projects in Pender County

Modal

Regionally, each county's public transit options are linked by RouteMatch, administered by the Eastern Carolina Council (ECC). RouteMatch enables transportation providers in surrounding counties to secure a county resident a seat on a public transit vehicle traveling beyond the region (e.g., to locations like Duke Medical Center or Wake Medical Hospital). Existing public transit services are augmented by taxis in the region. The Pender County Local Coordinated Plan was adopted in March 2009 and identified opportunities and challenges for public transit in the county.

Recommended Strategies and Actions

Pender County's transportation network currently includes multiple modes. Given the critical need to ensure that people, goods, and services move freely throughout the county and beyond, the efficient operation of these modes within the context of the regional, multimodal network is critical. Planners and elected officials at the local, regional, and state levels have recognized the area's reliance on the roadway network as an efficient and safe delivery system. This attention is evident in the Transportation Improvement Program projects listed above. Still, more must be done, particularly in light of organic and military-infused growth within Pender County and throughout the seven-county region. The recommendations that follow include roadway recommendations as well as modal recommendations. The recommendations devised by the Transportation Working Group, when combined with priority projects on the state TIP, will position Pender County to effectively manage future growth.

Roadway

Completion of the identified TIP projects will enhance the transportation system in Pender County and allow for more efficient movement of troops and civilians.

Modal

Transit

Critical issues identified during the preparation of the Pender County Local Coordinated Plan included:

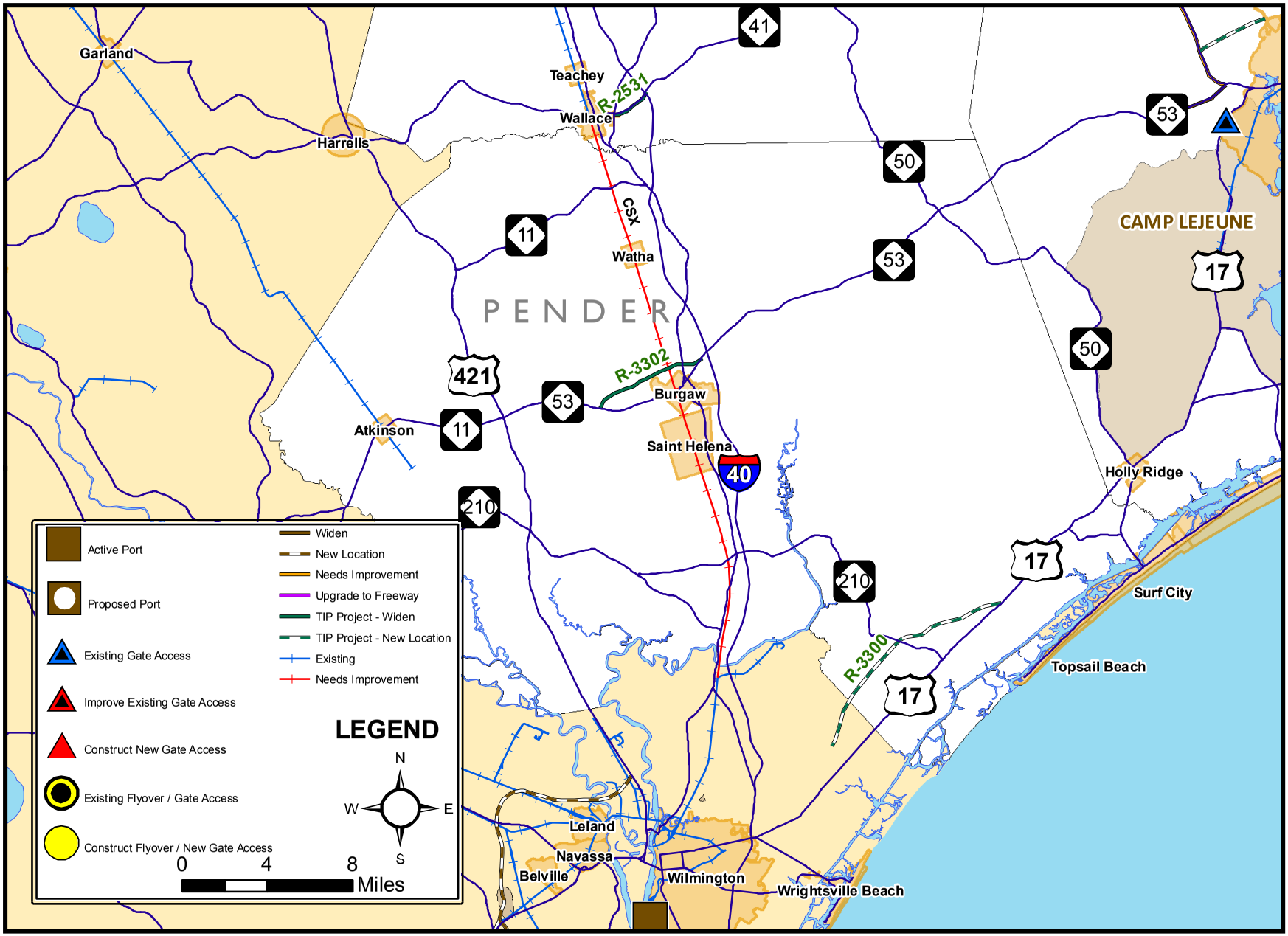
- Need for more vans and better transportation in general (Hampstead-Topsail Beach area especially in need of more routes and vans)
- Transportation to employment in New Hanover and Duplin Counties
- Saturday service (especially for medical visits)
- Transportation vouchers for Non-Medicaid recipients

Although each county is currently served by a combination of paratransit, public transit, and rideshare programs, the needs identified in the local coordinated plans reflect a rising demand for more coordinated, cost-effective, and regular routes. In order to satisfy these needs, coordinated action is required on behalf of the public transit agencies, county and municipal transportation planners, state planning agencies, military bases, and federal transportation authorities. Key recommendations for improving access and efficiency of public transit in the region relative to military needs include:

- Identify, apply, and use funding available through federal funding programs.
- Coordinate public transit beyond county boundaries by enhancing technical capabilities of the ECC's RouteMatch program—geocoding is inefficient

Across the region, there is an overwhelming demand for transit services to and from Marine Corps Base Camp Lejeune and Marine Corps Air Station Cherry Point. Expansion of current transit services will allow greater mobility of younger-ranking Marines as well as more residential to base connections. Although the ECC facilitates RouteMatch to coordinated intra-county public transit, it is underused and needs enhanced technical support.

REGIONAL GROWTH MANAGEMENT PLAN
TRANSPORTATION



ROADWAY AND RAIL RECOMMENDATIONS
Pender County

Figure 4.1

Infrastructure

Existing Conditions

Water

Potable water facilities in Pender County are defined as the structures designed to collect, treat, or distribute potable water – including water wells, treatment plants, package plants, reservoirs, and distribution mains.

Water Utility Companies

Pender County, Burgaw, and Surf City provide water service to portions of Pender County. Pender County's system is mostly concentrated in the Rocky Point area. The Town of Wallace is the main provider for water for Pender County, and water is distributed from the Town of Wallace to Pender County via a water transmission main along the US 117/I-40 corridor. The small community of Pender Lea is also served via a water transmission main along NC 11. Portions of the county are served with private groundwater wells. **Figure 5.1** shows the water service areas in Pender County.

Water Supply and Treatment

Pender County purchases 0.8 millions of gallons (MGD) of water supply from the Town of Wallace. Pender County has plans to construct a six MGD surface water treatment plant. Pender County in conjunction with the Rocky Point-Topsail Water and Sewer District is currently expanding its system westward along NC 210. This project, Phase III of the system, consists of a water main along NC 210 to Hampstead/Topsail High School. A subsequent project, Phase IV of the system, will expand water service to the Town of St. Helena east along New Road. Phase V of the system is in the planning stage and will extend water service from Phase III at Topsail High School northeast along US 17 to the Onslow County line. Pender County's distribution lines are in good condition and are fairly new. System pressures average 55 pounds per square inch (PSI) (Pender County, 2006).

The Town of Surf City recently completed a three million gallon (MG) water treatment plant and is currently constructing two new 12 inch water lines along Highway 210 to carry raw water from its well number three to the new water treatment plant (WTP) and back to customers in the area.

The Town of Maple Hill provides waste service. Its water source is the Chinquapin system in Duplin County, which has a 12-hour well yield of 0.648 MG. The 2020 system demand is expected to be 0.443 MG, or approximately 68.3 percent of available supply.

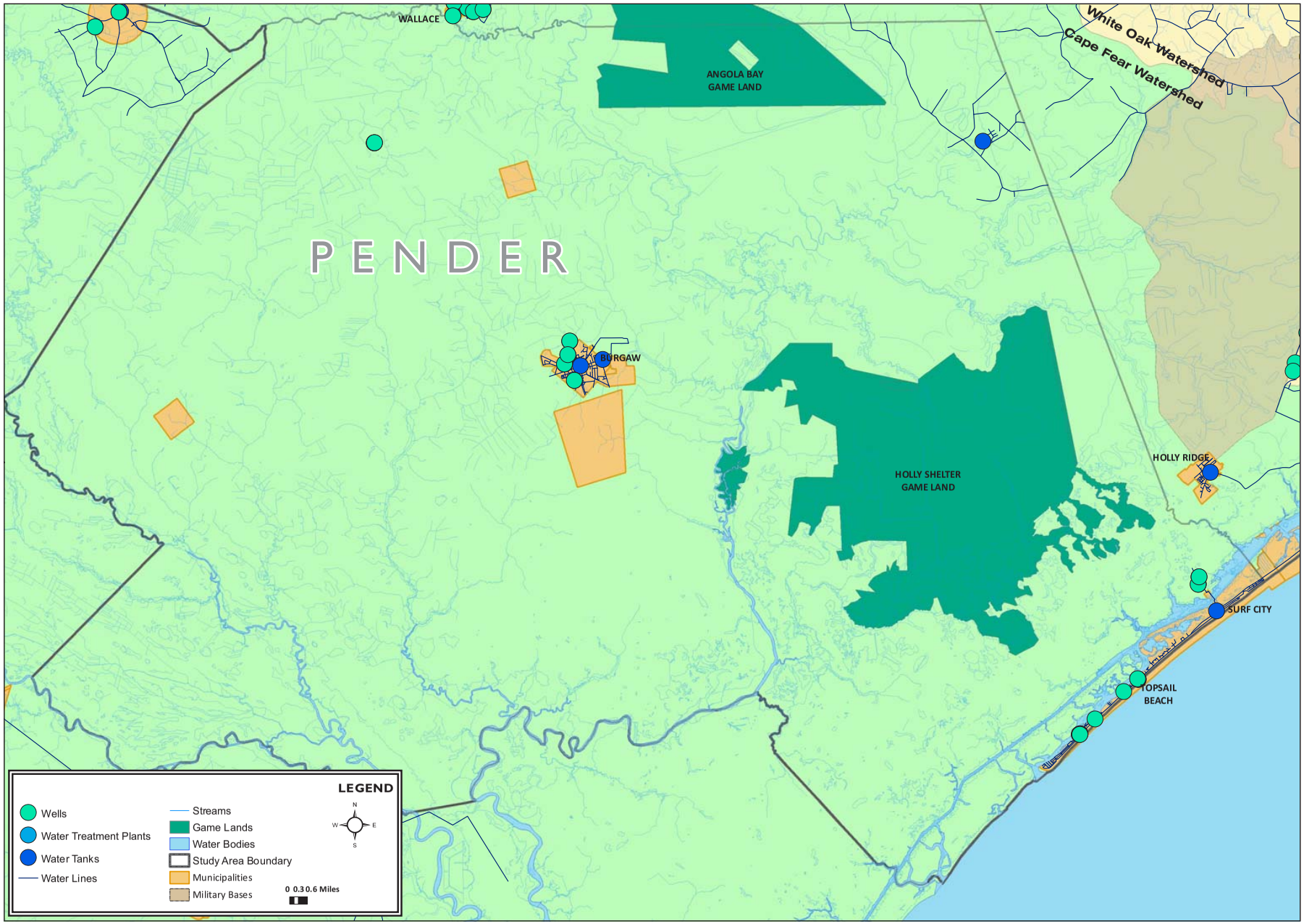
The Town of Burgaw supplies water to its customers via groundwater wells with a 12-hour yield of 0.82 MG and storage capacity of 0.675 MG. Reported usage is approximately 0.445 MGD, or roughly 54 percent of available supply. Staff report the water distribution system is in good condition; however, the town would like to replace old cast iron lead joint pipes over time. Generally, pressures in the distribution system range from 52-56 PSI.

Regulations

North Carolina Department of the Environment and Natural Resources' (NCDENR's) Division of Water Resources monitors saltwater intrusion in the region through a series of monitoring wells that are sampled every three to four years. There are five monitoring wells located in Pender County.

Pending Regulations

Representative Russell Tucker (Duplin County) has introduced House Bill (HB) 643, which may provide a solution to groundwater contamination issues. By creating a salinity barrier between saltwater and groundwater the legislation could help protect Carteret County's groundwater supply from saltwater intrusion. Detailed discussion on this proposed regulation is found in the Reclaimed Water of the RGMP Infrastructure Module.



PENDER COUNTY WATER **Figure 5.1**

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Sanitary Sewer

Sanitary sewer facilities are defined as the structures or systems designed for the collection, transmission, treatment, or disposal of sewage-including trunk mains, interceptors, treatment plants, and disposal systems.

Wastewater Providers

The Towns of Burgaw and Surf City provide sewer to the customers within their municipalities. Pender County's Rocky Point-Topsail Water and Sewer District provides sewer service in the Rocky Point area and to the Del Labs business. Much of the county outside of Burgaw and Surf City is served with package wastewater treatment plants (WWTPs) or individual septic systems for sewer. **Figure 5.2** shows the wastewater service areas in Pender County.

Wastewater Collection and Treatment

The Town of Surf City is in the process of constructing a two MG WWTP capable of producing reclaimed water quality effluent. The new WWTP is expandable, and the two MG Phase I plant will increase the town's wastewater treatment capacity by 1.4 MGD from 0.6 MGD. The town purchased approximately 2,000 acres known as Juniper Swamp for land application of the reclaimed water quality effluent as spray irrigation. The Juniper Swamp land application site has the capacity to land apply up to three MGD of wastewater effluent.

The Town of Burgaw's WWTP has a capacity of 0.75 MGD. The town's staff reports it is in good condition due to thorough maintenance practices. The average actual flow to the WWTP is 0.45 MGD, which is 60 percent of available capacity. The wastewater effluent is discharged into the Osgood Canal. The town's sewer collection system is considered by Town staff to be in fair condition, and to mitigate infiltration the town has recently completed projects to line problem spots.

The Rocky Point-Topsail Water and Sewer District's Rocky Point sewer system has a capacity of approximately 75,000 gallons per day (GPD). A planned expansion will construct facilities from this area to the Town of Wallace for treatment. Infrastructure capacities are planned for 2MGD of wastewater flow. Pender County has a contract with Cape Fear Public Utility Authority (CFPUA) for 0.25 MGD of wastewater treatment (Pender County, 2006).

Private Package WWTPs

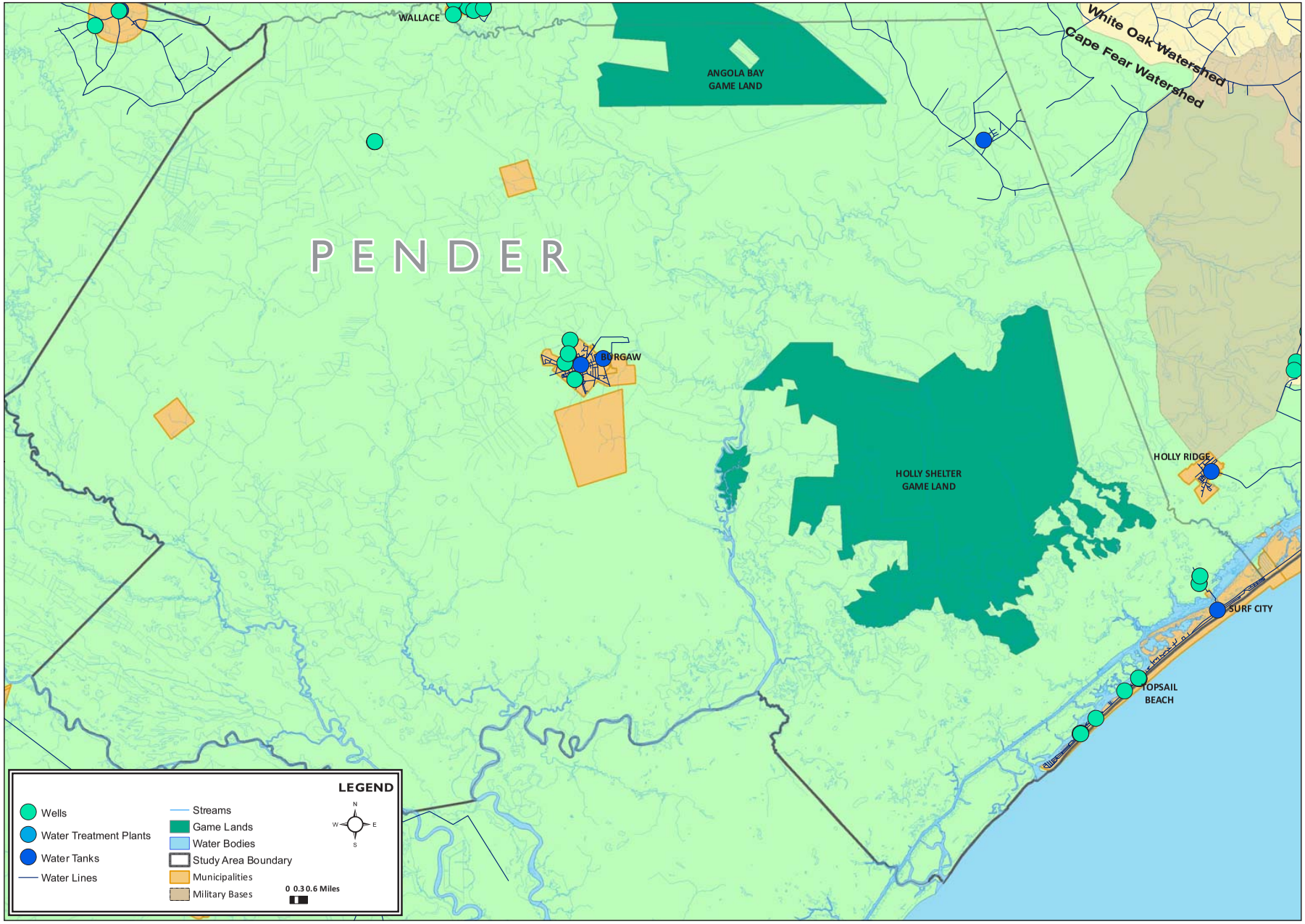
Several private package wastewater treatment plants (WWTPs) are located throughout the county. Pender County has a fairly de-centralized wastewater treatment system outside of the municipalities and the Rocky Point-Topsail Water and Sewer District system.

Septic Systems

For portions of the county where public or private sewer collection systems are not available, septic systems on private property serve as the only method for treatment and disposal of raw sewage. These systems typically work well with proper siting, design, installation, operation, and maintenance. However poor soil conditions limit the installation of many new septic systems. Poor soil conditions result in an inability to percolate, rendering properties without access to sewer undevelopable. This could have a significant impact on growth in the county. All new septic systems in the region require a permit from the Pender County Health Department prior to construction.

Regulations

Sewer providers in Pender County are subject to the 80 percent/90 percent rules (15A NCAC 2H.0223 Demonstration of Future Wastewater Treatment Capacities) administered by NCDENR's Division of Water Quality. Details on these rules can be found of the RGMP Infrastructure Chapter. If either the 80 percent or 90 percent rules are not met by the sewer provider, NCDENR can place a sewer line moratorium on that wastewater treatment system. To allow for military growth and to avoid moratoriums, it is important for the sewer providers in Pender County to meet these 80 percent/90 percent requirements.



PENDER COUNTY WATER **Figure 5.2**

NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Several bodies of water in Pender County are listed on the Clean Water Act's Section 303d Impaired Waters List (see **Table 5.1**). For many of these streams and rivers, total maximum daily loads (TMDLs) are developed such that the point discharge of wastewater effluent is not a feasible option. Moreover the coastal portions of Pender County have brackish or saltwater surface waters, and the discharge of wastewater effluent in these surface waters is prohibited and is considered freshwater pollution into saltwater estuaries. Because of these sensitive surface waters, sewer providers have few options to discharge wastewater and historically opt for land application or spray irrigation.

AU Number	Stream Name
18-68-18b	Moores Creek
18-74-39b	Burgaw Creek
18-74-55a	Long Creek
18-74-55b	Long Creek
18-87-10-1b	Banks Channel
18-87-11	Nixons Creek
18-87-11.7d	Topsail Sound and Middle Sound ORW Area
18-87-11.7e	Topsail Sound and Middle Sound ORW Area
18-87-12a	Old Topsail Creek
18-87-12b	Old Topsail Creek
18-87-14	Mill Creek (Betts Creek)
18-87-7	Old Mill Creek
18-87-8a	Beckys Creek (Bishops Creek)
18-87-8b	Beckys Creek (Bishops Creek)
18-87-9-1	Mullett Run
18-87-9a	Virginia Creek
18-87-9b	Virginia Creek

Table 5.1 - Impaired Streams
Source: NC Division of Water Quality

Based on these projects, Pender County has the ability to produce 0.48 MGD of reclaimed water.

Regulations

NCDENR regulates reclaimed water under 15A NCAC 02T .0900 – Reclaimed Water Systems. These regulations are described in detail of the RGMP Infrastructure Chapter.

Pending Regulations

Two pending regulatory changes, if approved, will alter the ways that reclaimed water can be used in the State of North Carolina and have significant impact on Pamlico County: updated 15ANCAC Reclaimed Water Rules and HB 643 – Authorize Aquifer Storage of Reclaimed Water. Information on these pending regulations can be found in the RGMP Infrastructure Module.

Pending Regulations

Changes to 15A NCAC 02T.0900 – Reclaimed Water Systems will affect how WWTPs capable of producing reclaimed water quality effluent can discharge effluent and will save additional space in land application facilities. As HB 643 is currently proposed, it would allow for wastewater effluent to be treated to reclaimed water quality standards and used in ASR systems. Additional discussion on these rule changes along with HB 643 is included under the Reclaimed Water section of this portion of the of the RGMP Infrastructure Module.

Reclaimed Water

Providers and Capacity

Reclaimed water or "reuse water" is relatively new to the seven-county region and to the State of North Carolina; however, in Pender County, there are several facilities permitted for reclaimed water. A list of NCDENR-approved facilities is shown in Table 5.2 below (NCDENR, 2009).

Owner	Facility	Permitted Flow (gpd)
Carolina Water Service Inc of NC	Belvedere Plantation WWTF	216,000
Aqua North Carolina Inc	Castle Bay WWTF	100,000
Hampstead Pines Homeowners Association Inc	Hampstead Pines Subdivision WWTF	23,640
Coastal Carolina Country Club	Coastal Carolina Country Club Golf Course	27,040
Town of Burgaw	Burgaw WWTF Conjunctive Re-Use Spray Irrigation	27,040
Demers, Chuck	Hampstead Retail Center WWTF	5,760
Avendale Development LLC	Avendale WWTF	82,440

Table 5.2 - Facilities in Pender County Permitted for Reclaimed Water
Source: NC Division of Water Quality

Stormwater

Pollution associated with storm water runoff is the number one water quality problem in the region and the state as a whole. As a result, several regulations have been initiated to manage storm water. The regulations that apply in Pender County are described below:

Stormwater Management Program (Coastal Stormwater Rules)

As with all coastal counties, Pender County is subject to State Stormwater Management Program (Coastal Stormwater Rules) requirements. The program applies to all development in the county that disturbs one or more acres of land or requires a Coastal Area Management Authority (CAMA) major permit. Recent amendments to the rule address coverage, low density thresholds, design storm requirements, wetlands and impervious surface calculations, and vegetative buffer size, especially as they apply to SA and ORW classified watersheds. (N.C. Division of Water Quality. http://h2o.enr.state.nc.us/su/coastal.htm) Details on the program can be found in the RGMP Infrastructure Module.

CAMA Requirements

During the development of its CAMA Plan, Pender County developed a series of stormwater policies. These policies include: documenting and recording drainage program areas, equitably distributing the costs of stormwater management, providing property owners and developers with available information and educational materials on effective methods to address water quality protection during construction and on-going operations, encouraging site-specific storm water management options that minimize runoff and nonpoint source discharges to estuarine and public trust waters, and making sure facilities funded by the county set examples for building design, landscaping, buffers, open space, landscaping, litter control, storm water management, use compatibility and policies imposed upon the private sector. *(Pender County CAMA Land Use Plan Update, 2006)*

These strategies, incorporated into the adopted CAMA Plan, are the guiding policies for local stormwater management.

Solid Waste

Solid Waste Management

Solid waste management encompasses the collection, recycling, and disposal of solid waste generated by local residents and businesses.

Collection

Residents dispose of their solid waste at one of 12 convenience centers located throughout the county. Convenience center user fees for household waste disposal and recycling are $149 per year. The Tipping Fee at the Pender County Transfer Station is $70.00 per ton.

Disposal arrangements for special wastes or large amounts of waste are made directly with the Sampson County Landfill. Contractors must also dispose of large quantities of debris at the Sampson County Landfill. Small quantities of construction debris and bulky furniture are accepted at three of the county's convenience sites and the Hampstead Transfer Station.

Yard waste and vegetative debris are prohibited in state landfills. Residents in Pender County can contract with a private hauler or take their yard waste to Wilmington Materials on Hwy 421. Residents may also use backyard composting or controlled burning to dispose of yard waste.

Recycling

Pender County does not have a curbside recycling program; however, all 12 convenience sites in the county collect recyclables. These centers have a variety of collection bins including compactor units, roll-offs, and converted dumpsters. Collected materials included newspaper, cardboard, plastic bottles, aluminum cans, steel cans, clear, brown, and green glass, batteries, motor oil, tires, and white goods. For households that contract with a private provider the convenience center availability fee for recycling only is $74 per year.

Disposal Facilities

The county has a long-term renewable contract with Waste Industries, Inc. This company collects the solid waste from the convenience centers and hauls it to the county's transfer station, which is located in Hampstead, NC, and is also operated by Waste Industries. According to an agreement with Waste Industries, solid waste from the Hampstead transfer station is then taken to the Sampson County Landfill, which is operated by the same company under an agreement with the Sampson County Government. (Pender County. http://www.pender-county.com/departments/Utility%20Operation/solid%20waste/index.shtml)

Landfill Capacity

NCDENR publishes an annual solid waste report that details the remaining capacity for each of the state's landfills. According to the 2007-2008 Solid Waste Annual Report, 1,073,935.90 tons of solid waste were disposed of in the Sampson County Landfill between 2007 and 2008. The remaining capacity of the landfill is 4,255,960.61 tons (this total includes landfill volume constructed and permitted to operate). The total volume for the landfill site at final design is 32,774,991.11 tons. After determining the tons of solid waste disposed of in 2007-2008, the landfill has 3.96 years of capacity remaining. If the landfill was built to its maximum design size, the landfill could continue operating for 30.52 years. (N.C. Department of Environment and Natural Resources. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf)

Telecommunications

Pender County is below the state average for connectivity. Pender County has 73.99 percent of its households connected, compared with 83.33 percent at the state level. According to the e-NC Authority, Pender County is a Rural, Tier 4 Community with a connectivity speed of between 6-10 Mbps.

Access Providers

Cable

Charter Communications and Time Warner have cable TV franchises in Pender County. Charter Communications provides cable modem access in Hampstead, Olde Point, Surf City, Topsail Beach areas of Pender County. Time Warner provides cable modem access in Burgaw, Maple Hill, Rocky Point, Saint Helena, Wartha, Willard and areas of Pender County. In total more than half of the households, or 56.47 percent, have access to cable.

Telcos

AT&T and Embarq provide telephone service in Pender County. A total of 65.23 percent of households have access.

AT&T provides DSL access to areas of the Atkinson and Burgaw exchanges and some areas of Pender County served by the Castle Hayne, and Scotts Hill exchanges. Embarq provides DSL access in the Topsail Island (77 percent) exchange. It also serves areas of Pender County with the Holly Ridge (52 percent) and Wallace (20 percent) exchanges.

Satellite

Customers with clear views have access to Direcway & Starband high-speed Internet service.

Wireless

Pender County does not have any wireless high-speed Internet access providers. (The e-NC Authority.http://www.e-nc.org/100_County_Report/Pender.pdf)

Needs Assessment

The largest percentage of growth in Pender County is projected to occur in the Rocky Point and Scott's Mill areas of the southeastern portion of the county along US Highway 17 as well as along the I-40 and Hwy 210 corridor as depicted in **Appendix G**: Committed Residential Developments.

Water

Pender County faces several challenges relating to water including combating saltwater intrusion, and having infrastructure in place to meet increasing water demands. These problems are described in the RGMP Infrastructure Module. Specific on these challenges in Pender County, as well as additional challenges at the local level, are detailed below:

Challenges and Needs

Some saltwater intrusion is present along the coast past US Highway 17coinciding with the significant growth in southeastern Pender County.

Pender County water usage is projected to exceed its water capacity by 2010 based on increased water demands along the US Highway 17 Corridor in southeastern Pender County. Particularly, the Rocky Point Water and Sewer District (RPWSD) and Scott's Hill Water and Sewer District (SHWSD) service areas will experience growth partially attributable to military growth. Pender County is in the process of constructing a two million gallon per day (MGD) water treatment plant. This project also includes a needed 24" water transmission main to convey the treated water into the distribution system. Before the new plant is complete, the demand including allocations will total 5.8 MGD and exceed its capacity. Because of the large water treatment need, the two MGD planned water treatment plant needs to be updated and constructed to a minimum of six MGD.

Sewer

Challenges and Needs

- Due to extensive wetlands in Pender County, land suitable for spray irrigation is scare, expensive, and not conducive to economic development or tax-generating development. Alternative disposal methods for the county's wastewater effluent are necessary for growth to continue.
- Package wastewater treatment plant providers are not required to meet with Pender County during the site plan review stage. Therefore, the package treatment plants frequently fail to coincide with regional wastewater treatment efforts or existing infrastructure. Stronger communication between the development community and sewer providers would allow for better use of existing facilities with excess capacities or planned facilities.

Reclaimed Water

Challenges

Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For Pender County, several accepted methods of beneficial use of reclaimed water employed elsewhere in coastal and neighboring states could benefit both water and sewer systems within the county. The protection of existing groundwater sources from saltwater intrusion is of primary importance.

Irrigation is the principle means of applying reclaimed water. However, suitable land application sites are costly and scarce, and using developable land for spray irrigation does little to help local economies and fails to provide a tax base to the jurisdictions where they are located.

Needs

Both the re-write of the current NCDENR reclaimed water regulations and the proposed HB 634 – Authorize Aquifer Storage of Reclaimed Water are necessary to allow for expanded use of reclaimed water within Pender County. The beneficial use of reclaimed water can decrease potable water demands thus having a positive impact on the region's water needs and could be used to protect the county's groundwater supply from saltwater intrusion. Expanded allowable uses for reclaimed water under the proposed NCAC updated regulations would allow reclaimed water to be treated as a valuable water resource and for it to be applied to more end users. The expanded uses will also reduce the demand on

land application sites.

Stormwater

Challenges

The biggest challenges facing the region for stormwater management are funding, enforcement, and threats to affordable housing. These challenges are also Pender County's greatest challenges and are described in the RGMP Infrastructure Chapter.

Solid Waste

Challenges

Pender County has a long-term renewable contract with Waste Industries for solid waste management. Through an agreement with Sampson County, Waste Industries operates the Sampson County Landfill. The Sampson County landfill has ample capacity well beyond the planning horizon.

Telecommunications

Challenges

Pender County is below the state average for connectivity. A total of 73.99 percent of households in Pender County are connected, compared with 83.33 percent at the state level. The county is faced with the challenge of increasing connectivity in the rural, remote areas of the county.

Needs

Pender County needs to work to meet or exceed the state average for connectivity.

Recommended Actions

The following matrix identifies recommended strategies, actions, and policy initiatives to help Pender County solve its infrastructure problems. Additionally, responsible parties are identified as well as the time frame for the need in short term (urgent by 2011), near term (less than 10 years), or long term.

Type	Project Name	Responsible Party	Funding Required	Time Frame	Description
Water, Sewer, Reclaimed Water	Policy initiative to support HB 643 Authorize Aquifer Storage of Reclaimed Water	All, Rep. Tucker	N/A	Urgent	HB 643 will protect the County region's valuable groundwater and potable drinking water supply by allowing highly treated reclaimed water to be used in ASR wells to form a salinity barrier between groundwater and saltwater. ASR also allows reclaimed water to be used during peak water usage months for beneficial reuse which conserves potable water supplies. HB 643 will also relieve demands on limited land application/spray irrigation sites in the County
Water, Sewer, Reclaimed Water	Modification of Regulatory Policy addresses discharge of reclaimed water	All	N/A	Urgent	NC EMC has endorsed re-writes to the current 15A NCAC 02.T.0900 Reclaimed Water Systems to allow for increased beneficial uses of reclaimed water including the discharge of highly treated reclaimed water into freshwater wetlands. These regulations will conserve potable water supplies by allowing for increased uses for reclaimed water for non-potable uses and will relieve demands on limited land application/spray irrigation sites in the County.
Water, Sewer, Reclaimed Water	Modifications to plan review process	All	N/A	Near term	Planning agencies at both the County and municipality level (where appropriate) should incorporate water and sewer regional context into their plan review process where local water and sewer providers are contacted early in the process such as re-zoning or initial development plan review periods to discuss the availability of water/sewer and how the proposed development can be incorporated into the agencies' water and sewer master plans. Water, sewer, and reclaimed water facilities, including package treatment plants, should be designed in accordance with both local water and sewer authority regulations as well as NCDENR regulations, whichever is more stringent.
Water	Scott's Hill-Rocky Point Water Treatment	Pender County	$18M	Urgent	By 2010, Pender County is expected to exceed 2 MG in water usage, which is 100 percent of treatment capacity. Additional water treatment is needed in Pender County based on current demands and demand allocations totaling 5.8 MGD, which is 3.8 MGD more water than current plant construction capacity. The plant will need to be expanded to 6MGD, and project funding includes a 24 inch water transmission line.

Table 5.3 -Pender County Recommended Action Matrix

Funding opportunities for these strategies are detailed in the RGMP Infrastructure Module.

References

N.C. Division of Water Quality. Coastal Stormwater: Revised Rule Effective Oct. 1, 2008. http://h2o.enr.state.nc.us/su/coastal.htm.

The e-NC Authority. 100 County Report. http://www.e-nc.org/100_County_Report/Pender.pdf.

N.C. Department of Environment and Natural Resources. North Carolina Solid Waste Management Annual Report July 1, 2007-June 30, 2008. http://www.wastenotnc.org/swhome/AR07_08/AR07_08.pdf.

N.C. Department of Environment and Natural Resources. Solid Waste Management Plans. http://www.wastenotnc.org/swhome/swmplans.asp.

Pender County, 2006. *Pender County CAMA Land Use Plan Update. Pender County.*

Pender County. Solid Waste. http://www.pender-county.com/departments/Utility%20Operation/solid%20waste/index.shtml.

Wilson, Nat. N.C. Department of Environment and Natural Resources. Email Message pertaining to saltwater intrusion monitoring wells. May, 28, 2009.

Medical, Health, and Social Services

Medical and Health Services

Introduction

Pender County has a relatively small medical community and is served by one critical access hospital and 27 FTE health care providers. Health care services are currently centrally located in Burgaw, but future needs due to population growth from the military and civilians will likely create needs in Hampstead and Topsail. Pender Memorial Hospital, the county's only acute care provider, benefits from being a New Hanover Health Network affiliate, which reduces the difficulties of achieving access to clinical expertise. The hospital has existing capacity to absorb additional TRICARE patients, particularly for inpatient acute care and outpatient rehabilitation services.

Existing Conditions

Department of Defense Health Services

There are no Department of Defense (DoD) facilities located in Pender County. Military residents of Pender County primarily travel to Naval Hospital Camp Lejeune in Jacksonville for treatment at a military treatment facility, which is over 16 miles away from most county residents. Only 1,414, or approximately two thirds, of Pender County's 2,090 TRICARE-eligible residents, are enrolled. Approximately 40 percent of those enrollees choose to have a civilian primary care manager.

	2008
Enrolled to a Military Treatment Facility Primary Care Manager	569
Enrolled to Network Civilian Primary Care Manager	845
Total Enrolled	**1,414**
Total Eligible	**2,090**

Table 6.1 - TRICARE Enrollees

Source: Health Net Federal Services.

Given Pender County's population of over 50,000, TRICARE covers less than three percent of residents. According to Health Net, despite this low level of TRICARE enrollment, over 90 percent of Pender County physicians are in the TRICARE network. Pender Memorial Hospital has indicated a desire to support the region and provide additional TRICARE services as necessary and appropriate.

Veterans Affairs

The Department of Veterans Affairs has two community-based outpatient clinics (CBOC) within the MGTF Region, located in Jacksonville and Morehead City. However, for many Pender County residents, the Wilmington CBOC is the closest facility. Both the Wilmington and Morehead City CBOCs both offer primary care and mental health services, while the Morehead City CBOC also offers dental services. Specialty services are available in this region by telemedicine.

Patients in Pender County access inpatient VA hospitals in Fayetteville and Durham. Due to the distance to these facilities, VA patients may be referred to a local community hospital if emergency services are needed.

Health Care Providers

Pender County has been designated as a Health Professional Shortage Area by the Health Resources and Services Administration (HRSA) for mental health and dental care. Pender County benefits from Pender Memorial Hospital's affiliation with New Hanover Health Network, based in Wilmington. This relationship mitigates the challenges associated with physician recruitment and retention in the county. According to providers in the county, physician services are currently centrally located in Burgaw, but will likely need to be extended to areas of population growth such as Hampstead and Topsail.

Pender County has approximately 16 FTE primary care physicians, four FTE medical specialists, and five FTE surgeons. In addition, Pender County has one FTE pathologist, one FTE radiologist, and 10 FTE dentists. Assuming no military population growth, there is a need for 19.8 FTE primary care physicians, 18.3 FTE medical specialists, 13.4 FTE surgeons, and 14.1 FTE dentists in 2011. Physicians at larger medical centers in New Hanover County provide care to Pender County residents. As such, a portion of the physician needs of the Pender County population is already being met by providers located outside of the county. If Pender County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.

Behavioral Health

Provider	Providers	FTEs
Psychologist	1	0.75
Licensed Clinical and Social Worker*	2.0	1.0
Mental Health Counselor*	1.0	0.5
Total	**3.0**	**2.25**

Table 6.2 -Behavioral Health Providers
*Licensed Clinical and Social Workers and Mental Health Counselors are estimated at .5 FTE per providers
Source: Health Net Federal Services and regional providers.

Behavioral health services in Pender County are managed by the Southeastern Center of MH/DD/SAS LME, which also includes Brunswick and New Hanover Counties. Southeastern Center of MH/DD/SAS, based in Wilmington, has plans to initiate a crisis intervention team with law enforcement officers.

Pender County has 2.25 FTE behavioral health providers.

Assuming no military population growth, there is an additional need for 5.9 FTE behavioral health providers in 2011.

There are no providers of inpatient behavioral health services in Pender County; county residents seeking these services primarily receive care at New Hanover Regional Medical Center, part of the New Hanover Health Network in New Hanover County, and to a lesser extent, at Duplin General Hospital in Duplin County and Brynn Marr Hospital in Onslow County.

Assuming no military population growth, the projected 2011 adolescent psychiatric visits in the county indicates a need for one adolescent inpatient psychiatric bed. The region is projected to have a surplus of adolescent inpatient psychiatric beds in 2011, and thus, capacity for these services will be available in nearby counties. Moreover, the *2009 State Medical Facilities Plan* indicates a need for six adolescent inpatient psychiatric beds in the Southeastern Center LME. Thus, additional capacity may soon be available to care for Pender County patients through another facility in the region.

Assuming no military population growth, the projected 2011 adult psychiatric visits in the county indicates a need for five adult inpatient psychiatric beds. The region is projected to have a need for 10 adult inpatient psychiatric beds in 2011. Duplin General Hospital is currently monitoring its ability to expand its psychiatric unit, which will help meet this need. In addition, according to the *2009 State Medical Facilities Plan,* the Southeastern Center LME, which includes the 62 adult inpatient psychiatric beds at New Hanover Regional Medical Center, is projected to have a capacity surplus in 2011. This capacity in Pender County's LME region will help meet the need for Pender County residents.

Assuming no military population growth, the projected 2011 substance abuse visits in the county indicate a need for one substance abuse bed. However, the region is projected to have a surplus of substance abuse beds in 2011, and thus, capacity for these services will be available in nearby counties. Given the low level of demand for these services and the absence of behavioral health physicians in the county, it is unlikely that new programs will be developed in the near future.

Inpatient Acute Care

Inpatient acute care services in Pender County are provided by Pender Memorial Hospital. Pender Memorial Hospital is designated as a Critical Access Hospital, which allows it to receive cost-based reimbursement from Medicare and TRICARE. Pender Memorial Hospital is affiliated with New Hanover Health Network, which reduces the difficulties of physician recruitment and achieving access to clinical expertise. New Hanover Health Network operates four acute care hospitals:

Hospital	Acute Care Beds	County
New Hanover Regional Medical Center	514	New Hanover
Cape Fear Hospital	133	New Hanover
J. Arthur Dosher Memorial Hospital	36	Brunswick
Pender Memorial Hospital	43	Pender

Table 6.3 - New Hanover Health Network Hospitals
Source: 2009 Hospital License Renewal Applications

In FY 2008, Pender Memorial Hospital's 43 licensed acute care beds operated at 20-percent occupancy, though the hospital only staffed 25 beds during that time. The staffed beds operated at 35-percent occupancy. As such, there is capacity in the county for inpatient services. More than 80 percent of Pender County patients receive acute care services at facilities outside of the county; many seek care at New Hanover Regional Medical Center, which offers tertiary care services.

If all Pender County residents received inpatient acute care in Pender County, the county would have a total need for 96 acute care beds in 2011, assuming no military population growth. With more than 80 percent of Pender County patients receiving acute care services at facilities outside of the county, Pender County can accommodate a reasonable decrease in out-migration without a need for additional inpatient acute care beds. The *2009 State Medical Facilities Plan* also indicates no additional need for inpatient acute care beds in Pender County. Pender County residents who leave the county for inpatient acute care travel primarily to the New Hanover Regional Medical Center. Due to the higher level of specialty services located at this facility, most of this out-migration is appropriate.

Pender Memorial Hospital provides general surgery and a step-down care unit. In addition, the hospital offers diagnostic imaging services including CT, mobile MRI, ultrasound, and X-ray, on an inpatient and outpatient basis. The hospital does not provide obstetrics, comprehensive cardiac, or comprehensive oncology services.

Inpatient Rehabilitation Care

There are no providers of inpatient rehabilitation services in Pender County; county residents primarily seek inpatient rehabilitation care at New Hanover Regional Medical Center, which operates 60 inpatient rehabilitation beds. Assuming no military population growth, the projected 2011 inpatient rehabilitation visits in the county indicate a need for four inpatient rehabilitation beds. Inpatient rehabilitation patients are appropriately being treated in New Hanover County at this time.

Outpatient Services

Outpatient services are currently centrally located in Burgaw at Pender Memorial Hospital, which provides emergency department services, diagnostic imaging, and outpatient surgery, including endoscopy. Population growth in other areas

of the county will likely create needs for a decentralization of services to areas such as Hampstead and Topsail.

Regional Coordination

Pender County providers work with military treatment facilities and other regional providers as necessary to meet the health care needs of the county population. By nature of its hospital affiliation, Pender General Hospital is highly collaborative with New Hanover Health Network. Regional providers stated that the current collaboration between counties and between military and civilian providers is effective.

Needs Assessment

Department of Defense Health Services

As stated in the regional summary, TRICARE reimbursement is a current and future concern. However, given the level of TRICARE enrollment in Pender County, these needs are not as acute as they are in other counties in the region.

Veterans Affairs

As stated in the regional summary, the current Veterans Affairs services are reasonable to meet current and projected needs in the region, including those of Pender County. Leadership at the VA has indicated that there are currently no plans to expand services in the region.

Health Care Providers

Pender County currently faces physician shortages in several areas, and the modest growth expected in the county's military population will exacerbate this need to some extent. Following the projected increase in the military population, the projected 2011 physician needs in the county indicate an additional need for 20.4 FTE primary care physicians, 18.6 FTE medical specialists, 13.7 surgeons, and 15.7 FTE dentists. Pender County is projected to have a surplus of pediatricians, but a shortage of family practice, internal medicine, and obstetrics/gynecology physicians (OB/GYNs), which account for the projected need in primary care. Physicians at larger medical centers in New Hanover County provide care to Pender County residents. As such, a portion of the physician needs of the Pender County population are already being met by providers located outside of the county. If Pender County were to fill all of the needs listed here, there would likely be an oversupply of certain physicians in the region.

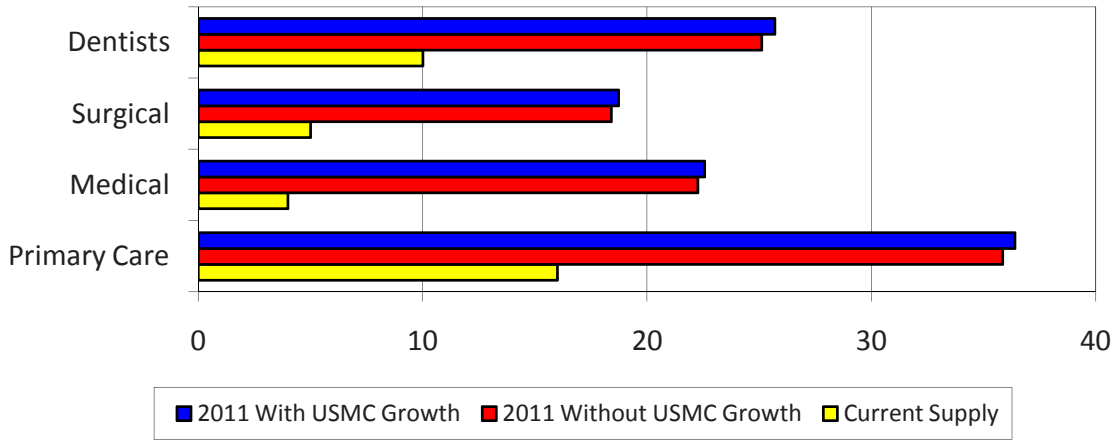


Figure 6.1 - Health Care Provider Needs (FIEs)

Source: Health Net Federal Services, regional providers and HPS Demand Model.

As noted above, physician services are currently centrally located in Burgaw, but these services will likely need to be extended to areas of population growth such as Hampstead and Topsail.

Behavioral Health

Following the projected increase in the military population, the projected 2011 behavioral health visits in the county indicate an additional need for 6.1 FTE behavioral health providers. Although psychologists and extenders (such as counselors and licensed social workers) could meet some of these needs, there remains a need for psychiatrists.

The growth in the military population will result in little change in the need for adolescent and adult inpatient psychiatric beds or substance beds. As noted above, it is unlikely that new programs will be developed in the near future for these services, given the low level of need and the absence of behavioral health physicians in the MGTF Region. The region is projected to have a surplus of adolescent inpatient psychiatric and substance abuse beds in 2011, assuming growth in the military population, and thus, capacity for these services will be available in nearby counties. The growth in the military population is projected to result in a need for six additional adult inpatient psychiatric beds, for a total need of 16 beds in 2011 for the region. Duplin General Hospital is currently monitoring its ability to expand its psychiatric unit, which will help meet the needs of the region, including Pender County residents. Moreover, according to the *2009 State Medical Facilities Plan,* the Southeastern Center LME, which includes the 62 adult inpatient psychiatric beds at New Hanover Regional Medical Center, is projected to have a capacity surplus in 2011. This capacity in Pender County's LME will help meet the need for Pender County residents.

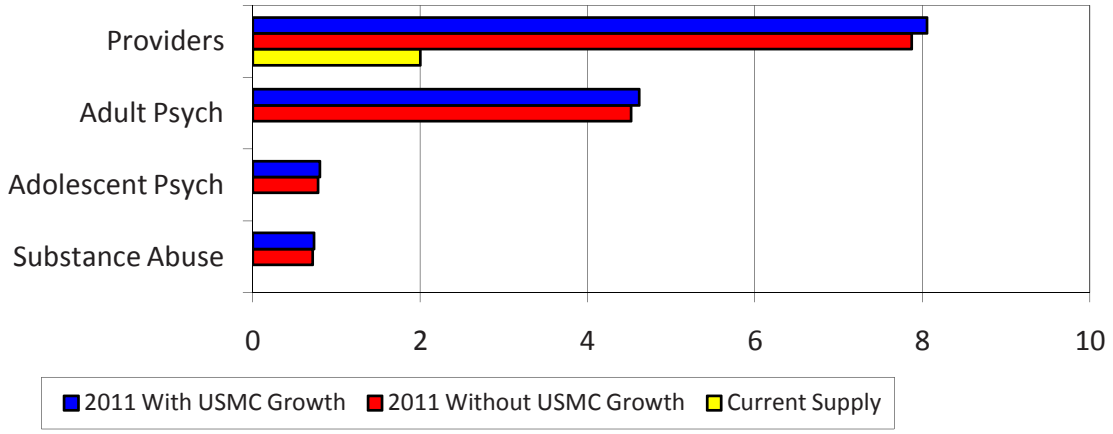


Figure 6.2 - Behavioral Health FTEs and Beds

Source: Health Net Federal Services, regional providers, 2009 Hospital License Renewal Applications, and HPS Demand Model.

Inpatient Acute Care

The growth of the military population will not result in the need for additional acute care beds in Pender County, given the level of out-migration from the county for inpatient acute care services.

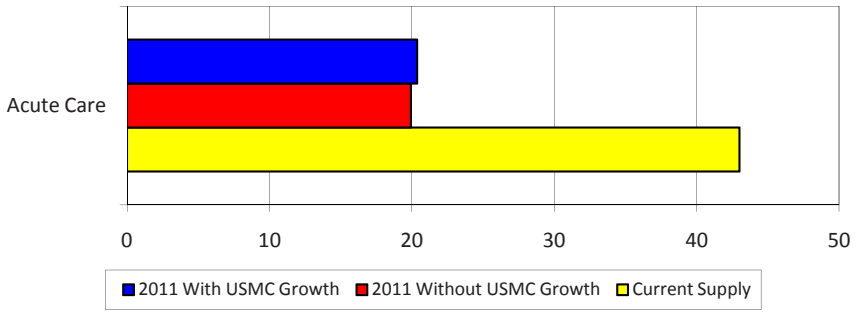


Figure 6.3 - Inpatient Acute Care Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model.

Inpatient Rehabilitation Care

The growth of the military population will not result in a new need for additional inpatient rehabilitation beds. As stated previously, inpatient rehabilitation patients are appropriately being treated in New Hanover County at this time. As such, the need for additional capacity is likely already being met outside of the county.

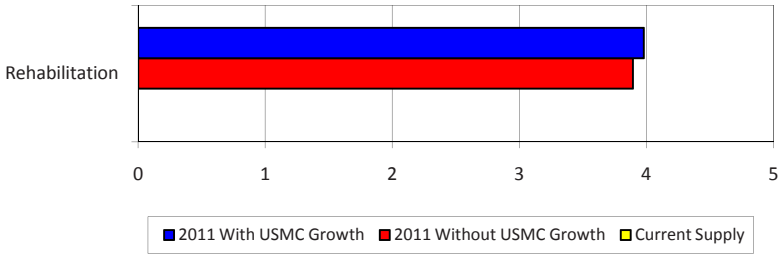


Figure 6.4 - Inpatient Rehabilitation Beds

Source: 2009 Hospital License Renewal Applications and HPS Demand Model.

Recommended Strategies and Actions

Pender County needs will be met through the execution of regional strategies and actions, in addition to those listed below.

Action 1: Continue efforts to recruit and retain primary care physicians, medical and surgical specialists, and behavioral health providers.

Rationale

The greatest needs in Pender County (both with and without military population growth) are for primary care providers, behavioral health providers, and physicians in specialty services such as cardiology, nephrology, ophthalmology, urology, and general surgery.

Responsible Party

Local hospital and physician leadership.

Funding

According to the Merritt Hawkins 2008 Survey of Physician and CRNA Recruiting Incentives, the average cost of recruiting these physicians in 2008 was as follows:

- Internal Medicine: $176,000
- Family Practice: $172,000
- OB/GYN: $255,000
- Psychiatry: $189,000
- Cardiology: $392,000
- General Surgery: $321,000
- Urology: $387,000

Merritt Hawkins did not provide data for nephrologists or ophthalmologists. The recruitment expense for these physicians could be shared by another facility if the physician's time were shared between counties. In addition, the recruitment expense of physician's assistants and nurse practitioners is considerably less than the costs listed above.

Action 2: Monitor needs and explore opportunities to expand health services in the growing areas of Hampstead and Topsail.

Rationale

Inpatient and outpatient health services, including physicians, are centrally located in the county, which has a left a vacuum of care in areas of focused military growth such as Hampstead and Topsail.

Responsible Party

Local hospital and physician leadership.

Funding

None requested.

Social Services

Existing Conditions

Marine and Family Services

Marine and Family Services is a division of the department of Marine Corps Community Services (MCCS), and provides a variety of services to strengthen the military community at each Marine installation throughout the country. Marine and Family Service programs are intended to meet the social service needs of Marines and their family members, and can be accessed by phone or by visiting Marine and Family Services offices located on MCB Camp Lejeune, MCAS Cherry Point, and MCAS New River. Marines and their family members can access services voluntarily or via referral to social services by a commander or a division of military services, such as a health care provider. Marines are briefed on available services during the required base orientation, *Welcome Aboard,* upon arrival at any Marine installation. Services and special events are advertised on the base television channel and on flyers around base, including at the commissary, shops, and restaurants.

Because of the distance to each installation in the MGTF Region, most Pender residents do not access these services. MCAS New River, Camp Lejeune, and MCAS Cherry Point are approximately 33, 60 and 88 miles, respectively, from Burgaw in central Pender County. Distance to these installations may vary from other locations in Pender County, and also may vary depending on the accessibility of more direct routes via North Carolina's road system. For a full description of Marine and Family Service Programs, please see the Regional Medical, Health, and Social Services module.

OneSource

Military OneSource is a resource contracted through the Department of Defense for military members and their families, intended to supplement existing military support services through the internet or by phone. Military OneSource complements Military and Family Services, providing a central location for information and counseling on issues faced by military service members and their families, including child care, parenting, deployment and reunion adjustment, education resources, relocation assistance, financial counseling, legal advice, and spouse career training.

OneSource resources are designed to meet short-term needs. OneSource offers counseling sessions over the phone and online, and refers to local counselors for in-person counseling. These services are ideal for Pender County residents who live a significant distance from each of the local installations. Local counselors in the communities surrounding MCAS New River and MCB Camp Lejeune often have limited availability, and waiting lists are frequent and wait times lengthy.

Services Provided – County Department of Social Services

North Carolina Department of Social Services (DSS) is a "federally mandated, state supervised, county administered social services program."[3] All County Departments of Social Services (County DSS) provide the following social services; for a full description of DSS services please see the Regional Medical, Health and Social Services Module.

- *Adult & Family Services* – supports disabled adults with a range of services such as guardianship, transportation to medical facilities, services for the blind, and adult care home monitoring.
- *Child Welfare* – covers the full range of child welfare services, including prevention initiatives, child abuse and neglect intervention, foster care licensing and monitoring, and adoption services for those children who require permanent placement.
- *Crisis Intervention* – helps low-income households that have heating or cooling-related emergencies to reduce the risk of health or safety problems, as well as the risk of eviction.
- *Day Care* – provides free and/or subsidized child day care for low-income families.
- *Food and Nutrition Services* -- offers food assistance to eligible families.
- *Pregnancy Services* – supports low-income individuals with support for unplanned pregnancies, addressing medical, social, education, and psychological issues.
- *Refugee assistance* – assists newly-arrived refugees.
- *Senior Services* – offers meal assistance and health promotion activities to eligible adults over 60 years of age.
- *Work First* – provides temporary assistance to needy families and supports their ability for self-sufficiency.

Military and civilian populations in Pender County access DSS services by phone, Internet, or in person at the County DSS office, located in Burgaw.

As discussed previously, while Marine and Family Services is meant to be the primary avenue by which military members and their families access services, military families living off base access social service programs through the County DSS. In particular, the military population uses Child Welfare, particularly Child Protective Services, Day Care, and to a lesser extent, Food and Nutritional Services (FNS), commonly known as "food stamps." In addition, affordable transportation is a current need for both military and civilian populations that greatly impacts access to social services.

Pender County has experienced an overall 10 percent increase in demand for its services over the past year due to the current economic conditions, stretching thin funds and staff capacity. In particular, a new demographic group in the civilian population is seeking social services through DSS, as middle-class individuals are losing employment and therefore, means for self-sufficiency. Serving this demographic group requires increased resources from DSS staff, because many of these individuals are accessing social services for the first time and are unfamiliar with the DSS system and procedures. In addition, Pender County DSS is currently in need of additional facilities; limited facilities are inhibiting program expansion, particularly for programs that require space to ensure client confidentiality. Pender County DSS expects that it will need additional funding and staff if these conditions continue.

Child Welfare

As discussed at length in the Regional Medical, Health, and Social Services module, military families, particularly younger, junior-enlisted military families, use DSS child welfare services at higher rates than do civilian populations. This higher use rate is due to factors discussed previously, including lack of support networks due to frequent moves and separation from extended families. In addition, families living in the civilian community (such as those located in Pender County) often

3 North Carolina Department of Social Services, available at http://www.ncdhhs.gov/dss/about/

feel isolated from the military population, and might perceive that the civilian population does not understand the unique challenges they face in military life. Finally, they might not be knowledgeable about on-base services and resources, or not be able to access those services, thereby exacerbating their sense of isolation.

All of these factors lead to military families requiring a disproportionate amount of child welfare services in Pender County compared to the civilian population, particularly child protective services. Child abuse and child neglect cases exist at high rates among the military community, often resulting from domestic partner abuse issues or parental substance abuse.

Food and Nutritional Services (FNS)

Few Marines utilize FNS programs through Pender County DSS because most Marines do not qualify for these services. Eligibility for FNS is based upon income and family size.

Transportation

No Pender County-based public transportation is available, although the County DSS office contracts with New Hanover's WAVE Transit for individuals requiring special transit assistance. Most frequent users of this service are patients needing access to medical facilities in other counties, such as Onslow County, for regular care such as dialysis.

Geographic access is also a challenge—much of Pender County's military population is located in the eastern part of the county near Surf City, while Pender County DSS Services is located in Burgaw, 23 miles away. Private transportation, such as taxis, is sometimes available but is often not affordable for many community members. Pender County DSS had a regional office in Surf City in the past to facilitate access to social services, but due to the higher income level of the Surf City community, many residents did not qualify for social services, and the office was closed.

Coordination - Marine and Family Services & Departments of Social Services

Overall, Pender County DSS offices and the military report a limited need to coordinate the delivery of social services. In cases of child abuse, however, coordination between County DSS and military staff is essential. If the offender is a military service member, his or her commanding officer is notified and the service member may be removed from the home temporarily and/or placed in custody on base. This coordination is particularly important because military families often do not have extended families in the area, and without the removal of the offender, Pender County DSS would need to find temporary housing for the victims following allegations of child abuse. With the removal of the offender through the military discipline system, the child can remain in the home while follow-up investigation and counseling are conducted. Please note that spousal abuse cases are not handled by DSS.

Needs Assessment

Pender County is expecting over 1,200 Marines and their families in the military population influx. While much of the Surf City population tends to be higher-income and does not qualify for some social services, such as day care or food stamps, some of the military influx will be younger, junior-ranking service members. These younger Marines often have young children and are still learning life and coping skills to address the challenges they are facing and the stresses of military life. With current wartime deployments to OEF and OIF, stresses on military service members and their families are increasing, as are injuries and mental health conditions such as traumatic brain injuries (TBIs) and post-traumatic stress disorder (PTSD) cases, adding to the need for additional social service capacity.

The influx is not expected to create needs for new service; rather, the increased military population is expected to exacerbate resource needs already present at Pender County DSS services. Specifically, Pender County DSS expects the increase in population to have the most impact on Child Welfare programs. Current barriers to access for the expected Marine population are also expected to be exacerbated—particularly geographical access.

Transportation and Geographical Access

As previously discussed, access to affordable public transportation and increasing geographic access is a major need for both the civilian and military populations throughout the region. In particular, needs include:

- Increased access for military families living off base to access social services in their own communities.

- Transportation that can be accessed daily and without advance reservations
- Increased geographical access, including increasing options to access services such as satellite offices, specifically for Surf City residents

Child Welfare

Pender County DSS expects that Child Welfare services will see the greatest increase in demand as a result of the military population growth. Increased capacity to address issues that cause this demographic group to need child protective services and increased resources for child neglect and abuse cases is a significant need. These preventative and response programs, staff, and systems are in place, but will need increased funding and targeted initiatives to address expected upcoming need. In particular:

- Increased capacity for preventative programs through Pender County DSS that are currently in place and will need increased funding include classes, workshops, and counseling on topics including parenting, anger management, positive communication, and healthy relationships.
- Increased capacity for targeted programs that address specific needs for the expected Marine demographics, including recognizing and addressing mental health conditions incurred during combat, addressing relationship and family challenges before/after deployment, and life and coping skills for military spouses during deployment.
- Increased capacity for preventative initiatives targeted to decrease the sense of physical and cultural isolation that many off-base military families feel. Reducing this isolation would increase the well-being of these families and decrease their need for child protective services. Programs already in place that need additional capacity include mentoring programs for military spouses and youth as well as support groups.
- Increased knowledge about services available to military families, in particular those living off base. Military service members do receive information about Marine and Family Services as part of their base orientation, and Marine and Family Services advertises opportunities on base. However, military spouses who do not go to bases frequently depend upon their Marine spouses for all information about available services.
- Increased capacity for child protective services of Pender County DSS. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly and that adequate follow up (counseling, legal coordination, coordination with military Command) is thorough and timely.

The following chart outlines specific anticipated funding needs for additional child protective service demand as a result of the military population increase:

Child Protective Services Financial Impact	Foster Care Financial Impact	Total Expected Child Welfare Services impact
$4,093	$36	$4,129

Table 6.4 - Child Welfare Services
Source:Pender County Department of Social Services

Day Care

Access to affordable day care is currently a pressing need for the civilian population; the increased military population is expected to have a minor impact on the demand for day care. The following child care needs reflect current needs that will be exacerbated by the influx of military population. Expanded day care slots and qualified staff to support this capacity are estimated at a cost of $350.

The following chart outlines current and anticipated day care needs for Pender County:

Food and Nutritional Services

Because many of the military families expected in Pender County would not qualify for food assistance, the FNS program anticipates a minimal impact. Pender County anticipates increased funding of only $33 to accommodate the expected military population.

Recommended Strategies and Actions

	Child Care Enrollment - 2007	Expected Child Care Enrollment due to Normal Population Growth - 2011	Additional Slots Expected Due to the Military Increase - 2011	Total Expected 2011 Child Care Enrollment
Children aged 5-12	302	358	9	367
Children under 15 years old	1,066	1,263	32	1,295

Figure 6.5 - Projected Child Care Enrollment

Source: Education Working Group, Military Growth Task Force.

Pender County needs will be met through the execution of regional strategies and actions, in addition to those listed below.

Action 1: Increase access to services by addressing limited mobility and geographic access issues.

Rationale

The lack of flexible public transportation and the distance between Pender County's military population and Pender County DSS results in many military families encountering challenges in accessing services.

Supporting Activities

- Reduce or eliminate geographic access barriers by bringing services to military communities in Pender County, particularly in Surf City. Form community action teams through Pender County DSS and Marine and Family Services. These action teams can serve military families at accessible locations throughout Pender County in locations such as community facilities, schools and churches. Particularly, preventative workshops could be successful in these venues, and child care could be provided on site. The appropriateness of providing services requiring confidentiality, such as individual or family counseling, will depend on the capacity of the community facility.

Funding

- No funding requested

Action 2: Increase preventative program capacity.

Rationale

Many military families access services at a point of crisis; addressing causal issues through preventative programs can reduce the need for emergency services.

Supporting Activities

- Target military members most at risk for needing emergency social services, such as young and junior-enlisted military families with young children.

- Provide local, accessible outreach programs to the military community residing in Pender County.

Funding

- Funding for increased preventative program capacity should be allocated through the state budgeting process for the Department of Social Services

Action 3: Increase program capacity for child welfare, particularly child protective services.

Rationale

Due to the expected demographic of the military population, substantial increases are expected in child abuse and neglect cases, requiring immediate intervention.

Supporting Activities

- Allocate additional funding for Pender County DSS to address the increase in child welfare resources due to the expected population growth

Funding

- Increased administration and program increase, with approximately $4,130 in additional funding needed, to be allocated through the state budgeting process for the Department of Social Services.

Public Safety and Emergency Services

Existing Conditions

The Public Safety and Emergency Services (PS/ES) sector in Pender County will not see the same impact on levels of service that counties that are host to Marine Corps installations can expect. In terms of preparedness and communications interoperability, Pender County does not face needs as dire as many others in the MGTF Study Region.

Communications Interoperability

Pender County's first responders are in the process of migrating to the VIPER network full-time. The counties law enforcement and EMS agencies have completed the transition and fire departments are expected to follow suit in fall of 2009. The county has maintained VHF high-band and UHF systems for dispatching and backup purposes. With VIPER, the county's first response agencies have or will have interoperability with a number of local neighboring agencies as well as NC Highway Patrol and state Emergency Management. Emergency management representatives have expressed a lack of communications with non-VIPER agencies, an issue that could be overcome with the addition of county-wide ACU unit.

Increases in Demand for Services

Emergency services in Pender County have seen a significant increase in service demands in recent years. Between 2006 and 2008, yearly calls for emergency medical service jumped 42 percent while calls for fire service jumped over 115 percent. In that time period, staffing for EMS went from two to three.

Outdated Facilities

The Pender County Law Enforcement Center holds the Pender Sheriff's Office, the E911 Center, Pender County Utilities, and the Emergency Management Office. This building originally served as an electrical cooperative office. The space has reached capacity, with a number of employees sharing offices and a lack of adequate parking space. In spite of recent electrical upgrades, the facility is not compliant with the Americans with Disabilities Act (ADA) guidelines. County representatives have also mentioned the unsuitability for the building to serve 24-hour operations during major storm events due to a lack of shower or bunk facilities.

Needs Assessment

Communications Interoperability

Emergency Services

- In order to achieve interoperability with local agencies not utilizing VIPER, the county's emergency managers would need an ACU unit to have linking capabilities
- The county is in need of incident management software to provide situational awareness to partner agencies. The cost of server and software is estimated at $68,000.

Personnel and Associated Needs

Emergency Services

- A multi-hazard planner for disaster preparedness (approximately $42,000 / year)
  - Vehicle ($25,000)
  - Operational Costs ($2000)

- Office equipment ($1,500)

- An administrative assistant for the county's Emergency Management Office
  - Office equipment ($1,500)

Facilities and Equipment

- A new multi-purpose, ADA-compliant Public Safety and Emergency Services center with expanded capacity, adequate parking, and bunk and shower facilities for 24-hour operations.

Recommended Strategies and Actions

Action 1: Obtain an ACU unit to link non-VIPER partnering agencies

Funding

- State appropriations
- Assistance to Firefighters Grant (FEMA)
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 2: Obtain incident management software to provide operational awareness to partnering agencies.

Funding

- State appropriations
- Assistance to Firefighters Grant (FEMA)
- Federal grants to DCC&PS
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations

Action 3: Upgrade Emergency Management and Law Enforcement facilities to meet the growing demands on the PS/ES sector in Pender County

Funding

- Assistance to Firefighters Grant
- Federal Hazard Mitigation Funds
- State Homeland Security Appropriations
- OEA community development funding

Quality of Life

Existing Conditions

Parks and Recreation and Sports Venues

Much of the recreation in Pender County is beach-related, since the county includes some barrier islands. This recreation includes boating, surfing, sunbathing, jet skiing, fishing, kayaking, etc.

On Topsail Island, there is a sea turtle rescue and rehabilitation center that is open to the public in the summer, offering tours to educate visitors about sea turtles.

The Holly Shelter Game Preserve is located in Pender County, and is the largest state-controlled hunting preserve on the East Coast. Topsail Island is another big recreational destination, offering activities such as bird watching, dolphin and whale watching, and turtle watching. The Black River and Cape Fear River offer paddling opportunities in the county, and there are several campgrounds available. The county also has four golf courses.

Moore's Creek National Battlefield is managed by the National Park Service. A one-mile trail with exhibits leads through the battlefield and across Moore's Creek on a historic bridge. The park also has a 0.3-mile colonial forest trail and a picnic area.

There are two parks within the county – Pender Memorial Park and Hampstead Kiwanis Park.

The county's Parks and Recreation Department provides youth and adult recreational programs, including athletics, camps, and trips.

Facilities	North Carolina Standard	# in Pender	Recommended # based on 2007 population (49,407)	Over (+) and Under (-)
Baseball Fields	1/8,000	4	6	-2
Soccer Fields	1/6,000	2	8	-6
Softball Fields	1/4,000	4	12	-8
Tennis Courts	1/1,200	10*	41	-31
Outdoor Swimming Pools	1/14,000	0	3	-3
Community Centers	1/14,000	1	3	-2

Figure 8.1 - Comparison of Recreation Facilities Managed by Pender County Parks and Recreation Department and Havelock Parks and Recreation Department with State Standards (2006)

Note: Does not include facilities that are available at the public schools

*County-owned public tennis courts are only school properties and use is restricted by schools needs

Current Plans

The Pender Parks and Recreation Department is expanding its two county-owned parks. Two youth baseball/softball fields, one football/soccer field, one youth soccer field for children ages 10 and under, and one youth soccer field for ages eight and under will be added to Pender Memorial Park. The Hampstead Kiwanis Park is also scheduled to receive two youth baseball/softball fields, one football/soccer field, and a half-mile walking trail. Even with these anticipated park expansions, however, the county will have an undersupply of parks for its population.

Water Access and Parking

Pender County has two piers, Surf City Pier (open 24/7) and Jolly Roger Pier. There are five boat ramp sites in the county: Holly Shelter Landing and Sawpit Landing enter the Northeast Cape Fear River; Shelter Creek Landing enters Shelter Creek; Surf City Ramp enters the Intracoastal Waterway; and a boat ramp located at Hines Avenue and South Anderson Street enters the Topsail Sound in Holly Ridge.

There are also 15 beach access points within the county. [Please refer to Appendix O for a complete listing.]

Arts and Culture

The Pender County Public Library has two branches – the Central Library, in Burgaw, and a Hampstead Branch. Their square footage is listed below and compared to the state standard (State Library of North Carolina 2007, 54):

Pender County Public Library (Burgaw):	14,000 SF
Hampstead Branch Library:	7,000 SF
TOTAL:	**21,000 SF**

Based on the 2007 population of Pender County (49,407) and the state recommendations for library square footage (0.65 per capita), the suggested area for libraries in Pender County is 32,115 SF. This indicates a deficit of about 11,115 square feet in the county.

The Pender County Library Strategic Plan notes that the two libraries are constrained by their existing facilities. The plan notes that the main library is operating at nearly maximum collection and service capacity. The Hampstead Branch is also operating at nearly maximum capacity, and both libraries lack adequate shelving for their collections. Neither library is able to expand or add services without sacrificing another resource or service (for example, to expand the number of public computers would require public seating or shelving to be sacrificed). The library system will need to expand its collections and services to accommodate future growth, but it lacks the space to do so. The Strategic Plan notes that the Main Library is the only existing facility that can accommodate further expansion (likely with a two-story addition).

The Topsail region of the county (served by the Hampstead Branch library) is expected to experience the greatest impact of military-induced growth in the county.

Pender County has a variety of other arts-related and cultural venues and activities. The Pender Arts Council is located in Burgaw and has many local artists on display in its building. The council also offers children's classes. Local museums include the Pender County Museum, Penderlea Homestead Museum, Missiles and More Museum, and Poplar Grove Plantation Museum. Annual festivals in the area include the Celebrate Hampstead Festival, Springfest, North Carolina Blueberry Festival, North Carolina Spot Festival, Maple Hill Festival & Parade, Autumn with Topsail Festival, and the Poplar Grove Plantation Halloween Festival.

Current Plans

The Pender County Library Strategic Plan suggests building a new regional library to serve southern Pender County, and expanding the regional library in the eastern part of the county. The first phase of the library's facility plan includes two service areas, the Burgaw Service Area and the Topsail Service Area (proposed for now-2020). These areas are currently served by the existing libraries in the county. Planning is underway to replace the Hampstead Branch Library with a new, 22,700 square-foot regional facility to serve the eastern coastal area of Topsail Township. It is hoped that this project will be completed by 2009 due to the population growth in the area. The strategic plan recommends expanding the Main Library (serving the Burgaw area) to 29,000 square feet within the next five to seven years.

The second phase of the library's facility plan includes the South Pender Service Area (proposed for 2020-2030), based on the significant population growth in the Rocky Point/Long Creek area, and the potential growth in Grady Township. The recommended new library in this area would be 22,100 square feet.

Hotels and Meeting Space

Pender County has 13 hotels with a total of approximately 300 rooms available within the county [listed in **Appendix E**]. Most of these accommodations are motels and inns. Camp Kirkwood Camp and Conference Center has several spaces for meetings, and can accommodate groups of up to 250 people. The Train Depot in Burgaw is being renovated to include a unique historic facility to host events, though the date of opening and capacity is still unknown at this time. The county has a general need for additional hotels that have amenities and on-site meeting space, in also larger meeting facilities.

Needs Assessment

Pender County currently needs two baseball and eight softball fields, six soccer fields, 31 tennis courts, three public outdoor swimming pools, and two new community centers, and military-induced growth will only increase demand for these recreational facilities. **Table 8.2** below shows which facilities would be necessary due *just to the military-induced growth.*

Facilities	State Standard	Pender County (1,267 people)
Baseball Fields	1/8,000	-
Soccer Fields	1/6,000	-
Softball Fields	1/4,000	-
Tennis Courts	1/1,200	1
Outdoor Swimming Pools	1/14,000	-
Community Centers	1/14,000	-

Table 8.2 - Sports Venue Facilities Needed to Support Military-Induced Growth in Pender County

New community centers and sports complexes with indoor and outdoor athletic facilities (ball fields, soccer fields, and tennis courts) and gymnasiums are needed. In addition to athletic fields and venues, parks are also needed to accommodate added population. The county is already lacking in the amount of park space per capita it needs, and therefore, steps should to be taken to preserve open space within the county. **Table 8.3** below shows which types of parks would be necessary due just to the military-induced growth.

Estimated Military-Induced Population Increase	Neighborhood Parks Needed (6-8 Acres/1000 People)	Community Parks Needed (10 Acres/1000 People)	District/Metro Parks Needed (20-100 Acres/1000 People)
1,267	8-10 acres	13 acres	25-127 acres

Table 8.3 - Parks Needed to Support Military-Induced Growth in Pender County

Libraries in the county, which are already lacking enough space per capita (by about 11,115 square feet), will be further strained by military-induced growth. Because it is anticipated that the Topsail Library will be most significantly affected, it is suggested that additional space be added to this location. **Table 8.4** below shows the estimated square footage needed just to accommodate the military-induced growth.

Estimated Military-Induced Population Increase	Library Square Footage Needed (0.65 SF Per Capita Estimates)	Library Square Footage Needed (1.0 SF Per Capita Estimates)
1,267	824 SF	1,267 SF

Table 8.4 - Library Space Needed to Support Military-Induced Growth In Pender County

In addition to needing more square footage, library programs will be stretched thin as regional population increases, Steps should be taken to increase available programs, access to computers and the Internet, and parking for the library buildings. Typically, the lack of parking is due to a lack of funds for new parking areas.

Estimated Military-Induced Population Increase	Public Computers (1/2000 residents)	Collections (2 items/ capita)	User Seating (2.5 seats/1000 residents)	Programming/Meeting Space (1 seat/300 residents)	Parking (1 space / 200 SF)
1,267	1	2,534	3	4	4

Table 8.5 - Additional Library Needs To Support Military-Induced Growth in Pender County

Recommended Strategies and Actions

Recommendation 1: Build one new recreation complex that includes enough sports fields to bring the county up to state standards, and includes gymnasiums.

A feasibility study to site the complex, determine appropriate size and functions, and identify public-private partnership funding opportunities should be undertaken in FY 10. Design and construction of complex should be initiated in FY 11, with completion planned for FY 12. The estimated cost for the complex would be $5 million - $30 million, depending on its size.

Rationale

Pender County is already lacking in the number of athletic fields it offers, based on state standards, and the military-induced growth will only place further stress on existing recreational programs and facilities. The county will need new or expanded recreation facilities that include new sports fields and gymnasiums.

Funding:

Grants and other funding sources available for parks and recreation projects are listed below.

North Carolina Parks and Recreation Trust Fund (PARTF) – Any eligible agency may apply for funding up to $500,000 on a 50-50 cost-share basis. Contact the NC Recreation Resources Services at: www.naturalresources.ncsu.edu/rrs/

North Carolina Trails Program – Can apply for funding up to $50,000 on a 20-80 cost-share basis, with cash or in-kind contributions. Contact the Trails Program at: www.ils.unc.edu/parkproject/trails/home.htm

North Carolina Adopt-A-Trail Program – This grant is awarded annually to government agencies, non-profits, and private trail groups. 100-percent funding is available up to $5,000. Contact the Trails Program at: http://www.ncparks.gov/About/grants/trails_grant.php

North Carolina Recreational Trails Program – State program that helps fund trails and related recreation at the state level. Applicants contribute 20 percent of the cost. Contact the NC Trail Program at: http://www.ncparks.gov/About/grants/trails_grant.php (Phone: 919-715-8699).

Land and Water Conservation Fund – Federal program that helps fund the development of outdoor recreation lands and waters at the state level. Assistance is awarded to counties showing higher relative needs using the state's Open Project Selection Process. A 50-50 cost-share basis. Contact the Land and Water Fund Program at: www.nps.gov/lwsf

The LWCF is based on the NC Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the NC Division of Parks and Recreation. The state gives some preference to counties that have fewer recreation sources per capita, which is why the SCORP ranks the counties according to their recreational resources.

National Heritage Trust Fund – Supplements funding for the state, helps acquire and protect national areas, preserves ecological diversity and cultural heritage, and inventories natural areas. Contact the National Heritage Trust Fund at: (Phone) 202-343-9563.

NC Department of Transportation Enhancements Fund (TEA 21) – There are 12 funding categories including acquisition, landscaping, bicycling, and pedestrian facilities. www.dot.state.nc.us/planning/development/enhancement/program

Eat Smart, Move More NC Funding Opportunities – Community grants program supports local health departments in NC in efforts to development community-based interventions that encourage, promote, and facilitate physical activity and healthy eating. Funding ceiling of $20,000. (Example: Carteret County Health Department in collaboration with County Parks and Recreation and other community partners will develop a 1.5 mile walking trail equipped with outdoor fitness stations. This trail will be developed at Newport Middle School, and is part of a dual-use, community-school park project. For information, contact: http://www.eatsmartmovemorenc.com/Funding/Funding.html

Recommendation 2: Create additional library space, programs, and amenities as outlined above, particularly for the Topsail branch (which will likely experience the most impact from military growth).

The anticipated cost for new library space is $255 per square foot. This cost includes construction and related expenses (building program, A/E fee, interior design fee, reimbursable expenses, geotechnical, site survey, testing), uplift expenses (furnishings, communications cabling, telephone system, technology, A/V equipment, microform equipment, building and security system, copiers), contingency construction and uplift, and library collections (books for 50-percent fill rate and A/V materials).

Rationale

Libraries and their programs are an important, low-cost activity for military families in Pender County. The county is not up to state space standards, and is lacking in the number of computers and other programs or amenities that it offers. Libraries are becoming increasingly like community centers, and as a free resource, are very important to military families.

Library Funding

Below is a list of funds and grants that are available for library projects.

Gates Foundation Grants in North Carolina – The Bill & Melinda Gates foundation will support the replacement or addition of public access PCs. Amount is based on number of PCs needed to reach the Foundation's pre-established "level of service." Eligible libraries are located in counties that have either a 10-percent or greater poverty level in the Foundation-defined service area OR more than 3,000 persons living in poverty. http://statelibrary.ncdcr.gov/gates/gates.html Libraries in Pender County that have been established as eligible by the Foundation: Pender County Public Library

Institute of Museum and Library Services – Provides federal grants to libraries and museums nationally. Works at the national level and in coordination with state and local institutions and organizations. http://www.imls.gov/index.shtm

National Endowment for the Humanities – An independent grant-making federal agency dedicated to supporting research, education, preservation, and public programs in the humanities. For available grants, contact: http://www.neh.gov/grants/index.html

National Endowment for the Arts – A federal agency dedicated to supporting excellence in the arts, bringing the arts to all Americans, and providing leadership in arts education. Is the nation's largest funding agency for the Arts. For grant information, contact: http://www.nea.gov/grants/apply/index.html

Golden Leaf Foundation – North Carolina organization whose mission is to promote the social welfare of state citizens and to distribute funds to economically affected or tobacco-dependent regions of North Carolina. Grant information at: http://www.goldenleaf.org/grants/

Kresge Foundation (for support related to our regional strategies) – A private foundation that supports communities through building up the capacity of nonprofits, historically, supports fundraising campaigns to build capital projects (e.g., libraries, museums, community centers). http://www.kresge.org/index.aspx

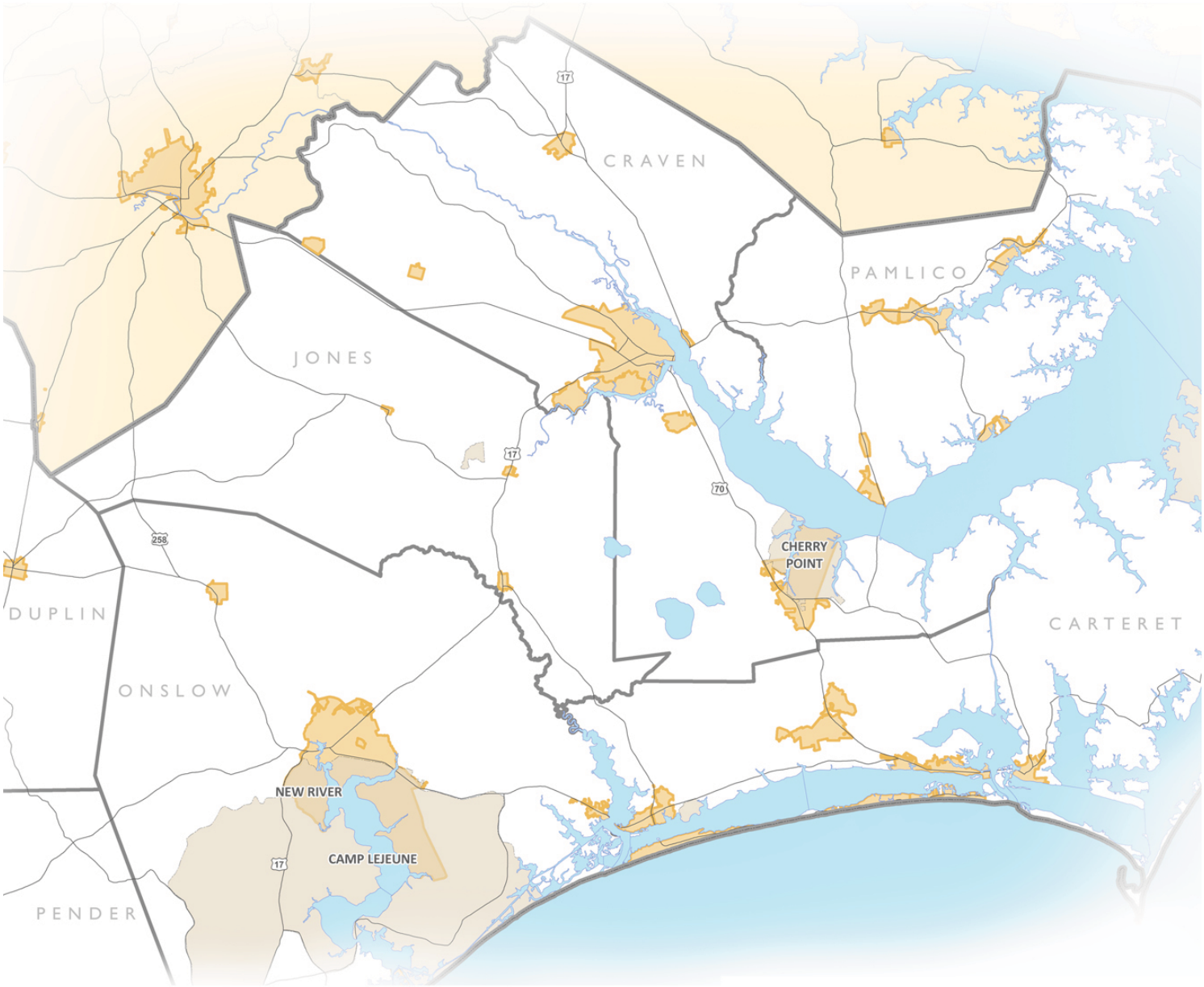
Kellenberger Historical Foundation (based in Craven County)

Recommendation 3: Recruit additional hotels with full amenities and attached meeting space.

Rationale

Pender County currently lacks sufficient meeting space, and particularly hotels with attached meeting space. New hotels that have full amenities and adjoined meeting facilities are needed to accommodate groups that need a meeting space within the hotel.

THIS PAGE INTENTIONALLY LEFT BLANK



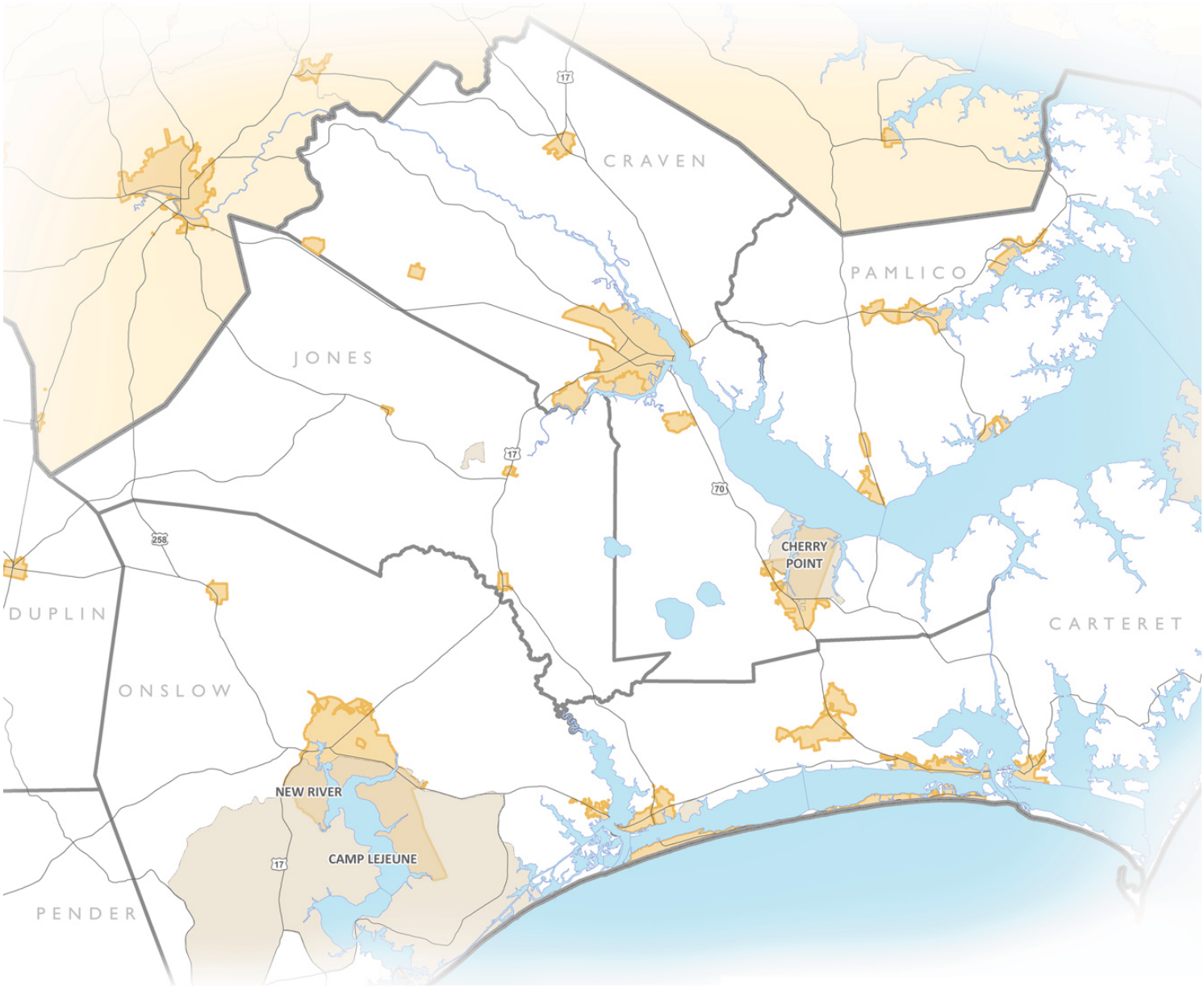
NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix A

Regional Growth Issues

Appendix A: Regional Growth Issues

	HOUSING
1	Potential encroachment threats are caused by future residential development around military installations.
2	Limited funding sources slow residential development that is dependent on funds for water and wastewater infrastructure. New development will strain existing infrastructure.
3	Limited affordable and available rental housing for civilians and military personnel is difficult to find. This problem will be exacerbated by future growth.
4	Affordability of housing may be affected by increase in homeowner's insurance rates.
5	Storm water regulations will pose a threat to the affordability of housing in the region.

	WORKFORCE & JOB CREATION
6	High school graduates and associate degree graduates leave the region to find employment.
7	Top students who leave the region to attend four-year colleges do not return upon completing their degrees.
8	There is a lack of business, academic and research centers in the MGTF Region.
9	The region has sustained a loss in its manufacturing base.
10	There is concentration of residents who lack a high school diploma. It is difficult for these residents to find employment.
11	The region has high rates of underemployment.
12	High skill jobs remain unfilled.
13	Teacher turnover rates are high despite high demand for teachers.
14	The multi -year planning process of the community colleges hinders the colleges from reacting quickly to changing local population and economic conditions.
15	There is an unmet demand for day care facilities and day care specialists both on and off base that will increase with anticipated growth.
16	There is an unmet demand for employees to fill low-skill jobs in retail trade, food, accommodation, and construction that will increase with anticipated growth.
17	There is an unmet demand for employees for high-skill jobs in healthcare, education, construction trades, aerospace, advanced manufacturing, information technology, and engineering which will increase with anticipated growth.
18	Skilled former military personnel are unable to acquire a license for comparable jobs in the civilian sector. This problem is present with certification within the health care sector, law enforcement, and commercial driver licensing.

	EDUCATION
19	Projected student growth ranging from 3 to 5 thousand students in the K-12 population will create substantial needs and generate significant costs in the MGTF Region.
20	LEAs in the MGTF Region are facing tremendous challenges recruiting and retaining qualified teachers. The cost of constructing new public schools falls solely on the shoulder of county government. The most common funding source is through a general obligation bond which is difficult to gain public support of in today's economy.
21	Projected growth of 2,500 children between the year 2007 and 2011 creates a significant strain on child-care services in the MGTF Region. The region requires an additional 411 childcare professionals to accommodate this growth.
22	The region will also need to replace 435 personnel in the child-care work force **per year** to absorb

	turnover rate.
23	Craven Community College needs to recruit an aviation instructor to meet the increased demand of the FAA General, Airframes and Power Plant Exam Prep program.
24	Craven Community College also needs to recruit an additional quality process instructor to meet the increased demands of Lean Six Sigma Quality Instruction.
25	A strong need to provide additional 2+2 baccalaureate programs with the University of North Carolina in Wilmington (UNCW) exists. To meet the critical teacher shortage, which will be exacerbated by anticipated growth, build upon the teacher-training program.
26	Continuing Education must be prepared to offer a full array of short-term training and expansion the current programs that prepare military and military-related students.
27	Associate Degree Nursing programs, as well as other health care programs, need expansion to meet critical workplace shortages stemming from growth.
28	Low teacher compensation results in qualified nursing instructors leaving the region's community college system to pursue comparable jobs with higher salaries in other parts of the country.
29	Increased short-term training is needed in the technical/vocational fields to support the workforce needs in the community.
30	To meet the childcare and teacher needs, staffing and facilities will need to be increased beyond the current shared facilities with the Coastal Carolina Community College.

	TRANSPORTATION
31	Congested corridors are caused by bottlenecks along the corridor. Traffic increases in the seven counties due to anticipated growth in addition to the influx of tourists combine with inadequate roadway capacity to create peak hour traffic congestion on major area roadways.
32	High vehicular accident rates are sustained due to poor intersection design, inadequate access considerations and traffic congestion. The counties with high crash rates also have frequently congested corridors.
33	Reintroducing rail services will require track and infrastructure improvements in order to safely and efficiently accommodate both freight and passenger trains. Infrastructure improvements would include replacing 27 miles of track between Castle Hayne and Wallace as well as installation of Centralized Traffic Controls (CTC) to allow train speeds to reach 59 to 79 mph
34	East Coast ports are projected to double their container throughput by the year 2012. Industry experts suggest that this number could double again by 2025. Increased military use of ports at Morehead City-Radio Island, Port of Wilmington and Sunny Point will increase.
35	Development of Radio Island will necessitate roadway transportation infrastructure improvements.
36	To receive federal funding, counties must update their Local Coordinated Plan (LCP).
37	There is an overwhelming demand for transit services to and from Camp Lejeune and Cherry Point.
38	Expansion of daytime and nighttime transit services (including weekend) is needed.
39	Increasing military demand will require the creation and expansion of fixed-routes to the base.
40	Counties need more vans and better transportation in general. The Hampstead-Topsail Beach area is especially in need of more routes and vans.
41	Transportation to out of county employment in New Hanover and Duplin counties is important.
42	Transit service on Saturdays (especially for medical visits) is essential.
43	Non-Medicaid recipients need to receive vouchers for transportation to offset costs.
44	Arterial access to the airport via the US-70 corridor remains an issue.

	INFRASTRUCTURE
45	Increased requirements led to new demand on other aquifers, leading to increased stress on the Black Creek Cretaceous aquifer.
46	Existing water treatment infrastructure does not exist in the region to treat saltwater to prevent saltwater intrusion from occurring.
47	Additional water supply is needed in Onslow County.
48	Additional water treatment is needed in Pender County.
49	Long-term growth in Maysville, coupled with the effects of CCPCUA water use reductions to Jones County, will compromise the ability of Jones County to serve as the additional supply to Maysville after the 50% CCPCUA reductions take effect in 2013.
50	Limited Land Supply exists for the use of Land Application Systems (wastewater treatment and reuse system).
51	Existing Expansion Policies makes it difficult to plan sewer needs and infrastructure.
52	Land suitable for spray irrigation is scarce, expensive and not conducive to economic development or tax-revenue generating development.
53	WWTP in the MGTF region are operating at near capacity which will experience significant impacts due to the anticipated population growth.
54	Current NCDENR reclaimed water regulations limit the uses of reclaimed water. For the MGTF Region, promoting several methods of beneficial usage of reclaimed water elsewhere in coastal and neighboring states could reduce strain on water and sewer systems within the MGTF Region.
55	The re-write of the current NCDENR reclaimed water regulations and HB 634 – "Authorize Aquifer Storage of Reclaimed Water" are necessary to allow for expanded use of reclaimed water within the MGTF Region.
56	Federal and state entities have enacted unfunded mandates in regulations to manage stormwater. These mandates require public education, outreach, public participation/involvement, illicit discharge detection, construction site and post-construction runoff control and pollution prevention. These programs require the use of scarce financial resources to ensure compliance with stormwater programs. Coastal Stormwater Rules will pose a threat to affordable housing in the region.
57	For the City of Jacksonville to support additional NPDES Phase II stormwater requirements, an entire stormwater department needs to be created to enforce stormwater ordinances. In addition, the department will be required to provide support in public education and outreach, public involvement and participation, illicit discharge detection & elimination, construction site runoff control, post-construction runoff control and pollution prevention efforts.
58	Every county in the region establishes waste reduction goals as part of its Solid Waste Plan. Many obstacles exist that make obtaining these waste reduction goals challenging.
59	Without investment in ICT, the region will struggle to complete with other areas of the state in retaining young people, ensuring public safety, increasing educational opportunities, and promoting economic development.

	MEDICAL, HEALTH, & SOCIAL SERVICES
60	Outmigration for medical care highlights inadequate provision of health services within the MGTF region.
61	Despite advanced planning Naval Hospital MCB Camp Lejeune and Naval Health Clinic Cherry Point, there is a need for additional physicians, particularly medical and surgical specialists.
62	TRICARE reimbursement will remain one of the most significant health care issues facing the MGTF

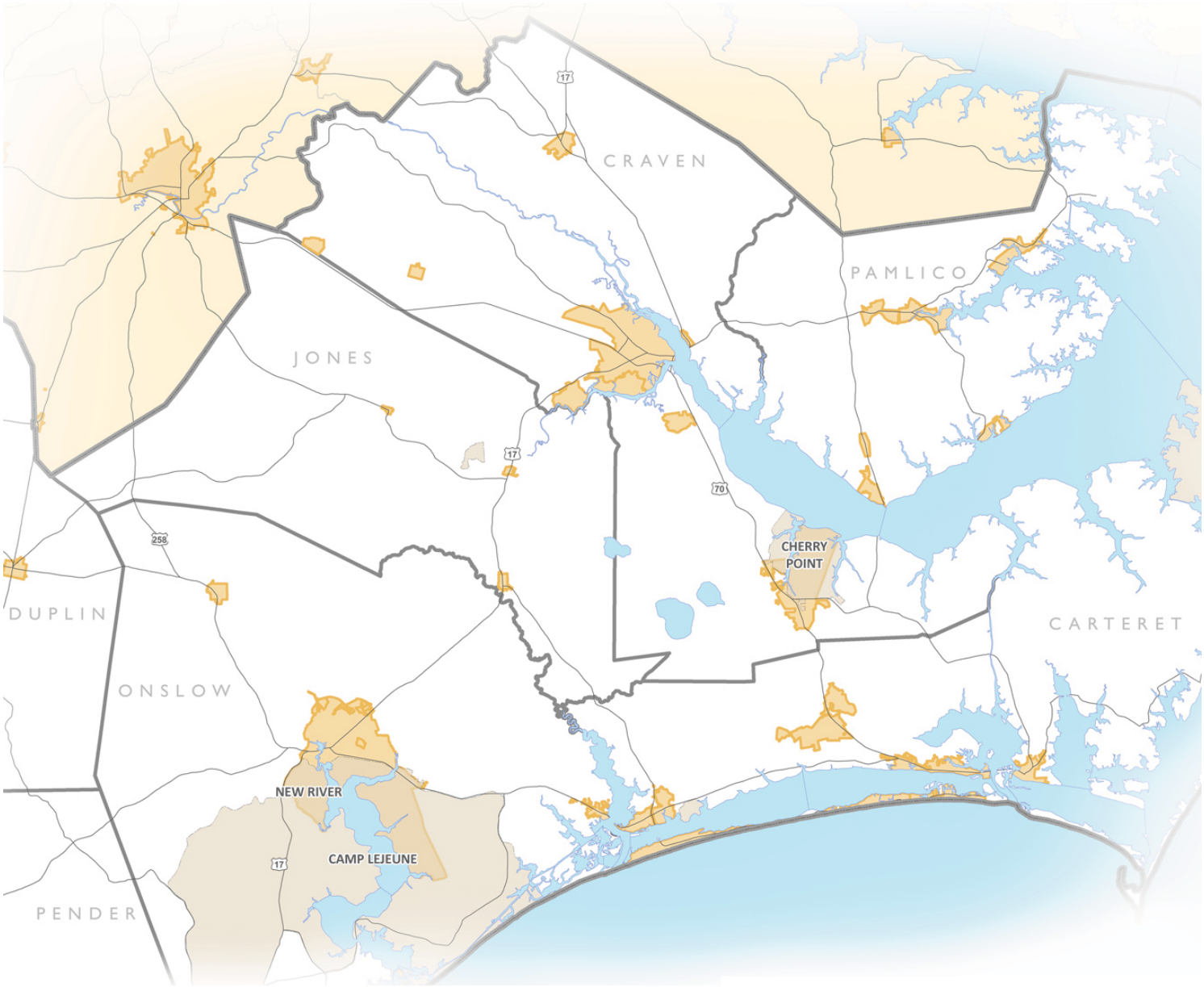
	Region following the influx of military growth.
63	At present, there is a large physician shortage across the region. Anticipated USMC related growth would further increase those needs.
64	As active-duty troops return from abroad, the current shortage of mental health and substance abuse services will become more apparent. It is documented that behavioral health problems are more acute with deployed and returning service members and their families.
65	The MGTF Region is facing a significant shortage of behavioral health providers. Following the anticipated USMC population growth, twice as many providers will be needed. Recruitment of these providers is essential to supporting the needs of the military population and maintaining deployment readiness for active-duty service members.
66	A surplus of substance abuse and adolescent psychiatry beds will remain in the region after the anticipated growth takes place. There will be a need for 16 additional adult psychiatric beds.
67	While regional coordination is effective, there is a need for greater communication between DoD facilities, Health Net Federal Service and civilian providers regarding the provision of behavioral health services to military personnel. As the behavioral health needs of the population continue to increase, civilian providers will be relied upon to deliver care. It is imperative that providers be familiar with the services they can and cannot provide. In addition, providers should familiarize themselves with any restrictions on the how services are to be provided, as soon as possible.
68	Marines that are part of the influx are expected to increase social service demand at both on base and off -base public services. T*he increased military population is expected to exacerbate resource needs already present both on base at Marine and Family Services and off base through County DSS services.*
69	Access to affordable public transportation and increasing geographic access is a major need for both the civilian and military populations throughout North Carolina's Military Growth Task Force Region.
70	Increased access for military families living off base to access social services in their own communities is needed.
71	More transportation that can be accessed daily and without advance reservations is needed in the MGTF region.
72	Increased geographic access to services is needed. This includes increased access to services such as satellite offices.
73	Access to affordable day care is currently a pressing need, which will increase with the anticipated military growth.
74	Expanded day care slots and qualified staff are crucial in supporting the additional demand for day-care capacity.
75	Expanded day care slots and capacity for children with special needs, such as extreme ADHD are needed.
76	Increased day care availability is needed at second and third shift times. Access to day care at these times would greatly increase military spouses' ability to find employment outside the home, increasing financial independence and decreasing needs for other social services, such as FNS.
77	Increased access to respite care is needed, particularly for single parents, military spouses whose spouses are deployed and parents with children with special needs.
78	Increased day care slot availability is needed for parents needing urgent or last minute day care options, particularly for single parents or military spouses whose spouses are deployed.
79	Child welfare services through county DSS and Marine and Family Services are expected to experience a significant increase in demand because of anticipated growth.
80	Increased capacity for preventative programs through Marine and Family Services and county DSS that are currently in place and will need increased funding to accommodate additional demand

	created by growth.
81	The MGTF region will require increased capacity for targeted programs that address specific needs for the expected Marine demographic groups, including recognizing and addressing mental health conditions incurred during combat, addressing relationship and family challenges before/after deployment, and life and coping skills for military spouses during deployment.
82	The anticipated growth will require increased capacity for preventative initiatives that aim to decrease the sense of physical and cultural isolation that many off-base military families feel.
83	While military service members do receive information about Marine and Family Services as part of their base orientation, many military service members and their families do not know how to access available resources.
84	Increased capacity for child protective services for both Marine and Family Services and county DSS will be required as a response to anticipated growth. Additional child protective service staff will be needed to ensure that all alleged child abuse and neglect cases are responded to promptly and receive adequate follow-up.
85	The anticipated growth will create an increase in demand for programs that provide food assistance.
86	The need for increased counseling services capacity is also linked to a need for increased mental health services provided through the health system.
87	Increased capacity for counseling services will be needed for Marines and their families.
88	Increased continuity of care is needed between the medical services and Marine and Family Services. This is necessary to address the mental health conditions and any social service spillover into family issues that require counseling or intervention from family advocacy services.
89	Increased capacity for family advocacy programs is needed to ensure timely and appropriate response to acute family issues including domestic violence, child abuse and child neglect.
90	Both MCB Camp Lejeune and MCAS Cherry Point's Exceptional Family Member programs are operating at full capacity, requiring additional resources, even at current program levels.

	PUBLIC SAFETY & EMERGENCY SERVICES
91	There is a need for an integrated interoperable communications system among emergency managers and all first responders in the region.
92	Additional capacity and funding is needed to hire enough personnel to meet the growing demands for service across the region's PS/ES sector.
93	Adequate facilities and equipment to enable PS/ES providers to provide safe, efficient and well-managed services are required.
94	Safe, equipped, well-staffed, and technologically up-to-date courts to cope with rapidly increasing caseloads are required to address the anticipated influx of residents in the MGTF region.
95	County health departments in the region report that current needs will be intensified by military and related growth. The majority of this need is associated with medical and social services and is addressed in the Medical and Health Services module of the plan.

	QUALITY OF LIFE
96	Several counties in the MGTF Region currently face challenges in accommodating demand for parks and recreation facilities. The anticipated population growth will have a significant impact on the use and availability of current venues within the region. The seven counties have a reasonable number of outdoor venues, but they lack enough indoor facilities needed to host activities during fall and winter months, or in the event of inclement weather.
97	Pender, Onslow and Carteret counties have the most beachfront available in the region and have

	specific concerns regarding the availability of both parking and beach due to private ownership. When tourists from outside the region travel to the beaches, a shortage of parking near the beaches creates a problem for full-time and seasonal residents.
98	The combination of summer tourism, the normal influx of seasonal residents, vacationers, and an additional 41,000 new residents by 2011, will likely cause parking and water access to be issues for the region for the near future.
99	Military-induced growth will likely bring some additional housing to the region, which will require maintenance from local communities.
100	Incorporate state-encouraged guidelines for beach and public waterfront access.
101	A need for *affordable* cultural attractions is especially important for young Marine and civilian families.
102	Necessary library square footage is estimated at 0.65 SF per-capita (established by the North Carolina Public Library Directors Association). An additional 41,000 people would require an additional 26,650 square feet of library space within the seven-county region.
103	Library planners and institutions have begun to recommend 1.0 SF per-capita, which would result in the need for 41,000 square feet of library space to accommodate the increase in population.
104	Current hotel capacity meets demand, but the increase in military personnel has the potential to increase demand. In addition, increased corporate, group and leisure travel resulting from projected normal, non-military growth, as well as the introduction of new businesses to the area, may strain current hotel capacity.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

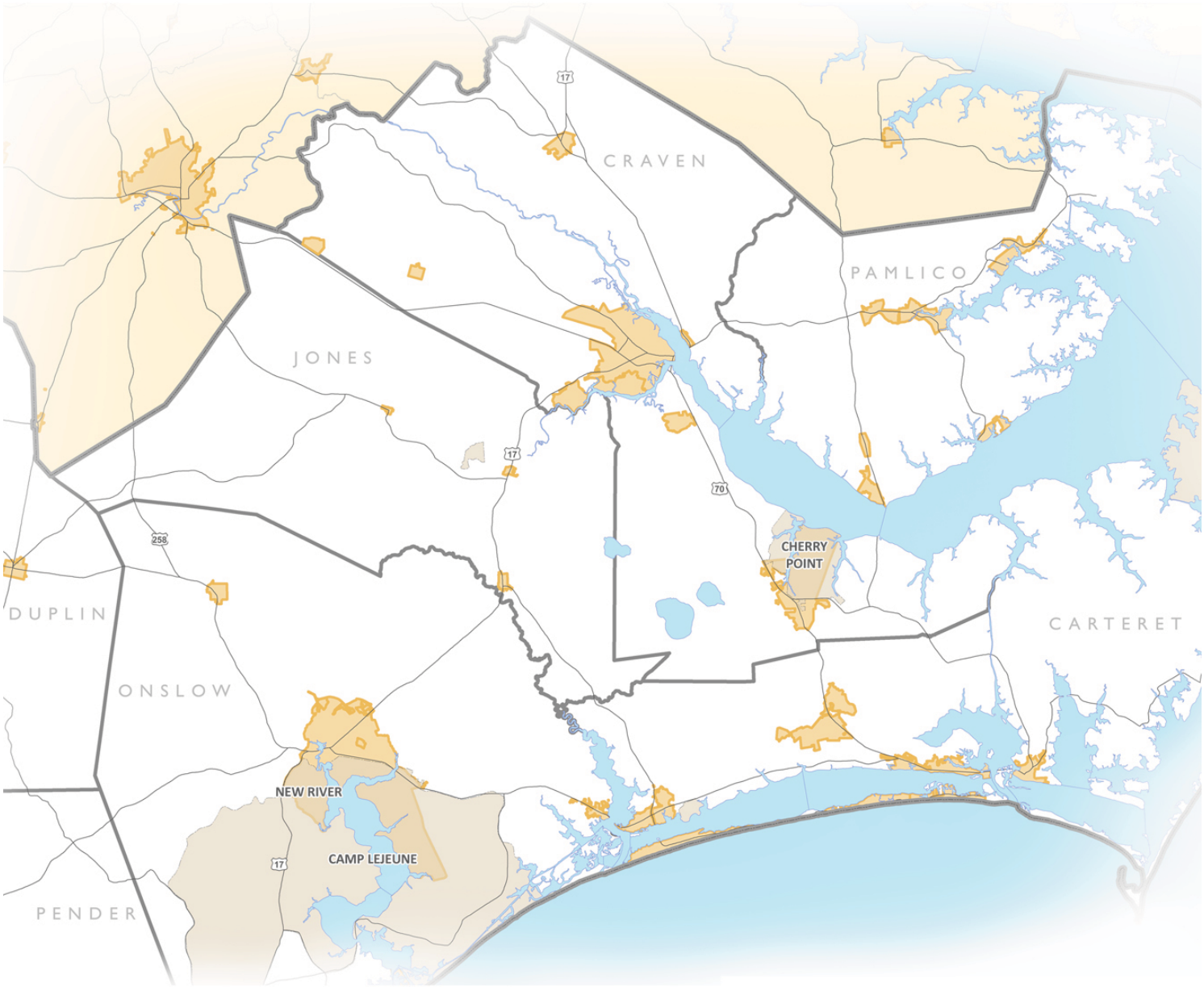
October 2009

Appendix B

Worksheet for Estimating Civilian Housing Demand

Appendix B: Worksheet for Estimating Civilian Housing Demand

County	Average Household Size	Growth, 2007-2011	Households	Induced Growth 2007-2011	Households	Total # Civilian HH	Occupied Rent/Own %	# of Renter HH	# of Owner HH
Craven	2.30	3,715	1,615	3,025	1,315	2,930	33.25%/66.75%	974	1,956
Carteret	2.29	2,276	994	1,166	509	1,503	23.44%/76.56%	352	1,151
Pamlico*	2.38	0	0	210	88	88	17.81%/82.19%	16	73
Pender	2.43	7,648	3,147	950	391	3,538	17.39%/82.61%	615	2,923
Duplin	2.94	3,022	1,028	898	305	1,333	25.08%/74.92%	334	999
Jones*	2.53	125	49	214	85	134	20.23%/79.77%	27	107
Onslow	2.49	8,371	3,362	8,537	3,429	6,790	41.87%/58.13%	2,843	3,947
Region	2.48	25,157	10,196	15,000	6,122	16,318		5,162	11,155



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

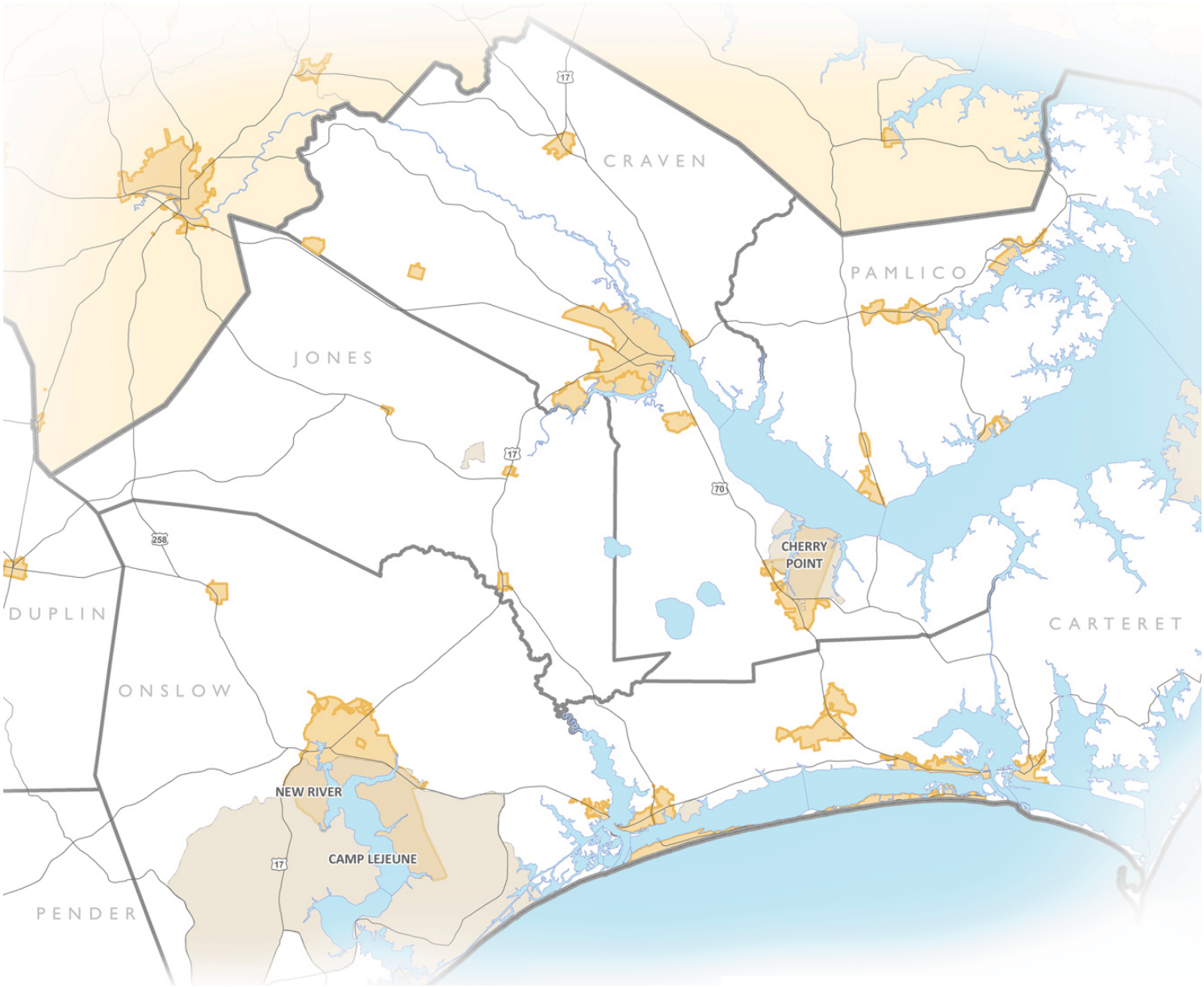
October 2009

Appendix C

Worksheet for Estimating Active Duty Personnel Housing Demand

Appendix C: Worksheet for Estimating Active Duty Personnel Housing Demand

County	Active Duty Households	On Base%/ Off Base %	Off Base Households	% Renter/ % Owner	Active Duty Renters	Active Duty Buyers
Craven	2,136	21.00%/79.00%	449	65.0%/35.0%	289	159
Carteret	199	NA	199	65.0%/35.0%	128	71
Pamlico*	1	NA	1	65.0%/35.0%	1	0
Pender	164	NA	164	65.0%/35.0%	106	58
Duplin	34	NA	34	65.0%/35.0%	22	12
Jones*	70	NA	70	65.0%/35.0%	45	25
Onslow	8,873	22.65%/77.35%	2,009	65.0%/35.0%	1,296	713
Region	11,477		2,926		1,887	1,039



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix D

Apartment Telephone Survey

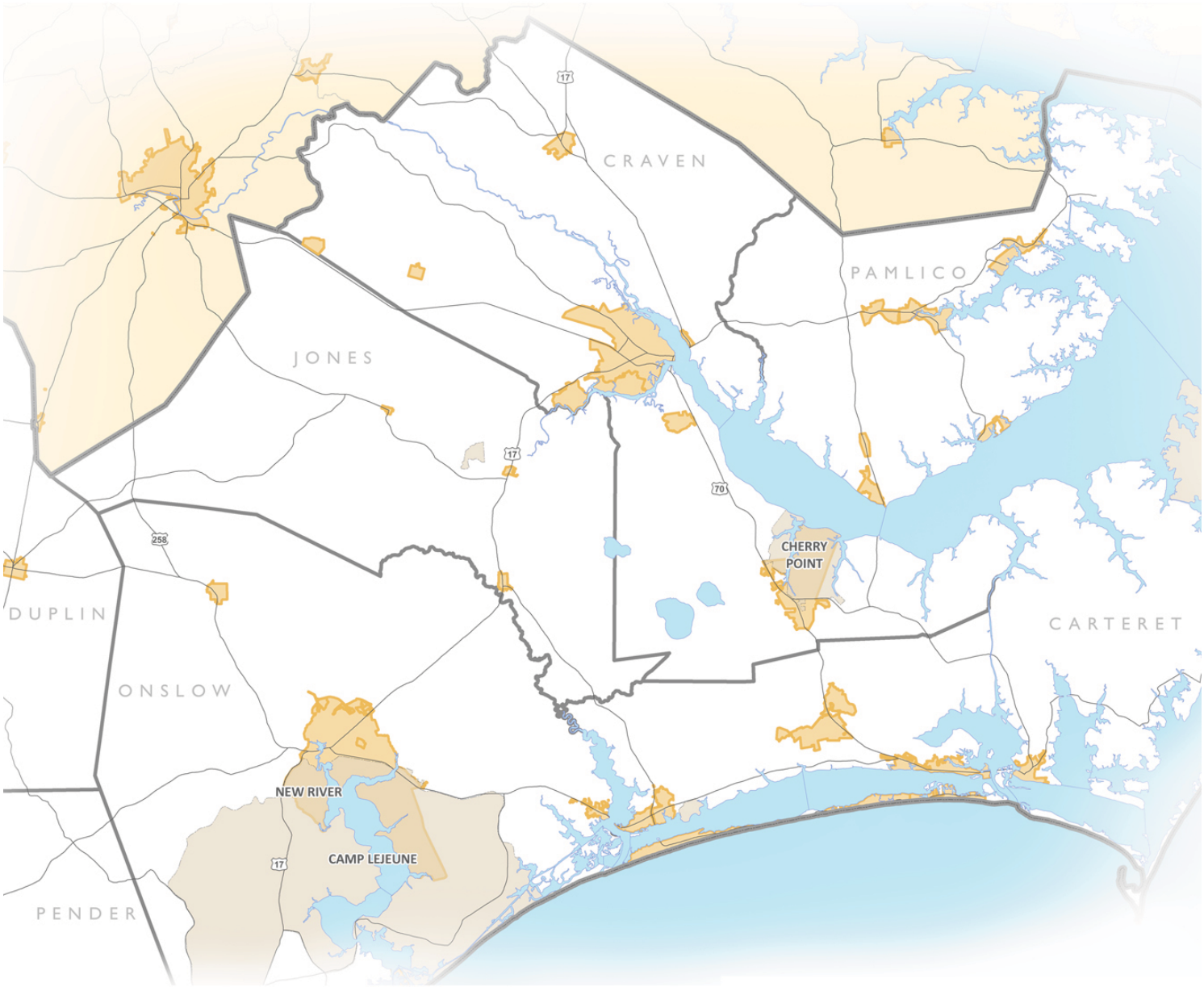
Appendix D: Apartment Telephone Survey

Name	Rent 1BR	Rent 2BR	Rent 3BR+	Rent Single Family	Vacancy Rates	Notes
Bay River Apartments		398.00	458.00		3 vacant	
Alliance Manor Apt						No Answer
Atlantic Marine Corps Communities	800-1600					Wouldn't Give Vacancy Info
Gatewood Apartments						Number Disconnected
Havelock Manor Apartments						No Answer
Winstead Mobile Home Park and Apartments						Did not want to give any information
Hill's Mobile Homes & Apartments						Number Disconnected
Laurel Hill Apts					No Vacant	1/2 bedrooms rent is 30% of income
Tyler Place		525.00	555.00		No Vacant	
Havelock Hills Apts					No Vacant	Subsidized Housing
Puller Place @ Carolina Forest	870.00	955.00			No Vacant	
The Legacy at Abbington Place	815.00	915.00				Wouldn't Give Vacancy Info
The Reserve at Jacksonville Commons	765.00	870.00				Wouldn't Give Vacancy Info
Bluff Ridge	760.00	830.00				Wouldn't Give Vacancy Info
Charleston Place	730.00	830.00	930.00		2 Vacant	
Ashley Park		740.00				Wouldn't Give Vacancy Info
Liberty Crossing						No Answer
Park West	699-799					Wouldn't Give Vacancy Info
Lauradale	570-570					Wouldn't Give Vacancy Info
Windsor Place	549-999					Wouldn't Give Vacancy Info
Azalea Gardens	480-700					Wouldn't Give Vacancy Info
Beacham Apartments	440-620					Wouldn't Give Vacancy Info

Name	Rent 1BR	Rent 2BR	Rent 3BR+	Rent Single Family	Vacancy Rates	Notes
Town Center	424-646				No Vacant	
Oak Lane Apartments						Wrong Number
Camellia Court Apartments	370	456.00				55 and older community
Edenbridge Apartments						No Answer
Crab Point Apartments						No Answer
Brookside Apartments						No Answer
Country Club Apartments	525	$625.00	$705.00		No Vacant	
Orlandah Court Apartments						No Answer
Eastern Carolina Regional Housing Authority						
Westwood Square Apts	376	$490.00			3 Vacant	
Woodbriar Condo's Office						No Answer
Ekklesia Apts						Busy Signal
Woodridge Village Apartments						Office only open Wednesday No Answer
Mt Olive Village Apts						No Answer
Godwin Realty						Not Rentals
Mt Olive Court Apts						No Answer
Weatherstone Park Apartments						1/2 bedrooms 65 and up wouldn’t give rent over phone
Landmark Apartments						Office open Wednesday 3-5pm No Answer
Housing Authority of the City of New Bern						
Gateway Property Management LLC						No Answer
McCarthy Court Independent Living Apartments	1750	3100			2 Vacant	independent Living
Courtyards at Berne Village						1/2 bedroom assisted living wouldn’t give rent over phone
ATM Property Management LLC						No Answer

Name	Rent 1BR	Rent 2BR	Rent 3BR+	Rent Single Family	Vacancy Rates	Notes
Fairview Apartments						Busy Signal
Tryon Estates Apartments Rental	551	605-620			No Vacant	
The Meadows Apartments						Office open Wednesday 9-12 No Answer
Academy Common Apartments						No Answer
Wind Hill Apartments					No Vacant	1/2 bedroom rent based on income
Kensington Park Apartments						Office open Wednesday 8-4 No Answer
Olde South Apartments						No Answer
Autumn Chase Apartments						No Answer
AAA Copperfield Apartments						No Answer
Hunter's Landing						No Answer
Westwood Arms Apts						No Answer
Queens Court		$635.00			1 Vacant	
Robin's Nest Apt		$485.00			No Vacant	
College Park I & II		$595.00			4 Vacant	
Brunswick House						No Answer
Westberry Villa						Wouldn’t Give any info
Woodland Crossing	780-820	895-965	1100-1120		2 Vacant	
Rose Run Townhomes						No Answer
Olde South						No Answer
Colony Village Apts	584-715	$599.00	720-822			
Kings Mill Apartments						Number Disconnected
Tower Apartments	375	$475.00			No Vacant	
Elm Green Apartments						2 and 3 Bedroom No Answer
Lighthouse Way Mobile Home Pk & Apartments	350				1 Vacant	
Weeks Facie W Rentals		$475.00			1 Vacant	

Name	Rent 1BR	Rent 2BR	Rent 3BR+	Rent Single Family	Vacancy Rates	Notes
Trent River Apartments						Office open Thursday 1-3 No Answer
Oaks Apartments						No Answer
Brynn Marr Village	701-758	835-892	880-962			
Polleck Street Apartments		110-1300				
Reserve at Chenburnie	850-875	965-1010	1125-1150			
The Reserve at Mayfaire	825	1095	1375			
Charleston Place	680	780	880		No Vacant	
Ashley Park		675			No Vacant	
Canterbury Hills		650	690		No Vacant	
Cordell Village	495	695	750		No Vacant	
Country Wood	475	675			No Vacant	
Village Terrace		595			No Vacant	
Raven Wood		525			No Vacant	
Beacham Apartments	513	583			No Vacant	



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix E

Worksheet for Estimating # of For-Sale Homes in the Region

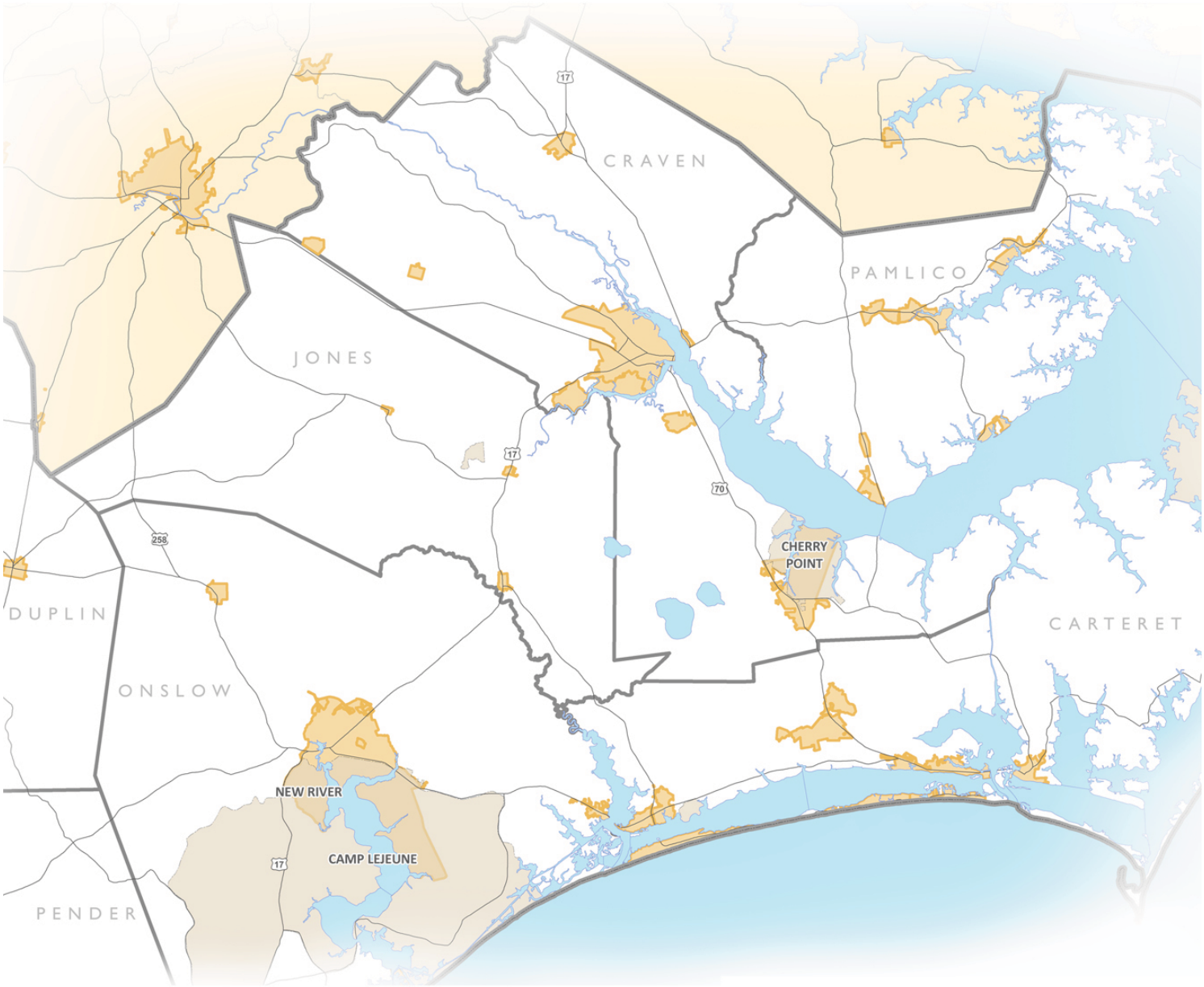
Appendix E: Worksheet for Estimating Number of For-Sale Homes in the Region

County	Total Number of Housing Units	Occupied	Owner Occupied	Renter Occupied	Vacant	Seasonal Rentals	Number of Mobile Homes
Onslow	55,724	48,121	27,972	20,149	4,697	2,906	13,585
Carteret	40,976	25,232	19,317	5,915	2,411	13,333	10,530
Craven	38,147	34,579	23,080	11,499	3,135	433	6,854
Pender	20,814	16,070	13,276	2,794	1,863	2,881	7,328
Pamlico*	6,781	5,178	4,256	922	700	903	2,117
Jones*	4,682	4,064	3,242	822	566	52	1,634
Duplin	20,523	18,269	13,687	4,582	2,094	160	6,831
Region	**187,647**	**151,513**	**104,830**	**46,683**	**15,466**	**20,668**	**45,128**

County	Percent	Percent Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Vacant	Percent Seasonal Rentals	Percent Number of Mobile Homes
Onslow	100.00%	86.36%	50.20%	36.16%	8.43%	5.21%	24.38%
Carteret	100.00%	61.58%	47.14%	14.44%	5.88%	32.54%	25.70%
Craven	100.00%	90.65%	60.50%	30.14%	8.22%	1.14%	17.97%
Pender	100.00%	77.21%	63.78%	13.42%	8.95%	13.84%	35.21%
Pamlico*	100.00%	76.36%	62.76%	13.60%	10.32%	13.32%	31.22%
Jones*	100.00%	86.80%	69.24%	17.56%	12.09%	1.11%	34.90%
Duplin	100.00%	89.02%	66.69%	22.33%	10.20%	0.78%	33.28%
Region	**100.00%**	**80.74%**	**55.87%**	**24.88%**	**8.24%**	**11.01%**	**24.05%**

County	Total Number of Housing Units	Owner Occupied	Renter Occupied	Vacant	Number of Mobile Homes	Number Seasonal Rentals
Onslow	63,785	32,018	23,064	5,376	15,550	3,326
Carteret	45,020	21,223	6,499	2,649	11,569	14,649
Craven	43,163	26,115	13,011	3,547	7,755	490
Pender	24,317	15,510	3,264	2,177	8,561	3,366
Pamlico*	6,781	4,256	922	700	2,117	903
Jones*	4,679	3,240	821	566	1,633	52
Duplin	21,331	14,226	4,762	2,176	7,100	166
Region	**209,076**	**116,589**	**52,344**	**17,191**	**54,286**	**22,952**
		55.76%	25.04%	8.22%	154,790	10.98%

								Vacant For-Sale Property
Onslow	63,785		32,018	23,064	5,376	15,550	3,326	
		94.79%	50.20%	36.16%	8.43%	24.38%	5.21%	
		45,719	24,213	17,441	4,066	48,235	2,515	
			58.13%	41.87%	6,691			3,889
Pender	24,317		15,510	3,264	2,177	8,561	3,366	
		86.16%	63.78%	13.42%	8.95%	35.21%	13.84%	
		13,575	10,050	2,115	1,410	15,756	2,181	
			82.61%	17.39%	1,717			1,418
Craven	43,163		26,115	13,011	3,547	7,755	490	
			60.50%	30.14%	8.22%	17.97%	1.14%	
		35,006	21,423	10,673	2,910	35,408	402	
			66.75%	33.25%	4,309			2,876
Carteret	45,020		21,223	6,499	2,649	11,569	14,649	
			47.14%	14.44%	5.88%	25.70%	32.54%	
		22,566	15,769	4,829	1,968	33,451	10,884	
			76.56%	23.44%	2,109			1,615
Pamlico	6,781		4,256	922	700	2,117	903	
			62.76%	13.60%	10.32%	31.22%	13.32%	
		4,043	2,927	634	481	4,664	621	
			82.19%	17.81%	855			703
Jones	4,679		3,240	821	566	1,633	52	
			69.24%	17.56%	12.09%	34.90%	1.11%	
		3,012	2,109	535	368	3,046	34	
			79.77%	20.23%	368			294
Duplin	21,331		14,226	4,762	2,176	7,100	166	
			66.69%	22.33%	10.20%	33.28%	0.78%	
		14,120	9,491	3,177	1,452	14,231	111	
			74.92%	25.08%	1,452			1,088



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix F

Worksheet for Estimating # of Rental Homes in the Region

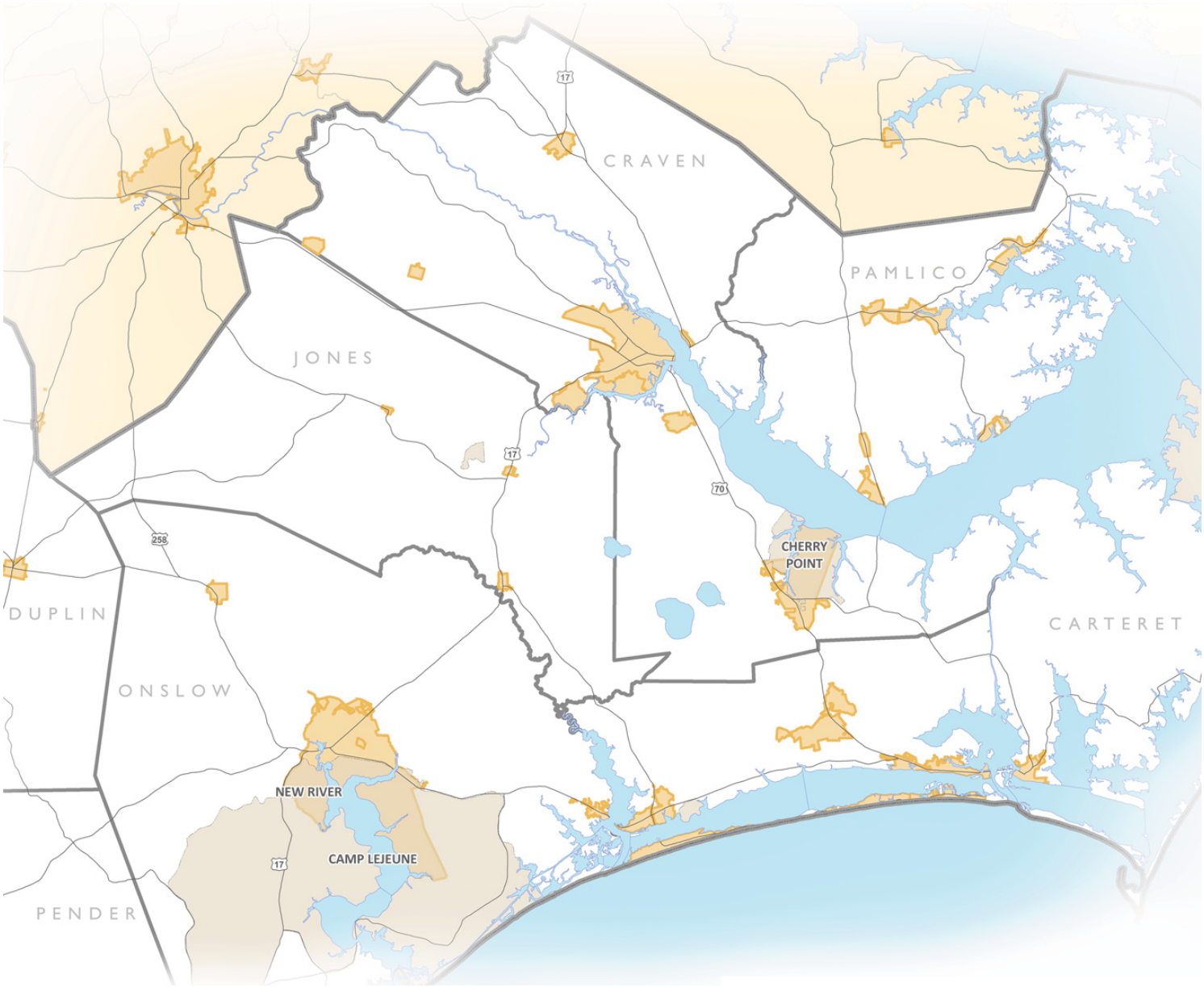
Appendix F: Worksheet for Estimating Number of Rental Homes in the Region

County	Total Number of Housing Units	Occupied	Owner Occupied	Renter Occupied	Vacant	Seasonal Rentals	Number of Mobile Homes
Onslow	55,724	48,121	27,972	20,149	4,697	2,906	13,585
Carteret	40,976	25,232	19,317	5,915	2,411	13,333	10,530
Craven	38,147	34,579	23,080	11,499	3,135	433	6,854
Pender	20,814	16,070	13,276	2,794	1,863	2,881	7,328
Pamlico*	6,781	5,178	4,256	922	700	903	2,117
Jones*	4,682	4,064	3,242	822	566	52	1,634
Duplin	20,523	18,269	13,687	4,582	2,094	160	6,831
Region	**187,647**	**151,513**	**104,830**	**46,683**	**15,466**	**20,668**	**45,128**

County	Percent	Percent Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Vacant	Percent Seasonal Rentals	Percent Number of Mobile Homes
Onslow	100.00%	86.36%	50.20%	36.16%	8.43%	5.21%	24.38%
Carteret	100.00%	61.58%	47.14%	14.44%	5.88%	32.54%	25.70%
Craven	100.00%	90.65%	60.50%	30.14%	8.22%	1.14%	17.97%
Pender	100.00%	77.21%	63.78%	13.42%	8.95%	13.84%	35.21%
Pamlico*	100.00%	76.36%	62.76%	13.60%	10.32%	13.32%	31.22%
Jones*	100.00%	86.80%	69.24%	17.56%	12.09%	1.11%	34.90%
Duplin	100.00%	89.02%	66.69%	22.33%	10.20%	0.78%	33.28%
Region	**100.00%**	**80.74%**	**55.87%**	**24.88%**	**8.24%**	**11.01%**	**24.05%**

County	Total Number of Housing Units	Owner Occupied	Renter Occupied	Vacant	Number of Mobile Homes	Number Seasonal Rentals
Onslow	63,785	32,018	23,064	5,376	15,550	3,326
Carteret	45,020	21,223	6,499	2,649	11,569	14,649
Craven	43,163	26,115	13,011	3,547	7,755	490
Pender	24,317	15,510	3,264	2,177	8,561	3,366
Pamlico*	6,781	4,256	922	700	2,117	903
Jones*	4,679	3,240	821	566	1,633	52
Duplin	21,331	14,226	4,762	2,176	7,100	166
Region	**209,076**	**116,589**	**52,344**	**17,191**	**54,286**	**22,952**
		55.76%	25.04%	8.22%	154,790	10.98%

								Vacant Rental Property
Onslow	63,785		32,018	23,064	5,376	15,550	3,326	
		94.79%	50.20%	36.16%	8.43%	24.38%	5.21%	
		45,719	24,213	17,441	4,066	48,235	2,515	2,515
			58.13%	41.87%	6,691			2,802
Pender	24,317		15,510	3,264	2,177	8,561	3,366	
		86.16%	63.78%	13.42%	8.95%	35.21%	13.84%	
		13,575	10,050	2,115	1,410	15,756	2,181	2,181
			82.61%	17.39%	1,717			298
Craven	43,163		26,115	13,011	3,547	7,755	490	
			60.50%	30.14%	8.22%	17.97%	1.14%	
		35,006	21,423	10,673	2,910	35,408	402	402
			66.75%	33.25%	4,309			1,433
Carteret	45,020		21,223	6,499	2,649	11,569	14,649	
			47.14%	14.44%	5.88%	25.70%	32.54%	
		22,566	15,769	4,829	1,968	33,451	10,884	10,884
			76.56%	23.44%	2,109			494
Pamlico	6,781		4,256	922	700	2,117	903	
			62.76%	13.60%	10.32%	31.22%	13.32%	
		4,043	2,927	634	481	4,664	621	621
			82.19%	17.81%	855			152
Jones	4,679		3,240	821	566	1,633	52	
			69.24%	17.56%	12.09%	34.90%	1.11%	
		3,012	2,109	535	368	3,046	34	34
			79.77%	20.23%	368			74
Duplin	21,331		14,226	4,762	2,176	7,100	166	
			66.69%	22.33%	10.20%	33.28%	0.78%	
		14,120	9,491	3,177	1,452	14,231	111	111
			74.92%	25.08%	1,452			364



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix G

Committed Residential Development Database

Appendix G: Committed Residential Development Database

Notes on Price-Points

1	Bogue Watch(285 units)- Developed as a high end waterfront community, lot sales have slowed and from what I understand the development is having issues. From initial price points for lots sales $150k+, this is not a viable housing option.	Email from Jason Gruner. 2/27/09
2	Cannonsgate(525 units)- Developed as a high end community, all lots have been sold to individual investors who bought for speculation. Based on initial pricepoints this would not be a viable housing option.	Email from Jason Gruner. 2/27/09
3	Eagles Watch (172 Units) Based on price points it's not viable	Email from Jason Gruner. 2/27/09
4	Mimosa Bay (56 units) Based on lot pricepoints this will not be affordable	Email from Jason Gruner. 2/27/09
5	Alligator Bay at Marshhaven (82 Units) From everything I've heard this project is in the process of being foreclosed on, it would take a miracle for anyone to be able to build in this community in the next 3 years.	Email from Jason Gruner. 2/27/09
6	Summerhouse on Everett Bay(1029 units) Based on the pricepoints this is not affordable. There is also a pending class action lawsuit in place that would keep most anyone from considering this as a viable option	Email from Jason Gruner. 2/27/09
7	Laguna Bay (26 units) Based on the price points this is not affordable.	Email from Jason Gruner. 2/27/09
8	River Landing (154 Units) High end golf course community, not viable.	Email from Jason Gruner. 2/27/09
9	Rivershore (46 units) The developer is in the process of going under, also based on the pricepoints of the lots this would not be a viable option	Email from Jason Gruner. 2/27/09
10	RiverDunes (219 units)- Extremely high end community, housing starting at $850k and goes up from there.	Email from Jason Gruner. 2/27/09
11	CutterBay (891 units)- High end waterfront community, lot pricing is over $100k and the development is having issues. It will be a long time before anyone can break ground in this community.	Email from Jason Gruner. 2/27/09
12	50 of 225 units are unaffordable	Email from John Parker. 3/16/09
13	not affordable. 21 units total	Email from John Parker. 3/16/09

3,556

CARTERET

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
The Grove	Atlantic Beach	0.00%	0.00	325	Multifamily	2007	1
Bouge Watch	NC 24, White Oak	0.00%	194.90	285	Single Family	2006	2
Cannonsgate, Phase I	NC 24, White Oak	0.00%	170.67	274	Single Family	2005	3
Cannonsgate, Phase II	NC 24, White Oak	0.00%	116.68	251	Single Family	2005	4
Chadwick Shores	Old Winberry Rd, Harlow	2.00%	214.50	61	Single Family	2008	5
Coldwater Creek, Phase 1	Hwy 58, White Oak	95.00%	21.38	33	Single Family	2007	6
Coldwater Creek, Phase 2	Hwy 58, White Oak	0.00%	43.28	96	Single Family	2007	7
Eastman Creek Landing	NC 101, Beaufort	55.00%	63.66	165	Single Family	2006	8
Park Meadows	Lake Rd., New Port	20.00%	38.32	57	Single Family	2006	9
River Watch, Sec 1-A	Stella Rd @ Wetherington Landing Rd	20.00%	22.51	30	Single Family	2007	10

Currently, there are 1,577 approved residential units in Carteret County. Although only two of these developments are more than 50% complete, all were approved between 2005 and 2007. This number represents 8.29% of the total approved units in the study area. 141 of these units have been constructed, representing 2.93% of the total constructed units in the study area. 1,436 units are unbuilt, and 100% of these fall within the MCAS—Cherry Point Military Housing Area (MHA) (NC 177).

PAMLICO

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
Bay Winds	Merritt, off Florence Rd.	100.00%		32	Single Family	2005	11
Lee Landing	Reelsboro, off Lee Landing Rd.	0.00%		46	Single Family	2005	12
River Dunes	Oriental, off Orchard Creek Rd.	100.00%		219	Single Family	2005	13
Windmill Point	Oriental, off Oriental Rd.	20.00%		39	Single Family	2005	14
Windmill Point	Oriental, off Oriental Rd.	20.00%		24	Multifamily	2005	14
Dawson Creek	Arapahoe, off Janeiro Rd.	0.00%		345	Single Family	2006	15
Whittaker Harbor	Oriental, off White Farm Rd.	100.00%		43	Single Family	2006	16
Caraway Cove	Arapahoe, off Seafarer Rd.	0.00%		51	Single Family	2007	17
Cutter Bay	Stonewall	0.00%		891	Single Family	2007	18
River Run	Pamlico County	100.00%		67	Single Family	2008	19
Deep Run Landing	Pamlico County	0.00%	281.00	113	Single Family	2008	20

There are currently 1,870 units approved in Pamlico County. This number represents 9.8% of the approved units in the study area. 374 of these units have been constructed, representing 7.78% of the total constructed units in the study area. 1,496 units are unbuilt, and 100% of these fall within the reasonable commuting distance of a Marine Corps Installation (Camp LeJeune, New River, or Cherry Point).

CRAVEN

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
Crooked Run, Ph. I	Hwy 70	97.00%	10.57	37	Single Family	2005	21
Forest Run, Ph. IV, Sec. 3	County Line Rd.	50.00%	30.37	48	Single Family	2005	22
Fulshire Plantation	Adams Creek Rd.	7.00%	122.00	57	Single Family	2005	23
Wesmil Pond Estates	Hwy 70/Old Airport Rd.	79.00%	10.92	38	Duplexes	2005	24
Lakeside at Royal Pines, Sec. 2	Havelock	96.00%	13.73	47	Single Family	2005	25
Hunters Ridge, Ph. VI	Brices Creek Rd.	28.00%	66.10	100	Single Family	2006	26
Croatan Woods	County Line Rd.	87.00%	18.09	52	Single Family	2006	27
Forest Run, Ph. V	County Line Rd.	30.00%	46.55	92	Single Family	2006	28
Lynnwood Highlands, Ph. I & II	Hwy 70	22.00%	40.00	121	Single Family	2006	29
Butler Farm, Sec. 4	Streets Ferry Rd.	3.00%	24.59	30	Single Family	2006	30
Crooked Run, Ph. II	Hwy 70	90.00%	19.25	62	Single Family	2006	31
Grantham Place (PUD)	Old Cherry Point Rd.	19.00%	18.65	70	Single Family	2006	32
Stately Pines, Sec. 7	Havelock	20.00%	18.07	35	Single Family	2006	33
Satterfield	Old Cherry Point Rd.	13.00%	7.50	30	Single Family	2007	34

Lakes at Antioch (The)	Hwy 17	15.00%	42.37	60	Single Family	2007	35
River Bluffs, Sec. 8	Hwy 70	0.00%	37.94	35	Single Family	2007	36
Forest Oaks, Sec. 1-A	Hwy 17	3.00%	30.32	39	Single Family	2007	37
Falcon Bridge (PUD)	Hwy 70	18.00%	27.53	148	Duplexes, SFH	2007	38
Swift Creek Landing, Ph. I	Hwy 17	0.00%	156.00	38	Single Family	2008	39
N/A	Bridgeton Hwy 17 & RR Tracks--both sides	0.00%		824	Some MF	2008	40
Slocum Woods	Havelock--Chadwick	33.00%		61	Single Family	2005	41
Belle Oaks	New Bern	75.00%		79	Single Family	2005	42
Brices Crossing	New Bern	23.00%		300	Single Family	2008	43
Carolina Colours	New Bern	12.00%		571	Single Family	2005	44
Craebern Forest	New Bern	8.00%		274	Single Family	2008	45
Creekside Village	New Bern	99.00%		111	Single Family	2004	46
Derby Park	New Bern	85.00%		194	Single Family	2003	47
Elizabeth Downs	New Bern	99.00%		53	Single Family	2003	48
Ellis Park Apartments	New Bern	0.00%		39	Multifamily		49

Evans Mill	New Bern	95.00%	53	Single Family	1998	50
Gables Run	New Bern	50.00%	36	Single Family	2003	51
Glenview	New Bern	93.00%	35	Single Family		52
Hidden Harbour	New Bern	49.00%	35	Single Family	2004	53
Lake New Bern	New Bern	0.00%	96	Single Family	2006	54
Lake Tyler	New Bern	1.00%	520	Single Family	2007	55
Long Leaf Pines	New Bern	13.00%	205	Single Family	2005	56
Northwest Park	New Bern	0.00%	193	Single Family		57
Pinecrest Estates	New Bern	1.00%	67	Single Family	2007	58
Planters Ridge (Mills Run)	New Bern	67.00%	99	Single Family	2006	59
Rivershore	New Bern	0.00%	46	Single Family		60
Selhorn Heights	New Bern	83.00%	128	Single Family	2003	61
Stillwater Harbour	New Bern	0.00%	68	Single Family	2006	62
The Reserve at Glenburnie	New Bern	16.00%	312	Multifamily	2007	63
Trent Shores	New Bern	97.00%	55	Single Family		64
West Crossroads	New Bern	30.00%	76	Multifamily	2005	65

Westport	New Bern	0.00%	158	Single Family	2006	66
Whitfield Landing	New Bern	0.00%	39	Single Family	2007	67

Currently, there are 5,866 approved residential units in Craven County. This number represents 30.85% of the total approved units in the study area. 1,399 of these units have been constructed, representing 7.36% of the total constructed units in the study area. 4,466 units are unbuilt, and 97% of these fall within the reasonable commuting distance of a Marine Corps Installation (Camp LeJeune, New River, or Cherry Point).

JONES

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
Lakes on White Oak	Hwy 17 @ 10th St	0.00%	50.00	225	Single Family	2007	68

There are currently 225 units approved in Jones County. This number represents 1.20% of the total approved units in the study area. None of these units have been constructed, but all are located within 20 miles of Camp LeJeune, New River, or Cherry Point.

ONSLOW

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
Cherrywoods, Sec IV	NCSR 1222, Richlands Twnshp	100.00%		55	Single Family	2005	69
Justice Farm, Sec I, II	Peru Rd Stump Sound	100.00%		51	Single Family	2005	70
Kanton Hills, Sec I	Dawson Cabin Rd Stump Sound	100.00%		63	Single Family	2005	71
Mill Creek, Landing at	Stump Sound	100.00%		55	Single Family	2005	72
Mimosa Bay	Old Folkstone Rd. Stump Sound	12.00%		56	Single Family	2005	73
River Bluff, Phs I	Northwest Bridge Rd. Richlands Twnshp	90.00%		43	Single Family	2005	74
Royal Palms	Tar Landing Rd, Stump Sound	10.00%		39	Single Family	2005	75
Trail Woods, Sec III	Lee Rogers Rd. Swansboro Twnshp	100.00%		43	Single Family	2005	76
Alligator Bay, Marsh Haven at	Chadwick Acres Rd Stump Sound	0.00%		82	Single Family	2006	77
Ashbury Park	Luther Banks Rd. Richlands Twnshp	15.00%		206	Single Family	2006	78
Bennett Farm, Sec 1, 2	Gregory Fork Rd, SR1229, Richlands	85.00%		35	Single Family	2006	79
Bryan Farms, Sec I,II,III	Hyw 24, Richlands,	98.00%		48	Single Family	2006	80
Cherrywoods, Sec VI	NCSR 1222, Richlands Twnshp	100.00%		31	Single Family	2006	81
Justice Farms, Sec III	Peru Rd Stump Sound	50.00%		34	Single Family	2006	82

Kanton Hills, Sec I, IIA	Dawson Cabin Rd Stump Sound	98.00%	33	Single Family	2006	83
Mimosa Bay (mult sec)	Mimosa Dr. Stump Sound	0.00%	89	Single Family	2006	84
Rock Creek	Rhodestown Rd. Richlands	100.00%	51	Single Family	2006	85
Sterling Farms	Old 30 Rd. White Oak Twnshp	100.00%	204	Single Family	2006	86
White Oak River Plantation, II	White Oak River Rd.	90.00%	40	Single Family	2006	87
Wildflowers	Franktown Rd Richlands	50.00%	47	Single Family	2006	88
Village of Folkstone	Holly Ridge	0.00%	260	Single Family	2005	89
Bishops Ridge, I,II,III	Blue Creek Rd, Jacksonville	65.00%	48	Single Family	2007	90
Cherrywoods, VIII-A	Wheaton Dr. Richlands	90.00%	53	Single Family	2007	91
Cow Horn Village	Cowhorn Rd. Richlands	0.00%	44	Single Family	2007	92
Dawson Place, IA, IB	Dawson Cabin Rd Stump Sound	70.00%	66	Single Family	2007	93
Forest Ridge, I, II, III	Belgrade-Swansboro Rd	17.00%	90	Single Family	2007	94
Jenkins Creek, IB, IC, II	Cowhorn Rd. Richlands	30.00%	65	Single Family	2007	95
Killis Hills	Cavenough Rd, Richlands	100.00%	79	Single Family	2007	96
Mimosa Bay	Old Folkstone Rd. Stump Sound	0.00%	71	Single Family	2007	97
Pebble Grove	US Hwy 258, Richlands	70.00%	42	Single Family	2007	98

Rogers Farm	Lee Rogers Rd. Swansboro Twnshp	100.00%	36	Single Family	2007	99
Sewell Fields of Verona	Sewell Rd. Jacksonville	6.00%	31	Single Family	2007	100
Southwest Plantation	Nelson Park Rd. Jacksonville	20.00%	65	Single Family	2007	101
Sunny Point	NCSR 1211, Richlands	43.00%	37	Single Family	2007	102
The Villas @ Creeker Town	Off Sandridge Rd. Swansboro	100.00%	32	Duplex	2007	103
Thompson Farms	Dawson Cabin Rd Jacksonville	78.00%	105	Single Family	2007	104
Ashbury Park	Luther Banks Rd. Richlands Twnshp	50.00%	52	Single Family	2008	105
Cherry Grove	NCSR 1206	11.00%	53	Single Family	2008	106
Dawson Place, Sec II, III	Dawson Cabin Rd	15.00%	89	Single Family	2008	107
Highlands at Queens Creek, I	Queens Haven Rd	9.00%	100	Single Family	2008	108
Killis Hills	Cavenaughtown Rd	40.00%	71	Single Family	2008	109
Melody Pointe	Cowhorn Rd. Richlands	0.00%	51	Single Family	2008	110
Quail Roost, 3	Smallwood Rd. SR 1565	80.00%	50	1/2 Duplex	2008	111
Sterling Farms	Old 30 Rd. White Oak Twnshp	60.00%	109	Single Family	2008	112
Winding River Estates	Richlands Hwy, NC 24 /US 258	15.00%	56	Single Family	2008	113
Tri-Field Estates	Town of Richlands	80.00%	100	Single Family	2006	114

Morris Landing	Holly Ridge	0.00%	170	Single Family	2005	115
Neighborhoods of Holly Ridge	Holly Ridge	40.00%	549	Single Family	2005	116
Carolinian East	Holly Ridge	50.00%	48	Multifamily	2005	117
Summerhouse on Everett Bay	Holly Ridge	0.00%	1029	Single Family	2005	118
C&D Builders	Holly Ridge	0.00%	30	Single Family	2005	119
Simpson Crossing	Richland Township	35.00%	119	Single Family	2008	

ONSLOW—CITY OF JACKSONVILLE

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
Arbors at Carolina Forest (The)	City of Jacksonville	0.00%	15.65	180.00	Multifamily	2008	141
Argona Village VI-C	City of Jacksonville	100.00%	0.00	24.00	Single Family	2/16/2007	142
Argona Village VI-D	City of Jacksonville	100.00%	13.72	35.00	Single Family	12/12/2006	143
Argona Vilage VIII-A	City of Jacksonville	50.00%	22.73	32.00	Single Family	6/12/2008	144
Arlington West	City of Jacksonville	0.00%	20.01	324.00	Multifamily	2008	145
Ashcroft Commons, Phase III	City of Jacksonville	100.00%	8.64	35.00	Single Family	6/20/2005	146
Brynwood Townhomes, Phase II	City of Jacksonville	100.00%	6.27	22.00	Single Family	4/25/2005	147

Carriage Run, Section I at Carolina Forest	City of Jacksonville	100.00%	21.10	20.00	Single Family	5/3/2005	148
Carriage Run, Section III-A at Carolina Forest	City of Jacksonville	0.00%	13.42	25.00	Single Family	1/9/2007	149
Carriage Run, Section IV-A at Carolina Forest	City of Jacksonville	5.00%	13.05	25.00	Single Family	7/25/2008	150
Cornerstone Village	City of Jacksonville	100.00%	2.64	65.00	Multifamily	2007	151
Crown Apartments	City of Jacksonville	70.00%	3.57	60.00	Multifamily	2007	152
Cypress Bay, Section II at Carolina Forest	City of Jacksonville	100.00%	8.41	22.00	Single Family	5/11/2005	153
Cypress Bay, Section III at Carolina Forest	City of Jacksonville	100.00%	17.90	49.00	Single Family	4/19/2006	154
Doris Place	City of Jacksonville	0.00%	3.44	34.00	Multifamily	2/9/2008	155
Eastgate, Inc.	City of Jacksonville	13.00%	26.19	38.00	Single Family	5/8/2008	156
Fieldstone at Haws Run	City of Jacksonville	0.00%	210.64	182.00	Single Family	12/11/2008	157
Huntington Park	City of Jacksonville	100.00%	40.36	85.00	Single Family	3/7/2005	158
Kensington Park, Section II of Williamsburg Plantation	City of Jacksonville	100.00%	10.15	52.00	Single Family	10/23/2007	159
Kensington Park, Section II of Williamsburg Plantation	City of Jacksonville	10.00%	22.44	34.00	Single Family	7/10/2006	160
Laguna Bay	City of Jacksonville	4.00%	9.21	26.00	Single Family	4/30/2007	161
Legacy at Carolina Forest (The), Phase 1	City of Jacksonville	0.00%	38.98	264.00	Multifamily	2008	162
Liberty Pointe	City of Jacksonville	0.00%	27.04	288.00	Multifamily		163

Meadows Gate	City of Jacksonville	0.00%	16.01	80.00	Multifamily	2008	164
Northeast Creek Village/ Country Club Rd	City of Jacksonville	100.00%	0.00	23.00	Single Family	2/7/2005	165
Northside at the Commons Section IX	City of Jacksonville	100.00%	10.08	23.00	Single Family	5/3/2005	166
Osprey Point	City of Jacksonville	5.00%	14.83	42.00	Multifamily	8/8/2007	167
Park at Country Club, Section II-C/ Huff Dr.	City of Jacksonville	100.00%	2.48	25.00	Single Family	2/1/2005	168
Residence at Liberty Square, (The)	City of Jacksonville	0.00%	9.10	144.00	Multifamily		169
South Point, Section II-A at Carolina Forest	City of Jacksonville	24.00%	8.90	25.00	Single Family	8/13/2008	170
South Point & a portion of Chaleston Place @ Carolina Forest	City of Jacksonville	100.00%	10.01	24.00	Single Family	3/28/2007	171
Village at Carolina Forest (The), Phase I	City of Jacksonville	100.00%	5.82	34.00	Multifamily	11/9/2005	172
Village at Carolina Forest (The), Phase II	City of Jacksonville	100.00%	5.05	44.00	Multifamily	8/14/2006	173
Village at Carolina Forest (The), Phase III	City of Jacksonville	100.00%	2.02	36.00	Multifamily	2/28/2006	174
Village at Carolina Forest (The), Phase IV	City of Jacksonville	100.00%	8.34	66.00	Multifamily	8/8/2007	175
Village at Glenn	City of Jacksonville	0.00%	16.39	140.00	Multifamily	2009	176
Villages at Longbourne, tract 2	City of Jacksonville	0.00%	2.47	25.00	Multifamily	2008	177
Villages at Longbourne, tract 3	City of Jacksonville	0.00%	2.68	32.00	Multifamily	2008	178

Vineyard Pointe	City of Jacksonville	10.00%	12.29	36.00	Single Family	9/19/2007	179
Woodlands II-F & Section III-G	City of Jacksonville	100.00%	12.42	21.00	Single Family	3/7/2005	180
Woodlands III at Carolina Forest	City of Jacksonville	50.00%	42.00	21.00	Single Family	10/17/2006	181

Onslow County contains 40.74% of the total approved units in the study area. Of these, 2,624 have been built, making up 53.78% of the total built units in the study area. 90% of the built units are located within 20 miles of one of the three Marine Corps installations. 92% of the remaining unbuilt units are also located within 20 miles of Marine Corps installations in the eastern region.

PENDER

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
Pelican Sound	Sloop Point Rd, Hampstead	28.00%		32	Single Family	2005	120
Morgan Cove Section 6	Old River Rd, Burgaw	100.00%		41	Single Family	2005	121
Pike Crossing	Old River Rd, Hampstead	38.00%		39	Single Family	2005	122
Majestic Oaks	Dan Owen Dr., Hampstead	13.00%		150	Single Family	2005	123
Eagles Watch	Grandview Dr., Hampstead	2.00%		172	Single Family	2005	124
Cambridge at Cross Creek	Off NC 210, Hampstead	65.00%		31	Single Family	2006	125
Summit Ridge, Ph IV	Off Carver Dr., Rocky Point	100.00%		40	Single Family	2006	126
The Manor at Mill Creek	Overlook Dr., Hampstead	2.00%		41	Single Family	2006	127
Fall Brook	Hwy 117 & W Strawberry Ln.	14.00%		35	Single Family	2006	128
Pinnacle Ridge	Pinnacle Parkway & Hwy 17	26.00%		68	Single Family	2006	129
Creekside at Willows Bay, III	Off NC Hwy 133, Rocky Point	100.00%		66	Single Family	2007	130
Avendale Phase II	NC 210 & Island Creek Rd.	31.00%		62	Single Family	2007	131
Graystone	Center Dr., Hampstead	11.00%		35	Single Family	2007	132
Turnstone Plantation	Off Carver Dr. Rocky Point	0.00%		36	Single Family	2007	133

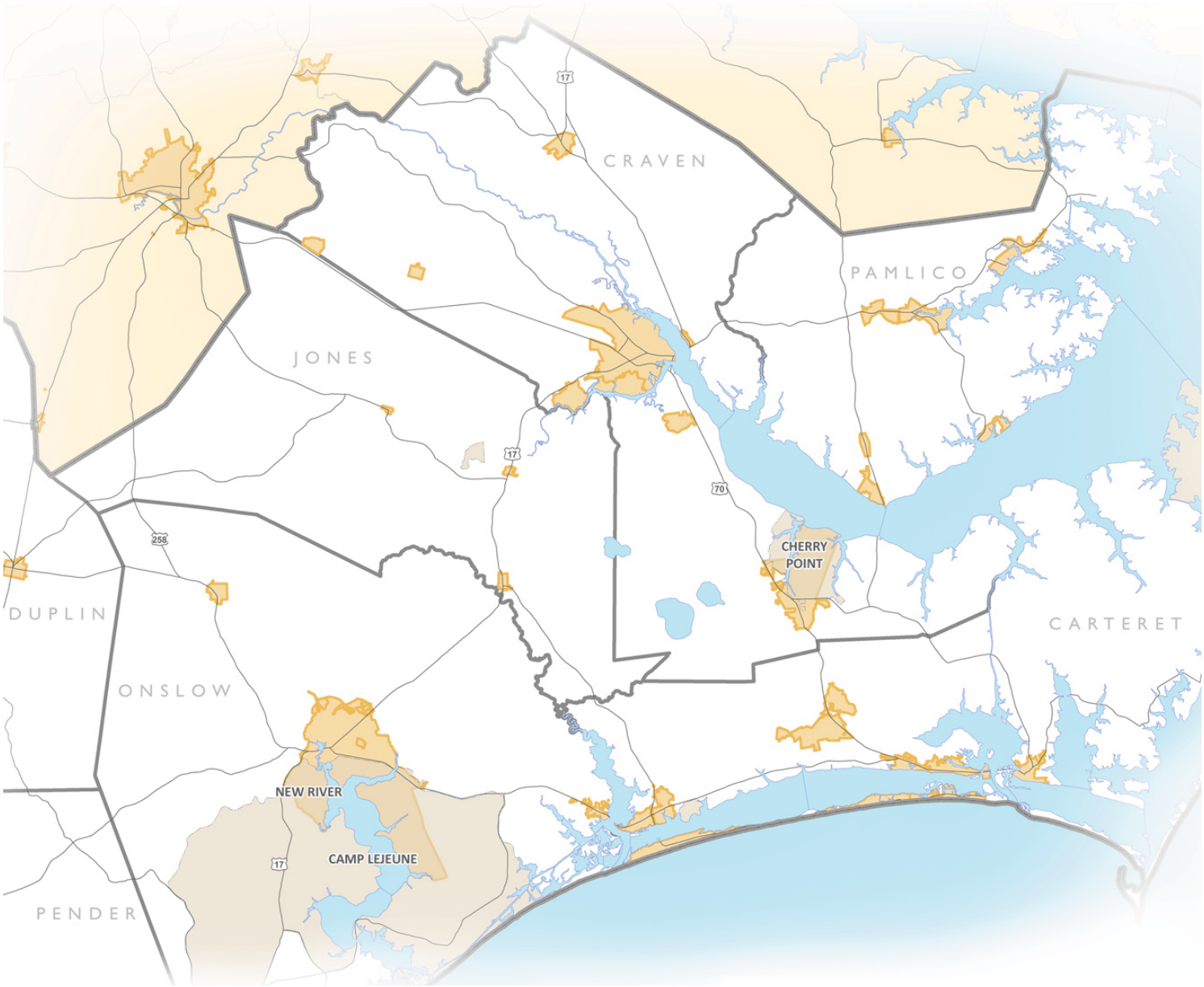
Creekside at Willows Bay, IV	Willows Bay Dr., Rocky Point	3.00%	58	Single Family	2007	134
Crowne Point	Sloop Point Rd, Hampstead	1.00%	173	Single Family	2008	135
Dogwood Lake	Rt 17 N, Hampstead	3.00%	139	Single Family	2008	136
Saltwater Landing	NC 210 Surf City	7.00%	137	Single Family	2008	137
Turtle Creek	NC 210 Surf City	20.00%	145	Multifamily	2008	138

There are 1,500 units approved in Pender. This number represents 8.0% of the total approved units in the study area. 306 of these units have been constructed, representing 6.4% of the total built units in the study area. 1,193 units remain unbuilt, and 623 of these, or 52%, are located within 20 miles of one of the three Marine Corps installations in the study area.

DUPLIN

Project Name	Location	Percent Complete	Acres	Number of Units	Type	Year Approved	Map ID
Monarch Real Estate	Alderman Rd	0.00%	68.00	76	Single Family	2008	139
River Landing	Intersection of I 40 & Hwy 41	0.00%	400.00	154	Single Family	2007	140

There are 230 approved units in Duplin County. This number represents 1.21% of the total approved units in the study area. None of these units have been constructed, and none of these projects are located within 20 miles of the Marine Corps installations in the study area.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix H

Inventory of Off-Base Housing for MCAS Cherry Point

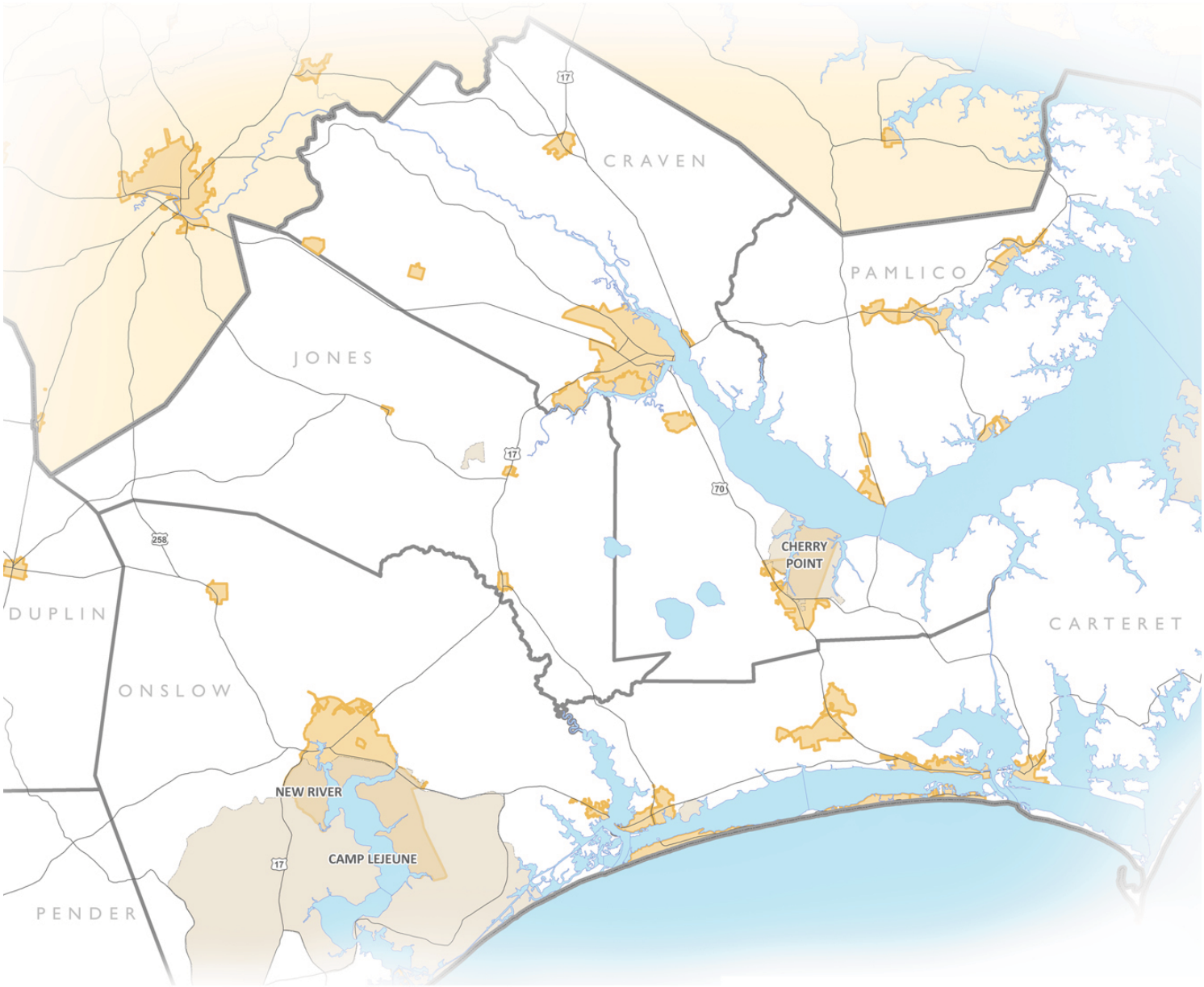
Appendix H

Referrals - Average Rent - Summary
MCCH

FEB-27-2009 11:50:29

Type	Bedrooms	Available Units	Average Rent	Minimum Rent	Maximum Rent
APARTMENT	1	100	597	350	1200
APARTMENT	2	216	670	385	1800
APARTMENT	3	29	968	650	1375
APARTMENT	4	1	1150	1150	1150
CONDO	1	12	829	500	1200
CONDO	2	66	888	550	1300
CONDO	3	35	1137	850	1800
DUPLEX	1	6	579	450	825
DUPLEX	2	202	686	375	1500
DUPLEX	3	80	1020	550	1800
DUPLEX	4	2	1500	1400	1600
DUPLEX	5	1	1500	1500	1500
HOTEL/MOTEL	3	3	1033	950	1200
HOUSE	1	3	733	450	1300
HOUSE	2	82	799	500	1400
HOUSE	3	627	1024	575	2400
HOUSE	4	137	1385	675	2600
HOUSE	5	12	1769	1200	2800
STUDIO	1	1	450	450	450
STUDIO	2	1	620	620	620
STUDIO	3	1	745	745	745
TOWNHOUSE	2	103	718	500	1450
TOWNHOUSE	3	59	912	675	1400
TOWNHOUSE	4	4	1254	900	1595
TRIPLEX	1	2	435	385	485
TRIPLEX	2	27	667	575	900
TRIPLEX	3	1	900	900	900

For official use only. Inappropriate use and distribution of information in this report may result in criminal and civil penalties. To avoid compromise, destroy this report after use.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix I

Inventory of Off-Base Housing for MCB Camp Lejeune and MCAS New River

Appendix I

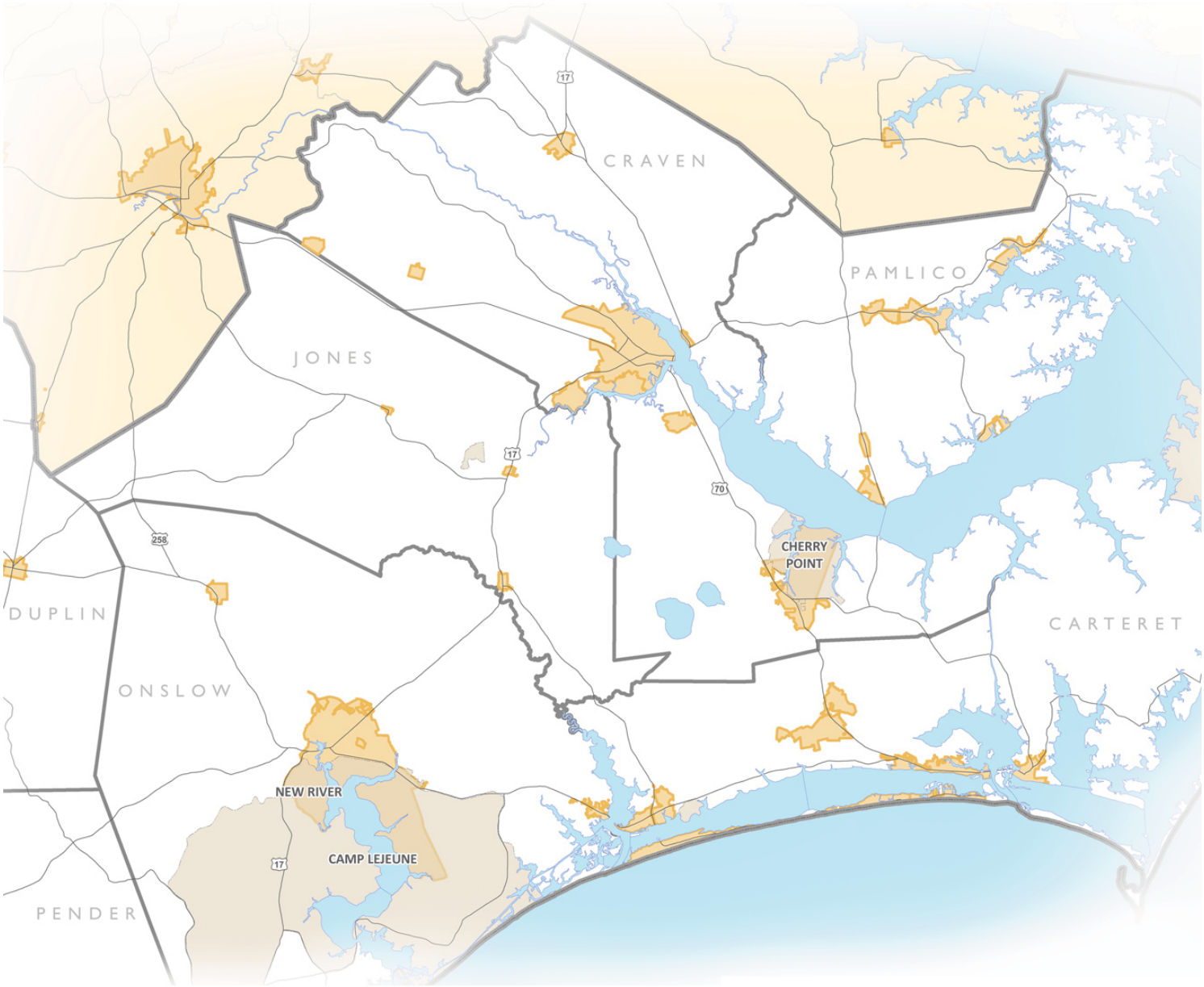
Complex Name	Area Code & Phone	Property Street Address	City	Type	No.of Bedrms	Rent	Security Deposit and fees	Amenities	Set-Aside
Abbington Place*	(910)346-2852	1025 Kensington Dr	Jacksonville	Apt	1,2,3	1)$815 2)$900-940 3)$985-995	$200 with good credit + $45-55 app fee + $250 admin fee	pool, theater, computer/fitness rm, carwash, volleyball	Yes
Ashley Park Apts*	(910)353-7515	2100 Country Club	Jacksonville	Apt	2	$740-775	depends on credit + $199 adm fee - $50 app fee	lawn care, trash, pool, tennis, exercise room, laund fac	Yes
Cantabury Hills*	(910)353-7515	916 Gumbranch Rd	Jacksonville	Apt	2,3	2-$630 3- $690 w/ water	$199 & up + $199 app fee	water, trash	Yes
Azalea Gardens	(910)346-5599	902 Gumbranch Rd	Jacksonville	Apt	1, 2	1)$480-500 2)700	1)$350 2) $350 $50 app fee	water, lawn care, trash, pool	Yes
Bluff Ridge Apts*	(910)577-2102	215 Valencia Dr	Jacksonville	Apt	1 , 2	1)$770-790 2)$840-860	$200 + $200 admin fee + $60 app fee - $300 pet fee & $20 monthly pet rent	lawn care, trash, pool, tennis, washer/dryer	Yes
Beacham Apts*	(910)347-7034	1820 Wilmington Hwy	Jacksonville	Apt	1 , 2	1) $440-510 2) $510-620	$200 - up + $45 app fee	lawn, trash, water, sewer, pool, cable	Yes
Brookview Apts*	(910)346-3241	316 Richlands Ave	Jacksonville	Apt	2	$578-593	$200 w/good credit + $35 app fee per person	trash, lawn care, exterminate	Yes
Brynn Marr Village*	(910)353-2024	300 Village Dr	Jacksonville	Apt	1, 2, 3	1) $701-758 2) $835-892 3) $880-962	Depends on credit history $200 non- refundable admin fee. Pet fee $200 non-refund plus $40 addit in rent	lawn care, trash, exterminating, pool, gym, tennis, on-site laundry	Yes
Cardinal Village	(910)347-5426	2301 Indian Drive	Jacksonville	Apt	1, 2, 3	1)$590, 2) $660-700, 3) 710 studio) $450	$300 - month rent + $75 app fee	lawn care, trash, water/sewer, cable, pool	Yes
Charleston Place Apts	(910)937-7368	400 Charleston Lane	Jacksonville	Apt	1,2,3	1) $750 2) $850 3) 9950	$99 Sec Dep, $45 app fee per person, $225 Non-/single, $55/couple Refundable Reservation/Community Fee $350 Non-Refundable Pet Fee	Pool, lawn care, coffee bar, laundry fac, media rm, Fitness Ctr	No
Cordell Village	(910)347-4049	Hwy 258	Jacksonville	Apt	1, 2, 3	1)$475 2)$595, 3)$795	Sec Deposit: 1)$435 (2)$525 (3)$525 + $40 for (1) $50 for (2) app fee	lawn care, trash	No
Countrywood*	(910)347-4049	off Hwy 53	Jacksonville	Dup, 4-plex	1, 2	1)$475- 495, 2)$675	1) $450 (2) $675 + $40-$50 app fee	lawn, sewer, trash	No
Hickory Grove	(910)347-4049	Easy Street	Jacksonville	4-plex	1	$475	$450 - $40-$50 app fee	lawn care	No
Ravenwood	(910)347-4049	Liberty Drive	Jacksonville	4-plex	2	$495	$495 + $40-$50 app fee	lawn care, trash	Yes
Village Terrace	(910)347-4049	Indian Drive	Jacksonville	Apt	2	$ 495 and $545-w/wash/dryer	$475 + $40-$50 appl fee	trash, lawn, water	Yes
College Park Apts	(910)353-2001	Commerce Drive	Jacksonville	Apt	2	$575	$575 & up + $20-$40 app fee	lawn care, trash	No
Hammock Lane Apts	(910)548-1441	Hammock Lane	Jacksonville	Apt	1,2	1) $525 2) $575	$450 no app fee	lawn care, 800 sf, microwaves	Yes

H&H Investments	(910)455-1699/330-6429	**Lainmark Drive**	Hubert	**Apt**	2	**$675**	675 $10.00 app fee	**washer/drye.. ..awn care, trash**	Yes
Hinson Arms	(910)455-1251	**3340 Richlands Hwy**	Jacksonville	**Apt**	2	**$575 $625 for renovated**	$575 w/good credit + $25 appl fee	**water, sewer, trash**	Yes
Holiday City	(910)353-2241	**553 Corbin Street**	Jacksonville	**Apt**	2	**$595**	$595 + $20 app fee	**trash,lawn care, pool, exterminate**	No
Lauradale Apts*	(910)455-3919	**2 Aragona Blvd**	Jacksonville	**Apt**	2	**$570 for 12 mo lease, $590 for 6 mo lease**	$250 + $25-50 app fee	**water/sewer, trash, exterminate lawn care, pool**	Yes
Liberty Crossing*	(910)455-8879	**3000 Carmen Ave**	Jacksonville	**Apt**	1, 2, 3	**1) $726 2) $775 3) $931**	$150/$175/$200 w/good credit + $50-$70 app fee + $185 admin fee	**lawn, trash, pool/gym, exterminate**	Yes
Parkwest Apts*	(910)577-7784	**203 Valencia Drive**	Jacksonville	**Apt**	1, 2	**1)$699, 2)$799**	$350 + $55 app fee	**lawn care, trash, pool**	Yes
Puller Place Apts*	(910)347-5000	**100 Delaney Drive**	Jacksonville	**Apt**	1,2,3	**1)$870-$895 2)$985-$1015 3)$1020-1060**	$99 w/good credit + $50-60 appl fee + $250 admin fee	**trash, sport court,pool,putting green, gym, etc**	No
The Reserve of Jacksonville*	(910)938-6066	**500 Talon Drive**	Jacksonville	**Apt**	1, 2, 3	**1)$765-795, 2)$870 880, 3)$940**	$200 deposit + $45 app fee per person or $55 for married couple + $250 admin fee	**lawn care, trash, pool/gym, tennis**	Yes
Spring Branch	(910)326-1414	**111 Spring Branch Ln**	Maysville	**Dup, multi-plex**	1, 2	**1)$475, 2)$575**	(1) $300 (2) $400	**water, lawn, trash, no deposit for electric**	No
S&L Rentals &Sandy Oaks	(910)455-1699 / 330-6429	**Hwy 172**	Hubert	**Duplex**	1, 2	**1)$400 2)$675**	1)$350 2)$600 + $10 app fee	**trash, lawn care, exterminate**	Yes
Sandy Oaks	(910)455-2480	**Hwy 172**	Hubert	**Duplex**	2	**$595**	$400 (no app fee)	**trash, lawn care**	NO
Big John Estates	(910)455-2480	**1305 Halltown Rd**	Jacksonville	**Multi-plex**	1	**$475**	$300 (no appl fee)	**trash, lawn care**	Yes
Town Center Apts *	(910)346-4188	**2292 Onslow Drive**	Jacksonville	**Apt**	1, 2, 3	**1)$515 2)$570-$595, 3)$646**	$99 w/good credit + $35-45 app fee	**lawn care, trash, water/sewer, exterminate**	Yes
Webb Apartments	(910)353-3088	**Piney Green Road**	Jacksonville	**Apt**	1, 2	**1)$450, 2)$550-650**	1)$450 2)$550-$650 + $20 app fee	**water, trash, basic cable**	No
Weston Arms	(910)389-4731	**Zack Circle**	Jacksonville	**Apt**	1, 2	**1)$400, 2)$500**	$350/ $400 (no app fee)	**lawn care, trash**	No
Westfield Duplex	(910)389-4731	**Zack Circle**	Jacksonville	**Dup**	2	**$700**	$500 (no app fee)	**lawn care, trash**	No
Whitehall	(910)389-4731	**Pine Valley Rd**	Jacksonville	**Town house**	2	**$700**	$500 (no app fee)	**lawn care, trash**	No
Windsor Place*	(910)938-1911	**100 Windsor Circle**	Jacksonville	**Apt**	Studio, 2, 3, Th/3	**S)$549 2)$739-$759 3)$899 Th)$999**	$249 w/1 yr lease, $149 & $199 w/good credit + $50 app fee/adult	**trash, pool**	Yes

* Accepts pets

Updated: 18-MAR-09

EAST PARK APTS	(910)326-3180	**61 TAYLOR TERRACE**	Swansboro	**APT**	1,2	**Income Based 1BR $495-705 2BR $525-$762**		**fenced playground**



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix J

Worksheet for Estimating Monthly Payments

Appendix J: Worksheet for Estimating Monthly Payments

Purchasing Affordability Worksheet, Draft, May 2009

County	Median Home Values		
Carteret	**Median Home Value (15%)**	**Median Home Value (20%)**	**Median Home Value (0%)**
Purchase Price	$144,792.00	$144,792.00	$144,792.00
Down Payment	$21,718.80	$28,958.40	$0.00
Loan Amount	$123,073.20	$115,833.60	$144,792.00
Loan Length (Years)	30.00	30.00	30.00
Loan Length (Months)	360.00	360.00	360.00
Yearly Interest Rate	5.50%	5.50%	5.50%
Monthly Interest	0.46%	0.46%	0.46%
Monthly Payment	($695.61)	($654.69)	($818.36)
Property Taxes	$50.68	$50.68	$50.68
Insurance	$90.50	$90.50	$90.50
Utility Costs	$193.00	$193.00	$193.00
Monthly Cost	$1,029.78	$988.86	$1,152.53

Craven	Median Home Value (15%)	Median Home Value (20%)	Median Home Value (0%)
Purchase Price	$124,803.00	$124,803.00	$124,803.00
Down Payment	$18,720.45	$24,960.60	$0.00
Loan Amount	$106,082.55	$99,842.40	$124,803.00
Loan Length (Years)	30.00	30.00	30.00
Loan Length (Months)	360.00	360.00	360.00
Yearly Interest Rate	5.50%	5.50%	5.50%
Monthly Interest	0.46%	0.46%	0.46%
Monthly Payment	($599.58)	($564.31)	($705.38)
Property Taxes	$115.96	$115.96	$115.96
Insurance	$78.00	$78.00	$78.00
Utility Costs	$193.00	$193.00	$193.00
Monthly Cost	$986.54	$951.27	$1,092.35

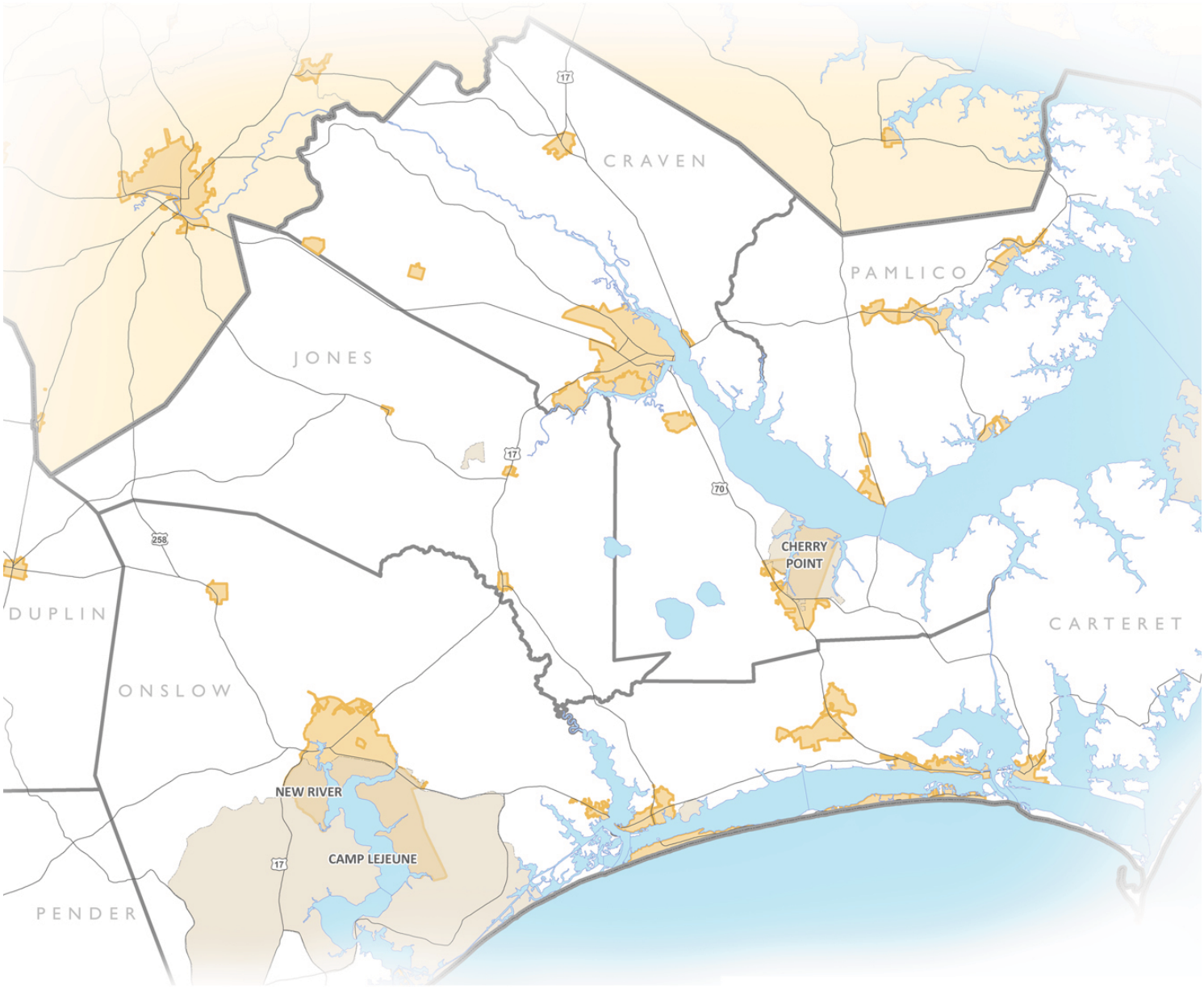
Pender	Median Home Value (15%)	Median Home Value (20%)	Median Home Value (0%)
Purchase Price	$162,568.00	$162,568.00	$162,568.00
Down Payment	$24,385.20	$32,513.60	$0.00
Loan Amount	$138,182.80	$130,054.40	$162,568.00
Loan Length (Years)	30.00	30.00	30.00
Loan Length (Months)	360.00	360.00	360.00
Yearly Interest Rate	5.50%	5.50%	5.50%
Monthly Interest	0.46%	0.46%	0.46%
Monthly Payment	($781.01)	($735.07)	($918.83)
Property Taxes	$88.06	$88.06	$88.06
Insurance	$101.61	$101.61	$101.61
Utility Costs	$193.00	$193.00	$193.00
Monthly Cost	$1,163.67	$1,117.73	$1,301.49

Pamlico	Median Home Value (15%)	Median Home Value (20%)	Median Home Value (0%)
Purchase Price	$106,309.00	$106,309.00	$106,309.00
Down Payment	$15,946.35	$21,261.80	$0.00
Loan Amount	$90,362.65	$85,047.20	$106,309.00
Loan Length (Years)	30.00	30.00	30.00
Loan Length (Months)	360.00	360.00	360.00
Yearly Interest Rate	5.50%	5.50%	5.50%
Monthly Interest	0.46%	0.46%	0.46%
Monthly Payment	($510.73)	($480.69)	($600.86)
Property Taxes	$57.81	$57.81	$57.81
Insurance	$66.44	$66.44	$66.44
Utility Costs	$193.00	$193.00	$193.00
Monthly Cost	$827.98	$797.93	$918.11

Jones	Median Home Value (15%)	Median Home Value (20%)	Median Home Value (0%)
Purchase Price	$94,977.00	$94,977.00	$94,977.00
Down Payment	$14,246.55	$18,995.40	$0.00
Loan Amount	$80,730.45	$75,981.60	$94,977.00
Loan Length (Years)	30.00	30.00	30.00
Loan Length (Months)	360.00	360.00	360.00
Yearly Interest Rate	5.50%	5.50%	5.50%
Monthly Interest	0.46%	0.46%	0.46%
Monthly Payment	($456.29)	($429.45)	($536.81)
Property Taxes	$62.53	$62.53	$62.53
Insurance	$59.36	$59.36	$59.36
Utility Costs	$193.00	$193.00	$193.00
Monthly Cost	$771.17	$744.33	$851.70

Onslow	Median Home Value (15%)	Median Home Value (20%)	Median Home Value (0%)
Purchase Price	$134,700.00	$134,700.00	$134,700.00
Down Payment	$20,205.00	$26,940.00	$0.00
Loan Amount	$114,495.00	$107,760.00	$134,700.00
Loan Length (Years)	30.00	30.00	30.00
Loan Length (Months)	360.00	360.00	360.00
Yearly Interest Rate	5.50%	5.50%	5.50%
Monthly Interest	0.46%	0.46%	0.46%
Monthly Payment	($647.12)	($609.06)	($761.32)
Property Taxes	$126.73	$126.73	$126.73
Insurance	$84.19	$84.19	$84.19
Utility Costs	$193.00	$193.00	$193.00
Monthly Cost	$1,051.04	$1,012.98	$1,165.24

Duplin	Median Home Value (15%)	Median Home Value (20%)	Median Home Value (0%)
Purchase Price	$96,840.00	$96,840.00	$96,840.00
Down Payment	$14,526.00	$19,368.00	$0.00
Loan Amount	$82,314.00	$77,472.00	$96,840.00
Loan Length (Years)	30.00	30.00	30.00
Loan Length (Months)	360.00	360.00	360.00
Yearly Interest Rate	5.50%	5.50%	5.50%
Monthly Interest	0.46%	0.46%	0.46%
Monthly Payment	($465.24)	($437.87)	($547.34)
Property Taxes	$62.14	$62.14	$62.14
Insurance	$60.53	$60.53	$60.53
Utility Costs	$193.00	$193.00	$193.00
Monthly Cost	$780.90	$753.53	$863.00



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix K

Smart Growth Toolbox

Appendix K

A Smart Growth Toolbox for Local Governments

Richard D. Ducker and David W. Owens

Builders and environmentalists, business and neighborhood groups, urban and rural residents all champion the idea of their communities growing responsibly and sensibly. Local governments face the daunting task of translating this broad support for smart growth into concrete programs for action. Just what kind of growth is smart, and how does a community accomplish it?

This article provides an overview of the principal management tools that a North Carolina local government might consider in developing and implementing a smart growth program. Each of these tools addresses a particular aspect of growth. Some of the aspects will be important for a particular city or county, some not. However, it is vitally important that a local government adopting a smart growth program carefully consider all the tools and the ways in which they can work together. An effective local program of smart growth must integrate planning, regulations, public investments, and education programs. It must include a mix of incentives and mandates, allowing some development practices, encouraging others, and requiring still others. Further, it must be coordinated with the state and federal transportation and environmental programs described in other articles in this issue. Determining the right mix of management tools for a particular

Among the projects that helped invigorate Charlotte, North Carolina's city center is Ericsson Stadium, home of the Carolina Panthers.

GARY O'BRIEN / THE CHARLOTTE OBSERVER

The authors are Institute of Government faculty members who specialize in community planning and land-use law. Contact them at ducker@iogmail.iog.unc.edu and owens@iogmail.iog.unc.edu.

community requires thoughtful study and planning, active participation by many affected people, and some tough choices for elected officials.

Urban Form and Design

A major thrust of many smart growth programs is encouraging, facilitating, or even mandating new forms of urban development. The mix of land uses, the design of developments, and the reuse of previously developed land all have an influence on urban sprawl. Planners, architects, and developers tout "new urbanism," "traditional neighborhood design," pedestrian-friendly development, and transit-friendly development as means of reducing reliance on automobiles and making more efficient use of existing roads, utilities, schools, and other public services. A variety of management tools are available to address these issues.

Mixed uses. A principal criticism of traditional zoning ordinances is that they overly segregate land uses. A predominant pattern of residential development in the past fifty years has been to have large tracts of single-family homes, with everyone having to drive out of the subdivision to a major road to get to jobs, shopping areas, or schools. Although much of this development pattern may reflect prevailing consumer desires, many zoning ordinances now mandate this pattern. Often, residential zoning districts do not allow multifamily housing, much less any commercial or office uses. Many zoning ordinances prohibit residential uses in downtown commercial areas.

Much as the "planned-unit developments" of the 1960s allowed some mixture of commercial, office, and industrial uses, smart growth proponents today propose amending zoning ordinances to allow a richer mix of residential, office, and commercial uses. For example, a large tract might be zoned to allow construction of a town square or a village center (perhaps with modest-sized shops, theaters, and restaurants; some professional offices; a school; and a church), surrounded by apartments and single-family homes, all within convenient walking distance. Also, zoning ordinances might allow a return to apartments over storefronts in urban areas. In addition, in urban areas with mass transit potential, the area around stops might be zoned for higher-density residential and commercial uses, further reducing reliance on the automobile as the sole source of transit for some people.

Local governments have the authority to allow mixed uses. The typical segregation of uses in zoning ordinances is a policy choice by elected officials, not a statutory mandate. However, allowing closely mixed uses presents a number of planning considerations that need attention to prevent conflict among uses. For example, commercial development should be limited to a neighborhood scale if it is to be compatible with nearby residential uses. Although careful attention and review are needed, if a local government wants to encourage mixed-use development, it should not create a review process that is substantially longer or more burdensome than that required for more traditional developments.

Traffic. How a new development is laid out can have a tremendous influence on traffic, which in turn affects air quality, traffic congestion, and the desirability of neighborhoods. If there are no sidewalks or bikeways, people may have no alternative to use of cars. If one subdivision's streets are not connected to the neighboring subdivision's streets, everyone has to drive out to more congested collector streets to go anywhere. If streets are designed solely to move a lot of traffic as quickly as possible, they will be considerably less attractive to pedestrians and bikers.

A variety of management tools are available to address these considerations. Subdivision ordinances can require that developers install sidewalks. Street-design standards can be revised to allow or require narrower roads, with on-street parking permitted in residential areas.[1] Ordinances can require connection of streets in adjoining subdivisions. Traffic circles and roundabouts are even making a comeback in congested areas as a way to slow cars to a speed that is more compatible with pedestrian presence while

Tapping the Brakes on Growth

Mooresville, North Carolina, is building a national reputation as a NASCAR mecca, boasting the highest concentration of NASCAR race shops in the country, according to a recent article in *The New York Times*.[1] This Iredell County town has doubled in size in the last ten years, fueled by Charlotte's economic engine and aided by the community's proximity to Lake Norman.

Home to more than twenty race shops that build cars and trucks for the Winston Cup and other race circuits, Mooresville gains both jobs and tourism from the racing connection. When race fans come to the nearby Lowe's Motor Speedway, they drop by Mooresville to tour the complex of Dale Earnhardt, stock car racing's top money winner. The race shops and the sport's related businesses provide about 1,400 jobs, said *The New York Times*.

Mooresville welcomes the growth that racing has brought but, for the short term at least, wants to confine that growth to an area served by existing infrastructure.

According to Rick McLean, Mooresville manager, NASCAR drivers and owners chose the community because it was convenient to Interstate 77, Lowe's Motor Speedway, and Lake Norman. "They like living at the lake and being able to get their cars to the races easily," he commented.

Although Mooresville leaders welcome growth, they have taken steps to manage it, using smart growth techniques. In Mooresville's case these include establishing an "urban growth boundary" (see accompanying article) and ensuring the vitality of the downtown core.

Photo courtesy of N.C. Division of Tourism, Film and Sports Development

maintaining a reasonable traffic flow.

Local governments have the legal authority to accomplish most of these purposes. When they create new subdivisions, they clearly may require that developers build roads, sidewalks, and bikeways to specified standards. They also may require developers to pay for or construct these thoroughfares, as long as the required contribution of the developer is no more than an amount roughly proportional to the anticipated impacts of the development. The authority to impose such requirements as a condition of various zoning approvals, such as site-plan or conditional-use permit decisions, is less clear. Legislation giving local governments explicit authority to require such contributions in zoning or other development approvals, as well as in subdivision approvals, would clarify and simplify the law in this area.

Beyond statutory authority the principal questions are ones of design, cost, and political feasibility. How wide must a street be for traffic safety and for accessibility by school buses and garbage trucks without being so wide and fast-moving that it intimidates pedestrians? How much potential pedestrian use must there be to justify the cost of installing sidewalks? These technical and practical considerations should be carefully examined as local governments modernize their subdivision and zoning ordinances.

Other design features. A related issue that arises in smart growth discussions is the design of individual structures. Many neotraditional neighborhood designs feature homes that are built close to the street, are situated close to one another, and have design elements such as "front" porches and garages at the rear of the dwelling, with alleyway access. Local governments can amend existing development regulations to add the flexibility they need to accommodate these features (as several North Carolina cities already have done, including Belmont Abby, Chapel Hill, Cornelius, and Davidson).[2] Mandating these design features is unusual, but it is permissible to provide regulatory incentives (such as expedited permit processing) for developments that incorporate them.

Infill and reuse. Smart growth proponents suggest that one way of securing compact development patterns is more efficient use of vacant or underused land within existing urban areas. Rather than constantly locating new development at or beyond the urban fringe, the notion is to encourage use of land that already has streets, utilities, schools, and other needed urban services available. This tool can be applied to new industrial or commercial development, affordable housing initiatives, or general residential development.

Several management tools allow or encourage this. Some communities are amending zoning regulations to allow carefully designed manufactured-housing units or small multifamily buildings on vacant urban lots in existing residential neighborhoods.[3] Communities have amended their zoning ordinances to allow basement or garage apartments within single-family zoning districts. Others have created neighborhood-conservation zoning districts that allow infill while protecting a neighborhood's character. These steps sometimes require amending the list of permitted uses in zoning ordinances or adjusting setbacks or density limits to make new construction feasible on small lots, either of which local governments have legal authority to do. The question is more one of developing carefully crafted design and density standards to address the neighborhood compatibility issues raised by existing residents. There are several approaches to securing active neighborhood involvement in designing these changes, including developing focused small-area or neighborhood plans and working with community organizations such as community development corporations.[4] In addition to reforming regulations, successful infill strategies must address other concerns that are necessary to make

An effective local program of smart growth must integrate planning, regulations, public investments, and education programs.

McLean said that the city council adopted the urban growth boundary less than two years ago when it determined that the city's resources might be stretched too thin if unrestrained growth was permitted everywhere. "This is part of the council's planning to ensure adequate infrastructure capacity," he explained.

If a developer comes in with plans that call for extension of water and sewer lines beyond the urban growth boundary, city staff tell the developer to come back in a few years. The boundary has not been in place long enough to determine if it will be successful in guiding growth, McLean said, but so far it has worked well.

Mooresville has undeveloped areas where it wants infill development, McLean continued. In 1996 the city completed a major annexation and then built twenty-six miles of water and sewer lines costing $10 million. With the urban growth boundary, the council wants to encourage development along the existing water and sewer lines.

Mooresville also is looking ahead to regional mass transit. Municipal leaders see that higher-density development will be needed along the rail corridor to support light rail between their city and Charlotte. "We may be looking at the type of development you see in downtown Charleston [South Carolina]," said McLean.

City leaders in this community always have paid close attention to the downtown core. A long-time Main Street Community,[2] Mooresville recently built the Citizen Center, a combination community and civic center in that core.

"It has succeeded beyond all our expectations," said McLean, "bringing 85,000 people into downtown every year." More than 90 percent of the downtown storefronts are occupied, McLean added. The others are vacant mostly because of ownership problems.

Through growth management, downtown revitalization, and regional transportation planning, Mooresville is quietly going about the business of building and protecting its future.

inner-city neighborhoods attractive for residents, such as providing good schools, safe neighborhoods, and ready accessibility to commercial areas.

Innovative "brownfields" programs are available that encourage reuse of old industrial sites by limiting the new user's liability for past environmental problems. These programs require neighborhood involvement and approval of clean-up plans by an environmental regulatory agency.[5] With larger-scale commercial and mixed-use redevelopment projects, public investment in parking and other improvements may be needed to make the project financially viable.

Other examples of public assistance for more efficient use of existing resources include the state and federal tax credits for renovation and restoration of historic structures, the state's Main Street Program (which provides technical assistance for revitalization of small-town commercial centers), creation of municipal service districts to finance downtown revitalization, and public investments in critical public uses in downtown areas (such as courthouses, public safety centers, and post offices).

Protection of Open Space and Natural Areas

Another important goal of many smart growth programs is environmental protection. In the past, many local governments assumed that federal and state environmental programs were adequate to protect air, water, land, critical habitats, natural-hazard areas, and the like. A more active local role has emerged in recent years. Sometimes the local effort is in collaboration with state and federal agencies, as in local floodplain zoning that is necessary for residents to participate in the national flood insurance program, state-mandated programs to protect the watersheds of local water supplies, or local receipt of grants. More recently a number of local governments have undertaken independent efforts to adopt regulations, acquire interests in land, and develop education programs for environmental protection.

Regulatory measures. How new development takes place can have a dramatic impact on the environment. Sediment runoff during construction can choke creeks and streams. Polluted stormwater runoff can degrade downstream rivers. Unmanaged urban sprawl can consume farmland and open spaces. Development in flood-hazard areas can lead to extensive property damage and loss of life.

Local governments have extensive authority to adopt regulations to address these concerns. Land-use plans can clearly identify areas that are appropriate for high-density development and areas suitable for only low-density development, and regulations then can be put into place to guide development levels accordingly. (For full effectiveness, these decisions should be carefully coordinated with decisions to improve transportation and utilities.) Regulations can allow (or require) clustering of new development or require that each development preserve a specified amount of open space. Regulations also can require that vegetated buffers be left along waterways to limit the impacts of stormwater runoff and protect streamside habitats.

Further, regulations can limit the amount of impervious surfaces that are constructed in sensitive areas and can require holding ponds for runoff, or systems that allow the stormwater to sink into the ground. Regulations also can limit development on steep slopes to prevent soil erosion, and local sediment-control regulations (which can exceed minimum state standards) can reduce soil erosion when sites are cleared for development. Regulations can limit development in floodplains and other natural-hazard areas. Landscaping and tree protection regulations can require preservation or restoration of vegetation as development takes place. Agricultural zoning districts can be established in rural areas to limit the intrusion of industrial, commercial, or even residential uses in prime farmlands.[6]

Acquisition of interests in land. Occasionally a local government must go beyond regulation to land acquisition—for example, when there will be active public use of a property (such as

Acting Regionally

When it came time to update their Coastal Area Management Act plan last year, Wilmington and New Hanover County took it to another level. It is no longer just a land-use plan but a comprehensive plan, addressing housing, public infrastructure, economic development, and transportation. Now the city and the county share a comprehensive plan, an uncommon although not unique situation in North Carolina.

According to Mary Gornto, Wilmington's manager, the city and the county now are working on a unified development ordinance. "We are trying to be smart about growth," she said, "trying to be more efficient." Wayne Clark, Wilmington's director of development services, expects the unified development ordinance to be ready in mid-2001.

Located on the Cape Fear River and the Intercoastal Waterway, Wilmington is rich in aquatic resources.

One new element that the city plans to have in place, even before the unified code is finished, is mixed-use districts, combining commercial, residential, and recreational operations. Clark said that such districts offer more flexibility. At least one developer has begun developing a tract this way. The city's requirements will include a 25 percent set-aside for green space and an additional 10 percent for common space (fountains, areas for benches, plantings, and so on).

Clark said that the area local governments are involved in a number of regional cooperative efforts, including planning for transit, roads, and preservation of waterways and corridors along waterways.

Gornto sees smart growth in Wilmington as a means to ensure the vitality of all

Photo courtesy of N.C. Division of Tourism, Film and Sports Development

for recreation) or when large tracts must be preserved in a natural state with no development at all. Local governments can acquire land alone or in collaboration with local nonprofit groups, as described in the article in this issue on land trusts (see page 42).

Where no active public use of the land is planned, more management options are available. For example, a regulation can require a buffer or open space to be undeveloped, but the title (and the right to exclude the public) can be retained by the private owner.

A local government can tailor its smart growth land acquisitions to the needs of particular programs. It can buy the land outright (called acquiring the "fee interest") and hold the property for public use as parkland, pathways along streams or natural areas (such as the increasingly popular greenway programs now present in many North Carolina cities), or open space. It can acquire property and later sell or give that property to nonprofit groups under restrictive covenants, as often is done with redevelopment and affordable housing programs. Further, a local government can acquire easements when leaving some aspects of ownership in private hands is appropriate. Examples include acquiring the development rights on farmland or an access easement for greenways.[7] North Carolina local governments have authority to purchase land for open space preservation, farmland preservation, parks and recreation, stormwater management, and any other legitimate governmental purpose.[8]

Development regulations can require the conditioning of subdivision approval on the owner conveying land to the public for open space and recreation, to address the impacts and the public needs that will be created by that subdivision. The amount of land required to be dedicated as a condition of development approval, however, must be reasonably related to the impacts of the development and roughly proportional to their scope.

Beyond the question of legal authority, careful attention should be given to ensuring that there will be adequate maintenance and long-term management of areas acquired, as well as adequate planning to guide acquisition priorities.

In addition to use of local funds, there are several significant state and federal sources of grant funds for land acquisition. These include the state's Clean Water Management, Farmland Preservation, Parks and Recreation, and Natural Heritage Trust Funds and the substantial state and federal funding for acquiring hazard areas following the disastrous floods of 1999. Governor James B. Hunt's recently adopted Million Acre initiative[9] and the proposed massive federal reinvigoration of the Land and Water Conservation Fund may substantially increase the financial resources available to local governments for these acquisition programs.

Tax policies. Tax policies play an important role in protection of open space and natural resources. Examples include income tax deductions for contributions of land, use valuation for property taxes, and innovative financing for local acquisition programs (such as real estate transfer fees). North Carolina local governments have no independent authority to institute or amend such policies; they can only apply laws enacted by the legislature and Congress.

Economic Equity

One criticism of some smart growth programs is that they focus on the concerns of affluent suburban areas—urban sprawl, traffic congestion, design of new subdivisions, environmental protection, and the like—without adequate consideration of economic equity issues. A related criticism is that smart growth programs may actually exacerbate economic inequities by restricting the availability of affordable housing. In response, smart growth proposals increasingly incorporate management measures to address economic equity issues directly. These include efforts to secure more affordable housing and preferences for developments that enhance economic opportunity within the community.

Affordable-housing initiatives. One consequence of rapid development is a concomitant rise in housing prices. Al-

its neighborhoods. The continued cooperation between the city, the county, and other local governments in the area will aid in that effort, said Gornto.

Being Hickory by Choice

No growth management plan is smart unless the citizens support it. Several years ago, through a process called Hickory by Choice, citizens in Hickory, North Carolina, gave serious consideration to how they wanted their community to look.[3] The plan, adopted by the Hickory City Council two years ago, emphasizes downtown revitalization, pedestrian-friendly streets, more mass transit, more open space, and neighborhood centers where people can live, work, and shop.

The City Center Plan, the initiative to restore Hickory's core, is a key element of Hickory by Choice. The plan, developed with tremendous citizen participation, calls for older business districts to become neighborhood service centers. It also envisions narrow streets with tree-lined sidewalks, apartments over shops, and traditional buildings on now-empty lots. Duany Plater-Zyberk & Company, known for its neotraditional planning efforts, helped develop the plans.

To carry out the plan, Hickory has rewritten its zoning codes to permit and encourage housing in its downtown areas and the redevelopment of older commercial areas for multifamily housing.

According to Tom Carr, Hickory's executive assistant for development, the downtown is ready for housing, although market forces will determine exactly when housing will be built.

Hickory took a major step last fall to make the downtown area more accessible and safe: it changed the city's grid of one-way streets to two-way streets. Carr explained that one-way streets were "late sixties or seventies traffic planning" designed to move more cars. The two-way streets provide better access to properties, are more pedestrian friendly, and slow traffic, Carr said.

There now is more interest in locating downtown. Renovations will turn a former grocery store into corporate offices,

though homeowners usually view this as good news, rapidly escalating housing prices make it difficult for the less affluent to enter the housing market. Often, it is not just the poor who have difficulty finding housing; schoolteachers, firefighters, police officers, and many middle-class workers also struggle to find adequate housing in the fast-growing areas where they work.

A variety of techniques are available to local governments to address affordable-housing concerns. Provision of public housing and housing assistance can aid the poor in securing shelter. Zoning can allow more multifamily housing in appropriate areas. Regulations that increase the cost of development can be carefully scrutinized to see if standards might be relaxed and the development-approval process for affordable housing streamlined.

Some communities have experimented with regulatory incentives for affordable housing. For example, if a specified proportion of a development will provide affordable housing, it becomes eligible for expedited permit processing or a density bonus.[10] Other communities move beyond incentives to inclusionary zoning mandates. Carrboro and Chapel Hill, for example, require that new residential developments above a certain size include a specified percentage of smaller houses. Communities in other states (Montgomery County, Maryland, for example) directly mandate that large residential developments include a minimum number of houses with sales prices that meet affordable-housing targets.

North Carolina cities and counties have the legal authority to undertake most of these initiatives. Although the public investment and regulatory incentive programs are on solid legal footing, how far local governments can go with regulatory mandates for affordable housing is unclear. To date, North Carolina courts have been wary of allowing land-use regulations to address socioeconomic concerns directly.[11] Still, securing adequate housing for all segments of the community and promoting geographic diversity for all segments of the housing market are legitimate governmental objectives. To the extent that large new commercial, office, or industrial developments create a need for additional affordable housing, it may well be constitutionally permissible to require the developers to assist in providing that housing through, for example, mandatory contributions to a housing trust fund. However, North Carolina statutes do not currently authorize such requirements.[12]

Employment and other linkage requirements. Unlike local governments in other parts of the country, local governments in North Carolina have infrequently used "linkage" requirements, which tie approval of development to the provision of jobs and services for disadvantaged members of the community. For example, a large commercial development might be required to employ a specified number of low-income residents during construction or as workers in the eventual business.

In North Carolina it is not unusual for a developer to offer such a plan voluntarily during the development-approval process, and for local governments to consider it informally as a factor in the potential community benefits of a project. However, the legality of requiring it is less clear. Although a local government may require that a developer address the impacts it is creating (for example, by helping the people who will work there secure public transportation or adequate day care), requiring that the developer provide jobs to a specified community likely goes beyond what a local government can legally mandate.

Planning and Intergovernmental Coordination

Local government planning is necessary to anticipate the impacts of growth and development, to secure broad public involvement in discussions of how best to deal with these impacts, and to know what management tools to use and how to employ them. Without adequate planning, the tendency is to lurch from crisis to crisis, always trying to catch up with worsening problems. Also, even if a sin-

and a federal agency is considering office space in the core.

The city is increasing its commitment to sidewalk construction throughout the community, setting aside $200,000 per year for that purpose.

In the planning stages is an "artwalk" to link cultural institutions with shopping and other attractions. Hickory has borrowed this idea from Asheville.

Another element in Hickory's growth management is incorporating transportation planning into land-use planning. Streets and roads being built need to accommodate the surrounding land uses. For example, Carr says, the city is working with Catawba Community College to ensure that new streets fit into the campus.

Citizens and visitors flock to Hickory's pedestrian mall during Oktoberfest.

Hickory leaders know that completion of Highway 321 to Gastonia will spur major development south of the city, and they are working to make sure that the growth is deliberate. At one new interchange just two miles from downtown, the city will encourage a connected center of employment, schools, parks, and the like through approval of water and sewer connections. "Being able to decide who can and who can't get water and sewer service will help us guide the growth into a community rather than something that looks like a jumble," Carr said.

Regional cooperation is evident in this area of North Carolina. Local governments are working with the private sector on air quality issues and on water quality planning for the Catawba River.

—Margot Christensen

gle local government is planning and managing its growth, some issues can be effectively addressed only through strong coordination and cooperation among neighboring units of government. Transportation, water quality, water supply, air quality, and habitat protection usually must be addressed regionally as well as locally.

North Carolina local governments have extensive authority to plan together and coordinate with one another. City planning programs were first authorized by statute in 1919, county planning programs in 1945. These statutes include broad authorization to create advisory boards, conduct studies, and prepare plans.

Comprehensive planning is entirely *voluntary,* however (except in the twenty coastal counties, where local land-use plans were mandated by the 1974 Coastal Area Management Act, discussed in the article on page 21). Also, even if local governments adopt a comprehensive plan, there is no state mandate that the local governments (or state agencies) follow the plan in their regulatory or public investment programs. Moreover, there are relatively few state financial incentives for local planning, such as priority access to state transportation or utility funding, though this has begun to change.[13]

The situation with intergovernmental coordination is similar. There is authority for *voluntary* interlocal coordination on planning and management issues. Regional planning commissions and councils of government may undertake cooperative planning efforts, but there is no mandate to do so.[14] The state is beginning to address individual growth management issues on a regional basis, such as regional transportation planning and water quality plans for river basins, but many of those efforts are still in the early stage of development. A critical question for North Carolina's smart growth efforts is whether to provide additional incentives or mandates for local planning and coordination.

Growth and Public Facilities: Impact Fees

It seems elementary that growth should lead to a larger tax base, more tax revenues, and more opportunity for a local government to provide and pay for the new public facilities that are needed. In areas of rapid growth, however, public revenues do not necessarily come in fast enough or in the right form to cover growing public costs. Rapid change can make it difficult for communities and their local governments to adjust. Several important tools of growth management influence the timing of growth and the financing of public facilities. Impact fees are one such tool.[15]

Impact fees, also known as facility fees or project fees, can best be thought of as exactions from developers because they are incident to the power of local governments to regulate the development of land. An "exaction" is "a condition of permission for development that requires a public facility or improvement to be provided at the developer's expense."[16]

The land and the improvements for streets, utility lines, recreation areas, and the like that developers have traditionally been expected to provide have been located on site because these exactions principally serve the residents or the users of the development. But many public facilities, such as arterial streets and community parks, serve far more than a single development. Exactions in the form of impact fees allow public facility costs to be more carefully and equitably apportioned throughout the planning area. Impact fees also can provide a more uniform approach to developer contributions because they apply to all development projects, not just those that are subject to regulation in the form of subdivision approval, special- or conditional-use permits, or site-plan approval.

Although the North Carolina General Statutes authorize various types of exactions from developers (particularly under the power to approve subdivisions), they do not include express enabling legislation for impact fees. As a result, several dozen North Carolina cities and counties have secured local acts authorizing the use of impact fees to provide for various types of public facilities.[17] Only a portion of the affected local governments have actually adopted fee ordinances. Some of these include Raleigh in 1987 (covering roads, parks, and greenways), Durham in 1987 (covering streets, parks and recreation facilities, and open space), and Cary in 1989 (covering roads).

Express enabling legislation authorizing impact fees for certain uses may not always be needed in North Carolina, however. The courts have held that North Carolina cities have the implicit authority to impose impact fees to fund capital improvements for water and sewer systems.[18] In addition, the North Carolina Supreme Court has held that municipal authority must be construed broadly and that cities have the power to charge user fees to recover the costs of reviewing land-development proposals.[19]

An essential ingredient—indeed, a constitutional requirement—of an impact fee program is that the use of the fees be adequately connected to public facility needs resulting from the development for which they are paid.[20] A local government first must show that the development will create a need for the new capital facilities. This is the so-called attribution principle. A second principle, proportionality, requires that the developer shoulder no more than its proportionate share of the needs created by the new development. The third principle, benefit, requires that the lands or the public facilities funded by the developer provide sufficient benefit to the development for which the fees were imposed. The collected fees must be earmarked to ensure that they are for the particular type of public facility for which they

Notes

1. Richard Sandomir, *Auto Racing: Race Car Paradise without Fumes,* THE NEW YORK TIMES, May 25, 2000.

2. The Main Street program seeks to revitalize downtowns by stimulating economic development in the context of historic preservation. It is administered by the North Carolina Main Street Center, which is part of the North Carolina Department of Commerce, Division of Community Assistance.

3. This story is based in part on Eleanore Hajian, *Growing into the Community That Citizens Want,* SOUTHERN CITY, Feb. 1999, at 1; *Strengthening the Core of Hickory,* SOUTHERN CITY, Mar. 1999, at 12.

The author is public affairs director at the North Carolina League of Municipalities. Contact her at mchriste@nclm.org.

were collected (for example, roads) and that the facility is geographically located close enough to the development to be truly beneficial. A corollary requirement is that impact fees be spent soon enough after they are collected to provide such a benefit.

Moratoria on Development

In some communities, planning and management programs that could have anticipated and dealt with the impacts of growth are not in place before the advent of rapid growth. In other communities the political will to do something about these impacts does not exist until the problems become severe and readily apparent. In either situation it takes time to put a smart growth program in place once a decision is made to do so. There are technical studies to conduct, plans to prepare, ordinances to craft, and funding to secure, all with substantial public discussion and debate. While this is taking place, the problems may worsen and become more difficult and expensive to fix.

One technique to maintain the status quo while management tools are developed and put into place is a moratorium on development. For example, a local government may put approval of new subdivisions on hold for six months while it prepares new design standards or crafts an adequate public facilities ordinance (discussed later in this article).

There is no explicit statutory authority for North Carolina cities and counties to adopt a moratorium, but they have the implied authority to do so under their zoning, subdivision, and general ordinance-making authority.[21] In the absence of an urgent public health or safety emergency, it is prudent for a local government to follow all the public notice and hearing requirements for zoning amendments when adopting a moratorium.[22]

To be valid, a moratorium should include the following features. It should be adopted only to address a real need that has been adequately documented. It should apply only to projects that affect the identified need. It should have an explicit duration that is reasonably limited to the time it will take the local government to address the needs that led to its imposition. Finally, the local government must actually initiate and responsibly pursue action to address those needs during the moratorium.

Permit Quotas

Another approach to influencing the pace of growth is to set a limit on the number of residential building permits that the local government will issue each year. The limit may be based on the average growth rates over some period before the most recent surge of construction activity. Some communities base the quota on the availability of key public facilities and services (for example, water supply) and the ability of the local government to expand them according to a schedule of construction during the planning period. Several prominent cities have instituted point systems or "merit systems" for allocating permits.[23] They rate proposed projects according to criteria such as the availability of public services, the quality of architectural and site design, and provisions for amenities such as pedestrian paths and special open spaces. Permit quotas fare reasonably well in the courts as long as the quota and permit allocation systems are an integral part of a well-conceived growth management plan and include no absolute caps on permits.

Urban Growth Boundaries

Urban growth boundaries are one of the most controversial growth management tools used by local and state governments. An "urban growth boundary" is a boundary line used to separate land that may be developed for urban purposes from land that may not. A local government designs such a boundary to accommodate the urban growth projected to occur in the area during the immediate planning period. Although an urban growth boundary may be adjusted from time to time, areas beyond the boundary are meant to remain rural or undeveloped. Such boundaries are generally intended to prevent urban sprawl, protect open space and agricultural land in rural areas, and enhance the vitality of downtowns, urban neighborhoods, and existing urban areas.[24]

A closely related concept is the "urban service area," a geographic area within which urban governmental services are being provided or will be provided within the immediate planning period and outside of which such services will not be extended. For several reasons, urban service areas are most closely associated with extensions of water and sewer services.[25] First, these utility extensions are major shapers of urban growth because they enable development at densities that could not be sustained otherwise. Second, municipalities, the local governments most likely to provide water and sewer services in urban areas, are generally authorized to do so in areas outside as well as inside municipal limits and may be the only public providers of utility service in areas on the urban fringe.

The establishment of an urban service area, however, is only one feature of a program to enforce an urban growth boundary. The integrity of an urban growth boundary also must be protected through policies governing other urban services (such as stormwater services, traffic control, and bus service), through local land-development regulations, and through policies governing annexation of land by the municipality. Most urban growth boundary programs are either based on intergovernmental agreements affecting the responsibilities of at least several local governments or adopted in response to mandates and incentives in state growth management programs. Generally at the heart of an urban growth program is a comprehensive land-use and public facilities plan that serves as its blueprint.

There are few examples of urban growth boundaries in North Carolina that have been used effectively. (For a discussion of the use of urban growth boundaries in other parts of the country, see the article on page 12.) One exception involves Orange County, Carrboro, and Chapel Hill. These units established a "rural buffer" around the two towns in the 1980s. The jurisdictions entered into an interlocal agreement concerning planning jurisdiction, adoption and enforcement of land-development ordinances, extension of water and sewer

Building Bridges—Another Tool for Local Governments

I support smart growth to create investments and housing in central city areas. But I also ask who will benefit from smart growth? Smart growth could create a nomadic poor. Too often the latest planning initiative does more harm than good for minority communities. Who can forget how urban renewal destroyed minority communities?

—Stella Adams, North Carolina Fair Housing Center[1]

Despite lingering concerns about the ability of smart growth programs to address economic and racial equity issues, advocates for low-income and minority communities are an often overlooked ally in communities' efforts to manage growth. Local governments can strengthen their planning for smart growth by helping to build bridges between community development advocates, or "community developers," and smart growth proponents.

The common ground between the two groups is not difficult to find. Both smart growth proponents and community developers readily agree that urban sprawl often has resulted in land use that is segregated by race and economics: the outer rings of communities tend to be more affluent and white; the inner rings, poor and minority. Further, both agree that the abandonment of city centers by industry and higher-income residents has devastated the segregated areas left behind.[2] Thus, both also agree that sprawl and the movement of capital from inner cities "are key points that must be addressed if we aspire to solve the paradox of great wealth and great poverty coexisting in our metropolitan areas today."[3]

Smart growth and community development principles lead to some of the same solutions for the problems of both disinvestment in inner cities and overinvestment in suburbs. These solutions include restoring and reusing existing buildings, reinvesting in existing infrastructure, developing infills, returning jobs to inner cities, improving public transportation, and reusing industrial brownfields.

Proponents of smart growth and community development arrive at the solutions from very different orientations, however. Smart growth proponents typically talk about sprawl in terms of the costs to those who have left city centers or to the community at large: expensive housing and poor quality of life in suburbia, and high infrastructure, transportation, energy, and environmental costs to the community.[4] Community developers focus on the concerns of those who remain in the cities: unemployment, poor schools, poor housing, environmental racism, and crime.

Neither group can solve the problems of its constituency in isolation. Suburbanites will not return to city centers unless the physical and social conditions are improved. Cities will not be able to address their problems fully without the resources of suburbanites. Together the two groups might have an unprecedented opportunity to transcend issues of race and class to craft solutions that address long-unmet economic, environmental, and social problems. Indeed, smart growth may have the greatest chance of sustained success if the planning process reflects a commitment to inclusiveness, diversity of participation, and equity.

On a statewide level, the two groups have begun to build a bridge. In September 2000 the North Carolina Community Development and Smart Growth Leadership Roundtable assembled for the first time to discuss the potential connection between smart growth initiatives and community development efforts. The opportunities for working together to control sprawl, redirect public and private investments into low-income and minority communities, and ultimately manage growth in the interests of the entire community were clear. Local governments encouraging this type of collaboration might begin by simply inviting community developers to participate in the local smart growth debate.

—Anita R. Brown-Graham

The author is an Institute of Government faculty member who specializes in community development and public liability. Contact her at brgraham@iogmail.iog.unc.edu.

Notes

1. Stella Adams, Executive Director, North Carolina Fair Housing Center, Presentation at the North Carolina Community Development and Smart Growth Leadership Roundtable, Durham, N.C. (Sept. 6, 2000).
2. Marc Seitles, *The Perpetration of Residential Segregation in America: Historical Discrimination, Modern Forms of Exclusion, and Inclusionary Remedies,* 14 Journal of Land Use & Environmental Law 89 (1998).
3. Charles M. Haar, Suburbs Under Siege: Race, Space and Audacious Judges 186 (1996).
4. *See, e.g.*, Real Estate Research Corp., The Costs of Sprawl: Environmental and Economic Costs of Alternative Residential Development Patterns at the Urban Fringe, Vol. 1, Detailed Cost Analysis; Vol.2, Literature Review and Bibliography (Washington, D.C.: U.S. Gov't Printing Office, 1974), which does not include any examination of sprawl's social effects, such as its impacts on cities.

lines into the area by the Orange Water and Sewer Authority, and annexation of territory on their fringes.[26]

Advantages and drawbacks. Urban growth boundaries can help steer development to delineated areas and prevent the costly overextension of public services. They have proven to be effective in protecting open space and agricultural land. They also offer the public a simple and understandable means of influencing growth patterns. Generally they benefit current urban residents and property owners.

Nonetheless, urban growth boundaries tend to drive up the price of real estate within the boundary, particularly if inadequate land is provided to accommodate growth there. Further, although

such boundaries are designed to encourage compact development, designated urban growth areas tend not to develop at the densities allowed, perhaps reflecting a market preference for lower-density development. This underdevelopment of existing urban areas tends to encourage more lenient designations of urban growth areas and adjustments to the boundary. Also, the use of urban growth boundaries can be undermined if surrounding jurisdictions allow urban development beyond the boundary, sometimes causing a leapfrog effect that results in development miles away.

Legal issues. The effective use of urban growth boundaries requires cooperation among local governments and, in many instances, regional agencies. Some effective programs rely on intergovernmental agreements initiated by the local governments involved. However, even if the local governments and service providers (such as private water companies and metropolitan sewer districts) bargain with one another in good faith, they may not contract away their legislative powers. For example, North Carolina local governments may not legally obligate themselves to rezone property, annex land, or accept streets at some future time. Legislation is needed to allow a local government to obligate itself in advance to conform its planning jurisdiction and annexation plans to a jointly established urban growth boundary and to amend its land-development ordinances in particular ways.

In addition, legislation is needed to ensure that state agencies that provide public facilities and services (for example, the North Carolina Department of Transportation) respect local and state growth plans in their siting decisions and that state agencies that authorize or regulate nonprofit and private service providers conform their permitting decisions to local plans and growth boundaries. It is no coincidence that many of the local units that employ urban growth boundaries are located in states in which the state legislature has directed local governments to carry out local growth programs that include the establishment of urban growth areas.[27]

A second set of legal issues concerns the legal authority of a provider of water or sewer service to decline to extend service into an area beyond the urban service area or urban growth boundary. North Carolina counties and cities operating water and sewer systems within city limits take on the special obligation of a public service corporation to provide equal service to their current and potential customers.[28] Once such a utility holds itself out as providing service in an area, it generally must serve those in the area who request it.[29] Refusal to extend service within those areas generally must be based on a utility-related reason, such as inadequate system capacity or inadequate financial resources to provide additional service. It is unclear whether a local government that does take on the special utility obligation of a public service corporation may refuse to extend service on the ground that doing so would be inconsistent with a growth management plan. Courts elsewhere have reached mixed conclusions.[30]

However, a North Carolina municipality has no obligation to furnish service outside its city limits and has broad discretionary power to determine whether and on what terms it does so.[31] Thus a North Carolina municipality may refuse to extend water or sewer service beyond an urban service area or urban growth boundary to the extent that such an area or boundary is located outside city limits.

Adequate Public Facilities Standards

Certain growth management techniques demand that a community measure the impacts of a project against its standards for public facilities. One of these techniques involves use of standards for development approval known as "adequate public facilities" (APF) standards.[32] The key feature and perhaps the prime virtue of an APF program is that it regulates the timing of development so as to prevent a community's growth from outpacing government's ability to provide necessary public facilities to serve that growth. It also funnels growth into the geographic areas that are more capable of handling new development. The APF criterion is that for a development project to be approved, the developer must show that public facilities have currently available capacity to accommodate the project or that such capacity will be available when the project is ready for occupancy. Because facilities must be provided concurrently with development, the APF criterion is sometimes known as the "concurrency" criterion.

North Carolina programs. APF programs are widely used in states like Florida and Washington, where concurrency is mandated; in states like Maryland and New Hampshire, where APF standards are expressly authorized by statute; and by a number of other local governments throughout the country. The three major APF programs in North Carolina make adequacy a criterion not only in rezoning decisions but also in various decisions related to project approval. In 1994, Currituck County adopted APF standards in its unified development ordinance for school, fire and rescue, law enforcement, and other county facilities. They apply to large residential subdivisions, multifamily residential developments, and other uses requiring conditional- or special-use permits. Cabarrus County's subdivision ordinance includes an APF standard for most of the facilities covered by Currituck's ordinance, but the standard applies only to residential subdivisions. Cabarrus County and the municipalities within it (Concord, Harrisburg, Kannapolis, and Mount Pleasant) are currently considering adoption of a unified development ordinance that calls for a far-reaching APF program. Cary's ordinance, adopted in 1998, includes APF standards for schools and roads and applies to all subdivisions and site plans.

Legal issues. Under current North Carolina enabling legislation, incorporating APF provisions into a municipal development ordinance appears to be permissible. City and county zoning statutes specifically mention that a purpose of zoning is to "facilitate the adequate provision" of various public facilities.[33] Whether such an ordinance is legally defensible, however, may depend on the justification for the ordinance, the types of development subject to the APF criteria, and the way in which the ordinance is linked to the local government's comprehensive land-use plan and capital improvement program. In the one North Carolina appellate court case involving review of an APF ordinance,

the court did not directly address the question of enabling authority but did uphold Currituck County's denial of a residential development because county schools were inadequate.[34]

Uncertainty about the provider. An APF program can result in some uncertainty about who will provide or pay for a particular street, utility extension, or park improvement. If a public facility is inadequate, the deficiencies can be remedied by either the government or, by implication, the developer. If the developer faces substantial delays, it may be inclined to make concessions to the regulating unit to move ahead, and agree to furnish more than its proportionate share of the costs of the required improvements. These concessions can prompt the local government to spend less on its capital improvement program.

Allocation of excess capacity. Like the use of a permit quota system (discussed earlier), the use of an APF program can result in an erratic pace of development as developers queue up to take advantage of excess capacity for a public facility before the capacity disappears. Most APF programs allow the allocation of excess capacity on a first-come, first-served basis.[35] If the community places a moratorium on applications, then the community may expect a flood of applications once facility capacity is expanded. In any case the pace of development and the rate at which development applications are received can be uneven.

Transfer of Development Rights

Traditional zoning ordinances and related ones controlling development often create uneven impacts on landowners. One way of evening out these impacts is to require all landowners who benefit from an area's development to pay the costs associated with the preservation and the protection of lands that arguably should not be developed. The advantage of such a program is that it allows the owners of land worthy of protection to enjoy economic benefits without having to develop the land and without the government having to purchase it. A transfer of development rights (TDR) program is intended to achieve these purposes.

Most TDR programs are closely associated with resource protection programs. One of the most prominent and long-lasting programs has been adopted in Montgomery County, Maryland, where development rights may be transferred from rural agricultural areas to urban areas just beyond the District of Columbia boundary. TDR programs also have been used to protect open space; to protect historic buildings and landmarks, as in Chicago, Denver, and New York City; to protect areas with critical environmental significance, as in the New Jersey Pinelands; and to protect natural-hazard areas from development.[36]

Concepts of property. TDR programs modify conventional property concepts in several ways. First, they divide "property" into two components: (1) the land itself and (2) the development potential or "development rights" associated with that land, usually measured in terms of the zoning and land-subdivision purposes allowed for the land. Second, they allow the development rights to be severed from the host parcel, thus allowing the rights to be bought, sold, taxed, and used as security. Third, they allow the rights to be acquired by the owner of land at another location and exercised to increase the permissible development at that new location.

The usual TDR approach requires identification of "sending areas"—areas in which property owners may sell development rights—and "receiving areas"—areas to which property owners may transfer development rights. Identifying the sending areas is relatively simple because these are the areas that a community generally is the most concerned about protecting. Identifying receiving areas is more difficult for both political and practical reasons. They are more suitable for intense development because of their location, the availability of public facilities such as utilities, and the community's overall development pattern. There is typically a conventional maximum density in the receiving areas, but that density may be exceeded by the importing of rights severed from land in a sending area.

Administration. Although the concept of TDR programs has been a topic of interest in the planning and legal communities for years, the programs themselves pose notoriously complex administrative problems. This accounts for their rather limited use. For a program to work, development rights must have value, and there must be a balance between sending and receiving zones. If too many development rights flood the market, the owners of the land being protected will be seriously disadvantaged. In addition, the jurisdiction in which the TDR program is used must include growing areas with a strong demand for intense development. If there is no market for intense urban uses of land (that is, high-density residential and compact commercial and office development), there will be little incentive for landowners in receiving areas to purchase development rights. Likewise there will be no market for such rights if the zoning rules in receiving areas allow landowners to develop land to its most profitable use without acquiring any additional development rights.

Without adequate planning, the tendency is to lurch from crisis to crisis, always trying to catch up with worsening problems.

Legal issues. TDR programs were validated by the U.S. Supreme Court in the seminal case of *Penn Central Transportation Co. v. City of New York*. The city had designated Grand Central Station as a landmark and required all of its exterior alterations to be approved by a city commission. However, it accorded the owner, Penn Central, additional development rights that could be severed and transferred for use at a noncontiguous parcel. When Penn Central proposed to lease the air rights above the terminal for a high-rise office tower, the commission rejected the plans as being destructive of the terminal's aesthetic and historic features. The Court rejected Penn Central's claim that a taking had occurred, stating that although the availability of transferable development rights "may well not have constituted 'just compensation' *if* a 'taking' had occurred, the rights nevertheless undoubt-

edly mitigate whatever financial burdens the law has imposed. . . ."[37]

There is express enabling authority for North Carolina local governments to adopt a TDR program, but the circumstances under which the program may be used are limited. G.S. 136-66.10 and -66.11, adopted in 1987, allow a North Carolina city or county to provide "severable development rights" under its zoning and land subdivision ordinances if a landowner dedicates right-of-way for a new or widened thoroughfare shown on a thoroughfare plan. However, because these development rights are established only when a property owner makes a special form of road right-of-way dedication, the potential supply of development rights is too small to support a viable market. As a result, local governments have made virtually no use of this statute.[38]

Variations. There are several variations on the TDR theme. Perhaps the most conservative alternative involves transfer of development potential from one part of a zoning lot to another. If the less-developed area of the parcel is later subdivided and sold, then a conservation easement may be recorded that restricts the use of that area. For example, Winston-Salem is considering such an arrangement to encourage the transfer of development potential from flood fringe areas to "upland" portions of land parcels.

Conclusion

North Carolina cities and counties have substantial legal authority to enact smart growth programs. Although a few innovative tools may not be legally available, the smart growth toolbox for local governments is robust. Local governments can use a coordinated program of regulations, plans, and public investment strategies to reduce urban sprawl, protect the environment, and promote wider economic opportunities for their citizens. These programs can reduce the public and private costs of growth and promote the development (and maintenance) of the types of communities in which people want to live. The state does not mandate the use of any of these tools. The choice of whether and how to manage growth and how to coordinate efforts has largely been left to local governments. Charting how growth will be managed is in the hands of local citizens and their elected leaders.

Notes

1. The North Carolina Department of Transportation recently approved amendments to its rules to allow construction of narrower streets with on-street parking. These rules set the minimum standards for roads that are turned over to the state for maintenance and thus are very important design considerations for many county subdivisions.

2. Aesthetics is a legitimate basis for local regulation. State v. Jones, 305 N.C. 520, 290 S.E.2d 675 (1982) (upholding junkyard-screening requirement); A-S-P Assoc. v. City of Raleigh, 298 N.C. 207, 216 S.E.2d 444 (1979) (upholding historic district regulations). A few local governments in the state have regulatory appearance codes to prevent dilapidated commercial buildings in redevelopment areas or community entranceways. Others have aesthetic standards for new commercial developments. However, regulation of architectural details for residential development outside historic districts is generally left to private restrictive covenants rather than to governmental regulations (though local regulations in other states do prohibit homes that are either too uniform, or too dissimilar from neighboring homes).

3. Raleigh and the Manufactured Housing Institute recently cooperated in development of a demonstration house to illustrate affordable infill housing.

4. For additional information on community development corporations, *see* Anita R. Brown-Graham, *Thinking Globally, Acting Locally: Community-Based Development Organizations and Local Governments Transform Troubled Neighborhoods*, POPULAR GOVERNMENT, Winter/Spring 1996, at 2.

5. For details on these redevelopment options, see Richard Whisnant, *Brownfields in a Green State*, POPULAR GOVERNMENT, Winter 1999, at 2. The program is codified at N.C. Gen. Stat. § 130A-310.30 through -310.40 (hereinafter the North Carolina General Statutes will be referred to as G.S.).

6. Counties also may establish voluntary agricultural districts that limit water and sewer assessments for farmland and require special public hearings before condemnation of farmland. G.S. 106-735 through -743. Further, state law allows farmland to be assessed at agricultural rather than market value for property taxes and protects preexisting farms from nuisance suits. On the other hand, city and county authority to regulate subdivisions in agricultural areas is somewhat limited by the exemption of land divisions greater than ten acres from subdivision regulation (local governments may, however, establish minimum lot sizes greater than ten acres in appropriate rural-agricultural zoning districts).

7. Another possibility is to establish a program that facilitates sale or transfer of development rights, discussed later in this article.

8. The authority of local governments to "condemn" land (that is, to acquire it from an unwilling landowner by right of eminent domain) is more limited. In the smart growth context, this authority is generally available only for parkland and drainage projects. Local governments also can condemn land for streets and public utilities. Several local governments, including Asheville, Greensboro, Guilford County, High Point, and Raleigh, have secured local legislation authorizing condemnation for acquisition of open space.

9. The goal of protecting an additional one million acres of open space is codified at G.S. 113A-240 and -241.

10. For example, a zoning ordinance might provide that if a development will price at least 10 percent of its housing units at an "affordable" level, the development may have 10 percent more housing units than would be permitted otherwise.

11. For example, the court ruled that Chapel Hill could not use zoning to regulate the conversion of apartments to condominiums, holding that form of ownership was not a legitimate concern of land-use regulation. Graham Court Assoc. v. Town Council of Chapel Hill, 53 N.C. App. 543, 281 S.E.2d 418 (1981). The court invalidated a Harnett County rezoning that was based on concerns about crime (and allegedly the ethnicity of potential residents of manufactured housing parks), noting that, in zoning, it was arbitrary and capricious to consider impacts other than those on land use. Gregory v. County of Harnett, 128 N.C. App. 161, 493 S.E.2d 786 (1997).

12. Although such exactions would meet the constitutional requirement of being reasonably related to the impacts generated by the development approval, the more difficult question in North Carolina is one of statutory authority. Dedications can be required for streets, utilities, and recreational lands, and for construction of "community service facilities," but provision of affordable housing probably does not fit any of these categories.

13. G.S. 159G-10 provides priority funding under the Clean Water Revolving Loan and Grant Fund to local governments with comprehensive plans that protect existing water uses and ensure compliance with water quality standards. The statute gives even higher priority to local plans that exceed minimum standards and are being implemented. After July 1, 2001, local adoption of a flood-hazard ordinance (where applicable) also will be a factor in setting priorities.

14. For additional background on regional planning, *see* James H. Svara, *Regional Councils as Linchpins in North Carolina,* POPULAR GOVERNMENT, Spring 1998, at 21. Coordination of local planning has been a central feature of smart growth initiatives in many states.

15. For a fuller review of the topic, *see* JAMES C. NICHOLAS, ARTHUR C. NELSON, & JULIAN C. JUERGENSMEYER, A PRACTITIONER'S GUIDE TO DEVELOPMENT IMPACT FEES (Chicago: Planners Press, 1991); and DEVELOPMENT IMPACT FEES: POLICY RATIONALE, PRACTICE, THEORY AND ISSUES (Arthur C. Nelson ed., Chicago: Planners Press, 1988). For more on North Carolina's experience, *see* Richard D. Ducker, *Using Impact Fees for Public Schools,* 26 SCHOOL LAW BULLETIN 1; William R. Breazeale, *Raleigh's Facility-Fee Program,* POPULAR GOVERNMENT, Fall 1989, at 2.

16. Batch v. Town of Chapel Hill, 92 N.C. App. 601, 613, 376 S.E.2d 22, 26 (1989), *rev'd on other grounds*, 326 N.C. 1, 387 S.E.2d 655 (1990), *quoting* Richard D. Ducker, *Taking Found for Beach Access Dedication Requirement,* LOCAL GOVERNMENT LAW BULLETIN No. 30, at 2 (1987).

17. Unless otherwise noted, the following acts authorize the affected local governments to adopt fees for (1) streets, roads, and related improvements; (2) parks, open space, and recreational facilities; and (3) stormwater and drainage facilities. 1985 N.C. Sess. Laws ch. 357: *Carrboro* (not open space or recreational facilities); 1985 N.C. Sess. Laws ch. 498, as amended by 1987 N.C. Sess. Laws ch. 514: *Raleigh*; 1985 N.C. Sess. Laws ch. 536, as amended by 1988 N.C. Sess. Laws chs. 986–988: *Kill Devil Hills, Kitty Hawk, Manteo, Nags Head,* and *Southern Shores* (fire stations, city administration buildings, and emergency refuge shelters); 1986 N.C. Sess. Laws ch. 936: *Chapel Hill*; 1986 N.C. Sess. Laws ch. 936: *Hillsborough*; 1987 N.C. Sess. Laws ch. 460: *Chatham County* (water and sewer also); 1987 N.C. Sess. Laws ch. 460, as amended by 1991 N.C. Sess. Laws ch. 324: *Orange County* (water and sewer also); 1987 N.C. Sess. Laws ch. 460: *Pittsboro*; 1987 N.C. Sess. Laws ch. 705: *Hickory* (water and sewer also); 1987 N.C. Sess. Laws ch. 801: *Cary* (roads only); 1987 N.C. Sess. Laws ch. 802, as amended by 1989 N.C. Sess. Laws ch. 476: *Durham*; 1988 N.C. Sess. Laws ch. 996: *Rolesville* (water and sewer, and schools); 1988 N.C. Sess. Laws ch. 1021: *Catawba County* (emergency medical facilities, fire stations, schools, cultural facilities, libraries, and solid waste facilities); 1989 N.C. Sess. Laws ch. 430: *Knightdale*; 1989 N.C. Sess. Laws ch. 502: *Wake Forest* (same as Catawba County); 1989 N.C. Sess. Laws ch. 606: *Zebulon*; 1989 N.C. Sess. Laws ch. 607: *Southern Pines* (water and sewer also); 1991 N.C. Sess. Laws ch. 660: *Dunn*.

18. South Shell Investment v. Town of Wrightsville Beach, 703 F. Supp. 1192 (E.D.N.C. 1988) (finding authority in public enterprise statutes, G.S. 160A-313, -314), *aff'd*, 900 F.2d 255 (4th Cir. 1990). Virtually identical statutes apply to counties. G.S. 153A-276, -277.

19. Homebuilders' Ass'n of Charlotte v. City of Charlotte, 336 N.C. 337, 442 S.E.2d 45 (1994) (finding authority in zoning, land subdivision control, and other development-control enabling statutes), *rev'g* 109 N.C. App. 327, 427 S.E.2d 160 (1993). *See also* River Birch Assoc. v. City of Raleigh, 326 N.C. 100, 388 S.E.2d 538 (1990) (holding that, like other local governmental powers, power to require land dedication under subdivision ordinance must be construed broadly).

20. The test adopted in North Carolina and certain other states is the "rational nexus" test, which consists of the three principles discussed in the text. *See* Batch v. Town of Chapel Hill, 92 N.C. App. 601, 376 S.E.2d 22 (1989), *rev'd on other grounds*, 326 N.C. 1, 387 S.E.2d 655 (1990); Franklin Road Properties v. City of Raleigh, 94 N.C. App. 731, 381 S.E.2d 487 (1989).

21. For more detailed background on the legal issues involved in development moratoria, *see* David W. Owens, *Land-Use and Development Moratoria,* POPULAR GOVERNMENT, Fall 1990, at 31.

22. A two-month moratorium on building permits for projects inconsistent with the land-use plan was invalidated for failure to follow these procedural requirements in Vulcan Materials Co. v. Iredell County, 103 N.C. App. 779, 407 S.E.2d 283 (1991).

23. Perhaps the best known of these systems, from Petaluma, California, was upheld in Construction Industry Ass'n of Sonoma County v. Petaluma, 522 F.2d 897 (9th Cir. 1975), *rev'g* 375 F. Supp. 574 (N.D. Cal. 1974).

24. *See* V. GAIL EASLEY, STAYING INSIDE THE LINE 2 (Planning Advisory Serv. Report No. 440, Chicago: American Planning Ass'n, 1992).

25. Many growth boundary programs also include an urban expansion or reserve area beyond the urban service area or urban growth boundary where services will be phased in during the latter portions of the planning period. The urban growth boundary thus is located at the farthest edge of the urban expansion or reserve area, not necessarily at the urban service boundary.

26. Because the agreement limits the powers of the three units, they sought and obtained local legislation specifically authorizing the agreement's provisions (1987 N.C. Sess. Laws ch. 233). For a discussion of the agreement, *see* Richard D. Ducker, *The Orange County Joint Planning Agreement,* POPULAR GOVERNMENT, Winter 1988, at 47.

27. *See, e.g.,* Washington Growth Management Act (codified in large part as WASH. REV. CODE ANN. ch. 36.70A).

28. Fulghum v. Town of Selma, 238 N.C. 100, 76 S.E.2d 368 (1953).

29. Whether service must be extended is distinct from who will pay for the extension.

30. *Compare* Dateline Bldrs. v. City of Santa Rosa, 194 Cal. Rptr. 258 (Cal. Ct. App. 1983) (holding that refusal of city to provide service because project was outside growth area as designated by city-county growth management plan, was necessary and proper exercise of city's police power), *with* Robinson v. City of Boulder, 547 P.2d 228 (Colo. 1976) (holding that city was obligated to extend service despite city's determination that development in area would conflict with city-county growth management plan).

31. *Fulghum*, 238 N.C. 100, 76 S.E.2d 368; Atlantic Constr. Co. v. City of Raleigh, 230 N.C. 365, 53 S.E.2d 165 (1949).

32. For a fuller discussion of APF standards in the context of state and local growth management, *see* STATE AND REGIONAL COMPREHENSIVE PLANNING: IMPLEMENTING NEW METHODS FOR GROWTH MANAGEMENT (Peter A. Buchsbaum & Larry J. Smith eds., Chicago: American Bar Ass'n, 1993). *See also* S. MARK WHITE, ADEQUATE PUBLIC FACILITIES ORDINANCES AND TRANSPORTATION MANAGEMENT (Planning Advisory Service Report No. 465, Chicago: American Planning Ass'n, 1996).

33. G.S. 160A-383; G.S. 153A-341.

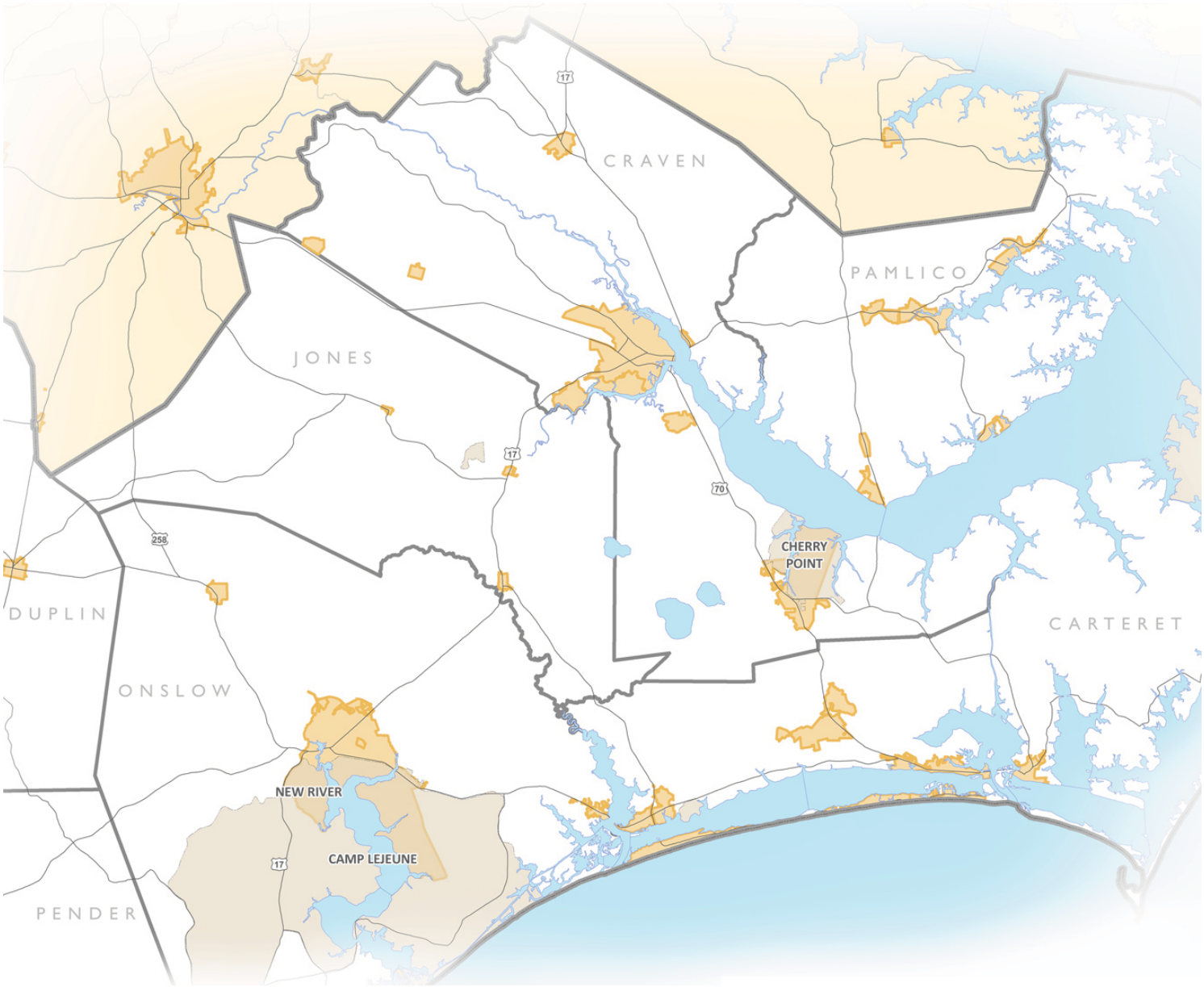
34. Tate Terrace Realty Investors v. Currituck County, 127 N.C. App. 212, 488 S.E.2d 845 (1997).

35. An alternative system used in Ramapo, New York, was upheld in Golden v. Planning Board of Town of Ramapo, 285 N.E.2d 291 (N.Y. 1972). It was based on a comprehensive plan for the development of all land in town according to an eighteen-year capital improvement program. A developer could obtain a development permit by acquiring a designated number of points based on the availability of five essential services, not all of them controlled by the town.

36. For a comprehensive review of TDR programs throughout the country, *see* RICK PRUETZ, SAVED BY DEVELOPMENT: PRESERVING ENVIRONMENTAL AREAS, FARMLAND AND HISTORIC LANDMARKS WITH TRANSFER OF DEVELOPMENT RIGHTS (Burbank, Cal.: Arje Press, 1997).

37. Penn Central Transp. Co. v. City of New York, 438 U.S. 104, 137 (1978) (emphasis added).

38. The existence of these statutes may by implication serve to prevent local governments from adopting TDR programs that are not otherwise expressly enabled. Provisions that would have authorized the town of Huntersville to establish a TDR program were deleted in conference committee from House Bill 684 in the 2000 session of the General Assembly.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix L

Installation Housing Market Analysis

Appendix L

2008 HOUSING MARKET ANALYSIS UPDATE

9 JULY 2008

MCB CAMP LEJEUNE and MCAS NEW RIVER

NORTH CAROLINA

HEADQUARTERS, U.S. MARINE CORPS

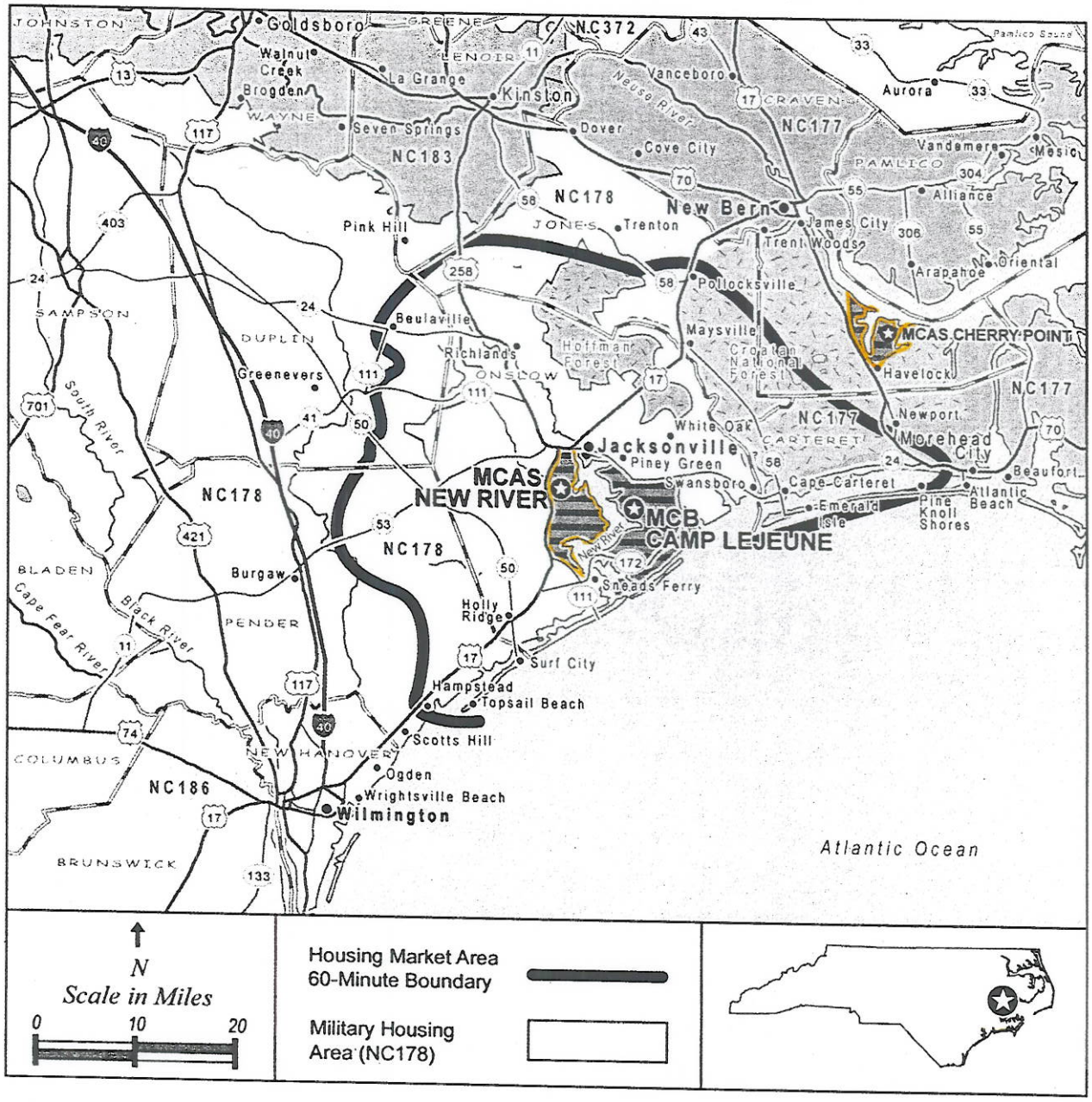
Louisville District, U.S. Army Corps of Engineers

Prepared by ROBERT D. NIEHAUS, INC.

REQUIREMENTS SUMMARY – MCB CAMP LEJEUNE & MCAS NEW RIVER

MCB Camp Lejeune and MCAS New River are located on the Atlantic seaboard adjacent to the city of Jacksonville in Onslow County, North Carolina. The MCB Camp Lejeune and MCAS New River housing market area is defined as that region within a one-hour commute of the principal installation work areas by private auto during peak traffic in average weather conditions. The market area includes all of Onslow County as well as portions of Carteret, Craven, Duplin, Jones, and Pender counties. Figure 1 illustrates the 60-minute market area used in this analysis, as well as Military Housing Areas (MHAs) in the region. The MHA identified as "NC178" is used to determine BAH rates for the two bases.

Figure 1. MCB Camp Lejeune and MCAS New River Housing Market Area



2008 HOUSING MARKET ANALYSIS UPDATE

FINAL REPORT

MCAS CHERRY POINT, NORTH CAROLINA

HEADQUARTERS, U.S. MARINE CORPS

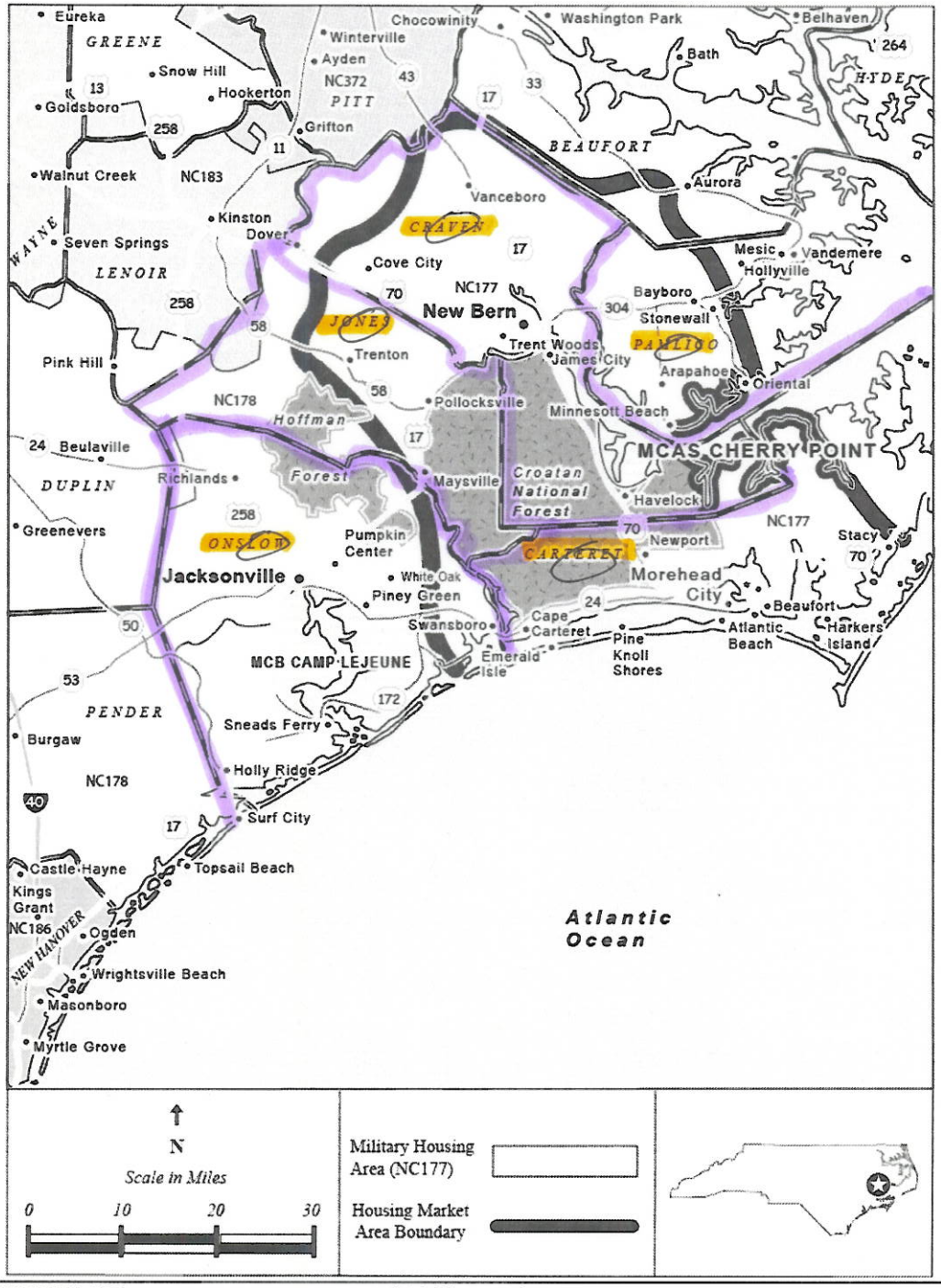
Louisville District, U.S. Army Corps of Engineers

Prepared by ROBERT D. NIEHAUS, INC.

REQUIREMENTS SUMMARY – MCAS CHERRY POINT

MCAS Cherry Point is located approximately midway between the cities of New Bern and Morehead City in North Carolina. The MCAS Cherry Point housing market area includes the majority of Craven, Carteret, and Pamlico counties, as well as portions of Jones, Onslow, and Beaufort counties. Figure 1 displays the 60-minute market area used in this analysis, as well as the Military Housing Area (MHA). The MHA (NC177) is used to determine BAH rates for the base.

Figure 1. MCAS Cherry Point Housing Market Area



For more information or to request complete copies of these reports, contact:

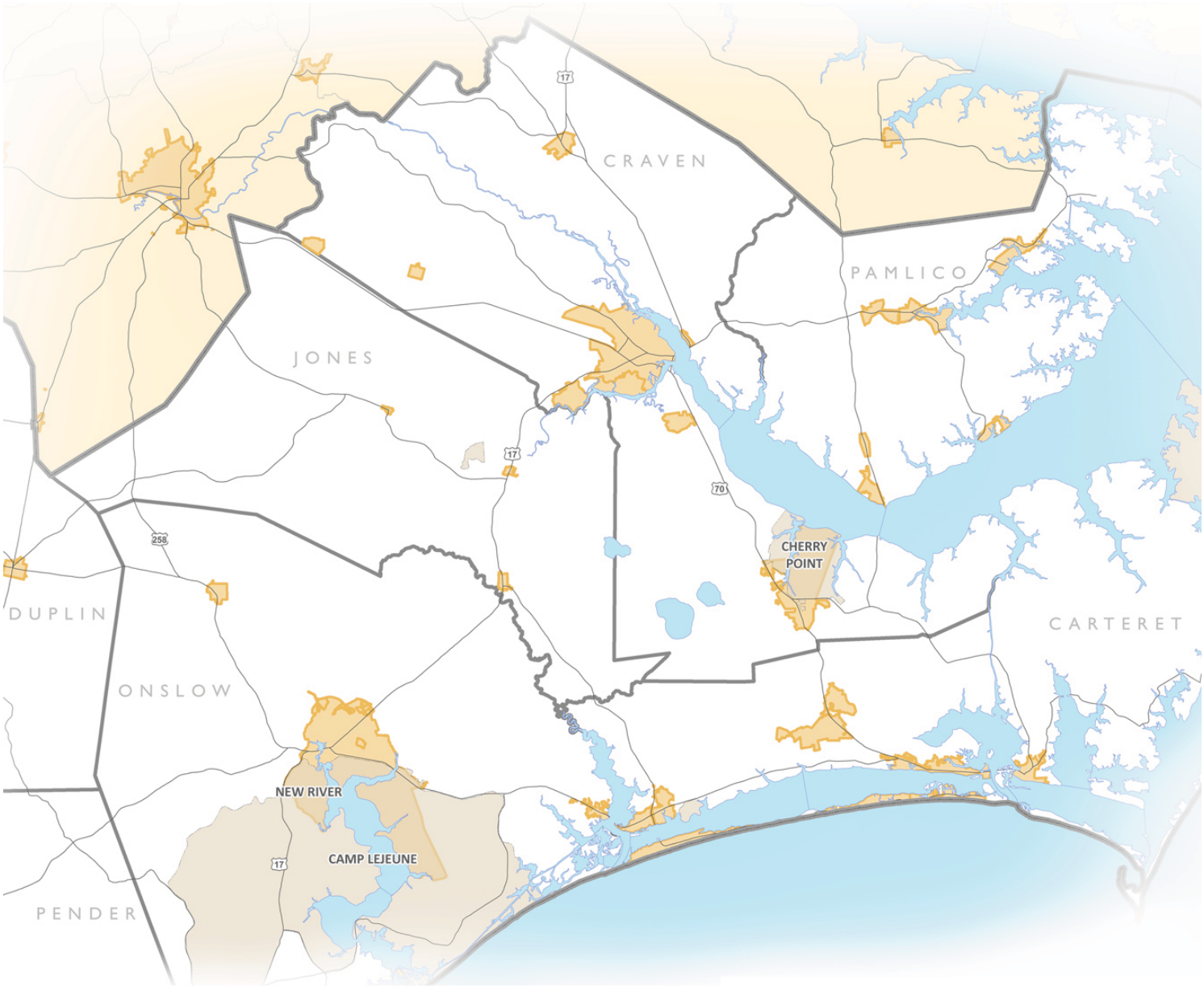
Marine Corps Air Station Cherry Point, Housing Office

http://www.cherrypoint.usmc.mil/Housing/oldpages/Housing.asp

Marine Corps Base Camp LeJeune, Housing Office

http://www.lejeune.usmc.mil/family_housing/

Locations:	Building TT43, Inchon Street, Tarawa Terrace	
		Reception Center, 60 Molly Pitcher Rd., Camp Lejeune
	Hours of Operation:	0800-1600 Monday - Friday
	Contact Phone:	(910) 450-1627 or 450-1628
	Email:	lejeunefamilyhousing@usmc.mil



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix M

CCPCUA Rules

Appendix M

TITLE 15A - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

CHAPTER 2 - ENVIRONMENTAL MANAGEMENT

SUBCHAPTER 2E - WATER USE REGISTRATION AND ALLOCATION

SECTION .0100 - AUTHORITY

.0102 PURPOSE

History Note: Authority G.S. 143-215.12; 143-215.14;
Eff. February 1, 1976;
Repealed Eff. August 1, 2002.

.0103 SCOPE

History Note: Authority G.S. 143-215.14;
Eff. February 1, 1976;
Repealed Eff. August 1, 2002.

.0106 DEFINITIONS

As used herein, unless the context otherwise requires:

(1) "Director" means the Director of the Division of Water Resources.

(2) "Division" means the Division of Water Resources.

History Note: Authority G.S. 87-87; 143-215.14; 143-215.21;
Eff. March 1, 1985;
Amended Eff. August 1, 2002.

.0107 DELEGATION

(a) The Director is delegated the authority to grant, modify, revoke or deny permits under G.S. 143-215.15 and G.S. 143-215.16.

(b) The Director may delegate any permitting function given by the rules of this Subchapter.

(c) The Director is delegated the authority to assess civil penalties and request the Attorney General to institute civil actions under G.S. 143-215.17.

(d) The Director is delegated the authority to process applications and collect fees for registration of water withdrawals and transfers under G.S. 143-215.22H and G.S. 143- 215.3(a)(1b).

(e) The Director may delegate any water withdrawal or transfer registration processing functions given by the rules of this Subchapter.

History Note: Filed as a Temporary Amendment Eff. October 14, 1991 for a period of 180 Days to Expire on April 11, 1992;
Authority G.S. 143-215.3(a)(1); 143-215.3(a)(4);
Eff. March 1, 1985;
Amended Eff. August 1, 2002; September 1, 1994; April 1, 1992.

SECTION .0200 - CAPACITY USE AREA NO. 1

.0201 DECLARATION AND DELINEATION OF CAPACITY USE AREA NO. 1

History Note: Authority G.S. 143-215.13;
Eff. February 1, 1976;
Repealed Eff. August 1, 2002.

.0202 PERSONS WITHDRAWING GROUNDWATER IN CAPACITY USE AREAS

History Note: *Authority G.S. 143-215.14; 143-215.15;*
Eff. February 1, 1976;
Amended Eff. March 1, 1985;
Repealed Eff. August 1, 2002.

.0205 ACTIVITIES

History Note: *Authority G.S. 143-215.14; 143-215.20;*
Eff. February 1, 1976;
Repealed Eff. August 1, 2002.

SECTION .0500 - CENTRAL COASTAL PLAIN CAPACITY USE AREA

.0501 DECLARATION AND DELINEATION OF CENTRAL COASTAL PLAIN CAPACITY USE AREA

The area encompassed by the following 15 North Carolina counties and adjoining creeks, streams, and rivers is hereby declared and delineated as the Central Coastal Plain Capacity Use Area: Beaufort, Carteret, Craven, Duplin, Edgecombe, Greene, Jones, Lenoir, Martin, Onslow, Pamlico, Pitt, Washington, Wayne and Wilson. The Environmental Management Commission finds that the use of ground water requires coordination and limited regulation in this delineated area for protection of the public interest. The intent of this Section is to protect the long term productivity of aquifers within the designated area and to allow the use of ground water for beneficial uses at rates which do not exceed the recharge rate of the aquifers within the designated area.

History Note: *Authority G.S. 143-215.13;*
Eff. August 1, 2002.

.0502 WITHDRAWAL PERMITS

(a) Existing ground water withdrawal permits issued in Capacity Use Area No. 1 (15A NCAC 2E .0200) within the Central Coastal Plain Capacity Use Area are reissued under Section .0500 of this Subchapter and are valid until the expiration date specified in each permit. Water use permits are no longer required for withdrawals in Hyde and Tyrrell Counties as of the effective date of this Rule. Permits are not required for surface water use under Section .0500 of this Subchapter in the Central Coastal Plain Capacity Use Area as delineated in Rule .0501 of this Section.

(b) No person shall withdraw ground water after the effective date of this Rule in excess of 100,000 gallons per day by a well, group of wells operated as a system, or sump for any purpose unless such person shall first obtain a water use permit from the Director. Existing withdrawals of ground water as of the effective date of this Rule and proposed withdrawals previously approved for funding appropriated pursuant to the "Clean Water and Natural Gas Critical Needs Bond Act of 1998" or other local, state or federally funded projects as of the effective date of this Rule shall be allowed to proceed with construction or to continue to operate under interim status until a permit has been issued or denied by the Director, provided that persons withdrawing in excess of 100,000 gallons per day by a well, group of wells operated as a system, or sump comply with the following requirements:

(1) Persons conducting withdrawals in the Capacity Use Area that require a permit shall submit a permit application to the Division of Water Resources within 180 days of the effective date of this Rule.
(2) Persons who have submitted applications shall provide any additional information requested by the Division of Water Resources for processing of the permit application within 30 days of the receipt of that request.
(3) Persons conducting withdrawals in the Capacity Use Area that require a permit shall submit water level and water use data on a form supplied by the Division four times a year, within 30 days of the end of March, June, September, and December until a permit has been issued or denied by the Division of Water Resources.

(c) Ground water withdrawals shall be governed by the following standards:

(1) Adverse impacts of ground water withdrawals shall be avoided or minimized. Adverse impacts include, but are not limited to:
(A) dewatering of aquifers;
(B) encroachment of salt water;
(C) land subsidence or sinkhole development;
(D) declines in aquifer water levels that indicate that aggregate water use exceeds the aquifer replenishment rate.
(2) Adverse impacts on other water users from ground water withdrawals shall be corrected or minimized through efficient use of water and development of sustainable water sources.
(3) In determining the importance and necessity of a proposed withdrawal the efficiency of water use and implementation of conservation measures shall be considered.

(d) An application for a water use permit must be submitted on a form approved by the Director to the North Carolina Division of Water Resources. The application shall describe the purpose or purposes for which water shall be used, shall set forth the method and location of withdrawals, shall justify the quantities needed, and shall document water conservation measures to be used by the applicant to ensure efficient use of water and avoidance of waste. Withdrawal permit applications shall include the following information:

(1) Location by latitude and longitude of all wells to be used for withdrawal of water.

(2) Specifications for design and construction of existing and proposed production and monitoring wells including:

(A) Well diameter;

(B) Total depth of the well;

(C) Depths of all open hole or screened intervals that will yield water to the well;

(D) Depth of pump intake(s);

(E) Size, capacity and type of pump;

(F) Depth to top of gravel pack;

(G) Depth measurements shall be within accuracy limits of plus or minus 0.10 feet and referenced to a known land surface elevation.

Exceptions may be made where specific items of information are not critical, as determined by the Director, to manage the ground water resource.

(3) Withdrawal permit applications for use of ground water from the Cretaceous aquifer system shall include plans to reduce water use from these aquifers as specified in Rule .0503 of this Section. Withdrawal rates from the Cretaceous aquifer system that exceed the approved base rate may be permitted during Phase I of Rule .0503 of this Section if the applicant can demonstrate to the Director's satisfaction a need for the greater amount. Cretaceous aquifer system wells shall be identified using the specifications in Rule .0502(d)(1) and .0502(d)(2) of this Section and the hydrogeological framework.

(4) Withdrawal permit applications for dewatering of mines, pits or quarries shall include a dewatering or depressurization plan that includes:

(A) the current withdrawal rate or estimates of the proposed withdrawal rate;

(B) the location, design and specifications of any sumps, drains or other withdrawal sources including wells and trenches;

(C) the lateral extent and depth of the zone(s) to be dewatered or depressurized;

(D) a monitoring plan that provides data to delineate the nature and extent of dewatering or depressurization;

(E) certification of all engineering plans and hydrogeological analyses prepared to meet these requirements consistent with professional licensing board statutes and rules governing such activities.

Exceptions may be made where specific items of information are not critical, as determined by the Director, to manage the ground water resource.

(5) Conservation Measures. The applicant shall provide information on existing conservation measures and conservation measures to be implemented during the permit period as follows:

(A) Public water supply systems shall develop and implement a feasible water conservation plan incorporating, at a minimum, the following components. Each component shall be described, including a timetable for implementing each component that does not already exist.

(i) Adoption of a water conservation-based rate structure, such as: flat rates, increasing block rates, seasonal rates, or quantity-based surcharges.

(ii) Implementation of a water loss reduction program if unaccounted for water is greater than 15 percent of the total amount produced, as documented annually using a detailed water audit. Water loss reduction programs shall consist of annual water audits, in-field leak detection, and leak repair.

(iii) Adoption of a water conservation ordinance for irrigation, including such measures as: time-of-day and day-of-week restrictions on lawn and ornamental irrigation, automatic irrigation system shut-off devices or other appropriate measures.

(iv) Implementation of a retrofit program that makes available indoor water conservation devices to customers (such as showerheads, toilet flappers, and faucet aerators).

(v) Implementation of a public education program (such as water bill inserts, school and civic presentations, water treatment plant tours, public services announcements, or other appropriate measures).

(vi) Evaluation of the feasibility of water reuse as a means of conservation, where applicable.

(B) Users of water for commercial purposes, other than irrigation of crops and forestry stock, shall develop and implement a water conservation plan as follows:

(i) an audit of water use by type of activity (for example, process make-up water, non-contact cooling water) including existing and potential conservation and reuse measures for each type of water use;

(ii) an implementation schedule for feasible measures identified in the above item for conservation and reuse of water at the facility.

(C) Users of water for irrigation of crops and forestry stock shall provide the following information:

(i) total acreage with irrigation available;

(ii) types of crops that may be irrigated;

(iii) method of irrigation (for example, wells that supply water to canals, ditches or central pivot systems or any other irrigation method using ground water);

(iv) a statement that the applicant uses conservation practice standards for irrigation as defined by the Natural Resources Conservation Service.

(6) If an applicant intends to operate an aquifer storage and recovery program (ASR), the applicant shall provide information on the storage zone, including the depth interval of the storage zone, lateral extent of the projected storage area, construction details of wells used for injection and withdrawal of water, and performance of the ASR program.

(e) The Director shall issue, modify, revoke, or deny each permit as set forth in G.S. 143-215.15. Permittees may apply for permit modifications. Any application submitted by a permittee shall be subject to the public notice and comment requirements of G.S. 143-215.15(d).

(f) Permit duration shall be set by the Director as described in G.S. 143-215.16(a). Permit transferability is established in G.S. 143-215.16(b).

(g) Persons holding a permit shall submit signed water usage and water level reports to the Director not later than 30 days after the end of each permit reporting period as specified in the permit. Monitoring report requirements may include:

(1) Amounts of daily withdrawal from each well.

(2) Pumping and static water levels for each supply well as measured with a steel or electric tape, or an alternative method as specified in the permit, at time intervals specified in the permit.

(3) Static water levels in observation wells at time intervals specified in the permit.

(4) Annual sampling by applicants located in the salt water encroachment zone and chloride concentration analysis by a State certified laboratory.

(5) Any other information the Director determines to be pertinent and necessary to the evaluation of the effects of withdrawals.

(h) Water use permit holders shall not add new wells without prior approval from the Director.

(i) The Director may require permit holders to construct observation wells to observe water level and water quality conditions before and after water withdrawals begin if there is a demonstrated need for aquifer monitoring to assess the impact of the withdrawal on the aquifer.

(j) For all water uses other than dewatering of mines, pits or quarries, withdrawals shall be permitted only from wells that are constructed such that the pump intake or intakes are at a shallower depth than the top of the uppermost confined aquifer that yields water to the well. Confined aquifer tops are established in the hydrogeological framework. Where wells in existence as of the effective date of this Rule are not in compliance with the requirements of this provision, the permit shall include a compliance schedule for retrofitting or replacement of non-compliant wells. Withdrawals from unconfined aquifers shall not lower the water table by an amount large enough to decrease the effective thickness of the unconfined aquifer by more than 50 percent.

(k) For withdrawals to dewater mines, pits or quarries, the permit shall delimit the extent of the area and depths of the aquifer(s) to be dewatered or depressurized. Maximum withdrawal rates and the permissible extent of dewatering or depressurization shall be determined by the Director using data provided by the applicant, data related to permits under G.S. 74-47, and other publicly available information. Withdrawal rates that do not cause adverse impacts, as defined in Rule .0502(c) of this Section, shall be approved.

(l) Withdrawals of water that cause changes in water quality such that the available uses of the resource are adversely affected shall not be permitted. For example, withdrawals shall not be permitted that result in migration of ground water that contains more than 250 milligrams per liter chloride into pumping wells that contain chloride at concentrations below 250 milligrams per liter.

(m) General permits may be developed by the Division and issued by the Director for categories of withdrawal that involve the same or substantially similar operations, have similar withdrawal characteristics, require the same limitations or operating conditions, and require similar monitoring.

(n) Permitted water users may withdraw and sell or transfer water to other users provided that their permitted withdrawal limits are not exceeded.

(o) A permitted water user may sell or transfer to other users a portion of his permitted withdrawal. To carry out such a transfer, the original permittee must request a permit modification to reduce his permitted withdrawal and the

proposed recipient of the transfer must apply for a new or amended withdrawal permit under Section .0500 of this Subchapter.

(p) Where an applicant or a permit holder can demonstrate that compliance with water withdrawal limits established under Section .0500 of this Subchapter is not possible because of construction schedules, requirements of other laws, or other reasons beyond the control of the applicant or permit holder, and where the applicant or permit holder has made good faith efforts to conserve water and to plan the development of other water sources, the Director may issue a temporary permit with an alternative schedule to attain compliance with provisions of Section .0500 of this Subchapter, as authorized in G.S. 143-215.15(c)(ii).

History Note: Authority G.S. 143-215.14; 143-215.15; 143-215.16; Eff. August 1, 2002.

.0503 PRESCRIBED WATER USE REDUCTIONS IN CRETACEOUS AQUIFER ZONES

Cretaceous aquifer water use shall be reduced in prescribed areas over a 16 year period, starting from approved base rates on the effective date of this Rule. The Cretaceous aquifer system zones and the three phases of water use reductions are listed as follows:

(1) Cretaceous aquifer system zones are regions established in the fresh water portion of the Cretaceous aquifer system that delimit zones of salt water encroachment, dewatering and declining water levels. These zones are designated on the paper and digital map entitled "Central Coastal Plain Capacity Use Area Cretaceous Aquifer Zones" (CCPCUA) on file in the Office of the Secretary of State one week prior to the effective date of these Rules.

(2) The reductions specified in Rule .0503 of this Section do not apply to intermittent users.

(3) If a permittee implements an aquifer storage and recovery program (ASR), reduction requirements shall be based on the total net withdrawals. The reductions specified in Rule .0503 of this Section do not apply if the volume of water injected into the aquifer is greater than the withdrawal volume. If the withdrawal volume is greater than the injected volume, reductions specified in Rule .0503 of this Section apply to the difference between the withdrawal volume and the injected volume.

(4) The reductions specified in Rule .0503 of this Section shall not reduce permitted water use rates below 100,001 gallons per day.

(5) Phase definitions:

(a) Phase I: The six year period extending into the future from the effective date of this Rule.

(b) Phase II: The five year period extending into the future from six years after the effective date of this Rule to 11 years after the effective date of this Rule.

(c) Phase III: The five year period extending into the future from 11 years after the effective date of this Rule to 16 years after the effective date of this Rule.

(6) Phase reductions:

(a) Phase I:

(i) At the end of the Phase I, permittees who are located in the dewatering zone shall reduce annual water use from Cretaceous aquifers by 25% from their approved base rate.

(ii) At the end of the Phase I, permittees who are located in the salt water encroachment zone shall reduce annual water use from Cretaceous aquifers by 25% from their approved base rate.

(iii) At the end of the Phase I, permittees who are located in the declining water level zone shall reduce annual water use from Cretaceous aquifers by 10% from their approved base rate.

(b) Phase II:

(i) At the end of the Phase II, permittees who are located in the dewatering zone shall reduce annual water use from Cretaceous aquifers by 50% from their approved base rate.

(ii) At the end of the Phase II, permittees who are located in the salt water encroachment zone shall reduce annual water use from Cretaceous aquifers by 50% from their approved base rate.

(iii) At the end of the Phase II, permittees who are located in the declining water level zone shall reduce annual water use from Cretaceous aquifers by 20% from their approved base rate.

(c) Phase III:

(i) At the end of the Phase III, permittees who are located in the dewatering zone shall reduce annual water use from Cretaceous aquifers by 75% from their approved base rate.

(ii) At the end of the Phase III, permittees who are located in the salt water encroachment zone shall reduce annual water use from Cretaceous aquifers by 75% from their approved base rate.

(iii) At the end of the Phase III, permittees who are located in the declining water level zone shall reduce annual water use from Cretaceous aquifers by 30% from their approved base rate.

(7) The CCPCUA Cretaceous Aquifer Zones map shall be updated, if necessary, in the sixth, eleventh, and sixteenth years following the effective date of this Rule to account for aquifer water level responses to phased withdrawal reductions. The map update shall be based on the following conditions:

(a) Rate of decline in water levels in the aquifers;
(b) Rate of increase in water levels in the aquifers;
(c) Stabilization of water levels in the aquifers;
(d) Chloride concentrations in the aquifers.

This aquifer information shall be analyzed on a regional scale and used to develop updated assessments of aquifer conditions in the Central Coastal Plain Capacity Use Area. The Environmental Management Commission (EMC) may adjust the aquifer zones and the water use reduction percentages for each zone based on the assessment of conditions. The EMC shall adopt the updated map and reduction percentage changes after public hearing.

(8) The reductions specified in Rule .0503 of this Section do not apply to wells exclusively screened or open to the Peedee aquifer.

(9) An applicant may submit documentation supporting the exemption of a well located in the Declining Water Level Zone from the withdrawal reductions specified in Rule .0503 of this Section. This documentation must include a record of monthly static water levels from that well over at least a three-year period, ending with the month when the request for exemption is submitted. The Director may exempt a well from reductions if the water level history shows no pattern of decline during this three-year period. A well previously exempted from the withdrawal reductions shall become subject to the reductions if water levels begin to show a pattern of decline.

History Note: Authority G.S. 143-215.15;
Eff. August 1, 2002.

.0504 REQUIREMENTS FOR ENTRY AND INSPECTION

(a) The Division may enter and inspect property in order to evaluate wells, pumps, metering equipment or other withdrawal or measurement devices and records of water withdrawals and water levels, if:

(1) Persons conduct an activity that the Division believes requires the use of water at quantities that subject the person to regulation under these Rules;
(2) A permittee or applicant has not provided data or information on use of water and wells and other water withdrawal facilities as required by these Rules; or
(3) Water levels and chloride concentrations at the person's facility, or at nearby facilities or monitoring stations, indicate that aquifers may be damaged by overpumping or salt water encroachment, or other adverse affects that may be attributed to withdrawal by the person.

(b) All information submitted to fulfill the requirements of these Rules, or to obtain a permit under these Rules, or obtained by inspection under these Rules, shall be treated as Confidential Business Information, if requested by the applicant, and found to be such by the Division. Reports defined in Rule .0502(g) of this Section are not considered Confidential Business Information.

History Note: Authority G.S. 143-215.19;
Eff. August 1, 2002.

.0505 ACCEPTABLE WITHDRAWAL METHODS THAT DO NOT REQUIRE A PERMIT

(a) As of the effective date of this Rule, any person who is not subject to Rule .0502 of this Section and withdraws more than 10,000 gallons per day from surface or ground water in the Central Coastal Plain Capacity Use Area, shall register such withdrawals on a form supplied by the Division and comply with the following provisions:

(1) Construct new wells such that the pump intake or intakes are above the top of the uppermost confined aquifer that yields water to the well. Confined aquifer tops are established in the hydrogeological framework.
(2) Report surface and ground water use to the Division of Water Resources on an annual basis on a form supplied by the Division.
(3) Withdraw water in a manner that does not damage the aquifer or cause salt water encroachment or other adverse impacts.

(b) These requirements do not apply to withdrawals to supply an individual domestic dwelling.

(c) Agricultural water users may either register water use with the Division of Water Resources as provided in this Rule or provide the information to the North Carolina Department of Agriculture and Consumer Services.

History Note: Authority G.S. 143-215.14; 143-355(k);
Eff. August 1, 2002.

.0506 CENTRAL COASTAL PLAIN CAPACITY USE AREA STATUS REPORT

Within two years of the effective date of this Rule, and at five year intervals thereafter, the Division of Water Resources shall publish a status report on the Central Coastal Plain Capacity Use Area. The report shall include the following:

(1) Compilations of water use data,
(2) Evaluations of surface and ground water resources,
(3) Updated information about the hydrogeologic framework in the Central Coastal Plain Capacity Use Area,
(4) A summary of alternative water sources and water management techniques that may be feasible by generalized geographic location, and
(5) A status report on actions by water users to develop new water sources and to increase water use efficiency.

History Note: Authority G.S. 143-215.14;
Eff. August 1, 2002.

.0507 DEFINITIONS

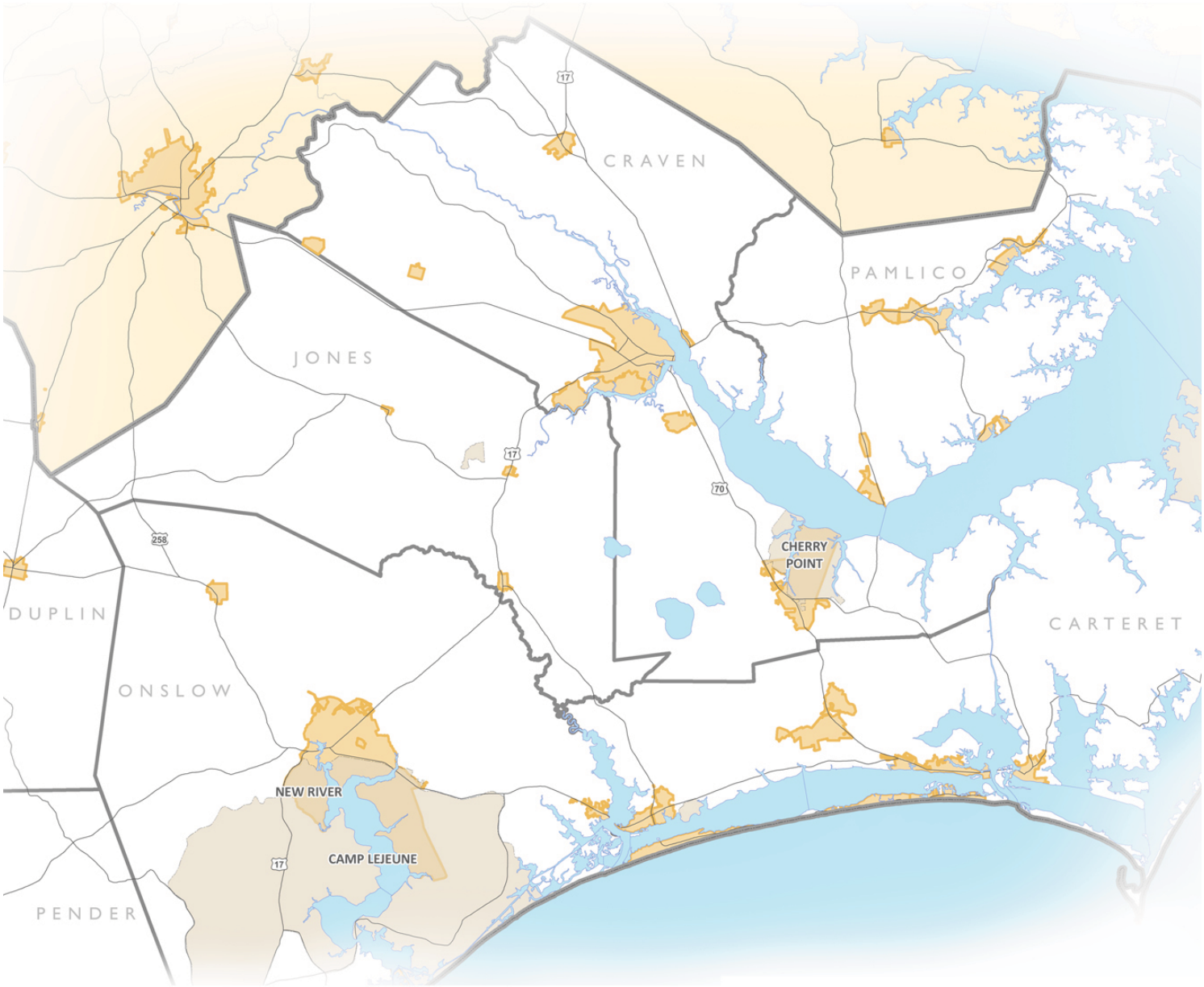
The following is a list of definitions for terms found in Section .0500 of this Subchapter.

(1) Approved base rate: The larger of a person's January 1, 1997 through December 31, 1997 or August 1, 1999 through July 31, 2000 annual water use rate from the Cretaceous aquifer system, or an adjusted water use rate determined through negotiation with the Division using documentation provided by the applicant of:
  (a) water use reductions made since January 1, 1992,
  (b) use of wells for which funding has been approved or for which plans have been approved by the Division of Environmental Health by the effective date of this Rule,
  (c) the portion of a plant nursery operation using low volume micro-irrigation, or
  (d) other relevant information.
(2) Aquifer: Water-bearing earth materials that are capable of yielding water in usable quantities to a well or spring.
(3) Aquifer storage and recovery program (ASR): Controlled injection of water into an aquifer with the intent to store water in the aquifer for subsequent withdrawal and use.
(4) Confining unit: A geologic formation that does not yield economically practical quantities of water to wells or springs. Confining units separate aquifers and slow the movement of ground water.
(5) Cretaceous aquifer system: A system of aquifers in the North Carolina coastal plain that is comprised of water-bearing earth materials deposited during the Cretaceous period of geologic time. The extent of the Cretaceous Aquifer System is defined in the hydrogeological framework and includes the Peedee, Black Creek, Upper Cape Fear and Lower Cape Fear aquifers.
(6) Dewatering: Dewatering occurs when aquifer water levels are depressed below the top of a confined aquifer or water table declines adversely affect the resource.
(7) Flat rates: Unit price remains the same regardless of usage within customer class.
(8) Fresh water: Water containing chloride concentrations equal to or less than 250 milligrams per liter.
(9) Gravel pack: Sand or gravel sized material inside the well bore and outside the well screen and casing.
(10) Ground water: Water in pore spaces or void spaces of subsurface sediments or consolidated rock.
(11) Hydrogeological framework: A three-dimensional representation of aquifers and confining units that is stored in Division data bases and may be adjusted by applicant supplied information.
(12) Increasing block rates: Unit price increases with additional usage.
(13) Intermittent users: Persons who withdraw ground water less than 60 days per calendar year; or who withdraw less than 15 million gallons of ground water in a calendar year; or aquaculture operations licensed under the authority of G.S. 106-761 using water for the initial filling of ponds or refilling of ponds no more frequently than every five years.
(14) Observation well: A non-pumping well screened in a particular aquifer where water levels can be measured and water samples can be obtained.
(15) Pumping water level: The depth to ground water in a pumping well as measured from a known land surface elevation. Measurements shall be made four hours after pumping begins. Measurements shall be within accuracy limits of plus or minus 0.10 feet.
(16) Quantity based surcharges: Surcharges billed with usage over a certain determined quantity.
(17) Salt water: Water containing chloride concentrations in excess of 250 milligrams per liter.
(18) Salt water encroachment: The lateral or vertical migration of salt water toward areas occupied by fresh water. This may occur in aquifers due to natural or man-made causes.
(19) Seasonal rates: Unit prices change according to the season.
(20) Static water level: The depth to ground water in a non-pumping well as measured from a known land surface elevation. Measurements shall be made after pumping has ceased for 12 hours. Measurements shall be within accuracy limits of plus or minus 0.10 feet.

(21) Unaccounted for water: The difference between the total water entering the system (produced and purchased) and the total metered or otherwise accounted for water usage.

(22) Water table: The water level in an unconfined aquifer.

History Note: *Authority G.S. 143-215.14;*
Eff. August 1, 2002.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix N

Recreation Facilities

Appendix N: Recreation Facilities

Table 1 Recreational Facilities by County

	Acres*	Indoor Facilities	Outdoor Sports Fields	Picnic Areas	Walking Trails	Water Access
Carteret County						
Carteret County park and trail system	62 miles				x	
Marshallberg Picnic Area	1.5			x		
Swinson Park	34.5		x	x		
Freedom Park	26		x	x		
Eastern Park	31		x	x		
Mariners Park	20		x			
Salter Path Beach Access	2			x		x
Salter Path Park	3		x	x		
South River Park	1.5		x	x		
Western Park	35	x[1]	x	x		
West Beaufort Water Access	3					x
Radio Island Water Access	3			x		x
Straits Fishing Pier	2					x

[1] Community Center with two classrooms, large multi-purpose room, and a kitchen.

	Acres*	Indoor Facilities	Outdoor Sports Fields	Picnic Areas	Walking Trails	Water Access
Harkers Island Beach Access	1.5					x
Morehead City Community Center		x[2]				
Emerald Isle Community Center		x[3]				
Craven County						
Twin Rivers Paddle Trail	250 miles					x
Creekside Park	111		x	x	x	x
Stanley White Recreation Center/ Henderson Park		x[4]			x	
West New Bern Recreation Center		x[5]				
Community Resource Center		x[6]				
Duplin County						
Cabin Lake County Park				x	x	x

[2] Weight room, gym, game room, and large multipurpose room.
[3] Exercise room, gym, lounge, and conference room.
[4] 15,000 sq. feet - Afterschool room, meeting room, kitchen facilities, indoor fitness facility, gym, ceramic room, and offices.
[5] 15,000 sq. feet - Game room, meeting room, kitchen facilities, gym, ceramic room, fitness equipment, and offices.
[6] Computer room, 3 multipurpose rooms, offices, and a small kitchen.

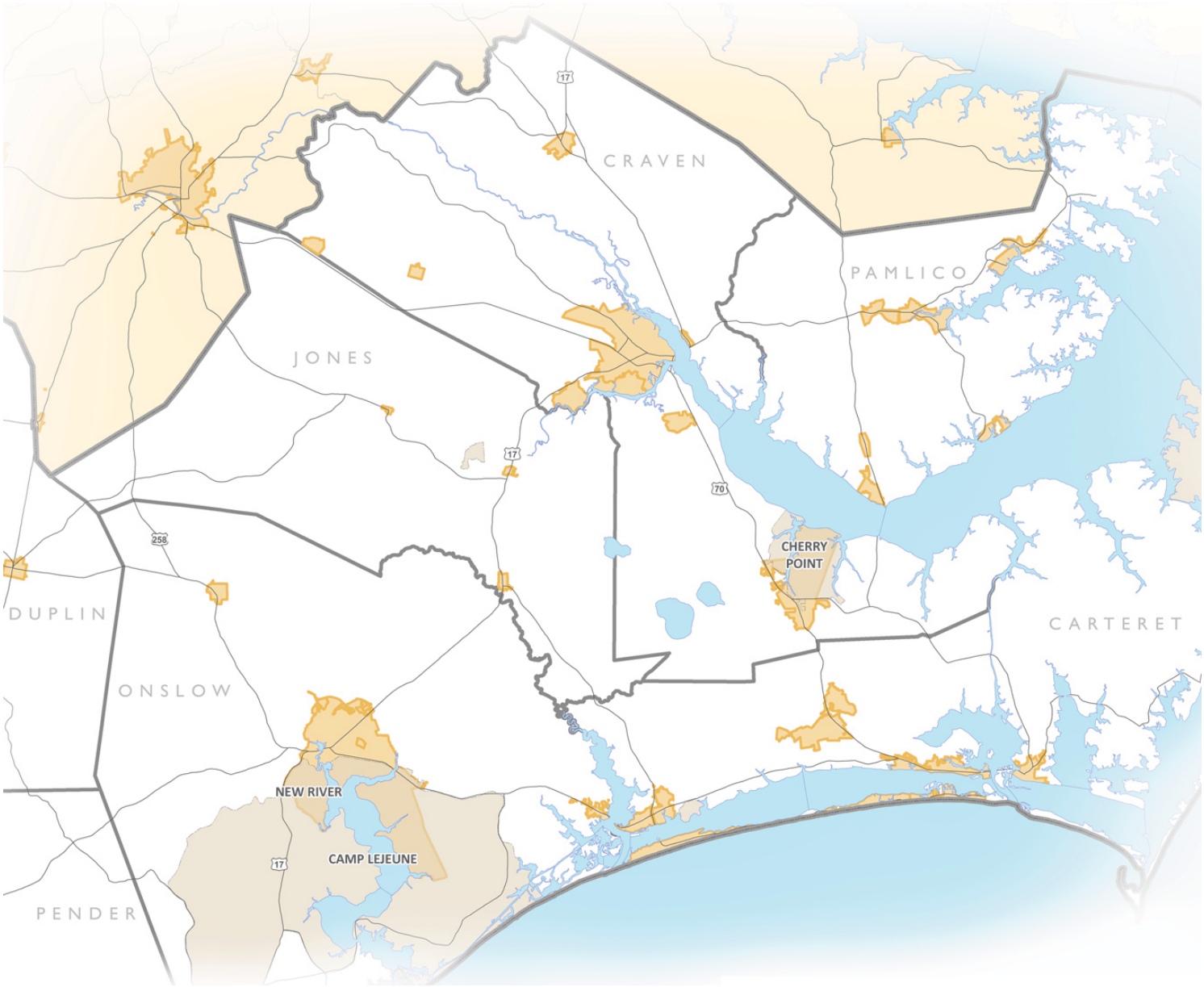
	Acres*	Indoor Facilities	Outdoor Sports Fields	Picnic Areas	Walking Trails	Water Access
Kenan Park			x	x		
Lake Leamon Campground					x	x
Maxwell Mill Park (Campground)						
Jones County						
Jones County Civic Center		x[7]				
Trent River						x
Croatan National Forest	160,000				x	x
White Oak River Paddle Trail						x
Jones County Recreational Program			x	x		
Onslow County						
Richlands Loop bike route	50 miles					
Paddle Trail	16.85 miles					x
"Jacksonville City to Sea" bike route	21 miles					

[7] 18,000 sq. feet - Two auditoriums, professional stage, dressing rooms, small meeting conference rooms, offices, and kitchen facilities.

	Acres*	Indoor Facilities	Outdoor Sports Fields	Picnic Areas	Walking Trails	Water Access
New River Waterfront Park				x		x
Deppe Park	373		x	x	x	
Hubert By-Pass Park	41+		x	x	x	
Oakhurst Nature Park	253				x	x
Onslow Pines Park	55+		x	x	x	
Richlands/Steed Park	195		x	x	x	
Stump Sound Park	56		x	x	x	
Pamlico County						
Canoe Paddle Trail system						x
Alliance Recreation Park	104		x	x	x	
Newton Creek Park	2.5			planned	planned	x
Bayboro Community Park	2.25		x			
Raccoon Creek Park	2			x	x	x
Dawson's Creek Beach Access	0.5					x

	Acres*	Indoor Facilities	Outdoor Sports Fields	Picnic Areas	Walking Trails	Water Access
Styron Beach Access	0.5					x
Lupton Park	2		x	x		
Lou Mac Park	0.5					x
Oriental Recreation Park	17		x	x	x	
Pender County						
Park complexes not listed on county website						
Holly Shelter Game Preserve						
Topsail Island						x
Holland's Shelter Creek Campground						
Rocky Point Campground						
Black River/Cape Fear River						x
City of Jacksonville						
Branchwood Park				x		
Brook Valley Park						
Georgetown Park			x	x		

Jack Amyette Recreation Center and Park			x			
Kerr Street Recreation Center and Park			x	x		
L.P. Williams Waterfront Park						x
Northeast Creek Park			x	x	x	x
Northwoods Recreation Center			x			
Phillips Park			x	x		
Richard Ray Park						
Riverwalk Park						
Sherwood Forest Park			x	x		
Wilson Bay				x		x
Rev. E. W. Wooten Park			x	x		
Woodlands Park				x		
*** Blank acreage spaces indicate information unavailable at time of completion.**						



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix O

Water and Shoreline Access

Appendix O: Water and Shoreline Access

Table 1 Carteret County Water Access Sites

Boat Access Points
Visitor's Center Wildlife Boat Ramp (Morehead City)
Cedar Island Wildlife Boat Ramp
Salter Creek Wildlife Boat Ramp
Straits Landing Wildlife Boat Ramp (Straits)
Taylors Creek Wildlife Boat Ramp (Curtis Perry)
Newport River Wildlife Boat Ramp
Cedar Point Wildlife Boat Ramp
Oyster Creek Wildlife Boat Ramp (Davis)
Lola Road Boat Ramp (Cedar Island National Refuge)
Thorofare Bay Boat Ramp (Cedar Island National Refuge)
Topsail Marine Park (Beaufort)
West Beaufort Water Access (Beaufort)
Morehead City Boat Ramp (Morehead City)
Cedar Point Campground (Croatan National Forest)
Oyster Point (Croatan National Forest)
Stella Boat Ramp
Pamlico Sound Boat Access (Cedar Island)
Beach Access Points
Station Street Park (Emerald Isle)
Third Street Ocean Access (Emerald Isle)
Eastern Ocean Access (Emerald Isle)
Western Ocean Access (Emerald Isle)
Blackskimmer Access (Emerald Isle)
Randy's Way Access (Emerald Isle)
Channel Drive Access (Emerald Isle)
Wyndtree Access (Emerald Isle)

Ocean Drive and Page Place (Emerald Isle)
Indian Beach Access (Indian Beach)
Ocean Club Access (Indian Beach/Salter Path)
Old IB Pier Access (Indian Beach/Salter Path)
Sea Isle Plantation Access (Indian Beach/Salter Path)
Salter Path Beach Access (Salter Path)
West Atlantic Boulevard (Atlantic Beach)
Sugarloaf Island (Morehead City)
Les and Sally Moore Public Beach Access (Atlantic Beach)
Sheraton Oceanfront Hotel/Beach Access (Atlantic Beach)
AmeriSuites Public Beach Access (Pine Knoll Shores)
Memorial Park Public Access (Pine Knoll Shores)
Ramada Inn Public Access (Pine Knoll Shores)
Iron Steamer Public Access (Pine Knoll Shores)
Trinity Center Public Access (Pine Knoll Shores)
Fort Macon Beach Access
Radio Island Water Access (Carteret County)
Harkers Island Beach Access (Carteret County)
Ward Creek Water Access
Newport River Water Access

Table 2 Craven County Paddle Trail Water Access Sites

North Carolina Wildlife Resources Commission (NCWRC)
Brices Creek
Bridgeton
Grifton*
Hancock
Lee's Landing*

Maple Cypress Road Bridge
Slocum
City/County Maintained
Creekside Park
Cowpen Landing
First Street, New Bern
Glenburnie Park
Lawson Creek Park
Lawson Creek Park
Spring Garden Landing
Croatan National Forest
Siddie Fields
Catfish Lake
Community/Private
B and B Mobile Resort
Core Creek Landing
Cool Springs Landing
Fairfield Harbor
Merchant Store Landing
Paul's Park
Pitch Kettle Landing
River Bend Marina
Shell Landing
Tar Landing
Vanceboro
Bridge Access
Adams Creek Road Bridge
Blades Road
End of Adams Creek Road
Merrimon Road Bridge

NC 43/Bachelor Creek Bridge
NC 43/Swift Creek Bridge
SR 1391/Ball Farm Road Bridge*
Wilson Creek Bridge (Trent Woods Drive)
Under NC 101 Bridge*
* Not in Craven County
Boat Ramps
Spring Garden Landing
Cowpen Landing

Table 3 Duplin County Water Access Sites

Boat Access Sites
Northeast Cape Fear River – NC 24 between Kenansville and Beulaville
Cabin Lake
Lake Leamon

Table 4 Jones County Water Access Sites

Boat Access Sites
Trent River boat ramp (Pollocksville)
Trenton Boat Ramp

Table 5 Onslow County Water Access Sites

Boat Access Points
New River Waterfront (2 ramps)
Kerr Street Waterfront
Northeast Creek Park
Main Street at White Oak Lane (Swansboro)
L.P. Willingham recreation area

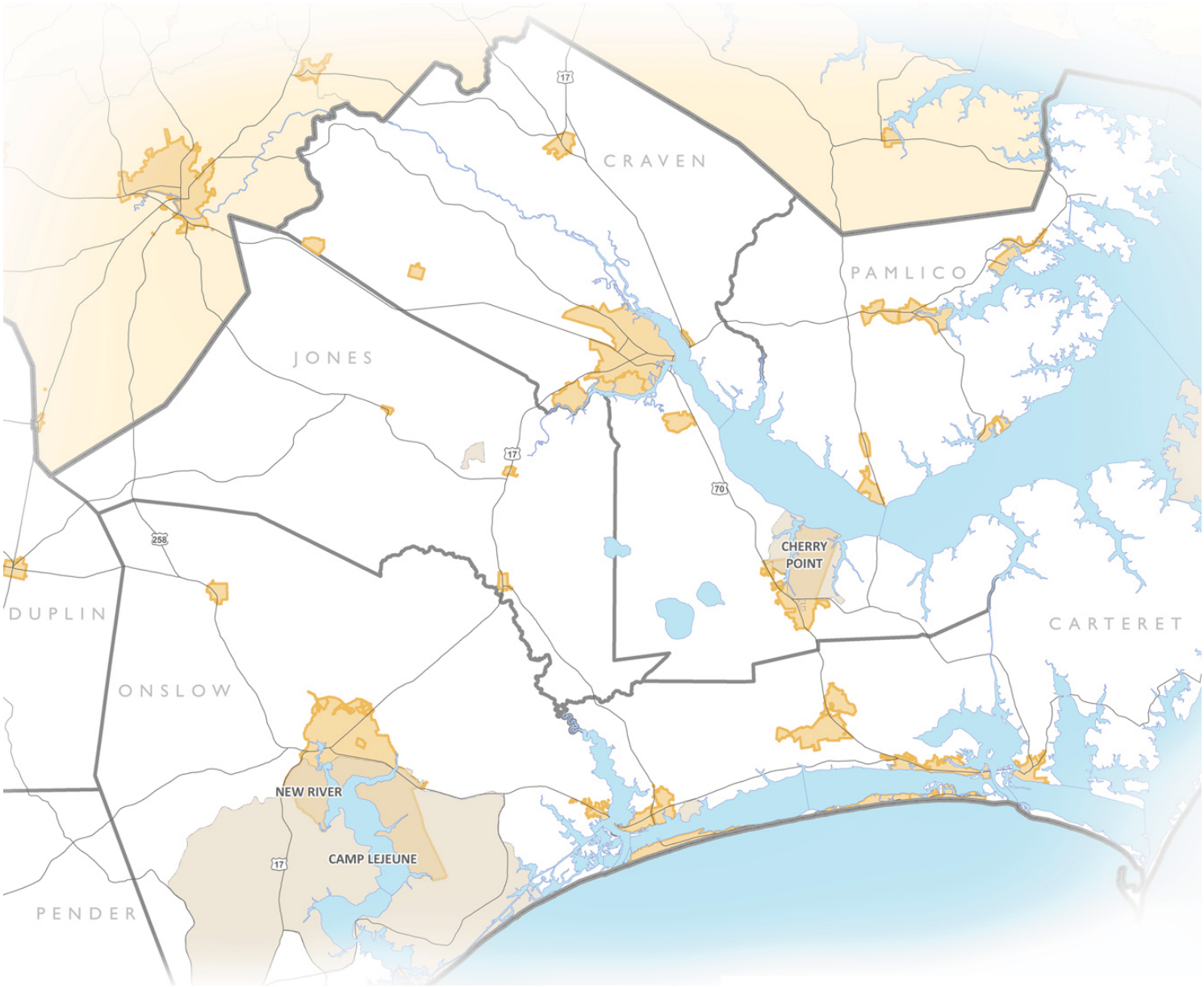
Canoe and Kayak Access Points
Cow Horn Creek
McAllister Landing
Burton Industrial Park Primitive Landing
Oak Hurst Nature Park
Sturgeon City cultural area
Mill Creek Green (fishing access)
Beach Access Points
Beach Park off River Road
North Topsail Beach SR 1568
North Topsail Beach NC 210
North Topsail Beach past St. Regis Hotel – 4-wheel drive vehicle access only
SR 1568, one mile from NC 210
18 boardwalk crossings from 2nd St. North to Reeves St. at Surf City line)

Table 6 Pamlico County Water Access Sites

Boat Access Points
Newton Creek Park
Lou Mac Park
Bayboro Phase 1 Highway 304
Canoe and Kayak Access Points
Raccoon Creek Park
Beach Access Points
Dawson's Creek Beach Access
Styron Beach Access
Piers: 2

Table 7 Pender County Water Access Sites

Boat Access Points
Holly Shelter Landing
Sawpit Landing
Shelter Creek Landing
Surf City Ramp
Hines Ave. and South Anderson Street
Beach Access Points
Pender Avenue
Jones Street and North Shore
North Shore and New Bern Avenue
North Shore off Wilmington Avenue
North Shore and Greensboro Avenue
Kinston and North Shore
Raleigh and North Shore
Charlotte and North Shore
Fields Avenue and North Shore
Barwick Avenue and South Anderson
Empie Boulevard and South Anderson Street
Davis Street and South Anderson
Hines Avenue
Smith Street and South Anderson
Barwick Avenue and Ocean Boulevard
Piers: 2



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix P

Arts and Culture Facilities

Appendix P: Arts and Culture Facilities

Table 1 Museums and Cultural Attractions by County

Carteret County	
North Carolina Maritime Museum	Core Sound Waterfowl Museum
Fort Macon State Park	Cape Lookout National Seashore Visitors Center
North Carolina Aquarium	The History Place
Beaufort Historical Association Complex	
Craven County	
Tryon Palace Historic Site and Gardens	North Carolina History Education Center (under construction)
New Bern Fireman's Museum	Eastern Carolina Aviation Heritage Foundation Exhibit
Attmore-Oliver House	Bellair Plantation and Restoration
Duplin County	
Confederate Arms Factory	World's Largest Frying Pan
Buckner Hill Plantation	Cowan Museum
Faison Museum	Historic L.P. Best House/Duplin County Veterans Museum
Liberty Hill Plantation	Tarkil Branch Farm's Homestead Museum
Thomas C. Townsend Fireman's Museum	Farm – Agri-Cultural touring
Wineries	
Jones County	
Foscue Plantation House	Things from Yesteryear Museum
Back in Time Museum	
Onslow County	
Onslow County Museum	Lynnwood Park Zoo
Montford Point Marine Museum	Pelletier House

Riverwalk Crossing Park	Sturgeon City
Sturgeon City Educational and Environmental Center (In planning stages)	Museum of the Marine (Under construction, awaiting funding)
Williamsburg Plantation (In planning stages)	Children's Museum of Jacksonville (In planning stages, awaiting funding)
Pamlico County	
Pamlico County Historical Association Museum	Pamlico County Heritage Center (to open July 2009)
Oriental History Museum	
Pender County	
Pender County Museum	Penderlea Homestead Museum
Topsail Island Missiles and More Museum	Poplar Grove Plantation Museum
Moores Creek National Battlefield	

Table 2 Libraries by County

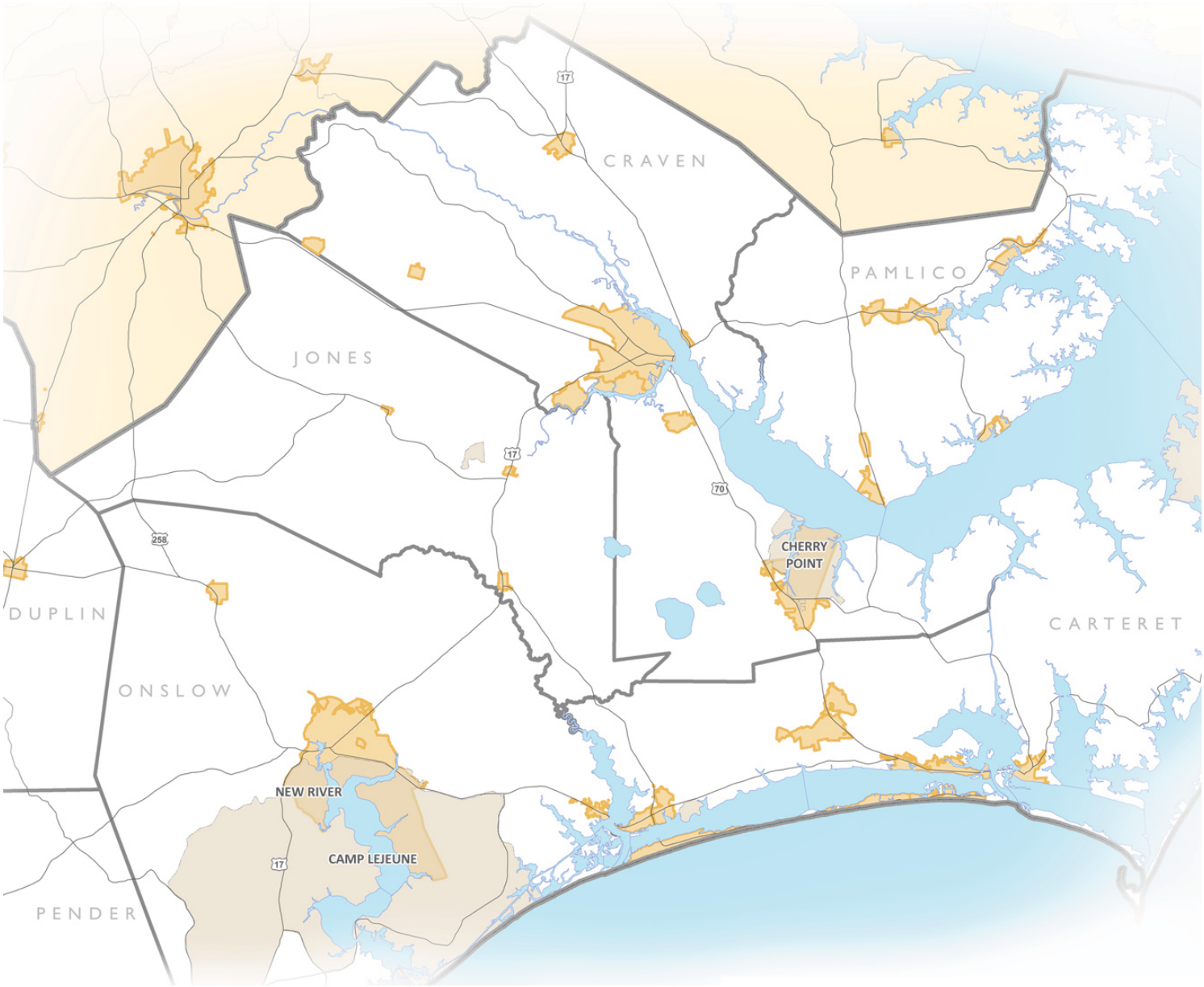
Carteret County	
Carteret County Public Library (Beaufort)	Western Carteret Library (Cape Carteret)
Newport Public Library	Bogue Banks Public Library (Pine Knoll Shores)
Craven County	
Cove City-Craven County Public Library	Havelock-Craven County Public Library
New Bern-Craven County Public Library	Vanceboro-Craven County Public Library
Duplin County	
Duplin County – Dorothy Wightman Library (Kenansville)	Phillip Leff Memorial Library (Beulaville)
Faison Branch Library (Emily Hill Library)	Florence Gallier Library (Magnolia)
Rose Hill Library	Warsaw-Kornegay Public Library
Jones County	

Maysville Branch Library	Pollocksville Branch Library
Comfort Branch Library (Trenton)	Trenton Branch Library
Onslow County	
Onslow County Public Library (Jacksonville)	Law Library (Jacksonville)
Richlands Public Library	Sneads Ferry Branch Library
Swansboro Branch Library	
Pamlico County	
Pamlico County Library (Bayboro)	
Pender County	
Pender County Public Library (Burgaw)	Hampstead Branch Library

Table 3 Festivals or other Activities by County

Carteret County	
American Chamber Music Festival	American Music Festival
North Carolina International ChoralFest	North Carolina KidFest
North Carolina Seafood Festival	"Art From the Heart" – Arts Council of Carteret
Crystal Coast Civic Center - hosts events and performances	Big Rock Art Festival
Big Rock Blue Marlin Tournament	Arts Council youth summer camp
Craven County	
Carolinian Shakespeare Festival	Chrysanthemum Festival
Scottish Heritage Society of Eastern North Carolina Festival	Colonial Living Day
Coastal Carolina Agricultural Fair	Havelock Chili Festival
Havelock Tourist and Event Center – hosts art shows, concerts, etc.	Tryon Palace – holds events throughout the year
Duplin County	

Kenan Memorial Amphitheatre – seasonal shows	Muscadine Harvest Festival
Raza Festival	Festival Latino de Duplin
Jones County	
The Little Theater	Jones County Civic Center – stage available for performances
Onslow County	
Onslow County Council for the Arts – youth programs	Kuumba Festival
Swansboro Festival	Coastal Carolina Community College – theater and cultural programs
Onslow County Community Concert Series	Sneads Ferry Community Theater
Pamlico County	
Fossil Festival	Croaker Festival
Pamlico County Civic and Cultural Center – plays, concerts, art exhibits	
Pender County	
Pender Arts Council – Youth classes and programs	Celebrate Hampstead Festival
Springfest	North Carolina Spot Festival
North Carolina Blueberry Festival	Autumn with Topsail Festival
Maple Hill Festival & Parade	
Poplar Grove Plantation Halloween Festival	



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix Q

Hotels and Meeting Space

Appendix Q: Hotels and Meeting Facilities

Table 1 Carteret County Hotels

Hotel	Guest Rooms
America Suites	111 suites
Atlantis Lodge	
Beach Vacation Properties	
Beaufort Inn	44
Best Western Silver Creek Inn	
Bogue Inlet Motel	
Bogue Shores Suites	
Buccaneer Inn	91
Budget Inn of Morehead City	
Calico Jack's Inn and	24
Caribbe Inn	
Clam Digger Inn	
Core Creek Lodge	
Driftwood Motel	
Econo Lodge Crystal	56
Edgewater Motel / Apartments	
Fisherman's Inn	8
Hampton Inn	
Harkers Island Fishing Center Hotel and Marina	
Holiday Inn Express Hotel and Suites	75
Hollowell's Motel	28
Hostess House Courtyard	125
Inlet Inn	35
Island Inn	
The Islander	
Morehead Motor Inn	
Oak Grove Motel	

Oceanana Family Resort, Motel, and Fishing Pier	
Oceanview Inn	
Palm Suites	90 suites
Parkerton Inn	47
Rusty Pelican Inn	
Quality Inn	101
Sand Dollar Motel	
Sandpiper Hotel	
Seahawk Motor Lodge	38 rooms, 2 villas, 1
Sheraton Atlantic Beach Oceanfront Hotel	200
Waterway Inn	
Whaler Inn Beach Club	47
William and Garland Motel	
Windjammer Inn	

Table 2 Craven County Hotels

Hotel	Guest Rooms
New Bern Riverfront Hotel	171
Bridgepoint Hotel and Marina	116
Springhill Suites by Marriott	109
Hampton Inn	101
Comfort Suites Riverfront Park	100
Candlewood Suites	81
The Palace Motel	60
Holiday Inn Express	60
The Ziegler Suites	11
BB Hurricanes Resort	6
Quality Inn*	102

Sherwood Motel*	87
Hostess House*	84
Days Inn*	73
Night's Inn*	42
Hampton Inn*	60
Comfort Inn*	58
Budget Inn Suites*	37
* Hotels within Havelock City limits	

Table 3 Duplin County Hotels

Hotel
Days Inn Suites: Warsaw
Duplin Inn - Wallace
Holiday Inn Express: Warsaw
Holiday Inn Express: Wallace
Liberty Inn
Relax Inn
Rose Hill Motel
Squires Vintage Inn
Warsaw Inn

Table 4 Jones County Hotels

Hotel	Guest Rooms
Trent Motel	12

Table 5 Onslow County Hotels

Hotel	Guest Rooms
Holiday Inn Express & Suites	68
Seaview Motel	20
St. Regis Resort	50
Villa Capriani	52
Best Rest Inn*	36
Coastal Motel*	34
Days Inn Jacksonville*	73
Economy Inn*	50
Quality Inn	110
Ramada Jacksonville*	121
Triangle Motor Inn*	112
Americas Best Value Inn Jacksonville*	60
Budget Inn*	28
Candlewood Suites *	95
Comfort Suites*	72
Extended Stay America Jacksonville Lejeune*	98
Fairfield Inn & Suites*	79
Hampton Inn*	122
Holiday Inn Express Jacksonville*	118
Innkeeper Jacksonville*	82
Liberty Inn*	80
My Hotel & Suites Jacksonville*	64
Sleep Inn & Suites*	62
Sunset Lodge*	88
TownePlace Suites*	86
Traveler's Inn*	16
Keene's Motor Lodge	15
* Hotels within Jacksonville City limits	

Table 6 Pamlico County Hotels

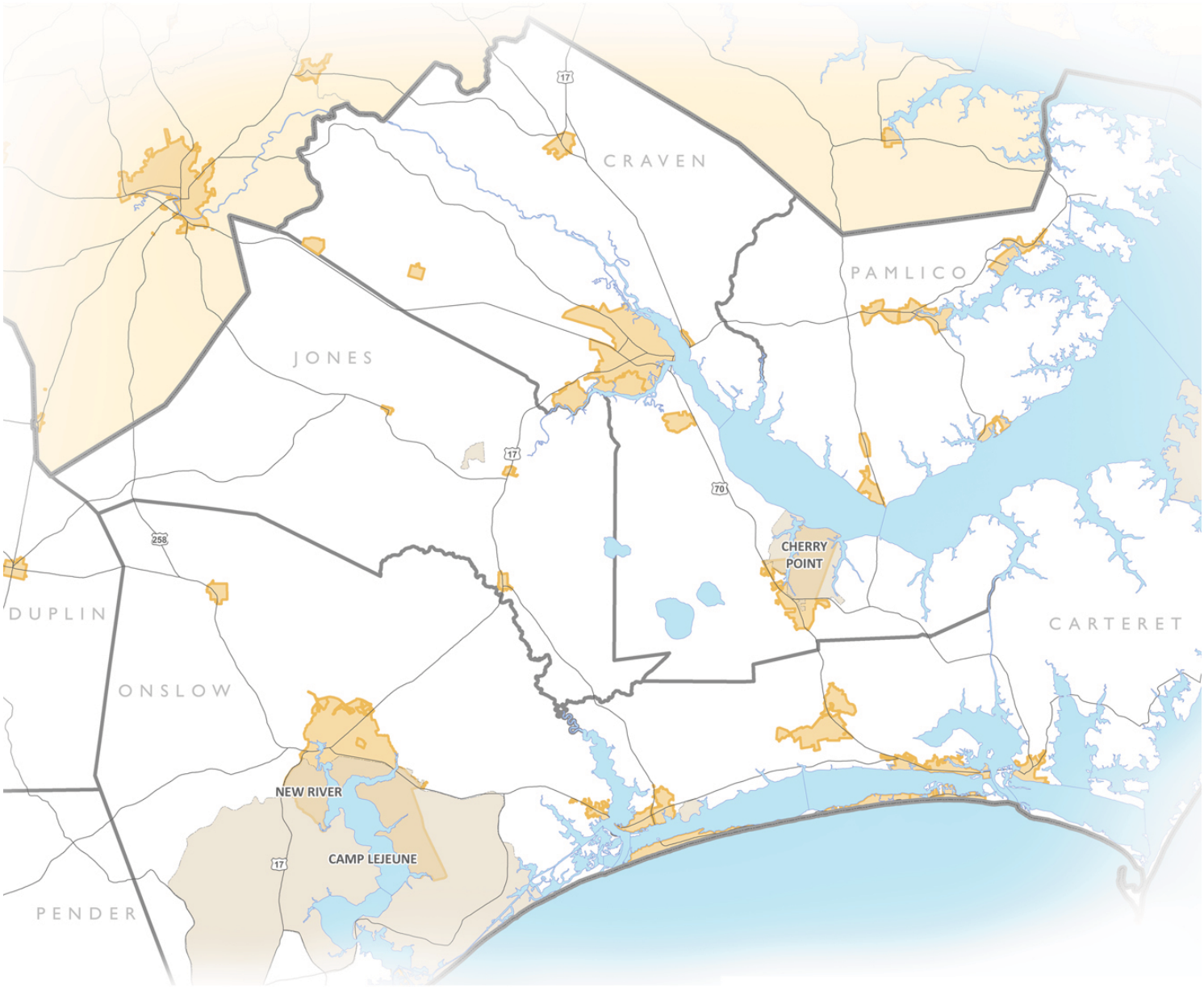
Hotel
Captain's Quarters
Oriental Marina & Inn
River Neuse Motel
Inland Waterway Inn
Marina Motel
Harbor Inn

Table 7 Pender County Hotels

Hotel
Island Inn
Jolly Roger Inn & Pier
Sea Vista Motel
Tiffany's Motel
Topsail Motel
Breezeway Motel
Surfside Motel
Loggerhead Inn
Sea Scape Motel
Shorehaven Inn
Sea Coast Suites
Blizzard's Anchor Inn
Burgaw Motel

Table 8 Large Meeting Space Available by County

Name	Maximum Capacity
Carteret County	
Crystal Coast Civic Center	Up to 1,000
Craven County	
New Bern Convention Center	Up to 1,350 for meetings and 1,000 for banquets
Havelock Tourist and Event Center	Up to 700 for meetings and 500 for banquets
Duplin County	
Duplin County Event Center	Up to 1,040 for banquets
Kenan Memorial Amphitheatre	Up to 1,000 people
Jones County	
Jones County Civic Center	Up to 1,000
Onslow County	
No large meeting space (1,000-person capacity) available in the County	
Pamlico County	
Ned Everett Delamar Center	Up to 650
Pender County	
No large meeting space (1,000-person capacity) available in the County	
Camp Kirkwood Camp and Conference Center	Up to 250 people



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix R

BLS Overview of the Quarterly Census of Employment and Wages

APPENDIX R

BLS Overview of the Quarterly Census of Employment and Wages

The Quarterly Census of Employment and Wages Program is a cooperative program involving the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor and the State Employment Security Agencies (SESA's). The QCEW program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program. Publicly available files include data on the number of establishments, monthly employment, and quarterly wages, by NAICS industry, by county, by ownership sector, for the entire United States. These data are aggregated to annual levels, to higher industry levels (NAICS industry groups, sectors, and supersectors), and to higher geographic levels (national, State, and Metropolitan Statistical Area (MSA)).

The QCEW program serves as a near census of monthly employment and quarterly wage information by 6-digit NAICS industry at the national, State, and county levels. At the national level, the QCEW program publishes employment and wage data for nearly every NAICS industry. At the State and area level, the QCEW program publishes employment and wage data down to the 6-digit NAICS industry level, if disclosure restrictions are met. In accordance with BLS policy, data provided to the Bureau in confidence are not published and are used only for specified statistical purposes. BLS withholds publication of UI-covered employment and wage data for any industry level when necessary to protect the identity of cooperating employers. Totals at the industry level for the States and the Nation include the non-disclosable data suppressed within the detailed tables. However, these totals cannot be used to reveal the suppressed data.

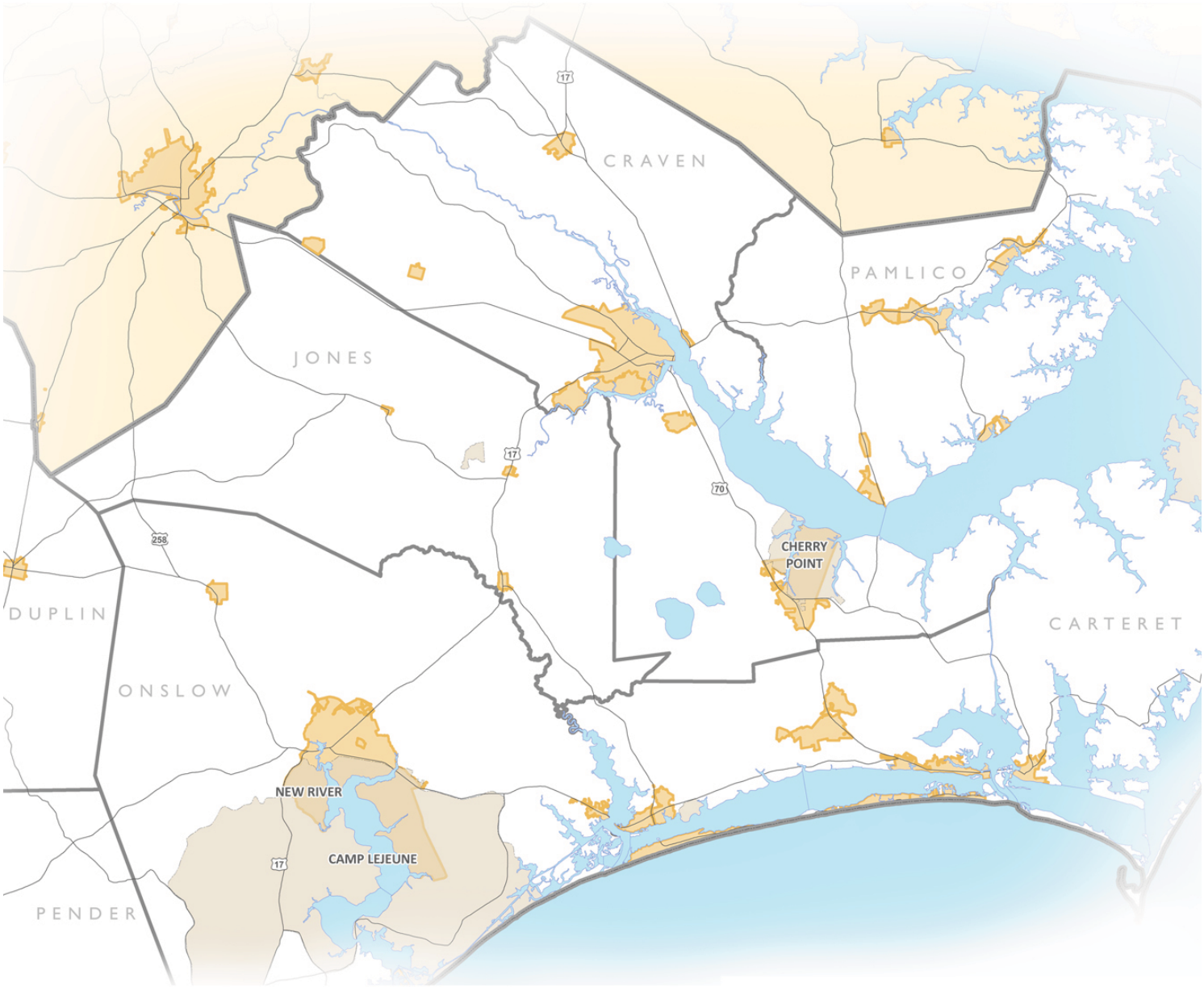
Employment data under the QCEW program represent the number of covered workers who worked during, or received pay for, the pay period including the 12th of the month. Excluded are members of the armed forces, the self-employed, proprietors, domestic workers, unpaid family workers, and railroad workers covered by the railroad unemployment insurance system. Wages represent total compensation paid during the calendar quarter, regardless of when services were performed. Included in wages are pay for vacation and other paid leave, bonuses, stock options, tips, the cash value of meals and lodging, and in some States, contributions to deferred compensation plans (such as 401(k) plans). The QCEW program does provide partial information on agricultural industries and employees in private households.

Data from the QCEW program serve as an important input to many BLS programs. The QCEW data are used as the benchmark source for employment by the Current Employment Statistics program and the Occupational Employment Statistics program. The UI administrative records collected under the QCEW program serve as a sampling frame for BLS establishment surveys.

In addition, data from the QCEW program serve as an input to other Federal and State programs. The Bureau of Economic Analysis (BEA) of the Department of Commerce uses QCEW data as the base for developing the wage and salary component of personal income. The Employment and Training Administration (ETA) of the Department of Labor and the SESA's use QCEW data to administer the employment security program. The QCEW data accurately reflect the extent of coverage of the State UI laws and are used to measure UI revenues; national, State and local area employment; and total and UI taxable wage trends.

BLS publishes data from the QCEW program every quarter in the County Employment and Wages press release. This is usually released 6 to 7 months after the end of the quarter. The QCEW program also publishes a subset of its quarterly data through the Create Customized Tables system, and full quarterly industry detail data at all geographic levels in ASCII files through our FTP server.

In addition, QCEW publishes the annual bulletin *Employment and Wages, Annual Averages* about 10 months after the end of the year. The 2002 edition is the first to appear on the internet in its entirety. For more information, see the Publications section of the BLS-QCEW home page. The cooperating SESA's also issue quarterly and annual reports of QCEW data.



NORTH CAROLINA'S EASTERN REGION
MILITARY GROWTH TASK FORCE

Regional Growth Management Plan

Military Growth Task Force of North Carolina's Eastern Region

October 2009

Appendix S

JLUS Summary

Appendix S: JLUS Summary

Eastern Carolina JLUS	
November, 2002	
Recommendations	**Implemented or Not** Yes/No
Blue=Joint Community and Installation Green=Military Yellow=Community/Others	
1. Modify existing comprehensive plans and land use plans as well as implementation tools such as zoning ordinances, subdivision regulations, manufactured home park ordinances, building codes, and capital improvement plans to ensure compatibility with installation operations.	Yes[1]
2. Enact regulations to guide growth in areas currently unprotected from uncontrolled growth. This includes expanding land use controls to incorporated and unincorporated areas adjacent to installations.	Yes[1]
3. When possible, extend areas of extra-territorial jurisdictions (ETJs) and/or annex areas currently unprotected from uncontrolled growth.	No[2]
4. Adopt and enact local policies promoting disclosure of safety and noise hazards prior to land transactions and development or sale of property.	Yes
5. Advocate for a change in North Carolina Statutes to require disclosure of safety and noise hazards in land records (zoning permits, deeds, etc.) and/or before any real estate sale, lease, or rent contract is finalized in defined areas around (military) airports.	No[3]
6. Adopt noise attenuation requirements and recommendations for future development in high noise areas.	Yes[4]
7. Produce maps for public distribution outlining areas of accident potential and high noise.	Yes
8. Develop and maintain a user-friendly web page available to the general public outlining areas of accident potential and high noise.	Yes
9. Educate lending institutions on appropriate mortgage lending in accident potential and high noise zones.	Yes[5]
10. Support HUD lending restrictions on lending for development in accident potential and high noise zones.	No
11. Explore all available options for acquisition of critical properties (which could have significant encroachment potential) through fee simple purchase, restrictive use easements, and land exchanges.	Yes
12. Encourage uniform building codes modifications to mitigate noise for new structures built in high noise areas.	Yes[4]
13. Develop a Capital Improvement Plan (CIP) to limit expansion of infrastructure to large, undeveloped areas, which are not currently served by public facilities, such as water, sewer, natural gas or surfaced roads, so that land within “impacted” areas would remain unserved.	Yes[6]
14. Evaluate current and future Standard Operating Procedures (SOPs) of MCAS Cherry Point and MCALF Bogue to minimize adverse impacts on local communities.	Yes
15. Support MCAS Cherry Point in its efforts to work with local planning officials to examine the impact of noise through demonstration projects.	Yes
16. Enhance the current dialogue between MCAS Cherry Point, local government officials, and citizens of impacted communities.	Yes[7]
17. Form a standing committee with local civilian membership to discuss air operations and review quarterly any noise concerns received by MCAS Cherry Point with the goal of sharing information and informing the local communities of efforts to mitigate any negative impacts.	No[8]
18. Ensure appropriate land use regulations, particularly zoning standards, are implemented along the proposed Havelock By-pass (NC 70) to minimize or prevent land uses that could negatively impact aircraft operations at MCAS Cherry Point.	Yes
19. Ensure appropriate land use regulations, particularly zoning standards, are implemented along NC 24, particularly adjacent to MCALF Bogue to minimize or prevent land uses that could negatively impact aircraft operations at MCALF Bogue.	Yes
20. Encourage public purchase of land for open space and compatible low density activities such as recreation.	Yes
21. Increase training and coordination of Emergency Response entities in the areas impacted by MCAS Cherry Point, MCALF Bogue, and MCOLF Atlantic.	N/A
22. Increase the frequency of the course rules briefing for locally based squadrons, particularly at MCALF Bogue.	No[8]

23. Support state legislation to protect military installations from encroachment.	Yes
24. Continue to support and provide resources for the Crystal Coast Disaster Coalition.	Yes
25. Improve notification of additional planning guidelines in affected areas through proper signage.	No[9]
26. Encourage the use of cutoff and semi-cutoff (shoebox) high sodium vapor lighting in the Accident Potential Zones.	Yes
27. Examine the feasibility of using other proposed outlying landing fields for Bogue Field aircraft operations.	No
28. Study the impact of altering the number of aircraft permitted in the Bogue Field, Field Carrier Landing Practice (FCLP) pattern.	Yes
29. Evaluate the feasibility of altering runway alignments at Bogue Field.	Yes
30. Update phone directories to clearly identify appropriate numbers to call for noise complaints/concerns.	Yes
31. Provide updated unclassified information on aircraft operations to websites for local communities.	No[10]
32. Create a ECJLUS Implementation Committee (comprised of existing members of the Technical Advisory Committee) to monitor and guide implementation of Joint Land Use Study recommendations.	Yes[11]

[1] Havelock CAMA Land Use Plan - Adopted January 2009, Carteret zones half of unincorporated county, including Bogue, Town of Atlantic not addressed in any plans.Bogue would like a Comprehensive Plan

[2] No futher study needed.

[3] Jurisdictions generally feel that base must conduct this task. Some Cities have advocated for mandatory disclosure clause in statute.

[4] Most jurisdictions recommend, Craven explicitly requires.

[5] Carteret held training sessions that generated great interest

[6] Yes, does not apply to built out areas and areas not addressed by and zoning, such as Emerald Isle or Bogue.

[7] Better than it has ever been, with exception of Town of Bogue

[8] No noise complaints. As such, meetings are held on an "as-needed" basis, additional rules not required.

[9] Several jurisdictions have examined the issue and have concluded that signage would adversely affect property values.

[10] Assistance required in implementing this recommendation

[11] Still operational and meets 1-2 times per year

Onslow County JLUS	
February, 2003	
Recommendations	**Implemented or Not**
	Yes/No
Blue=Joint Community and Installation Green=Military Yellow=Community/Others	
1. Adopt zoning in the form of overlay districts in some cases that applies land use restrictions to areas affected by military operations	Yes[1]
a. Low Level Training Route: To maintain public health and welfare wherever these routes exist under the County's jurisdiction, height limitations should be established for all structures (buildings, cell towers, etc.) within these zones with an overlay zoning district that sets forth maximum height restrictions.	Yes
b. Flight Track/Safety Hazard Zone for Aircraft Ingress/Egress to Ranges: Severely limit activities that would be likely to create high levels of light, smoke or dust, have a tendency to attract birds (e.g. landfills), or create electromagnetic interference.	Yes
c. Helicopter Landing Zone Buffer: These are half-mile buffers around Tactical Landing Zones in which building heights should be restricted and no new cell, radio, TV, or other communication or utility towers, or other similar obstructions, should be constructed.	Yes

d. NC 24 Traffic Impact Zone: Development on either side of NC 24 within a 1000-foot wide buffer should be designed to minimize traffic impacts, particularly those that would interfere with troop deployment through this corridor. Critical public safety facilities, such as fire stations and hospitals, should not be located along Hwy 24 unless an alternate access on another arterial road can be provided.	No
e. Noise Zone 2: Encourage noise attenuation for structures, and discourage uses that may be susceptible to the noise of aircraft overflights or range activities: residential, schools, hospitals/nursing homes, auditoriums and other places of assembly, and other institutional uses (churches, libraries, etc.)	Yes
f. Adopt specific land use regulations that limit the residential density that is permitted in the Verona area and the areas west and south of the Great Sandy Run ranges or allow residential uses only if requirements for noise attenuation construction are met. Alternately, in the Verona area only, severely limit residential uses but specifically permit uses that are not sensitive to the impacts of military training activities.	No[2]
g. Around Ellis Airport, especially in the areas along the extension of runway centerline, prohibit structures over a certain height and prevent or severely restrict land uses that may be sensitive to airport and aircraft operations.	No
2. Do not extend sewer service to those areas where the JLUS study has identified existing or future conflicts between military training activities and sensitive land uses.	No
3. Prepare and record a map in the Onslow County Register of Deeds office that illustrates the JLUS study area and notes that land uses within the area defined on the map may be subject to noise and/or vibration from military training activities including but not limited to the sounds and vibration from range activities and low level aircraft over flights.	Yes[3]
4. The impacts of Camp Lejeune on residents of the area immediately surrounding it should be disclosed to anyone buying property in the Study Area. This disclosure could take place in any of three ways.	Yes[4]
a. Create a standard disclosure form(s), conduct training for local real estate sales agents to explain the JLUS program and its recommendations, and encourage the use of the form as a supplement to the North Carolina residential property disclosure form when required, or in place of the North Carolina form where it is not required.	No
b. Establish a notification or disclosure statement, as a local county ordinance, that requires a specific notification to be executed by the purchaser of any vacant or residentially developed properties located within the JLUS study area to be recorded with any deed for such property transfer.	No
c. The County should also consider efforts through the General Assembly or the NC Real Estate Commission (NCREC) that existing and potential impact from the base be determined a “material fact” that should be disclosed to a potential purchaser within the designated areas (such as AICUZ or RCUZ areas) as well as in areas outside any specific designation but within the environs of the base where military training activities may occur.	No
5. Conduct educational programs to increase awareness of military activities on Camp Lejeune and potential impacts of such activities.	Yes
6. Local land use plans should be modified to acknowledge the role that Camp Lejeune and MCAS New River play in the community as a significant and unusual land use. Local ordinances should be reviewed and modified pursuant to any public policies arising from these modifications.	Yes[5]
7. Encourage and guide growth toward areas where the land and infrastructure can support development.	Yes
a. In the existing cities and towns, development should continue as urban infill. (See areas labeled ‘A’ on Map 12: Strategy Map.)	Yes
b. In the areas outside the cities and towns, development should be consistent with the recommendations of County plans (i.e. Onslow County Comprehensive Plan and CAMA Land Use Plan for Onslow County).	Yes
8. In all portions of the study area, development should take into consideration the proximity of Natural Heritage Inventory sites, Natural Heritage Element Occurrence sites, registered historic places and districts, and existing protected areas (parks, conservation areas, etc.) and minimize impacts to such areas/sites.	Yes

9. Establish a standing JLUS committee under the auspices of Onslow County, with representatives from affected communities and Camp Lejeune, to monitor the progress of the recommendations and to report annually to the Board of County Commissioners and the Base Commander as to their findings and recommendations.	Yes
10. Create and maintain a website that contains the JLUS recommendations and study maps as well as other information pertaining to implementation (e.g. meeting minutes of the JLUS Committee or an implementation progress report).	Yes
11. Develop staff teams or retain consultant services to focus on specific implementation techniques and standards to be considered by all affected jurisdictions.	No[6]
12. Coordinate JLUS implementation with the implementation of the Onslow Comprehensive Plan and other adopted plans of the County or affected communities to assure the continuity of recommendations and enforcement of standards.	Yes
13. Revisit the JLUS Report at least every year to assess implementation progress, assess level of complaints, and assess needs for future actions or updates.	No[7]
14. Investigate impact mitigation in five key areas (see numbered areas on Strategy Map):	
1. Verona/High Hill Road Area –Continue to examine ways to reduce off-range noise levels generated at GSRA, possibly through efforts such as additional refinements of the range structure and continued examination of source mitigation as technology develops; and examining ways of improving aesthetics along the GSRA boundary along High Hill Road, such as	Yes
- planting trees/vegetation between perimeter road and base boundary to soften appearance of perimeter road; and	N/A[8]
- seeking relief from Marine Corps order regarding warning signs at perimeter, and shifting such signs along High Hill Road inward onto USMC property.	No[9]
2. Implement measures to minimize such occurrences by designating alternate helicopter routes over base property when GSRA training and weather permits. In the long term, the USMC should examine the feasibility of installing fixed navigation aids along these designated routes to prevent flyovers during inclement weather.	Yes
3. Demolition training in ETAs along Courthouse Bay - It is recommended that the USMC continue efforts to mitigate noise/vibration impacts on Sneads Ferry through additional amendment and refinement of operations or possible relocation of such ETAs into more interior portions of the base.	Yes
4. G-10 Flight Tracks/Safety Zones - It is recommended that the USMC examine the feasibility of refining certain flight tracks to the least populated area(s) along these tracks and/or increase flying altitude approach profiles.	Yes
5. Base Uses along NC 24 - It is recommended that this area of the base be examined for alternate uses in order to create a good transition between development adjacent to the base and Camp Lejeune facilities/uses.	No[10]
15. The USMC should continue efforts to reduce noise at its source(s) using noise mitigation measures.	Yes
16. It is recommended that Camp Lejeune, MCAS New River, Onslow County, and affected municipalities engage in establishing a long-term communications program.	Yes
a. Publishing both MCAS and Camp Lejeune contact telephone numbers (complaint/resolution mechanism) together in newspapers, on websites, in blue pages of local telephone book, etc. In the long-term, establish one point of contact for entire base.	Yes
b. Establishing a continuous communication structure. As military command structure changes, methods of communication should be maintained. Consider drafting a memorandum of understanding (MOU) and/or memorandum of Agreement (MOA) between the Marine Corps, Onslow County, and other involved municipalities to outline policies and responsibilities for continued JLUS efforts and communication.	No[11]
c. Centralizing communications using:	
i. “in-the-field,” variable message signs along highways to indicate Camp Lejeune’s planned activities for the day/week or to advise on road closures (such as along NC 172)	Yes
ii. News releases	Yes
iii. Website/web page that should be updated regularly with unclassified information on Camp Lejeune range operations. Provide links to this site/page on the websites of the County and the cities and towns in the Study Area.	Yes
iv. Billboards	No

v. Brochures	No
vi. TV ads	No
d. Utilize the Onslow County GIS Department as a repository for unclassified map data generated or collected by Camp Lejeune's GIS Department.	Yes
17. Consider the feasibility of limited blackouts of operations except for critical training during periods such as Sunday mornings (when many churches hold their services) or late at night when many residents are sleeping	Yes
18. Examine the feasibility of securing funding for federally funded programs of off-site mitigation that could include:	
a. Purchase of noise/aviation easements	Yes[12]
b. Programs for dB reduction measures in surrounding properties – insulation, HVAC, etc.	No[13]
c. Fee/development right purchase	No[14]

[1] Onslow County adopted a Flight Path Overlay District (FPOD)in 2006; no other municipalities have adopted overlay zoning districts.

[2] While residential density is not formally restricted in the Verona area, Onslow County's future land use plan will guide future

[3] The map shows Onslow County's Flight Path Overlay District, not the JLUS study area.

[4] No standard disclosure *form* is required, but realtors are required to disclose zoning (including overlay zoning).

[5] Updates are currently in progress for Onslow County and City of Jacksonville; both are creating Unified Development Ordinances that

[6] No resources to implement.

[7] Joe Ramirez became an ex-officio member of the Onslow County planning board; regular updates are given on military

[8] Trees were already present.

[9] MCB Camp Lejeune determined that perimeter signs are necessary.

[10] Since NC-24 is a main deployment corridor, additional development along route is incompatible.

[11] While there is no formal MOA at this time, it is the intent of the military and community that this will be established in the future.

[12] Camp Lejeune has used federal Readiness and Environmental Protection Initiative (REPI) funding to purchase noise easements.

[13] Unaware of program, but will consider in the future.

[13] Unaware of program, but will consider in the future.