

Comprehensive Regional Growth Plan for the Fort Bragg Region Assessment and Recommendations



Chapter 11 Cumberland County

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DISCLAIMER

This report is intended as an aid to planners, managers, elected officials, and other decision makers in the Fort Bragg region. Our aim is not to dictate what should be done, but to assist in ongoing efforts to achieve goals and objectives identified and valued by the residents of the region. The recommendations presented in this report are suggestions for how the region could work towards those goals and objectives, based on best available information and current understandings.

The information, projections and estimates in this report are based upon publicly available data and have been prepared using generally accepted methodologies and formulas. The projections and needs presented in this report are based upon best estimates using the available data. It is important to note that currently available information and understandings are incomplete and cannot account for the inevitable, but unpredictable, impacts of unexpected global, national, state, and/or local events. Actual results and needs may differ significantly from the projections of this report due to such unforeseen factors and conditions, as well as inaccuracy of available data, and/or factors and conditions not within the scope of this project. Persons using this information to make business and financial decisions are cautioned to examine the available data for themselves and not to rely solely on this report.

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Chapter 11: Cumberland County

A. Introduction

This report presents the results of a thorough assessment of the impact of the expansion at Fort Bragg and identifies action items that need to be taken to prepare for this growth. The assessment process included dozens of individual interviews and working group meetings attended by a diverse group of planners and engineers, elected officials, city and county employees, representatives of chambers of commerce, and other stakeholders. Their insights guided teams of experts in their information gathering and analysis. Following the sustainability guidelines described in the introduction to the full report, the information presented here is intended to support proactive, integrated, regional planning through which the region's communities can develop innovative and effective responses to potential as well as already existing problems.

This section, which identifies issues facing Cumberland County and presents strategies for accommodating the impact of military-related growth,

can be read either independently or as part of the larger Growth Management Plan. It includes an assessment of the following topics:

- Economic Impact
- Education (K-12)
- Housing
- Information and Communication Technologies
- Water, Sewer, & Solid Waste
- Health Care
- Hospitality and Cultural Resources

Cumberland County encompasses approximately 661 square miles. It includes nine incorporated municipalities—the City of Fayetteville and the towns of Eastover, Falcon (part), Godwin, Hope Mills, Linden, Spring Lake, Stedman, and Wade—and several small unincorporated communities and villages (**Figure 1**).

Figure 1. Map of Cumberland County

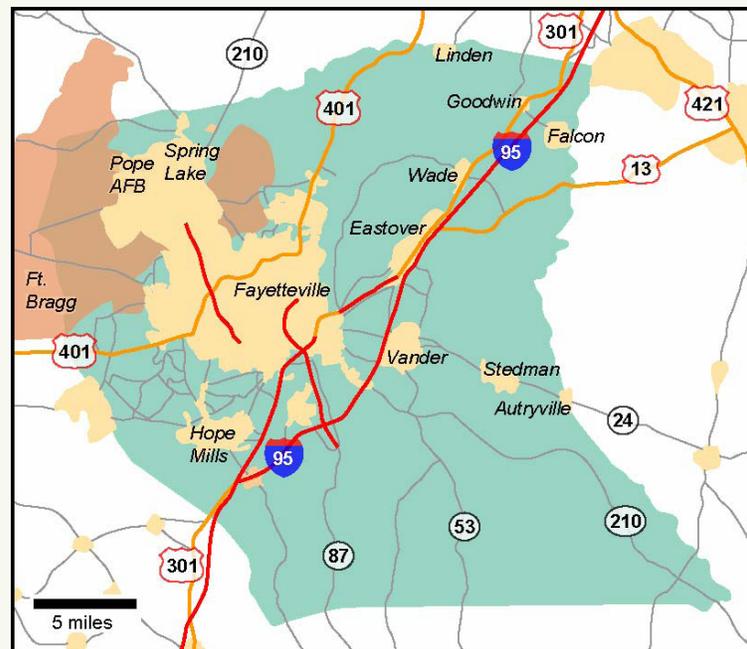


Table 1: Expected Number of Additional Military-Related Personnel

	2006	2007	2008	2009	2010	2011	2012	2013	Totals
Active-Duty Army	2,242	129	1854	1,310	477	-700	153	143	5,608
Active-Duty Air Force	-309	-1088	-786	-579	-460	70	155	50	-3,247
Army Civilians	393	102	149	216	17	1,072	0	0	1,949
Air Force Civilians	23	257	-19	-85	-31	-3	0	0	142
Defense Contractors	1274	632	253	120	120	1,226	504	-27	4,102
Totals	3,623	32	1,451	982	123	1,615	762	116	8,704

1. Growth Scenarios Used in This Report

The terms “normal growth” and “expected growth” figure prominently in the following discussion. “Normal”—that is, natural—growth refers to the changes in local population and other economic factors that would be affecting housing markets and school systems even if there were no military expansion at Fort Bragg. “Expected growth” refers to the additional growth that will occur as a result of the planned expansion at Fort Bragg.

The number of additional military-related personnel expected to relocate to the region from 2006 through 2013 is shown in **Table 1**.

In addition, the expected growth scenario includes expected construction expenditures for military projects managed by the Army Corps of Engineers, as well as privatized military housing projects managed by Picerne Housing. Military construction expenditures total \$1.3 billion¹ between 2006 and 2013, and privatized military housing construction totals \$336 million² between 2006 and 2013. For a complete discussion of the economic modeling and associated assumptions developed for this project, refer to the regional economic impact chapter.

2. Recommended Actions

The “Recommended Actions” section located at the end of each section lists specific actions suggested as responses to the challenges identified in the chapter. All of the recommended actions are important for the region as a whole; each recommended action is classified as being either “critical” or “important”

based on the relevance of the action to the mission of Fort Bragg. Critical actions are urgent actions; failure to implement them could jeopardize the base’s mission. Important actions represent a less urgent “best practice” of more general value to the region, in that failure to implement an important action could adversely affect community planning but would not jeopardize Fort Bragg’s mission.

B. Economic Impact of Military Growth

The infusion of military, civilian, and supporting contractors, together with the concomitant investments needed for construction and related activities, is expected to provide a boost to the Cumberland County economy and lead to a more than \$524 million increase in Gross Regional Product in 2013. The Fort Bragg expansion will also account for an additional \$68 million in personal income, \$587 million in disposable income, \$403 million in output (sales), and \$792 million in demand in 2013. The total population for Cumberland County in 2013 is expected to be 336,342, including 17,249 that are a result of military expansion.

Economic Impact

In order to understand how a community is going to change, it is necessary to identify where that community currently stands. When considering the growth of an entire county, broad demographics that show population, income, employment, and commuting trends can provide a reliable snapshot of where the county is now and where it is headed.

1. Estimates provided by Glenn Prillaman, Fort Bragg Directorate of Public Works

2. Estimates provided by Gary Knight, Picerne Housing

1. Population

The population of Cumberland County increased by 1.2% between 2000 and 2006, primarily as a result of natural growth and not because of people moving into the county from elsewhere. According to the North Carolina State Data Center (SDC) estimates, the population of Cumberland County increased from 302,962 in April 2000 to 306,545 in July 2006, the most recent date for which data are available. That 1.2% population increase was much less than the 10.1% average statewide increase for the period. Somewhat uncharacteristically for North Carolina counties, natural population growth (births minus deaths) added 18,331 people to Cumberland County during this time period. Out-migration from the county was estimated at 14,748, resulting in net growth of 3,583 persons, all attributable to natural growth. This type of growth pattern is characterized by the SDC as “extreme natural increase, net out-migration.”

Population growth in Cumberland County municipalities between April 2000 and July 2006 is shown in **Table 2**. The figures shown in the “Annexed Population” column are included in the respective municipalities’ population increase from 2000 to 2006. Data are not available for annexed populations of municipalities having populations of less than 2,000. Interestingly, Fayetteville experienced a greater increase in population from annexation than it did from normal growth during this

six-year period. In fact, Fayetteville experienced a net loss of the population that was within its city limits as of 2000. Fayetteville’s annexations between 2000 and 2006 added nearly thirty square miles to the city, nearly half again as much land area as the city had in 2000.

As of July 2006, Fayetteville had the sixth largest population (173,898), Hope Mills the 62nd largest population (12,536), and Spring Lake the 89th largest population (8,227) of the 541 North Carolina municipalities. At the completion of the expansion at Fort Bragg and Pope Air Force Base in 2013, the total population in Cumberland County is expected to increase to 336,342, corresponding to an increase of 17,249 that is attributable to military growth.

2. Income, Gross Regional Product (GRP), Output, and Demand

In 2013, the Fort Bragg expansion is expected to account for an additional \$680 million in personal income, \$587 million in disposable income, \$524 million in Gross Regional Product, \$403 million in sales (output), and \$792 million in demand.

Table 2. Population Growth in Cumberland County, 2000-2006

Municipality	April 2000 Population	July 2006 Population	Change (number)	Change (%)	Annexed Population
Falcon (part)	343	325	-18	-5.2%	0
Fayetteville	121,015	173,898	52,883	43.7%	55,677
Godwin	112	118	6	5.4%	0
Hope Mills	11,237	12,536	1,299	11.6%	756
Linden	127	140	12	10.2%	0
Spring Lake	8,098	8,227	129	1.6%	88
Stedman	664	681	17	2.6%	0
Wade	510	540	30	5.9%	0
Unincorporated Area	160,861	110,080	-50,776	-31.6%	0
Cumberland County Total	302,964	306,545	3,583	1.2%	56,521

Table 3. Economic Impact of Military Growth (Excludes Normal Growth)

	2013 (millions)
Personal Income	+ \$680
Disposable Income	+ \$587
Gross Regional Product	+ \$524
Total Sales (output)	+ \$403
Total Demand	+ \$792

As a result of military growth, personal income³ in Cumberland County will increase in 2013 by \$680 million to \$18.34 billion (**Table 3**). At the completion of the Fort Bragg expansion in 2013, disposable income⁴ will have grown by \$587 million. Similar to the trends seen in other variables, income changes in the regional economy spike at the peak of the military expansion in 2011, then settle to a more gradual increase over the long run as the regional economy absorbs the expansion. Gross regional product (GRP), the most commonly used metric for measuring value added to the regional economy, is analogous to the gross domestic product used for benchmarking activities in the national economy. While it was thought that the local economy would grow at a fair pace without the military expansion (that is, normal growth), the infusion of military, civilian, and supporting contractors—together with the concomitant investments needed for construction and related activities—is expected to provide a further boost to the Cumberland County economy and lead to a GRP increase of \$524 million. Total sales to local businesses (output) is affected by changes in industry demand, the local region’s share of each market, and international exports from the local region. The increase in 2013 is estimated to be \$403 million. Total demand is defined as the amount of goods and services demanded by the local region; it includes

3. Personal income, defined as the aggregate income received by all persons from all sources, is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors’ income, rental income, personal dividend income, personal interest income, and personal current transfer receipts, less contributions to government social insurance. (REMI Model Documentation Version 9.5)

4. Disposable income is defined as the portion of personal income that is available for consumers to spend. Disposable income equals personal income, less taxes and social security contributions, plus dividends, rents, and transfer payments. (REMI Model Documentation Version 9.5)

both imports and local supply. Under the Fort Bragg expansion, total demand for Cumberland County is expected to increase by \$792 million.

C. K-12 Education

As a result of military-related growth, Cumberland County Schools—which had a 2007-08 K-12 enrollment of 53,660—will experience an enrollment increase of 1,142 students between the 2008-2009 and the 2013-2014 school years. The expected impact will be heaviest in the Jack Britt and Gray’s Creek areas, where some schools are already significantly over capacity. If current levels of education services are to be maintained, Cumberland County will need at least \$88 million for staffing new classrooms over a period of six years and at least \$84 million for new school construction. Securing funding for capital improvements has become a priority.

School systems nationwide are facing difficult planning challenges arising from increasing student populations, aging school infrastructures, and increasing complexity in pupil assignments. These challenges are shared by Cumberland County, which must fund building and renovation projects based not only on normal population growth but also on the expected growth that will occur as a result of the military expansion at Fort Bragg.

1. Current Conditions

a. Background

Cumberland County Schools, with a 2007-08 K-12 enrollment of 53,660,⁵ makes up the fourth largest school district in North Carolina. Other characteristics of the district include:

- Fifteen elementary schools, fourteen middle schools, ten high schools, and thirteen alternative schools. These numbers include two elementary schools to be opened in 2010 and one middle school to be opened in 2009.
- Six thousand six hundred and forty-three employees, including 209 administrators, 3,409

5. North Carolina Department of Public Instruction, 2007-2008 Average Daily Membership (ADM), Month-Two Report.

teachers, 1,103 teacher assistants, and 1,922 support staff.

- Elementary school students account for 46.5% of the student population, with middle school and high school students making up 22.4% and 31.1%, respectively.
- Approximately 31% of students in 2007 were connected to the military which resulted in an average Federal Impact Aid per student of \$425.86⁶

b. Facility Needs

Current estimates suggest that the existing system-wide permanent capacity is 54,730, excluding two elementary schools and one middle school that are not yet opened. The current system-wide capacity surplus is approximately 364. However, many areas that are expected to receive significant military-related impact are also areas that are currently experiencing overcrowding. Elementary schools have a current capacity gap of 276 students. Middle schools in the county have a current capacity gap of 353 students, while high schools have a current capacity surplus of 230 students. Alternative and special schools have a capacity surplus of 763 students.

Cumberland County Schools plans to open a new middle school (capacity 900) in 2009 to replace the current Gray’s Creek Middle School, which will be converted to a K-5 school. The new middle school project, which is already funded, will accommodate

6. “EAC Education Site Visit, September 9, 2008, Fort Bragg, North Carolina” presented by Dr. Dan Honeycutt, Superintendent, Harnett County Schools.

Figure 2. The number of live births to residents of Cumberland County

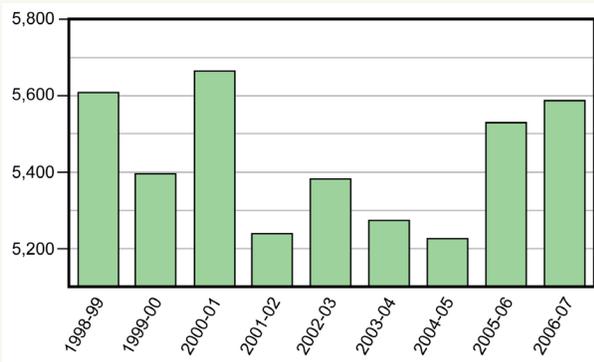
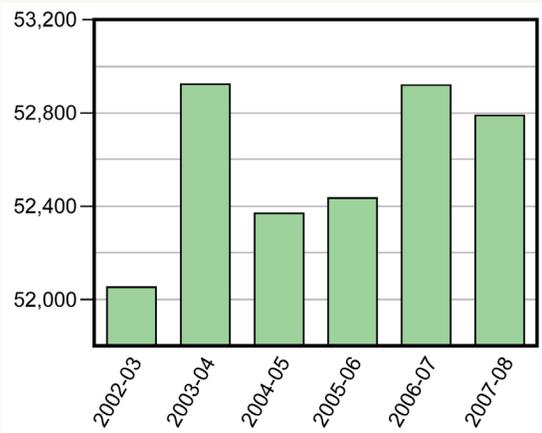


Figure 3. Average Daily Membership (ADM) for Month 2 in Cumberland County schools.¹



1. A system’s ADM is calculated by adding up the number of days that each student’s name appears on the class roll during the second month of the school year and then dividing this total by the number of school days in that month. ADM provides a more accurate count of the number of students in school than does enrollment.

405 additional students. Land has been acquired between Stoney Point and E. M. Honeycutt schools for a new elementary school with a planned capacity of 900. This project is funded and is expected to open in 2010. In addition, funded renovations providing approximately forty-two additional elementary classrooms are planned throughout the system.

Historical Growth

Although historical trends for Cumberland County resident live births have been decreasing slightly since 1998, recent years have seen a rise in new births (Figure 2).⁷ The six-year trend in Average Daily Membership for Month 2 is increasing by a little more than 100 students per year (Figure 3).¹

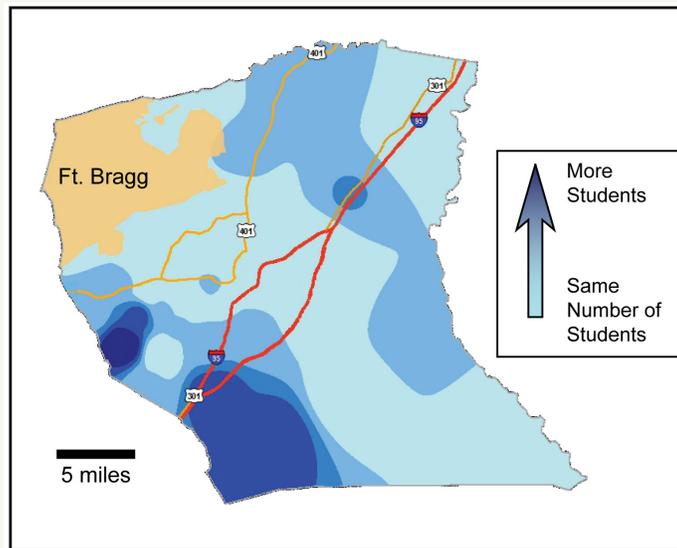
2. Future Conditions

a. Geographic Distribution

Cumberland County schools experienced a five-year (2002-03 to 2007-08) average annual growth rate of 0.29%, with yearly student population growth rates ranging from 0.25% to 1.7% in consecutive years. The projected normal growth rate for Cumberland County schools is expected to average 0.19% per

7. North Carolina Department of Health and Human Services.

Figure 4. Growth potential for K-12 student population. Darker blue indicates areas where the number of school-aged children is expected to grow the most.



year. In 2007, 16,646 (31.08%) of the students in Cumberland County schools were connected to the military.⁸ Military-related growth is expected to add 2,100 school-aged children to Cumberland County schools between the 2008-09 and 2013-14 school years. The current system-wide surplus in capacity will decrease to a system-wide capacity surplus of 600 by 2013. Although the county will probably not experience system-wide capacity issues, the areas already dealing with overcrowded schools can expect the largest share of incoming military-related students.

Figure 4 shows how the expected growth in the K-12 student population will be distributed throughout the county. This map is derived from a combination of GIS analyses—of where current students live, where military personnel live, and where land parcels available for development are located—and interviews about land use conducted with a wide range of knowledgeable stakeholders. Both information sources are important; strong residential growth does not necessarily correlate with increasing student population, and expert local knowledge is required to identify likely patterns. The resultant map reveals strong residential growth trends indicative of a future increase in the number of school-aged

children in the Jack Britt and Gray’s Creek High School areas and, to a lesser extent, the Seventy-First and Pine Forest High School areas, with additional growth potential in the Eastover area and the South View High School area. The Jack Britt High School attendance area was mentioned by several stakeholders as being highly preferred as a residential location for military families.

The enrollment projections displayed in are based on historical school enrollment records and available data about the number of newborn babies in each school district. The analysis used cohort survival ratios, which indicate the proportion of students enrolled in one grade in a specific school year relative to the number of students enrolled in the next grade level and school year. These ratios were used to develop a system-wide, ten-year enrollment forecast, which was then compared with estimates of school capacity in order to project capacity shortfalls in 2013. .

A gain of 1,000 military-related K-5 students is expected between 2008-09 and 2013-14. For the same period, middle school populations are expected to grow by 500 military-related students and high school populations are expected to grow by 600 military-related students. Total K-12 growth between 2007-08 and 2013-14 is expected to be 2,100 military-related students (**Figure 4**).

8. 2007-2008 Cumberland County Schools’ Annual Report, <http://www.ccs.k12.nc.us/StatsFacts.htm>

Figure 5. Projected Growth in Student Enrollment by School Level (2008-09 to 2013-14)

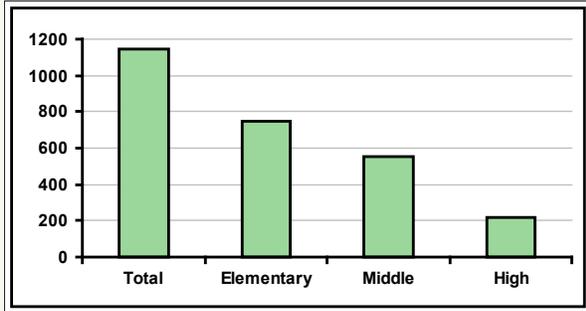
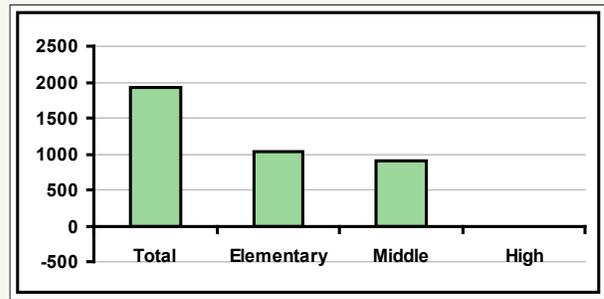


Figure 6. Projected Capacity Gap in Permanent Facilities by School Level (# of students)



b. Projected Growth and Facilities Capacity

System-Wide Impact: Enrollment projections were developed for all schools in the district⁹. Projections were based on historical school enrollment records as well as available data about the number of newborn babies in each school district. The analysis determined cohort survival ratios, defined as the proportion of students enrolled in one grade in a specific school year relative to the number of students enrolled in the next grade level and school year. These ratios, in turn, were used to develop a system-wide, enrollment forecast, which was then compared with estimates of school capacity in order to project capacity shortfalls in 2013. The total anticipated growth¹⁰ in school enrollments between the 2008-09 and 2013-14 school years is approximately 1,142 students (includes 2,100 students resulting from military-related growth). **Figure 5** details the projected school enrollments.

Projections for the 2013-2014 school year suggest that, system-wide, the permanent facilities capacity gap will be 1,916 students¹¹ (**Figure 6**).

This out-of-capacity analysis suggests that even after the Overhills Elementary school opens in 2009, an additional elementary school is needed as soon as possible. In addition, one middle school is needed immediately and one high school will be needed in 2012.

Military-Impacted School Clusters: In order to assess the impact of pending school construction projects on capacity gaps and to provide guidance on the siting of future schools, military-impacted school clusters were identified. Clusters include the individual school attendance areas - at the elementary, middle and high school levels - expected to receive the largest military impact. Once specific clusters were identified, the out-of-capacity analysis was redone at the cluster levels to illustrate year-by-year capacity gaps.

Two elementary clusters were identified. The schools included in the first elementary school cluster are E. M. Honeycutt, Lake Rim, Stoney Point and a new elementary school to be opened in 2010. An updated out-of-capacity analysis suggests that Stoney Point will be over capacity by 100 students in 2009; the new elementary school will exceed capacity by over sixty students when it opens in 2010. **Figure 7** provides out-of-capacity details and the location of the new elementary school. The second elementary school cluster includes Gallberry Farm, Alderman, and a new elementary school to be opened in 2010 (former Gray’s Creek Middle School). Gallberry Farm Elementary is expected to exceed capacity by nearly 150 students in 2010; Alderman Elementary is expected to exceed capacity by nearly 100 in 2010. The opening of the new elementary school in 2010 with a 495 student capacity will alleviate much of the overcrowding. However, Alderman Elementary is expected to operate with a modest capacity gap. **Figure 8** provides out-of-capacity details for this elementary cluster.

9. At the time of this analysis, actual 20 day ADM numbers were not available. Estimates were used based on available data.

10. Includes normal growth plus the expected military-related growth.

11. Special and alternative schools are not included in this calculation

Figure 7. Elementary Cluster #1

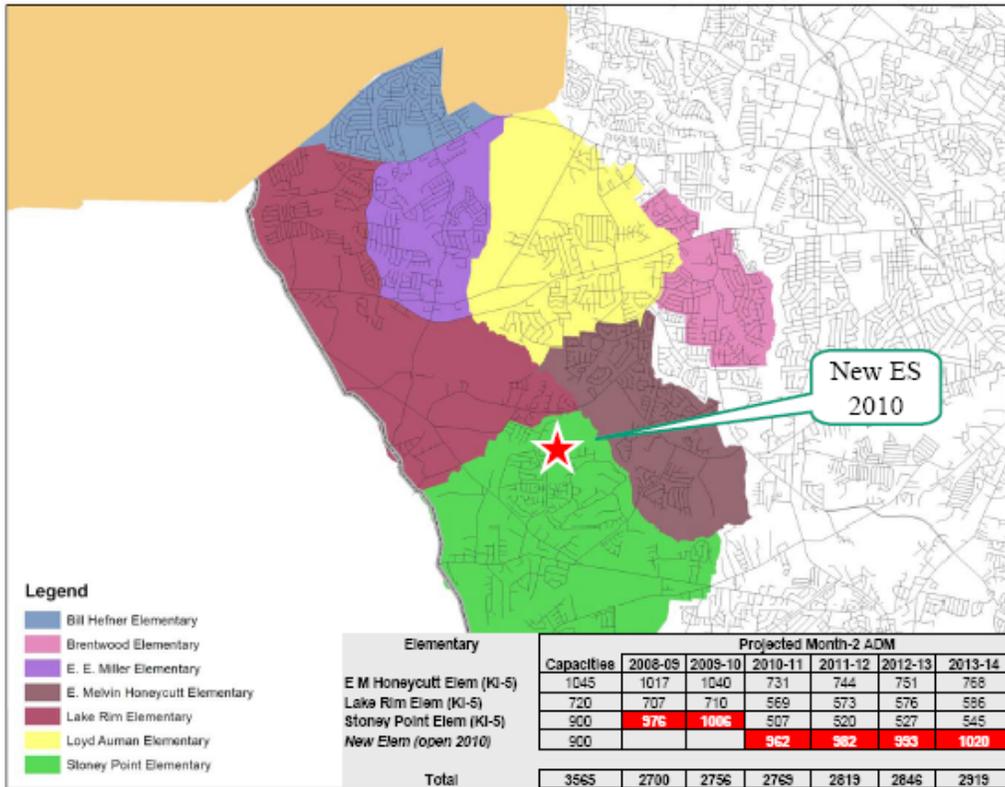


Figure 8. Elementary Cluster #2

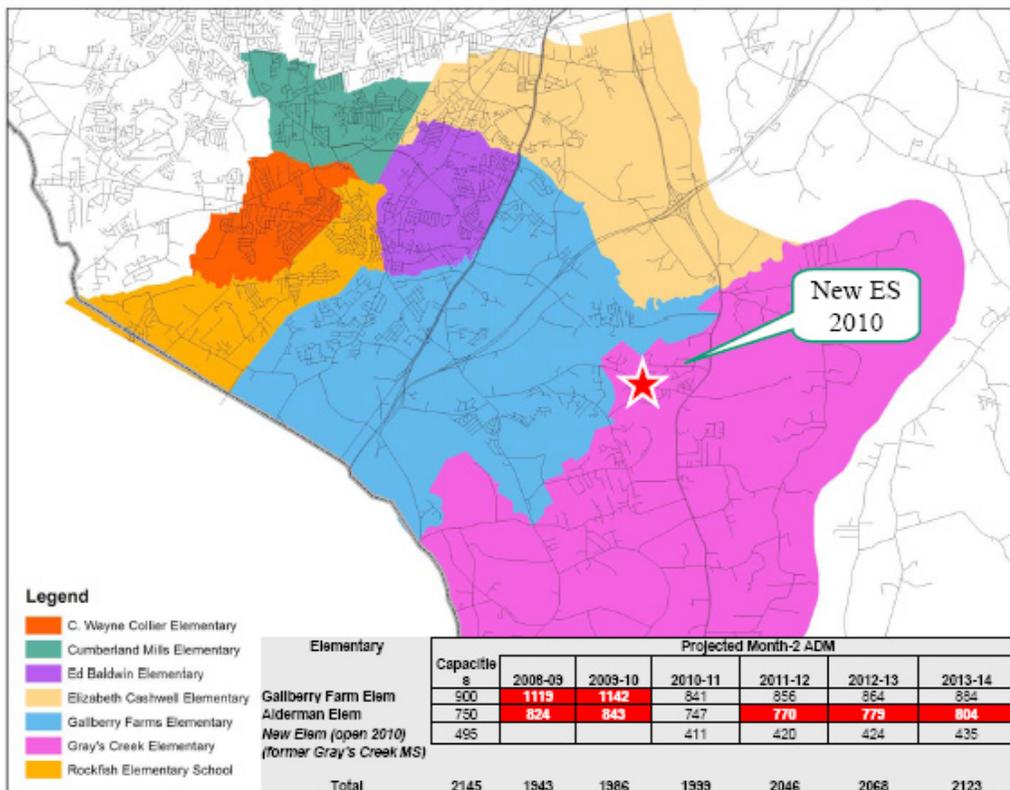


Figure 9. Middle School Cluster

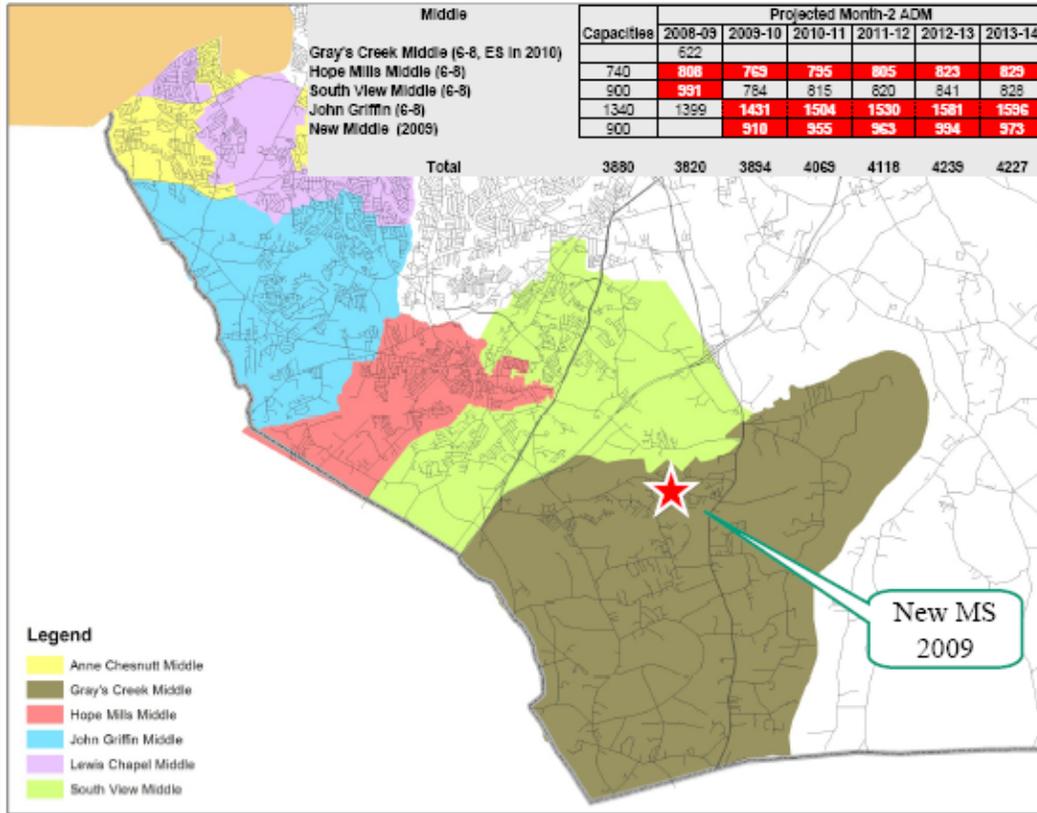
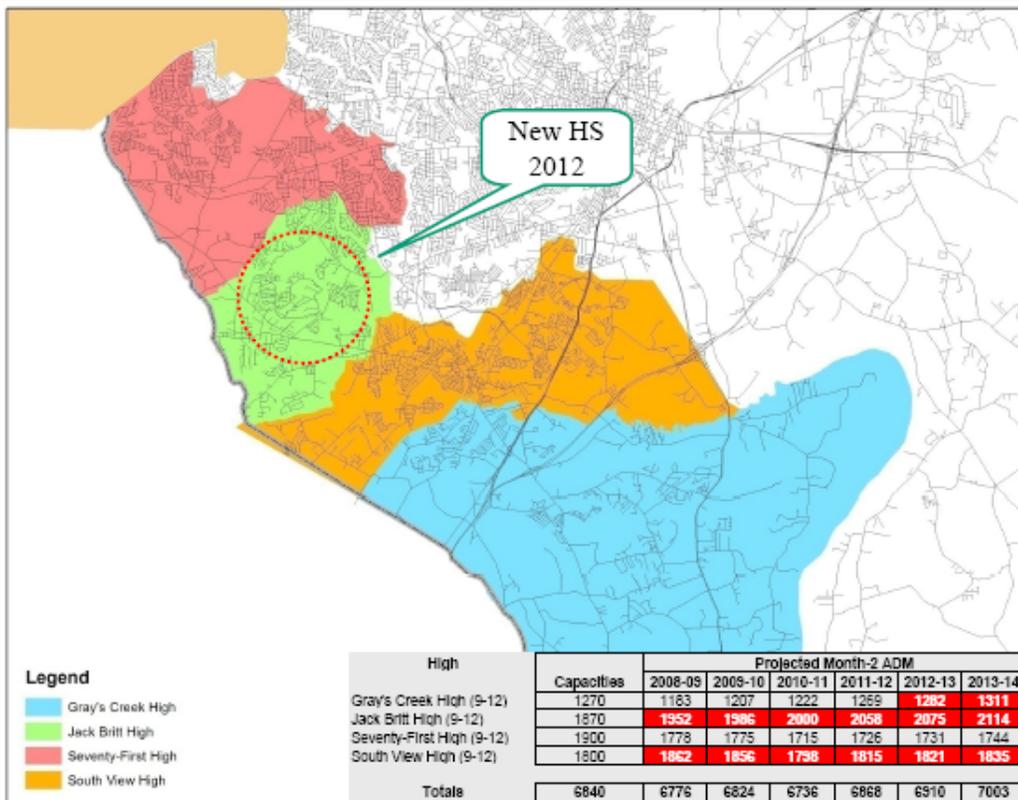


Figure 10. High School Cluster



The schools included in the middle school cluster are Grays’ Creek, Hope Mills, South View, John Griffin and a new middle school to open in 2009. An updated out-of-capacity analysis suggests that Hope Mills and South View are above capacity for the 2008-09 school year. Projections for the 2013-14 school year reveal that Hope Mills, John Griffin and the new middle school will all be operating well above capacity. **Figure 9** provides out-of-capacity details and the location of the proposed new school for the middle school cluster.

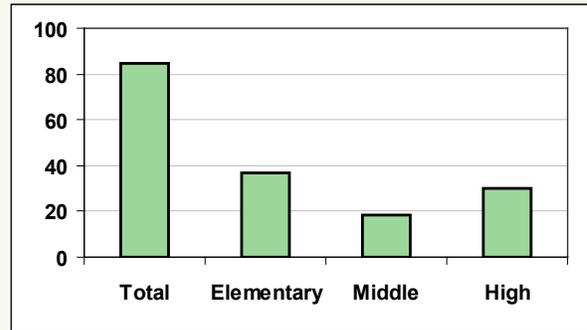
The schools included in the high school cluster are Gray’s Creek, Jack Britt, Seventy-First, and South View. The out-of-capacity analysis suggests that Jack Britt and South View are operating in excess of capacity. Projections for the 2012-13 school year reveal that capacity demands will increase substantially in all high schools - except Seventy-First High School – suggesting a need for a new high school in 2012. The optimal areas for the construction of new high school and out-of-capacity details are highlighted in **Figure 10**.

3. Gaps

Currently, more than half of the county’s elementary and middle schools are over capacity. With more students enrolled than the schools were built for, many schools use mobile classrooms (trailers) to handle the overage. The expansion of Fort Bragg will create larger numbers of school-aged children, accelerating and enlarging capacity gaps in certain areas of the county. The capacity challenge will be significant for all grade levels but is projected to be greatest for the county’s middle schools.

Growth in the population of school-aged children will not be uniformly distributed across the county. As noted above, the greatest increases are expected in the Jack Britt and Gray’s Creek High School areas and, to a lesser extent, the Seventy-First and Pine Forest High School areas. These areas will experience the greatest capacity challenges, and thus will have the greatest need for new classroom space and staff. For instance, Stoney Point Elementary, which is currently eighteen students over capacity, is projected to be nearly 200 students over capacity by 2013-14, with

Figure 11. Additional School Construction Cost associated with Military-Related Growth (\$ in millions)



more than half of the new students resulting from the military-related growth. Gray’s Creek Elementary is currently over capacity by almost forty students and is projected to be more than 160 students over capacity by 2013-14—again, with most of the new students coming from the military-related growth. John Griffin Middle School, currently under capacity, is projected to be more than 250 students over capacity by 2013-14, with most of the increase resulting from military-related growth.

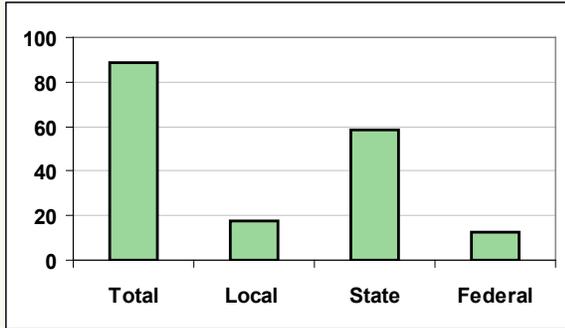
As mentioned, approximately 2,100 additional students will enroll in Cumberland County schools as a result of military-related growth.¹² In order to accommodate these military-connected students, there is an estimated \$84.8 million in construction costs needed to build new schools¹³ (**Figure 11**).

In addition to the cost of constructing new schools, there are additional administrative and operations costs, such as salaries, instructional supplies, utilities, maintenance, transportation, etc. The Cumberland County school district operates with money from local, state, and federal sources. Public schools are funded largely through tax dollars. The State provides

12. Compares the 2008-09 enrollment to the projected 2013-14 enrollment.

13. Using the county-wide out-of-capacity analysis and 2008-2009 enrollment projections, the proportion of students attending elementary schools, middle schools, and high schools was determined. This distribution was used to project which school level military –connected students would attend. The average cost per student to construct a school was obtained from Smith Sinnett Architects and assumes a 5-year construction inflation cost and a \$20K per acre land cost. The estimate is \$35,784 for an elementary school, \$40,388 for a middle school and \$48,429 for a high school.

Figure 12. Additional Administrative and Operations Cost associated with Military-Related Growth (\$ in millions)



the overwhelming majority of school funding in Harnett County, with the federal government providing the least. Sixty-six percent of school funding comes from state sources, fourteen percent from federal sources, and twenty percent from local sources.¹⁴ The total per-pupil expenditure in Cumberland County is \$7,663 annually compared to an average of \$7,800 for the Tier I counties. Based on the county-specific average costs, in order to maintain the same level of educational services for six years¹⁵, approximately \$88.8 million will be necessary to educate the 2,100 additional military-related students (**Figure 12**). The local portion of that cost is \$17.8 million.

14. North Carolina Department of Public Instruction, 2006-2007 School Statistical Profile

15. From the 2008-09 through 2013-14 school years

4. Recommended Actions

Critical Action 1: Identify potential funding sources for the construction and operation of the additional school capacity

Description: Current funding sources will not provide sufficient funding to fill the capital and operating needs of the County. A committee should be formed to identify potential sources for additional funding. Potential funding sources include: (1) a higher level of Federal Impact Aid, which is supposed to compensate local educational agencies for “substantial and continuing financial burden” resulting from federal activities such as the enrollments of children of military parents who live or work on federal land; and (2) traditional funding sources, such as general obligation bonds and raising property or sales taxes, which would need a focused effort to build public support since they require voter approval. In addition, the committee should explore the possibilities for obtaining special funding from the Department of Defense to deal with the special burden imposed on local schools by the BRAC process. Legislation, such as the Military Children’s School Investment Act recently introduced in Congress by Congressman Robin Hayes, should be supported.

The school system should also engage the Department of Public Instruction in enrollment forecasting. Even though DPI forecasting is conducted many months prior to the school opening when the exact number of military-related students is still unknown, the county should be able to provide relevant data that will support a joint effort to plan funding for new teachers and staff.

Responsible Parties: The exploratory committee should be formed by the BRAC Regional Task Force in partnership with Moore County Schools and Moore County government.

Critical Action 2: Identify short-term strategies for accommodating expected enrollment increases in the next few years.

Description: Cumberland County is expecting significant increases in student numbers over the next few years. The County should continue implementing short-term strategies for dealing with these increases until permanent solutions are secured. Strategies include:

- Mobile classroom or modular classroom facilities
- Temporary capping of enrollment at overcrowded schools plus temporary busing of students to under-utilized schools
- Alternative-calendar schools
- Rental of off-site, swing-space buildings to accommodate students over the short term

Responsible Parties: The BRAC Regional Task Force will work with Cumberland County Schools and the Harnett County Commission to identify solutions.

Critical Action 3: Update out-of-capacity analysis using actual 2008-09 enrollment numbers

Description: The out-of-capacity analysis in this assessment was based on estimated enrollments for the 2008-09 school year. The actual enrollment numbers based on the 20-day ADM - are now available. This update will verify the need for the additional elementary, middle and high schools recommended in this assessment.

Responsible Parties: The BRAC Regional Task Force will work with Cumberland County Schools to ensure that the most up-to-date information is used in any future assessments.

Important Action 4: Promote local government and school system collaboration in locating schools, houses, and neighborhoods

Description: Because the projected school capacity gap in Cumberland County is not evenly distributed across the county, efficient use of limited capital improvement funds will require strategic distribution of new facilities. Cumberland County Schools and local governments should consider adopting Smart Growth principles whereby school facility planning and local government planning efforts are integrated so as to reach multiple community goals educational, economic, social, and fiscal. Collaborative decisions regarding the location of schools, houses, and neighborhoods will promote policies that are consistent across governmental and functional boundaries. The availability and price of land is obviously an important factor in siting schools. GIS-driven technology such as the technology used to determine optimal school site in this assessment - is available that will assist in correlating school decision-making with projected land use trends.

Responsible Parties: The integration of a collaborative model of decision making is recommended for all counties in the region. The BRAC Regional Task Force is well positioned to provide regional access to expert technologies and org

D. Housing

The Cumberland County for-sale housing market continues to outperform the national and regional housing markets. Housing in the area is substantially more affordable than it is in most parts of the United States and is characterized by a history of price appreciation. Although the local market began to slow in the last eighteen months, negative impacts to the local economy are being offset by military spending at Fort Bragg. Cumberland County offers its present and future residents a wide variety of housing choices, ranging from smaller homes for less than \$100,000 to larger estate homes for \$350,000 and more

1. Current Conditions

Housing Characteristics

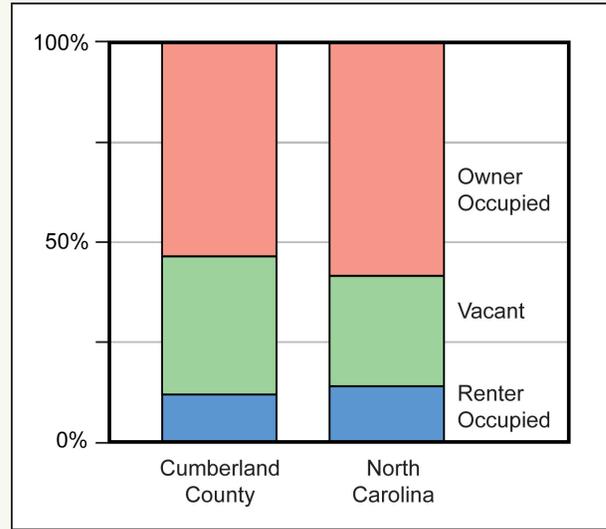
The number of housing units in Cumberland County in 2007 is estimated to be 125,869.¹⁶ This figure is up from 118,425 in 2000, which means that the average annual growth rate for the last seven years has been approximately 0.9%. Approximately 16,741 (13.3%) of these housing units are vacant, compared to a statewide vacancy rate of 14.2%. Approximately 53% of the units in Cumberland County are owner-occupied, while approximately 34.1% are renter-occupied (**Figure 13**). The statewide rates for owner-occupied units and renter-occupied units are 59.6% and 27.9%, respectively.

a. For-Sale Housing

Although the local market for existing homes has slowed in 2008, existing single-family homes continue to appreciate in price. Recently, new single-family homes have experienced a decline in the total number of units sold and the average sale price. The number of days required to sell new homes has increased. Although the market is slowing, the Cumberland County market is faring well when compared to national housing figures. Construction of new homes is slowing down, while the existing inventory of new homes is being reduced.

The average price for an existing single-family home in Cumberland County has increased from \$97,562

Figure 13. Housing occupancy by type in Cumberland County in 2007, compared with the statewide average



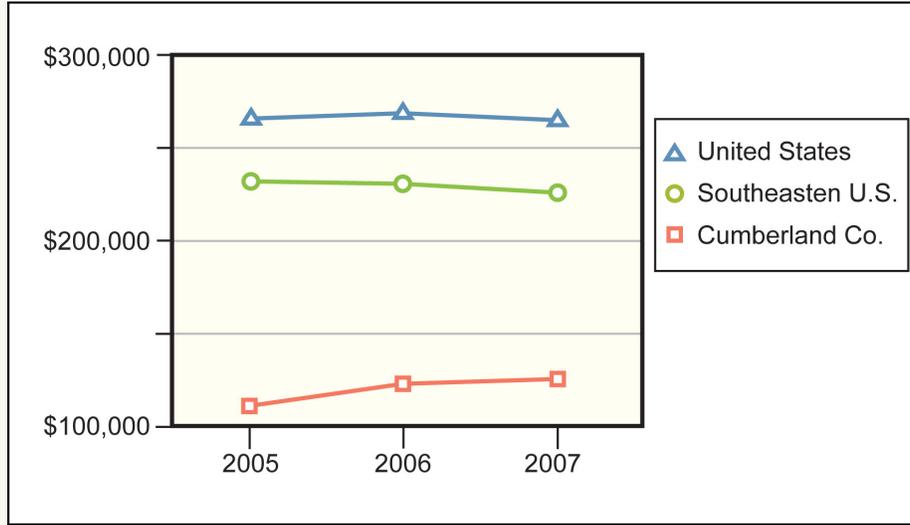
in 2002 to \$124,547 in 2007. Existing housing in Cumberland County continues to appreciate, with the average price for an existing single-family home increasing to \$130,131 in April 2008, up from \$121,573 in April 2007. This appreciation occurred during a period when prices were declining nationally and in the South (**Figure 14**). Housing is far more affordable in Cumberland County than it is in either the national or the regional markets.

The overall market for existing single-family homes has also outperformed the national housing market. From 2002 through 2006, total sales of existing local homes steadily increased. The local market for existing homes has slowed, however, with the total number of existing single-family home sales in April 2008 down by 16% when compared to April 2007. Nationally, existing single-family home sales declined by 23.8% over the same period. Overall, there is a more than six-month inventory of existing homes on the market, compared to a national inventory of approximately nine months. As of October 2007, the inventory of available existing houses consisted of 1,022 three-bedroom units, with an average price of \$120,634, and 353 four-bedroom units, with an average price of \$259,608.

In Cumberland County the number of new single-family units that are placed on the market and sold in a given year has grown significantly, from 688

16. Claritas Research

Figure 14. Average sales price for existing single-family homes in Cumberland County in 2007, compared with averages for the state as a whole and with the southeastern United States

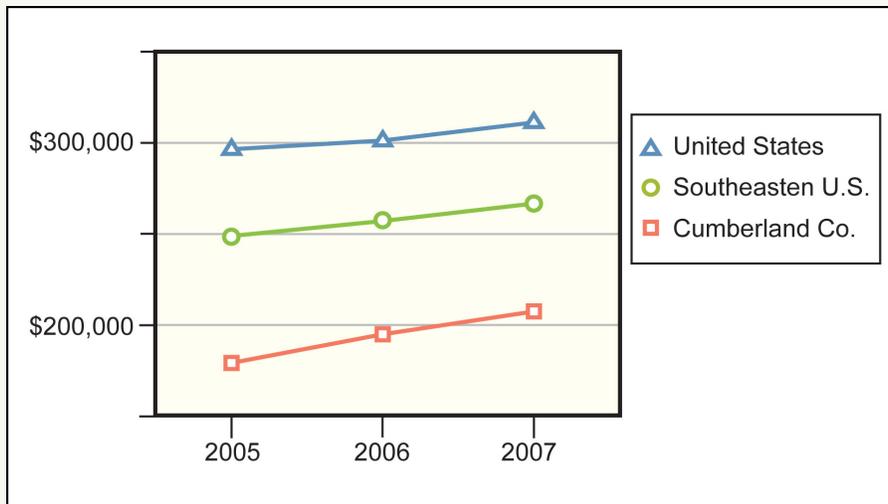


units annually in 2002 to 1,702 units annually in 2006. Likewise, the average price for a new house that has closed has increased from \$133,323 in 2002 to \$207,591 in 2007 (Figure 15). New housing in Cumberland County continues to appreciate modestly, with the average price for a home increasing to \$205,074 in April 2008, up from \$203,151 in April 2007.

The market for new single-family homes has outperformed the national and regional housing markets. From 2002 through 2006, total new-home

sales in the county steadily increased. Local new-home market activity has significantly slowed but has recently begun to pick up, with the total number of new single-family home sales in April 2008 increasing by 13% when compared to April of 2007. During the same period, new home sales nationally declined by 29.8%. Overall there is a 9.1-month inventory of new homes on the market, compared to a national inventory of approximately 9.8 months. Recent improvements in new house sales activities and modest reductions in the available inventory seem to suggest that, by the end of the year, new home sales

Figure 15. Average sales price for new single-family homes in Cumberland County in 2007, compared with averages for the state as a whole and with the southeastern United States.



may rebound as existing inventory is decreased. As of October, 2007, the inventory of available, existing houses on the Cumberland County market included 707 three-bedroom units, with an average price of \$202,278, and 383 four-bedroom units, with an average price of \$273,878.

Between 2003 and 2006, single-family housing permits rose consistently in Cumberland County, with the greatest number of permits (2,354) being issued in 2006. Beginning in 2007, the number of permits issued dropped substantially to 1,445. The number of permits issued during the first quarter of 2008 (237), is down by 50% from the same period in 2007. Just over half of the new single-family homes are being constructed in the unincorporated portion of the county, while most of the remaining construction activity has occurred within the City of Fayetteville. Permitting activity in Spring Lake, Hope Mills, and Falcon has been very limited. Permitting is likely to continue declining while the existing inventory of new homes is being reduced.

The typical new three-bedroom, two-bathroom home would not be affordable for single-income households at the rank of E-6 or below. Higher ranking or dual-income military households could afford the typical new house in Cumberland County. Factors that must be considered when determining whether the typical homebuyer can qualify for a mortgage on a typical Cumberland County home include:

- The median price for a typical new three-bedroom, two-bathroom home that contains approximately 1,400 square feet is \$173,900.
- A minimum down payment of 5% of the purchase price is required.
- Mortgage principal and interest cannot exceed 28% of the median monthly income.
- The prevailing mortgage interest rate is assumed to be 6.5%.

Affordability analyses are commonly based on index values. An index value of 100 means that a homebuyer has exactly enough income to qualify for a mortgage on a typical, median-priced new home. An index value above 100 signifies that a homebuyer earning the median income has more than enough

income to qualify for a mortgage loan on a median-priced new home. For example, an affordability index of 120.0 means that a homebuyer has 120% of the income necessary to qualify for a loan covering 95% of a median-priced, new single-family home. An increase in the index shows that this homebuyer is more able to afford the typical median priced new home.

Unmarried active-duty military personnel have affordability indices ranging from 70 for a junior enlisted (E2) to 245 for a company grade officer (O5). This suggests that the typical three-bedroom, two-bathroom new home would not be affordable for many junior enlisted personnel. These affordability indices are based on single-earner families. Many families, however, have two or more incomes, making selected homes affordable to these junior enlisted personnel as well.

b. Rental Housing

Overall, conditions in the Cumberland County rental market are tightening. As of February, 2008, vacancy rates of 4% to 8% in existing apartment developments are typical throughout the county. These rates represent a significant reduction compared with February, 2007, vacancy rates, which ranged from 15% to 20%.¹⁷ The price of rental housing typically averages \$500 to \$700 a month for a one-bedroom unit, \$600 to \$900 a month for a two-bedroom unit, and \$750 to over \$1,000 a month for a three-bedroom unit.

The number of building permits issued for rental housing units peaked in 2005 at 1,390 units and has significantly declined to 473 in 2007. During the first quarter of 2008, however, 386 units have been permitted, which is a substantial increase over the number of permits issued for the same period in 2007. The overwhelming majority of these units are being constructed in Fayetteville. Permitting in Spring Lake, Hope Mills, Falcon, and the unincorporated areas has been very light.

In the last year, vacancies have significantly declined, resulting in an increase in rental housing production. Selected rental projects that are in the planning stage

17. Melissa Reid, Publisher - Apartment Finder

Table 4. Rental Affordability for Military Families in Cumberland County

Two-Person Household						
Rank	E2	E6	W2	W4	O3	O5
Annual Income	\$31,377	\$51,322	\$68,454	\$91,588	\$71,553	\$105,225
Monthly Housing Expense @ 30% of Annual Income	\$784	\$1,283	\$1,711	\$2,290	\$1,789	\$2,631
Fair Market Rent (1 bedroom)	\$548	\$548	\$548	\$548	\$548	\$548
Affordability Gap	\$236	\$735	\$1,163	\$1,742	\$1,241	\$2,083
Fair Market Rent (2 bedroom)	\$612	\$612	\$612	\$612	\$612	\$612
Affordability Gap	\$172	\$671	\$1,099	\$1,678	\$1,177	\$2,019
Three- and Four-Person Household						
Rank	E2	E6	W2	W4	O3	O5
Annual Income	\$31,377	\$51,322	\$68,454	\$91,588	\$71,553	\$105,225
Monthly Housing Expense @ 30% of Annual Income	\$784	\$1,283	\$1,711	\$2,290	\$1,789	\$2,631
Fair Market Rent (1 bedroom)	\$612	\$612	\$612	\$612	\$612	\$612
Affordability Gap	\$172	\$671	\$1,099	\$1,678	\$1,177	\$2,019
Fair Market Rent (2 bedroom)	\$869	\$869	\$869	\$869	\$869	\$869
Affordability Gap	(\$85)	\$414	\$842	\$1,421	\$920	\$1,762

or under active development in Cumberland County include:

- Autumn View (Ramsey Street), developed by Dickson Properties - 144 units
- Westlake (Morganton Road), developed by Morganton Management & Development - 364 units
- Stone Ridge (Bingham Drive), developed by Pickering & Company - 216 units.
- Apartments in Spring Lake on 210, developed by Caviness and Cates - 240 units estimated.
- Millstone Village (Camden Road), developed jointly by Bradford Builders, Landfall Partners, and Watson/Caviness - 144 apartments
- Place Properties (Morganton and North Reilly Road), developed by D&L Investments - 300 units
- Unnamed project on Pamlee Road, developed by Chris Manning - 224 units.

All incoming military families will be able to afford rental housing in Cumberland County, except for those in pay grade E2 who are supporting a family of three or more.

Under U.S. Department of Housing and Urban Development (HUD) guidelines, a family should spend no more than 30% of its income on rent and utilities. When assessing the affordability of housing for military personnel, military income is defined as base pay, subsistence allowance, and housing allowance. Pay grades at the lowest number of service years are used as the floor when determining affordability for military families.

HUD defines a Fair Market Rent as the average rent in the county, by unit size. **Table 4** provides an analysis of the ability of military families at various military income levels to pay the fair market rent.

The current Fair Market Rents in Cumberland County are affordable to all pay grades except E-2s supporting a family of three or more.¹⁸

18. Annual Income for each pay grade was calculated utilizing the OSD Military Compensation Calendar at <http://www.dod.mil/cgi-bin/rmc.pl>. Years of service are: W4 – 27 yrs; W2 – 20 yrs; O5 – 20 yrs; O4 – 15 years; O3 – 7 yrs; E6 – 12 yrs; and E2 – 2 yrs.

2. Future Conditions

a. Anticipated For-Sale Housing Demand

Table 5 indicates the county’s projected population growth (both normal and military-related) between 2007 and 2013 and the number of single-family homes it will take to accommodate this growth. There will be need for 5,220 owner-occupied homes in Cumberland County between 2008 and 2013. The majority of these units will be needed to house the population associated with the military growth at Fort Bragg; the remainder reflects normal growth, and thus would have been needed even without the base expansion. It should be noted that this is an estimate of homebuyer requirements and should be relied upon only as a guideline.

Housing development, which has taken place primarily in the western and southwestern areas of the county, will begin to expand into other areas as the available inventory of for-sale homes declines. In particular, there is a high potential for relatively

large subdivision developments in the Eastover area, especially after the enhancement of highway access to Fort Bragg by expansion of I-295 from its current terminus at U.S. 401 to future interchanges with Murchison Road and Bragg Boulevard. The Jack Britt High School attendance area was mentioned by several stakeholders as being especially preferred as a residential location for military families. More specific information about anticipated development in Cumberland County is presented in the Appendix A.

b. Anticipated Rental-Housing Demand

Table 6 indicates the county’s projected population growth (both normal and military-related) between 2007 and 2013 and the number of rental homes it will take to accommodate this growth. Between 2008 and 2013, there will be need for 3,380 rental homes in Cumberland County. The majority of these units will be needed to house the population associated with the military growth at Fort Bragg; the remainder reflects normal growth, and thus would have been needed

Table 5. Projected Changes in the Number of Owner-Occupied Homes in Cumberland County Resulting from Military-Related Growth¹

	2007	2008	2009	2010	2011	2012	2013	
Population								
Normal Growth	308,251	308,988	310,550	312,269	314,193	316,150	318,089	
Expected Growth	4,728	9,285	11,789	12,177	13,775	15,595	17,249	
Total	312,979	318,273	322,339	324,446	327,968	331,745	335,338	
Total Households								
Normal Growth	118,558	118,842	119,442	120,103	120,843	121,596	122,342	
Expected Growth	1,818	3,571	4,534	4,683	5,298	5,998	6,634	
Total	120,377	122,413	123,977	124,787	126,142	127,594	128,976	
Homeowner Households								
Normal Growth	71,965	72,137	72,501	72,903	73,352	73,809	74,262	
Expected Growth	1,104	2,168	2,752	2,843	3,216	3,641	4,027	
Total	73,069	74,305	75,254	75,746	76,568	77,450	78,289	
For-Sale Housing Units								
Normal Growth	--	172	365	401	449	457	453	2,297
Expected Growth	--	1,064	585	91	373	425	386	2,923
Total	--	1,236	949	492	822	882	839	5,220

1. As a result of comments received at the June 17 2008 community meeting, this demand analysis is being updated to reflect an increased rate of homeownership and to show Army housing separately.

Table 6. Future Need for Rental Housing

	2007	2008	2009	2010	2011	2012	2013	
Population								
Normal Growth	308,251	308,988	310,550	312,269	314,193	316,150	318,089	
Expected Growth	4,728	9,285	11,789	12,177	13,775	15,595	17,249	
Total	312,979	318,273	322,339	324,446	327,968	331,745	335,338	
Total Households								
Normal Growth	118,558	118,842	119,442	120,103	120,843	121,596	122,342	
Expected Growth	1,818	3,571	4,534	4,683	5,298	5,998	6,634	
Total	120,377	122,413	123,977	124,787	126,142	127,594	128,976	
Renter Households								
Normal Growth	46,593	46,705	46,941	47,201	47,491	47,787	48,080	
Expected Growth	715	1,403	1,782	1,841	2,082	2,357	2,607	
Total	47,308	48,108	48,723	49,041	49,574	50,145	50,688	
For-Rent Housing Units								
Normal Growth	--	111	236	260	291	296	293	1,487
Expected Growth	--	689	378	59	242	275	250	1,893
Total	--	800	615	318	532	571	543	3,380

even without the base expansion. It should be noted that this is an estimate of homebuyer requirements and should be relied upon only as a guideline.

3. Gaps

There are several housing-related challenges that continue to face the region and the county. The inventory of for-sale properties remains high, credit standards are tightening, availability of future affordable rental housing is unclear, and green building efforts require additional emphasis. These gaps are discussed in this section.

The number of homes listed for sale has recently declined in many markets throughout the country. One factor contributing to reduced inventories is that potential sellers are not listing their homes because they do not want to compete with builders and banks that have been cutting prices in order to reduce their inventories of new or foreclosed homes. Although the supply of for-sale housing is no longer rapidly increasing, the inventories remain abundant. Until the

for-sale inventories return to a six month supply, local marketing efforts should continue and those interested in constructing additional new for-sale housing should be cautious.

Credit standards have been getting tighter all year, reducing the number of people who qualify for loans. However, many potential homebuyers can still qualify for a loan. Qualified borrowers should have little difficulty finding conforming and FHA-insured mortgages. Given the present “buyer’s housing market”, it may be time to accelerate homebuyer financing and counseling efforts. Of course, the continued increase in foreclosures nationally should give caution to any agency considering such an initiative. Many families may not be ready to purchase a home. The number one barrier to buying a home is poor credit. In addition, some families simply cannot afford a down payment. Buyer investment in the home is important for the long-term sustainability of home ownership. For those families that are ready, homebuyer education and counseling that provides both pre-purchase and post-purchase counseling is essential. Such counseling

and education will promote awareness of the home-buying process, educate homebuyers on financing alternatives, and provide information necessary to sustain homeownership—information, for example, on home maintenance and budgeting.

Green building is another consideration. Green building is “the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building’s life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction”¹⁹. Green buildings reduce the overall impact of the built environment on human health and the natural environment by more efficiently using energy and other natural resources and reducing waste, pollution, etc. As mentioned, caution should be exercised in the construction of new housing, particularly for-sale housing. However, when new construction or rehabilitation is needed the integration of green building standards is encouraged.

The availability of affordable rental housing for lower income households is essential to the success of local community and economic development efforts. To date, fair market rents have been affordable to the majority of households in the county. Recent trends suggest that the rental housing market is tightening. More families are opting to rent instead of buy a home and more lower-income households are moving to the area. The rental market should continue to be assessed to ensure that new rental developments not only provide market-rate housing, but also provide affordable opportunities for lower-income households.

19. U.S. Environmental Protection Agency (<http://www.epa.gov/greenbuilding/pubs/about.htm>)

4. Recommended Actions

Important Action 1: Secure state and Federal funds to provide homebuyer financing, counseling, and education for potential homebuyers

Description: Given the present “buyer’s housing market” in Cumberland County, it may be time to accelerate homebuyer financing and counseling efforts. Of course, the continued increase in foreclosures nationally should give caution to any agency considering such an initiative. Many families may not be ready to purchase a home. The number one barrier to buying a home is poor credit. In addition, some families simply cannot afford a down payment. Buyer investment in the home is important for the long-term sustainability of home ownership. For those families that are ready, homebuyer education and counseling that provides both pre-purchase and post-purchase counseling is essential. Such counseling and education will promote awareness of the home-buying process, educate homebuyers on financing alternatives, and provide information necessary to sustain homeownership—information, for example, on home maintenance and budgeting.

Responsible Parties: Local realtors, homebuilders, the City of Fayetteville, Cumberland County, financing institutions, and local HUD-approved counseling agencies²⁰ should coordinate the promotion of marketing and outreach; and the BRAC Regional Task Force could lend a hand in this effort. The Community Development Departments of the city and the county are also well positioned to take the lead.

Important Action 2: Participate in FORSCOM Housing Fairs and other events organized by the Army and the BRAC RTF.

Description: The Fort Bragg region offers a wide variety of home-buying opportunities. There is a substantial housing inventory, especially in the new home market. Personnel relocating from Atlanta with FORSCOM are of particular interest. A recent survey confirms that the income of these individuals is high and that they have a desire for larger-estate homes in secure communities such as Cumberland County’s Gates Four. This group is also highly reliant on the Internet, in both their homes and their offices. Participation in homebuyer fairs at FORSCOM in Atlanta and participation in a regional website designed for the FORSCOM and defense contractor audiences are recommended. These efforts, coupled with normal demand for local housing, should reduce the existing inventory of available homes, resulting in a significant increase in new home production levels by late 2009 or 2010.

20. <http://www.hud.gov/offices/hsg/sfh/hcc/hcs.cfm>

Responsible Parties: The BRAC Regional Task Force has asked Cumberland County to take the lead in developing a booth for display at any upcoming Atlanta housing fairs held for the benefit of FORSCOM personnel. County officials should coordinate closely with local realtors, homebuilders, and other real estate professionals to ensure that Cumberland County is well represented. The BRAC Regional Task Force could also take a coordinating role in the development of a comprehensive website specifically designed with FORSCOM and defense contractor personnel in mind. This site should be a one-stop shop for everything in the region—from health care and education to housing and leisure activities—with all counties in the region well represented.

Important Action 3: Encourage Development of Affordable Rental Housing

Description: While Cumberland County offers a wide variety of home buying opportunities, it offers fewer apartments and other rental units. The vacancy rate has declined substantially as the foreclosure crisis forces former homeowners into rental housing. Rental housing is now in short supply. Although most housing for rent in the region is affordable to both military personnel and civilians, households at or below 84% of the area median income who are supporting families of three or more may have difficulty finding affordable rental housing.

Responsible Parties: Local apartment developers, property managers, the City of Fayetteville, county governments, financing institutions, and the State of North Carolina Housing Finance Agency should coordinate the development of new rental housing; and the BRAC Regional Task Force could lend a hand in this effort. The City and County Community Development Departments are also well positioned to take the lead.

Important Action 4: Promote sustainability through the use of “green building” technologies.

Description: Green building practices offer an opportunity to create environmentally sound and resource-efficient buildings by using an integrated approach to design. Green buildings promote resource conservation, including energy efficiency, renewable energy, and water conservation features; consider environmental impacts and waste minimization and help create a healthy and comfortable environment²¹. One example of an approach to “green building” is The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ which advocates sustainability in the home building industry.

21. www.hud.gov

Responsible Parties: Cumberland County and its municipalities can support the construction of sustainable housing in a number of ways. The county could adopt “green building” standards for private sector construction, incorporate sustainability checklists in rezoning and permitting processes, implement a fast-track building permit process for “green building”, provide financial incentives to build sustainable housing, and support statewide legislation to promote the construction of sustainable housing.

E. Transportation

Key area roadways and access points are currently at or beyond their capacity levels. Planned highway improvements should alleviate some of the capacity issues, but traffic in Spring Lake will remain a major concern. The additional traffic due to military-related growth will exacerbate roadway congestion and traffic queues at access control points. There are several measures that could help alleviate congestion and queuing issues at the post's access points.

Cumberland County has the most extensive highway network, as well as the largest population, in the Fort Bragg region. Because this area is represented by the Fayetteville Area Metropolitan Planning Organization (FAMPO), transportation improvements have been clearly identified and supported for many years. Due to the strong relationship between Cumberland County and Fort Bragg, changes anticipated in the structure of the installation have been consistently considered in transportation planning. The plan to close a significant amount of the portion of Bragg Boulevard that runs through Fort Bragg, for example, has been balanced by the intended improvements to Murchison Road. The increasing congestion in Spring Lake, due in part to the demand for access to Fort Bragg, has also received the ongoing attention of transportation professionals.

The large number of identified transportation improvement projects in Cumberland County will ultimately provide support for base access from all parts of the county. Military-related population growth in Cumberland County is anticipated primarily in the western and southwestern areas of the county, with some potential for development in the Eastover area. Growth will challenge the transportation system on both the local roads and the larger regional network they access. FAMPO has identified a large number of projects intended to meet this demand. Multi-lane cross-sections are intended for Rockfish Road, Camden Road, Golfview Road, Cameron Road, Legion Road, and Bingham Drive in the southwestern portion of the county. Although Transportation

Improvement Program (TIP)²² projects are designated for all these facilities, several of them are currently unfunded. Projects targeting NC 59 in the vicinity of Hope Mills (U-620 and U-3849) will help relieve congestion in this popular area. Until the completion of the Fayetteville Outer Loop, US 401 will continue to be challenged in those areas where the road is limited to five lanes and development is dense.

Although TIP project X-0002 for the Outer Loop is scheduled for construction in 2009, there is an ongoing Indirect and Cumulative Effects (ICE) analysis that requires coordination between Fort Bragg, NCDOT, and FAMPO to support permitting requirements. The critical section of the Outer Loop that connects to US 401 in the western part of the county (U-2519 CA) is currently unfunded.

1. Existing Access in Spring Lake Area

This section focuses on the access points to Fort Bragg and the roadways providing access to the gates in the Spring Lake area of Fayetteville. **Figure 16** shows the Fort Bragg area of eastern North Carolina, highlighting the major roadways that connect the region with surrounding counties. Principal arteries in the region include I-95, one of the nation's primary north-south highways, plus US 401, US 301, US 1, US 15/501, and US 421. Area roadways that provide immediate base access include Murchison Road, Bragg Boulevard, and Highways 210 and 24/87. The six gates that will be examined are Manchester, Butner, Randolph, Reilly, Knox, and All-American.

There are two primary traffic issues involving Fort Bragg access points in the Spring Lake area. The convergence of Highways 24/87 and 210 with Murchison Road and Bragg Boulevard in Spring Lake causes intense traffic congestion during the day, especially during peak commute times for military

22. The NC Department of Transportation's Transportation Improvement Program (TIP) serves as a blueprint for transportation projects across the state. The state's TIP is a seven-year program that is updated biennially, based on technical information, priorities from Metropolitan Planning Organizations (MPOs), Rural Planning Organizations (RPOs), local governments, and public input. More information about the state's transportation planning and construction processes can be found at www.ncdot.org/projects.

personnel. Queues formed at key Access Control Points (ACP) by traffic entering post during the morning commute commonly lengthen onto adjoining roadways, causing disruption of vehicle flow.

This analysis will focus on the key highways and ACPs and the impact of planned improvements and military-related expansion on their traffic flow. Several sources of information have been utilized in this assessment. First, North Carolina Department of Transportation (NCDOT) traffic counts are used to give the reader an order-of-magnitude perspective on the amount of travel at a given point or roadway. Next, the Fort Bragg Comprehensive Traffic Plan, produced by the Onyx Group,²³ analyzes several operating scenarios for the post's roadways and intersections. These analyses are framed in terms of six Levels of Service (LOS) (categories A-F) of congestion-generated traffic delay. (LOS A, for example, represents no delay; D is minimally acceptable; and F is extreme delay.) Finally, the Fayetteville Metropolitan Planning Organization (FAMPO)—the agency the federal government charges with the region's transportation planning and the disbursement of transportation funds—produces a travel-demand model for analysis of the highway system. The model was utilized to examine the traffic volume-to-capacity ratios for several highways.

Following is a discussion of usage and existing conditions at the six primary ACP gates that provide access to Fort Bragg.

Manchester Gate – This gate, located along Manchester Road west of Highway 24/87, is the northernmost access to Fort Bragg and is adjacent to Pope Air Force Base. Manchester Road connects with Highway 24/87 north of Spring Lake and serves traffic coming to the post from northern Cumberland, southwest Harnett, northern Moore, and Lee Counties.

In 2000, NCDOT estimated the traffic volume on Manchester Road at 5,000 vehicles per day. The functioning of this access is impaired by the congested and circuitous route that traffic follows on-post beyond this point. The Fort Bragg

Comprehensive Traffic Plan's capacity analysis for 2007 reports unacceptable delays at the downstream, on-post intersection of Butner and Reilly Roads.

Butner Gate - This gate is located just west of the Bragg Boulevard and Butner Road intersection. This is the primary gate used by traffic coming from north of the post that is, from northern Cumberland, Harnett, northern Moore, and Lee counties. This traffic travels primarily via Highways 24/87 and 210 through Spring Lake, on the very congested South Bragg Boulevard. Before entering the post, traffic proceeds through the Murchison Road and Butner Road intersections with Bragg Boulevard. Figure 16 shows this highly congested area.

In 2006, NCDOT counted 17,000 vehicles per day on Butner Road near the Butner Gate. That count occurred during a period when a large number of active-duty military personnel from Fort Bragg were deployed overseas, and thus represents a lower than typical traffic volume. In order to suggest a more representative volume, as identified by the Fort Bragg Comprehensive Traffic Plan, this number was increased by 40%²⁴ to 23,800. The report also rates the Bragg/Butner intersection at LOS D/E, which is subject to long delays during peak congestion.

Randolph Gate - This gate, which serves as a secondary access point for traffic from the north, is located just west of the Bragg Boulevard and Randolph Road intersection, south of the Butner gate. Traffic here proceeds through the congested Spring Lake region before entering the post.

NCDOT estimated the daily traffic on Randolph Street near the gate in 2006 at 7,800 vehicles per day. Adjusting for deployments brings this total to 10,920 vehicles per day. In 2007, the Onyx report rated the Bragg/Randolph intersection at LOS D/E—that is, as subject to long delays during times of peak congestion.

Reilly Gate - This gate is located just south of the Canopy Lane and Reilly Street intersection at the Base's southern border. It currently serves traffic coming from western Cumberland, Hoke, and southern Monroe counties. Reilly Street is a highly

23. The Onyx Group (www.onyxgroup.com), a consulting firm that includes planners and traffic engineers, was hired by Fort Bragg in 2007 to develop a traffic management plan for the base.

24. Fort Bragg Comprehensive Traffic Plan, Onyx Group, p. 13.

congested roadway, with an adjusted daily traffic volume of 30,800 vehicles per day in 2006. The Onyx report rated the Reilly Road gate in 2007 as LOS F during the afternoon peak—that is, as having extreme delays.

Knox Gate - This gate, located just west of the Bragg Boulevard and Knox Street intersection, handles traffic approaching the base from portions of the county to the northwest of Fayetteville. In 2006, the adjusted traffic count near the Knox gate was 7,980 vehicles per day. The Bragg/Knox intersection was rated at LOS D/E—that is, as having long delays.

All-American Gate - This gate is located at the All-American Freeway south of the Gruber Road interchange. This freeway serves traffic entering the post from Cumberland and Robeson counties. In 2006, the adjusted average near the All-American Gate was 53,200 vehicles per day. Several intersections or ramps along the All-American Freeway on-post were rated at LOS D/E or F—that is, as having long delays.

These primary gates have long traffic delays during peak conditions and, combined with existing security procedures, produce significant traffic queues.

2. Existing Roadway Network

Several arteries that traverse the Spring Lake area carry substantial Fort Bragg traffic and will thus be impacted by military-related growth. Among those roadways are Bragg Boulevard, Murchison Road, NC 87/24, and NC 210 (**Figure 16**).

Bragg Boulevard – This roadway is a primary throughway for north-south traffic in the area. From Santa Fe Drive in the south heading northward, Bragg Boulevard is a divided artery with three northbound lanes and two southbound lanes. Between Knox Street and Butner Road, Bragg Boulevard becomes two lanes in each direction. There are additional turn lanes at several intervening cross street intersections. Adjusted 2006 traffic counts showed 57,400 vehicles per day along Bragg Boulevard just north of Santa Fe Drive, 49,000 north of Knox Street, and 49,000 between Randolph Street and Butner Road.

Murchison Road – This highway intersects Bragg Boulevard just north of Butner Road and proceeds in a southeasterly direction into downtown Fayetteville. Murchison Road is a four-lane divided artery with turn lanes added at key intersections. Adjusted 2006 traffic counts indicated 22,400 vehicles per day between Randolph Street and Honeycutt Road, 21,000 just south of the Gruber Road intersection, and 18,200 north of the Shaw Road intersection.

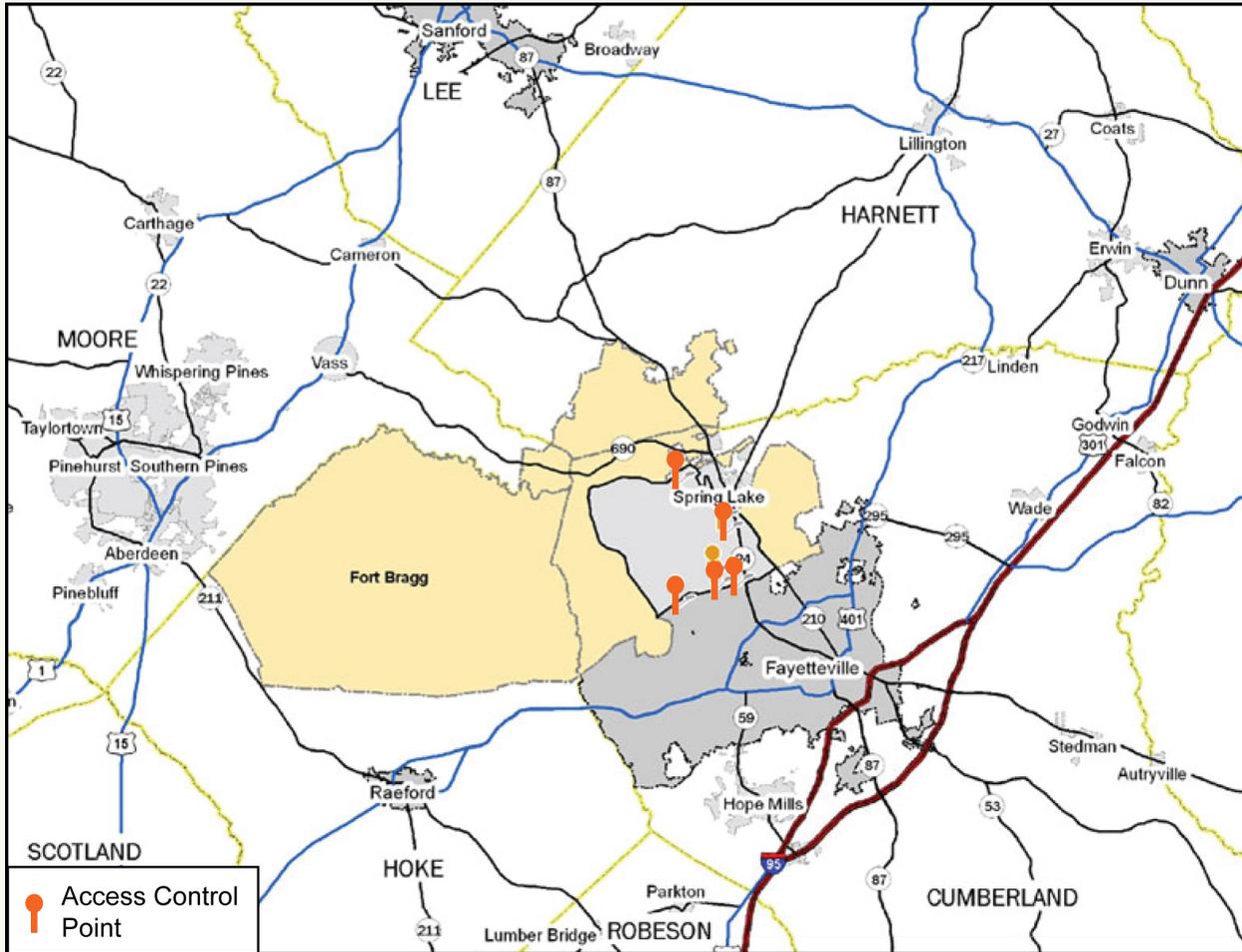
NC 87/24 – Highway 87/24 is an extension of Bragg Boulevard north of the intersection with Murchison Road to Harnett County. The highway has four northbound lanes and five southbound lanes between Murchison Road and Wilson Avenue, three lanes in each direction from Wilson Road to the intersection with Highway 210, two lanes northbound, and two lanes southbound from Highway 210 northward. Adjusted 2006 traffic counts showed 67,200 vehicles per day between Murchison Road and Spring Avenue, 43,400 south of Odell Road, and 33,600 north of Vass Road.

NC 210 – Highway 210, which—south of the intersection with Bragg Boulevard—is Murchison Road, turns northeast beyond Spring Avenue into Harnett County. This latter section is a four-lane divided arterial roadway. Adjusted 2006 traffic counts were 33,600 vehicles per day north of Spring Avenue, 28,000 north of Samuel Drive, and 23,800 north of Chapel Hill Road.

Highway 24/87, Highway 210, Murchison Road, and Bragg Boulevard all have current traffic volumes greater than their recommended capacities. Other area roadway volumes that were approaching capacity near Fort Bragg ACPs include Reilly, Manchester, and Butner Roads, as well as Randolph Street.

In summary, the traffic counts and model results from the Spring Lake area roadways and access points show that the system is under stress during existing as well as expected future conditions. Increased traffic caused by military-related growth will add further congestion to the area's roadways.

Figure 16. Map showing the major roadways that traverse the Fort Bragg region and the gates between Spring Lake and Fayetteville



3. Planned Roadway Improvements

Several planned roadway projects will have a major impact on traffic in the Fort Bragg area.

I-295 Extension – This improvement will bring a multi-lane freeway to the southern boundary of Fort Bragg and will ultimately connect the area to I-95 to the north and south. This freeway will spread out traffic that accesses the base along the southern boundary.

The sections from U. S. 401 north of Fayetteville to Bragg Boulevard are due to be completed in fiscal year 2011. Sections to the west and south that are to connect with I-95 in Hoke County have a long-term horizon. Highway interchanges will be constructed at Murchison Road, Bragg Boulevard, and the All-American Freeway. This very important project will

help relieve traffic congestion at the base’s southern periphery.

Murchison Road Improvements – NCDOT’s Transportation Improvement Program (TIP) calls for this highway to be upgraded to six lanes and interstate standards. The southern portion of the project—from the Fayetteville Outer Loop (I-295) to the interchange with Honeycutt Road—is scheduled for completion in fiscal year 2009. The northern portion—to the Highway 24/87-Highway 210 separation in Spring Lake—is currently unfunded. The short-term improvements should help distribute traffic more evenly to the eastern gates. When these improvements are fully implemented and combined with the I-295 extension, traffic will be able to access gates along the southern and eastern border of Fort Bragg more easily.

Closure of Bragg Boulevard – This crucial link in the highway network is due to be closed to non-base traffic from north of the Knox Street intersection to south of the intersection with Butner Road.

The timing of this project is contingent upon the completion of the Murchison Road improvements. After Bragg Boulevard is closed, Murchison Road would be the only highway in the area available for civilian north-south travel. The closure will reduce overall north/south capacity but, without a more complete traffic analysis, the effects on base access and on other area roadways are uncertain.

Fort Bragg Comprehensive Traffic Plan includes a number of recommended roadway improvements as well. These include:

- *Spring Lake/Odell Road ACP* – A suggested project is the connection of Odell Road with Armistead Street to the east of Pope Air Force Base. Odell Road is located south of and parallel to Manchester Road. Another part of the project, an additional access point along Armistead Street, would allow traffic in northern Cumberland and Harnett Counties to enter the base without traveling through the congested Spring Lake area. The Manchester ACP would be closed as a result. As part of this project, Armistead Street would be widened to four lanes, which should increase the throughput of this northern ACP.
- *Other Improvements* – The Onyx report identified a number of internal, base-intersection improvements and roadway realignments that would promote smoother post traffic flow. Among these recommendations is the extension of the All-American Freeway west of and parallel to Reilly Road and connecting to Butner Road. This addition would improve access to the northwestern post area from the south. Longstreet Road would be extended and realigned to promote easier east-west travel through the base, a needed improvement since the FORSCOM development will increase traffic in the post's Historic District.

4. Impacts of Military-Related Growth on Access

Military-related growth will have a wide-ranging impact on Fayetteville area traffic, particularly on roadways on-post, at ACPs, and on the major travel corridors surrounding the base. Access to the post would follow the major travel corridors in the area. Residents of the Linden Oaks community, located six miles north of the Manchester gate, would access the base via Highway 24/87 at the Butner or Manchester ACPs, or the proposed Armistead Street ACP. The 1,500 plus homes planned for this area will have a significant impact on Spring Lake traffic. Other Harnett County residents would access the base from Highways 24/87 or 210, probably through the Butner or Randolph ACPs. Residents of Hoke, Richmond, southern Moore, and Robeson counties would enter Fort Bragg via a southern route. Residents of northern Moore and Lee counties could come to the base via the Armistead Street gate or, potentially, a new ACP to the west along Vass Road.

Both Spring Lake and the southern access roadways to Fort Bragg would bear the brunt of this traffic inflow. With the planned improvements to Murchison Road and the I-295 extension, the southern area would be better able to handle the additional traffic demand. The ACPs already experiencing long delays would need to deal with the added traffic as well. The expected post-expansion increases at several key ACPs, as well as the likely points of origin for this traffic, are described in more detail in the Appendix.

As stated earlier, the capacity analyses for 2007 presented in the Fort Bragg Comprehensive Traffic Plan show that—except for Manchester/Armistead—all the gates listed above already have congestion problems during peak periods, as does the next intersection that Manchester gate traffic passes. The additional traffic caused by the military-related growth will lengthen traffic queues at these gates. The Butner gate will also be affected, since FORSCOM personnel are likely to pass through this ACP.

5. Impacts of Planned Roadway Projects on Access

There is no comprehensive tool for measuring all the possible results of the planned roadway projects. The FAMPO travel-demand model does not include sufficient detail about traffic into and on Fort Bragg to support analysis of either the improvements in the Thoroughfare Plan or the area's peaking conditions. The number of Fayetteville areas covered by the Onyx model is not sufficient to enable testing of the regional impact of either the I-295 extension or military-related growth. In addition, plans for the Murchison Road improvements have not yet been finalized, and the total impact of the planned Bragg Boulevard closure is uncertain. Further study is needed to enable a comprehensive assessment of the on- and off-post projects.

Several points can be made in regard to the planned roadway projects, however. It is apparent that having I-295 on the southern post border—with interchanges at Murchison Road, Bragg Boulevard, and the All-American Freeway—would greatly increase east-west capacity and would spread out the traffic at the base's southern access points. Also, the Murchison Road improvements have the potential to distribute more evenly the north/south traffic flow to the eastern ACPs.

The on-post improvements recommended in the Onyx report, together with the Odell Road and Armistead Street connection, should improve access in the northern base area. Other on-post realignments would provide some improvements in flow, though several roadway corridors would remain impediments to efficient traffic flow inside the post.

Key area roadways and access points are currently at or beyond their capacity levels. The planned highway improvements should alleviate some of the capacity issues on the southern border, but traffic in Spring Lake will remain a major issue. The additional traffic caused by military-related growth will exacerbate roadway congestion and ACP traffic queues. There are several measures that could help alleviate congestion and queuing issues at the post's access points. These include:

Accelerating Security Procedures at Individual Gates - The more intense the security measures taken at the gate stations, the more time they require and the longer the traffic queues become. During peak travel times, the queues can extend onto adjacent roadways and impede travel over a wide area. An examination of security procedures, with a goal of reducing base-access time, is one possible resolution that would not require an engineering solution.

Adding Lanes at Individual Gates - Adding lanes at each gate would increase ACP throughput—especially during times of peak congestion—and thus reduce traffic queues. This solution, however, would increase the amount of land required adjacent to each existing gate. Further study would need to be made to determine whether enough such land is available.

Increasing the Number of Access Control Points (ACPs) - Congestion could also be reduced by increasing the number of ACP gates. A new APC will be created with the addition of the Odell-Armistead connection, while the Manchester gate would be closed. Depending upon the new gate efficiencies, a gain in overall throughput could be achieved. A new roadway connection between Vass Road (609) and Lamont Road is an alternative for improving access to the APC at Longstreet on the western side of the cantonment area. This new connection and use of the Longstreet APC would provide an alternative access point for military personnel living in Moore and Lee counties. Since this traffic currently enters the post either through the Manchester gate or further south (coming through Spring Lake), this western gate would reduce traffic congestion in the area. Additionally, the nearby roadway geometrics at other access points could be improved so as to increase the volume of traffic allowed by the ACPs.

Further study is needed to quantify in greater detail the traffic implications of military growth. This study would be complemented by a comprehensive assessment of ACP function and security procedures and by a critical examination of the effects of increasing the number of ACPs.

6. Transit Access Impacts to Fort Bragg Resulting from Military Expansion

Mass transportation in the region around Fort Bragg is still developing. Transit on Fort Bragg is also in its initial phase of development. If transit is not incorporated into the traffic planning for on-post circulation, on-base transit will face the same challenges that now face the Fayetteville Area System of Transit (FAST). At this time, there are no plans to actively manage parking, transit, and traffic operations in a coordinated and complementary fashion, that is, with linkages to the access control points or gates as well as the external transportation system. Because of military-related expansion as well as the region's natural growth, transit service must be planned and implemented both on- and off-post.

On-Post/Fort Bragg. There is only one shuttle-bus service operating on the post. The shuttle bus is fare-free and circulates among twelve stops twice an hour. It interfaces with FAST at the Butner ACP. There are no known plans for expanding the system in the future. A near-term and significant improvement would be to provide fifteen-minute headways (time between buses). Another gate interface to connect to FAST would also be a significant improvement. The Reilly ACP is very close to the existing FAST Route 17, so there is an opportunity—should Reilly Road be improved—for the Reilly Road ACP to provide another internal/external bus interface.

Off-Post/Fayetteville Metropolitan Area. Currently, FAST operates a very basic radial fixed-route system. Ridership is good for what is offered, with 356,803 new passenger trips generated in the last ten years (1,103,648 passengers for FY 1996 and 1,460,451 passengers for FY 2006). With FAST struggling to accommodate the area outside of Fort Bragg, there is no obvious improvement to the system that would enable it to provide more service to Fort Bragg at this time.

On November 24, 2003, the City of Fayetteville increased its population by annexing areas containing approximately 43,000 residents. As a result, a Countywide Transit System Plan²⁵ was developed for FAMPO. The most significant recommendations

of the plan called for converting the current radial transit system to a feeder/mainline system. While implementing a new transit system is feasible, it would be very expensive. The proposed system would feature small vehicles (that would provide curbside demand-response transportation within transit zones) as well as standard transit vehicles that would transport passengers between zones. The service standard would include fifteen minutes response time and no more than fifteen-minute travel time to the transfer point. The new system would include service to the 43,000 new city residents as well as to those residents of previously annexed areas (Tiffany Pines, Warrenwood, Westgate, etc.) who are currently without public transportation.

FAST needs to expand in the same way to include Fort Bragg, with more service to its gate interfaces, including the ACPs at Reilly, Honeycutt, and Bragg Boulevard. As documented in the 2030 Cumberland County Joint Growth Strategy Plan,²⁶ FAST should expand and develop express bus service along the following routes: NC 24 to Stedman; I-95 by way of I-295 to Godwin, Falcon, and Wade; and I-95 by way of Ramsey Street to the Linden Community growth areas. These express bus services would also benefit Fort Bragg.

Off- to On-Post Transit (ACP) Interface. At this time there is only one internal-to-external bus transfer interface at Fort Bragg. It is located at the ACP on Butner Road. No bus interchange passenger counts are available at this time. There has been some discussion at community meetings of the possibility of modifying ACP locations so as to mitigate traffic queuing. There has been no discussion, however, of bus interfaces being further developed at key ACPs.

All transportation-related plans for Fort Bragg should include transit interface planning in concert with on-/off-post traffic congestion analysis. True multi-modal transportation planning will require unimpeded bus circulation—both on-post and to the bus ACPs. FAMPO should also consider revising the Countywide Transit System Plan to include bus ACPs to service Fort Bragg and connect it to FAST.

25. Fayetteville Area MPO (2004). Countywide Transit System Plan

26. Cumberland County Joint Planning Board (2007). 2030 Growth Strategy Plan

Possible Transit Linkages to Surrounding Counties. Transit connections to Hoke and Harnett counties could be established by creating express bus-to-bus ACPs, park-and-ride lots in the counties, vanpools, and/or carpool matching. Park-and-ride lots should be planned and implemented in areas that are approximately twenty minutes travel time from the Fort Bragg ACPs. (It has been well documented that commuters are more willing to carpool if their travel times are over twenty minutes in length.)

Hoke Area Transit Services Service has discussed connecting the Heritage Village living quarters to Fort Bragg and the FAST system via the Butner ACP bus interface. The next step in planning for this service would be conducting a survey of Heritage Village residents to determine the type of service (frequency of buses, span of service, and types of buses) that might be implemented. There is no schedule or funding for a study at this time.

Parking On and Adjacent to Fort Bragg. At this time there is no overall, systematic management of parking facilities at Fort Bragg. Maintenance of parking is centralized, but the management of individual parking spaces is often left up to the command structure of the adjacent buildings. Management commonly consists of no more than the reservation of a few selected spaces adjacent to the buildings for use by high-ranking officers and/or principle command-staff members.

Parking expansion plans and future parking management strategies have not been provided for review in this analysis or have not been developed. Because historic and environmental restrictions limit the extent to which the developed portions of the cantonment²⁷ can be expanded, it is strongly recommended that a comprehensive parking plan be developed for the cantonment area of Fort Bragg. It is to be expected that, in response to the shift in mission and increase in personnel, parts of the base will become more densely developed. Some surface parking in these areas will be replaced by parking structures; these structures, along with areas of shared parking between facilities, should be documented in the plan. The recommended parking plan should also

27. The term *cantonment* refers to developed areas in the eastern part of the base.

mark the beginning of the process to actively manage the parking areas on Fort Bragg.

There currently are no parking occupancy studies or future parking demand studies that could help identify the most likely areas that could support a structured parking facility on Fort Bragg. It should be noted, however, that structured parking is expensive and thus is most feasible in areas having high demand but few options for the expansion of surface parking. Because of the expense, financing of public structures almost always requires a user fee. If a user fee is to be charged, then a free transit alternative with free parking at a park-and-ride lot should be provided simultaneously with the new parking deck.

One concept for a parking deck that would service the new FORSCOM headquarters would involve building a secured deck at the ACP nearest the FORSCOM building, and shuttling FORSCOM personnel from this deck to their building. This would have to be a mandatory or command-directed activity. Despite the much more robust transit system available in the Atlanta Metro Area, 88% of the existing FORSCOM personnel currently use their personal vehicles for commuting to work. Because of the rank structure (mostly field grade and senior NCOs) at a Command headquarters, this may not be a feasible parking management strategy. It might be possible, however, to implement mandatory deck usage as a component of an overall parking-management system for the whole post.

Future Trolley or Light Rail to Fort Bragg. Previous light-rail studies²⁸ have indicated that the existing rail lines and previous station locations did not generate the ridership necessary for federal funding. The Fayetteville Alternative Transportation Feasibility Study examined the possible ridership that would be generated by connecting light-rail stations from Fort Bragg to Cross-Creek Mall to Downtown Fayetteville to a Riverfront Tourist Area. Because the amount of ridership did not justify the considerable expense of constructing a rail system, the project has been postponed. The projected expansion-generated travel and population increases are not likely to create an increase in ridership that would be sufficient to

28. *Fayetteville Alternative Transportation Feasibility Study*, Fayetteville Area Metropolitan Planning Organization.

justify the expense of a new fixed guideway system in Fayetteville. However, a new light-rail study that incorporates express bus services with bus feeder plans should be conducted to determine whether light rail will become feasible in the next ten to twenty years. Land-use plans and a source of permanent local transit funding will also have to be in place prior to developing a financial feasibility study with new ridership forecasts. The local revenue sources for the FAST system are strained at this time, and there is some discussion by local elected officials about finding additional resources for the bus system.

7. Travel-Demand Management (TDM) Program

Travel-Demand Management (TDM) is a package of complementary programs designed to achieve the goal of reducing the number of persons driving alone to work. To succeed at Fort Bragg, TDM would need to work across the FAMPO region and into the adjoining counties. Three TDM program packages, summarized in **Table 7**, were developed for North Carolina’s Research Triangle region and are recommended as an example of what could be done at Fort Bragg: The Basic Package would be applied to the entire FAMPO

region. The Moderate package would include additional measures that could be targeted specifically to Fort Bragg. The Aggressive package would add further features in the cantonment area.

No matter which TDM package is adopted by Fort Bragg and the region around the base, it is strongly recommended that Fort Bragg hire a TDM Coordinator and develop one or more Transit Centers near or at the possible bus interface ACPs. These changes will assist in dealing with transportation issues related to the influx of new post personnel and their families.

Base TDM Coordinator. There needs to be at least one full-time staff person charged with developing the initial TDM programs and tailoring them to Fort Bragg’s unique needs. The TDM Coordinator would need to encourage the FAMPO, in concert with the Fort Bragg TDM Plan, to develop a Regional TDM program (including a coordinator). This would enable a broader range of TDM services in the region. The Coordinator would also need to be included in any parking or bus service planning performed on or for Fort Bragg.

Table 7. Three Traffic Demand Management Packages, developed for the Research Triangle Park region that could be adapted for use in the Fort Bragg region.¹

Basic Package	Moderate Package	Aggressive Package:
<ul style="list-style-type: none"> • Ridematching tool enhancements • Travel/trip planning tool enhancements • Emergency ride home (ERH) program enhancements • General marketing support • Annual regional “try it” marketing campaign • Regional telework program and pilots (also addressing alternative work hours) • Regional reward/incentive-based program for alternative commuters • Regional awards program for employers and developers • Regional K-12 schoolpool and Saferides program • Regional assistance with trip-reduction programs and development of growth management strategies • Improvements to vanpool product • Regional trainings and workshops 	<ul style="list-style-type: none"> • Increased marketing, promotion and outreach targeted to downtown Raleigh employers • Voluntary site design improvements (preferential parking, bike lockers, transit amenities, etc) and other trip-reduction strategies • Carsharing promotion (attracting carshare company and infrastructure) • Special events assistance 	<ul style="list-style-type: none"> • Individualized agency/unit outreach • Financial incentives for alternative transportation strategies • TDM ordinances & Park N Ride ordinances • Mandatory site design improvements (for new and re-development) and trip-reduction strategies • Parking Management (including promotion of unbundled leases, cash out programs, and fees in lieu of programs) • Develop unit/agency shuttles connecting to on- and off-post transit • Improved transit service and signal prioritization • Fare-Free Transit Policies • Improved network of bicycle lanes and sidewalks • Commuter Store

1. The “Basic Package” would apply to the entire FAMPO region; the “Moderate Package” would include specific measures for Fort Bragg, and the “Aggressive Package” would be applicable to the Cantonment area in the eastern park of Fort Bragg. Source: Triangle Region Long Range TDM Plan (2007), Tables 18-20

Transit Center/Rideshare Facility. Fort Bragg’s internal street structure could support a hub-and-spoke transit system. Critical to the hub-and-spoke type of transit system is a transit center that enables convenient and efficient bus transfers between routes. Ridesharing facilities (park and ride lots) could be located at the outer edges of the post near ACPs or between the ACPs and the cantonment area. This kind of system—combined with parking management, frequent transit, and TDM programs—would enable a “park once” mobility schema for Fort Bragg.

Potential to Reduce On-Post Parking Demand. Although the Triangle TDM Plan did not specifically address parking demand, it did estimate the changes of travel modes from single-occupant vehicles to either shared-ride vehicles, transit, or bicycle/pedestrian modes. Any of these shifts would result in a reduction of parking demand. The Triangle Region Long-Range TDM Plan correctly noted that carpools—because they still produce a significant amount of vehicle travel—are less efficient at reducing Vehicle Miles Traveled (VMT) than other alternative modes.

Importance of Parking Supply and Cost. The supply and cost of parking will be the single largest factor in encouraging greater use of transit or other alternative modes for commuting. That is, “carrots” in the form of improved transit and other alternatives will have some effect; but a greater effect will come from “sticks” such as limited and/or more expensive parking.

Overall, the most important factor influencing modal choice appears to be parking price. Parking supply also has an important, although less visibly strong, effect. The role of parking supply in establishing parking prices needs to be factored into the evaluation. While the scarcity of parking apparently isn’t the most directly compelling signal to travelers, the higher prices it seemingly induces produce the signal that most influences mode choice. (Traveler Response to Transportation System Changes (TCRP report 95), p. 18-43).

Ample parking supply makes it hard to introduce effective commute-management programs, since it

is difficult to price or to otherwise restrict the use of parking that employees know to be available.

Experience has also shown, however, that other factors such as transit availability and concurrent incentives or programs will also influence traveler response to parking prices. Raising parking fees substantially without providing reasonable alternatives will have little effect on travel, but will simply serve to generate more funds from parking.

The most effective package of measures for reducing military commuter parking demand is likely to include:

- Using the supply and price of commuter parking to regulate demand
- Providing good-quality, attractive alternative modes of travel, so that people can and will respond to the price signals
- Continuing to develop TDM programs to support people who use the alternatives, as shown in the Triangle Region TDM Plan.

Because no one alternative mode will be suitable for everybody, a balanced system of alternatives is needed. The ideal system would include:

- Pedestrian and bicycle access around and to/from the post; this targets people living nearby.
- Incremental improvements to the existing local transit service; this targets people living throughout the region.
- Developing key corridors where there are opportunities to be competitive with car travel and with frequent high-quality services aimed at maximizing commuter ridership; this targets particular corridors where additional reductions in parking demand can be made and where there are synergies with other transit needs.
- Developing park-and-ride locations with frequent express service to Fort Bragg; this targets people living in suburban Fayetteville or the wider region, people for whom other transit services are not available or suitable. It also provides park-and-pool opportunities.

8. Recommended Actions

Critical Action 1: Initiate a sub-area transportation planning and traffic study for the area adjacent to the perimeter of Fort Bragg

Description: This study would require the development of a sub-area travel-demand model to be used for analysis purposes. The area of study would include portions of Cumberland, Hoke, Moore, and Harnett Counties. This model would measure the potential impacts of both NCDOT and on-post highway projects, providing enough detail—about traffic into as well as within Fort Bragg—to support the posing and evaluating of alternative traffic scenarios. The model would be comprehensive enough to analyze the area’s peak conditions and dynamically measure the impacts of the I-295 extension, the planned Murchison Road improvements, and the closure of Bragg Boulevard. In order to evaluate the traffic flows and queues at the ACP locations and impacted intersections, the sub-area model will be supplemented with a traffic simulation model such as Synchro. The modeling of alternative traffic and land-use scenarios would allow coordinated recommendations to be made regarding new ACPs, additional traffic lanes at the existing ACPs, and an improved transit interface between the on-base shuttle system and the FAST. Participation in the effort by all affected counties and agencies would increase the likelihood of their supporting the study’s recommendations.

Responsible Parties: Development and maintenance of the model, to be coordinated by the BRAC Regional Task Force, would be the responsibility of the Fayetteville Area Metropolitan Planning Organization, Fort Bragg Garrison, NC Department of Transportation, and other transportation decision makers.

Critical Action 2: Closure of Bragg Boulevard and the Widening/Improvement of Murchison Road

Description: The closure of Bragg Boulevard though the installation has been a priority element of the Force Protection Plan since 9/11. The BRAC 2005 addition of a four-star FORSCOM/USARC headquarters to be located less than one mile from Bragg Boulevard makes the requirement to close Bragg Boulevard even more critical. In order to accommodate the traffic that currently uses Bragg Boulevard, Murchison Road—a parallel highway—will require significant improvements. Although improvements to this roadway were already programmed by the Fayetteville Metropolitan Planning Organization and the NCDO, the increase in traffic demand caused by BRAC and other growth at Fort Bragg will result in much higher than previously projected traffic volumes. The net result of this increase is the need to construct grade-separated interchanges on Murchison Road at Randolph and Honeycutt Roads rather than the originally planned for at-grade intersections.

The resultant increase in costs means that the project has been significantly underfunded by the NCDOT. The BRAC RTF has prepared a separate White Paper requesting additional funding for this project. It is important that the funding for the \$16.26 million shortfall be secured and that the Murchison Road improvements proceed in a timely manner. The NCDOT has estimated the total costs for the Murchison Road improvements at \$62.9 million. A shortfall of \$16.26 million exists between the estimate and the amount committed by the NCDOT plus the requested DAR funding. Bragg Boulevard is scheduled to be closed when the FORSCOM/USARC headquarters relocates to Fort Bragg in 2011. Phase 1 of the Murchison Road improvements is funded by the NCDOT; and construction is scheduled to start in FY 2009.

Responsible Party: Murchison Road is a state roadway and the primary agency responsible for improvements and maintenance is the NCDOT. They have committed funding for the project and the Defense Access Road (DAR) program has requested funding.

Important Action 3: Improve Access to and Integration of the Fayetteville Area System of Transit (FAST) and the On-Base Shuttle Service

Description: The following actions are needed to promote a more accessible and integrated public transit system that will better serve the Fort Bragg population.

The FAST should consider:

- Expanding and developing express bus service along the following routes: NC 24 to Stedman; I-95 by way of I-295 to Godwin, Falcon, and Wade; and I-95 by way of Ramsey Street to the Linden Community Growth Areas.
- The feasibility of modifying the existing FAST Route 17 to accommodate an additional transit interface with the on-base shuttle at the Reilly Road ACP.

Army Transportation Planners should consider:

- Reducing the on-base shuttle's current headway time (time between buses) from thirty minutes to fifteen minutes
- Conducting a survey of the residents of Heritage Village (located in Hoke County) to determine the type of Army shuttle service that may be provided off base.

Finally, a fiscal impact analysis should be developed that will identify financial requirements, estimate the costs of providing additional service, and explain the net benefit to the region and to Fort Bragg specifically.

Responsible Parties: The BRAC Regional Task Force will facilitate the implementation of the above actions in cooperation with the City of Fayetteville, the Fayetteville Area Metropolitan Planning Organization, the Fort Bragg Transportation Office, and other transportation stakeholders.

Important Action 4: Hire Base TDM Coordinator

Description: There is a need for a Travel Demand Management (TDM) Coordinator at Fort Bragg to oversee the development and implementation of TDM Programs (carpool, vanpool, priority parking, transit interface at the ACPs, etc.). The primary purpose of this position will be to develop and market alternative transportation options for the Fort Bragg community. This would include the planning and regional coordination for transit center facilities and transit interfaces at the ACPs. The TDM Coordinator should also develop annual reports that are included in base sustainability reports. The reports should include annual surveys or assessments of commuting by mode (carpool, vanpool, bus, drive alone, bike, walk, etc.). The TDM Coordinator should be available to assist all the commands and agencies on Fort Bragg in developing their individualized TDM programs. Such programs could include flexible work hours that allow employees to carpool more easily, or work-at-home programs for those agencies that are capable of this type of flexibility.

In addition, the TDM coordinator should develop a TDM web page for Fort Bragg. It should be modeled on the “Militaryonesource” program²⁹ and be a significant link on the main Fort Bragg web page. All of the programs available to the Fort Bragg community should be listed on the web page.

Responsible Party: DOA, Army Corps of Engineers. This position would represent Fort Bragg in the development of the transit centers and park and ride facilities, and so it should be a DOD position.

29. <http://www.militaryonesource.com/skins/MOS/home.aspx>

F. Water, Wastewater, and Solid Waste

About a third of the county's 300,000 residents use private wells; there is a growing concern about the number of these that are contaminated. In addition, approximately 50,000 homes in the county use septic systems; and an increasing number of septic failures cannot be repaired. Addressing these public health concerns and providing public water and sewer service to the western part of the county is a top priority. Another challenge facing the county is that maintenance and rehabilitation of its aging sewer infrastructure is proceeding too slowly to maintain full function and prevent future costly failures. Meeting projected demand for normal growth through 2030 will cost the county approximately \$198.5 million for water and \$178.6 million for wastewater³⁰; military-related growth will account for an additional \$12.9 million of the county's total capital expenditure for water and \$25.9 million for wastewater.

1. Current Conditions

a. Water

Cumberland County does not have a countywide water system. Instead, the Fayetteville Public Works Commission (PWC), a large public utility, provides the majority of this service, while several smaller municipalities operate small water systems.

The PWC's water utility serves all areas within the city limits of Fayetteville and certain other developed areas outside the city. On the north, the service area extends to Fort Bragg and to the town of Spring Lake. The PWC service area extends east to the community of Eastover and the town of Stedman, south to an industrial park on Tom Starling Road, and west to the Hoke County line. This service area includes portions of the county involved in the 1998 merger with the town of Hope Mills. PWC also provides wholesale water service on a contract basis to Spring Lake, Stedman, and Hoke County.

Fort Bragg presently operates and maintains its own water system and uses the PWC service only for meeting unusually high peak demands or as an emergency water supply. Discussions are ongoing

30. N.C. Rural Center

about using PWC to provide more of the water required by the base.

In 2008, the Fayetteville water system had a user population of 202,560; 88,500 of these were residential customers, 5,702 commercial customers, and twelve industrial customers. The average daily demand that year was 26.67 million gallons per day (MGD). The system has a finished water storage capacity of 36.1 million gallons. PWC operates and maintains over 1,300 miles of water mains and two water-treatment facilities, including:

Glenville Lake Water Treatment Facility, which receives water from Glenville Lake and the Cape Fear River and has a current capacity of eighteen million gallons per day (MGD). The average daily demand in 2008 was 8.57 MGD.

P.O. Hoffer Water Treatment Facility, which receives water from the Cape Fear River and has a current capacity of 39.5 MGD. The average daily demand in 2008 was 17.10 MGD.

Several small municipalities in Cumberland County operate water systems as well.³¹ These include:

The Town of Falcon. The system has approximately fifteen miles of water distribution lines that serve a user population of 714. The average daily demand is 0.083 MGD. Total water use is divided as follows: 86% residential, 4% commercial, and 10% institutional. Falcon obtains its water from the Dunn system in Harnett County. The contract with Dunn is for up to 0.200 MGD. Falcon also has a regular connection with Godwin. The system has a finished water storage capacity of 0.100 million gallons.

The Town of Godwin. Godwin is located in northern Cumberland County, just north of Wade. The system has approximately five miles of water distribution lines that serve a user population of 238. The average daily demand is 0.013 MGD. Total water use is divided as follows: 99% residential and 1% industrial.

31. The following information about water systems in the small municipalities comes from the most recent Local Water Supply Plans on file with the North Carolina Department of Environment and Natural Resources Division of Water Resources. These plans can be accessed at http://www.ncwater.org/Water_Supply_Planning/Local_Water_Supply_Plan/search.php.

Godwin obtains its water from the Falcon water system. The contract with Falcon is for up to 0.040 MGD. The system's finished water storage capacity was not reported in the 2002 Local Water Supply Plan.

The Town of Linden. Linden is located in the northeastern corner of Cumberland County. The system has approximately twelve miles of water distribution lines that serve a user population of 1,132. The average daily demand is 0.096 MGD. Total water use is divided as follows: 95% residential, 3% commercial, and 2% institutional. Linden obtains its water from the Harnett County system. The contract with Harnett County is for up to 0.250 MGD. Linden also has a regular connection with Brookwood Water Corporation.

The Town of Spring Lake. Spring Lake is located just north of Fayetteville. The system has approximately forty-two miles of water distribution lines that serve a user population of 12,750. The average daily demand is 0.991 MGD. Total water use is divided as follows: 90% residential, 9% commercial, and 1% institutional. Spring Lake obtains its water from the PWC-Fayetteville system and Harnett County. The contract with PWC-Fayetteville is for up to two MGD. Spring Lake has a finished water storage capacity of 0.750 million gallons.

The Town of Stedman. Stedman is located in the eastern part of Cumberland County, southeast of Fayetteville. The system has approximately twenty-five miles of water distribution lines that serve a user population of 787. The average daily demand is 0.099 MGD. Total water use is divided as follows: 84% residential, 15% commercial, and 1% institutional. Stedman obtains its water from the PWC-Fayetteville system. The system has four wells, with a total twelve-hour yield of 0.157 MGD. In 2002, Stedman had an emergency connection with the Town of Autryville and a regular connection with the Maxwell Water Company. The system has a finished water storage capacity of 0.100 million gallons.

The Town of Wade. Wade is located in northern Cumberland County, just south of Godwin and west of Falcon. The system has approximately eight miles of water distribution lines that serve a user population

of 481. The average daily demand is 0.039 MGD. Total water use is divided as follows: 93% residential, 5% commercial, and 2% institutional. Wade obtains its water from deep wells. The system has five wells, with a total twelve-hour yield of 0.194 MGD. The system has a finished water storage capacity of 0.075 million gallons.

About a third of the county's 300,000 residents use private wells; there is a growing concern about the number of contaminated wells in the county.

b. Wastewater

Fayetteville's two wastewater treatment plants, operated by PWC, have a combined permitted capacity of 46 MGD. The average daily demand in 2008 was 25.1 MGD, with 65,041 residential customers (over 12,000 customers in the city use septic tanks), 4,627 commercial customers, and twelve industrial customers. PWC operates and maintains over 1,175 miles of gravity sewer mains, over seventy miles of force sewer mains, and seventy-five lift stations. Both wastewater treatment plants discharge into the Cape Fear River.

The two plants are:

- The Cross Creek Water Reclamation Facility, which has a current treatment capacity of 25 MGD, with a yearly average of wastewater treated at 12.1 MGD. The facility received the 1992 National Environmental Protection Agency (EPA) Operations and Maintenance Award.
- The Rockfish Creek Water Reclamation Facility, which has a current treatment capacity of 21 MGD, has a yearly average of wastewater treated at 13.0 MGD and a planned expansion that will increase capacity to 24 MGD. The maximum monthly average is 14.5 MGD.

Other wastewater systems in the county include:

- The sanitary district formed by Eastover residents after the defeat of a 1992 countywide bond proposal for more than \$30 million in water

and sewer improvements. The current service population for Eastover is 1,207 people. Current wastewater flow is 0.09 MGD.

- The Wade-Godwin-Falcon project, the Northern Cumberland Regional Sewer System (NORCRESS), which was created to meet a severe sewage problem that posed a health hazard. The district's sewer lines are connected to the PWC, and its water lines are connected to Harnett County's system. The current service population for NORCRESS is 920 people. Current wastewater flow is 0.07 MGD.

The Town of Spring Lake's wastewater treatment plant, which has a permitted capacity of 1.5 MGD. The plant discharges into the Lower Little River. The sewer system has 9000 customers with a current wastewater flow of 0.80 MGD. There are approximately 155 water customers in this area who use septic systems.

Although many homes have access to public sewer facilities, there are approximately 50,000 homes in the county that still use septic systems. Even after all of the homes taken into the city as a result of the 2005 annexation receive public water and sewer, 40,000 septic systems will remain in the county. Most of these septic systems do not have problems and most of those that do can be repaired. However, an increasing number of septic failures cannot be repaired and have required individuals to move from their homes. A recent analysis conducted by the Fayetteville Observer revealed that 1,071 failures were reported between 2004 and 2007. Many failures occur on small lots, developed in the 1960s and 1970s, where there is no room for septic repair work. A particularly large number of septic tanks have failed in Overhills Park and Bragg Estates.

c. Solid Waste

There are seven governments with solid-waste management programs in Cumberland County: the county itself, the city of Fayetteville, and the towns of Falcon, Hope Mills, Linden, Spring Lake, and Stedman. Residents of Godwin and Wade use the county's facilities. Fort Bragg also operates a solid-waste program. A summary of the solid-waste programs in the county is provided below and in the

Water, Wastewater and Solid Waste appendix.

Solid-Waste Collection. Cumberland County operates seventeen staffed convenience centers for the collection of residential waste and recyclables. Waste collected at each of the county's convenience centers is transferred to the Cumberland County Landfill facility in Fayetteville. Each of the county convenience centers is fenced for security and—to limit the number of trips for transfer vehicles—most are equipped with a stationary compactor for residential waste.

Falcon, Fayetteville, Hope Mills, Spring Lake, and Stedman offer weekly residential curbside waste collection using city/town staff. Hope Mills collects waste twice each week. Linden provides residential curbside collection through contract with a private hauler.

Waste at Fort Bragg is collected by private haulers. Separate contracts are in place for troop refuse (dumpsters) and housing (curbside collection).

Waste collected in Cumberland County is taken to one of several facilities, including:

- The City of Fayetteville Transfer Station, which is owned by the city and operated by contract with Waste Industries under State Permit No. 26-09T. In FY 2005-06, 94,980 tons of waste were handled at the transfer station. This total includes 90,907 tons from within Cumberland County.
- The Fort Bragg Transfer Station, which is owned and operated by the Army under State Permit No. 26-06T. In FY 2005-06, 27,305 tons of waste were handled at the transfer station.
- The Cumberland County Landfill, which is owned and operated by the county under State Permit No. 26-01.
- The Fort Bragg Construction and Demolition Debris (C&D) Landfill, which is owned and operated by the Army under State Permit No. 26-08.

Recycling. Recycling is provided by Cumberland County at each of its convenience centers.

Cumberland County also provides a school-based recycling program. With the exception of Fayetteville—which has five unstaffed collection sites for recyclables—and Linden—which provides curbside collection, no other municipality provides recycling. Cumberland County does allow residents of municipalities to use their convenience centers for the drop-off of recyclables.

Fayetteville established a recycling task force in early 2007 to study recycling programs elsewhere and make recommendations for program alternatives. As a result, the city is in the process of implementing a residential curbside recycling program that will utilize larger roll-out carts instead of small bins. This service is scheduled to begin in July 2008.

Fort Bragg has a comprehensive recycling program run by the Environmental Compliance Branch of the Fort Bragg Department of Public Works. For family housing, a curbside recycling program is provided by contract with a private hauler. Fort Bragg also has established a program for grinding pallets, clean wood waste, and concrete at its Lamont Road Landfill facility. The recycling of spent ammunition generates income to support the base's recycling efforts.

Special-Waste Management. Cumberland County collects used oil, antifreeze, lead acid batteries, tires, and pesticide containers. Cumberland County also has a permanent household hazardous waste collection site. With the exception of Hope Mills, which collects tires, and Spring Lake, which collects pesticide containers, latex paint, and household hazardous waste, no other municipality provides collection of special wastes. Fort Bragg collects used oil, antifreeze, lead acid batteries, and tires.

Yard-Waste Handling. Yard waste in Cumberland County is collected and mulched/composted at the county's Wilkes Road Yard Waste Facility in Fayetteville. The city of Fayetteville and the towns of Hope Mills and Spring Lake provide curbside collection of yard waste. Fort Bragg collects and mulches/composts yard waste at its Lamont Road Landfill facility.

Solid-Waste Disposal. Municipal solid waste collected at the City of Fayetteville Transfer Station

(operated by Waste Industries) is hauled by Waste Industries to the Sampson County Disposal Landfill facility in Roseboro (State Permit No. 82-02). The city's lease agreement with Waste Industries will expire in 2012. Waste Industries currently charges a \$38.25/ton tipping fee at their transfer station.

Municipal solid waste collected at the Fort Bragg Transfer Station is hauled by contract with Republic Services to the Uwharrie Regional Landfill facility in Mt. Gilead. Fort Bragg's current contract for hauling and disposal will expire in June, 2008. Fort Bragg does not charge a tipping fee at their transfer station.

Cumberland County's current landfill, which is located in Fayetteville and operates under State Permit No. 26-01, has separate areas for municipal solid waste and construction and demolition (C&D) waste. In FY 2005-06, the county disposed of 171,151 tons of solid waste and 40,163 tons of C&D waste. Based on its current facility plan, the county estimates that it has about ten years of remaining disposal capacity; additional expansion potential may also exist at the site. The county currently charges tipping fees of \$30/ton and \$37/ton for municipal solid waste and C&D wastes, respectively.

Fort Bragg currently operates a C&D landfill under State Permit No. 26-08. Based on its current facility plan, this facility, which accepts waste only from the base, is expected to have approximately ten to twelve years of remaining disposal capacity. Fort Bragg does not charge a tipping fee at its landfill.

There are three private, land-clearing and inert-debris landfill facilities in Cumberland County.

2. Future Needs

a. Water and Wastewater

Providing public water and sewer service to the western part of the county (roughly from Skibo Road to Hoke County) is a top priority for the Fayetteville PWC. Over the next several years, PWC will systematically extend water and sewer service to the currently undeveloped 8,000 lots that were taken into the city as a part of recent annexations. Project

1 of the Phase 5 Annexation utility installation will install bring sewer services to over 1,100 homes at an estimated cost of \$11 million. Project 1 includes LaGrange, east of Reilly Road; Aaron Lakes, east of Bingham Drive; and Shenandoah. This project is expected to be complete in April 2009.

PWC is currently working on an outfall along the Hwy 401 corridor north towards Harnett County. This line will stop at its practical limit, the topographic ridge located near Elliot Bridge Road. PWC is also in discussion with Hoke County to provide additional sewer capacity of 3 MGD (1.5 MGD at two different outfalls).

The PWC continues to take ownership and maintenance responsibilities for collection and distribution lines built in new areas by developers. PWC has established design standards and policies related to the extension of water and sewer lines throughout the county. The majority of the costs of extensions are borne by the homeowners or, in the case of new development, by developers.

The PWC water and sewer systems are well managed and have modernized systems for operations and maintenance. PWC currently has excess capacities in the range of 10 MGD for both water and sewer. This excess capacity is sufficient to meet existing need as well as the anticipated need that will result from the construction of new homes that have already received local government approval.

The challenges facing the county are threefold. First, the Baywood Area lift station is close to capacity; this will limit future service if an improvement plan is not adequately devised and implemented. This lift station is located northwest of Stedman, near the intersection of Hwy 24 and I-95. Second, the PWC system consists largely of infrastructure that is over fifty years old and is in continual need of maintenance and rehabilitation. Despite large annual investments in the system, it is estimated that only 1% of the total system can be attended to each year; this rate is insufficient to maintain full function and prevent costly failures. Finally, county residences that do not have access to public sewer and have failing septic systems require immediate attention to ensure that present and future environmental hazards are minimized.

b. Solid Waste

The state measures changes in waste-disposal rates by comparing the current year's per capita waste disposal rate to fiscal year 91-92's per capita rate; that is, 1991-92's is considered the base rate. (Per capita disposal rates are calculated by dividing the total tonnage of disposed waste by the number of users served.) Negative numbers indicate a decrease in the per capita disposal rate; positive numbers indicate an increase. Waste reduction is a change from the base year, not a change from year to year. The state per capita disposal rate is 1.34 tons per person per year, an increase of 25% from the FY 91-92 base year. The per capita disposal rate for FY 2006-2007 in Cumberland County was 1.47 tons, an increase of 81% from the base year.

Despite the addition of a few new curbside programs in the state, the overall number of municipal curbside recycling programs has declined in recent years. The recycling industry has evolved dramatically in the past fifteen years and, unless small and mid-sized municipal governments update their programs to reflect the current state of the industry, it is likely that the trend towards fewer curbside recycling programs will continue. In a properly developed program, each household could potentially generate up to 750 pounds of recyclables per year. North Carolina households are contributing only about 240 pounds of recycling per year to their local recovery programs. It is very clear that improving the breadth of program collection and increasing participation are keys to improving recovery.³²

The City of Fayetteville will begin a curbside recycling program in July of 2008. Waste Management of the Carolinas, the contractor selected by the city, will collect recyclables, and Pratt Industries will begin processing them in a Fayetteville facility.

³² North Carolina Solid Waste Management Annual Report July 1, 2006 – June 30, 2007.

3. Gaps

Water and Wastewater

Increased demand generated by normal population growth is expected to cost the county approximately \$198.5 million for water and \$178.6 million for sewer services through 2030.³³ The additional population increase caused by the expansion of Fort Bragg is projected to be about 17,249 people in 2013. This military-related increase could translate into additional water and sewer demand of approximately 2.6 MGD, which would mean additional capital expenses of \$12.9 million for water and \$25.9 million for sewer. These estimates are based on an assumed cost of \$5 per gallon for water and \$10 per gallon for sewer. Because the actual cost of this infrastructure will depend on a number of variables, including the specific configuration of each plant; these estimates should be considered as approximate and should be used only to provide a rough idea of future budget requirements.

Maintaining safe drinking water and environmentally sound sewer services is one of the most important responsibilities of any local government. As it becomes increasingly expensive to provide water and sewer services, local governments will need to balance their obligation to provide these fundamental services at affordable prices against the equally compelling need to manage their programs in a financially sustainable manner. While there are many financial and revenue strategies that are designed with local conditions and objectives in mind, managing water and sewer services inevitably involves asking customers to pay more for the services. Leaders should never forget that the failure to sufficiently

33. Water, Sewer and Stormwater Capital Needs 2030, N.C. Rural Center

fund these services will inevitably expose their communities to health and environmental hazards.

This section describes major financing alternatives available to local governments including bonds, grant and loans, local rates, tap and impact fees, and special assessments.

General Obligation Bonds. Private market lenders, who are the primary source of water and sewer financing, account for 70% of the total financing for such projects. Because of low bond ratings, approximately 60% of the state’s local governments cannot qualify for most infrastructure lending programs. Cumberland County and the City of Fayetteville, however, have solid ratings. They also have considerably more conservative general-obligation debt ratios (ratios, that is, that are calculated by comparing the governmental entity’s total indebtedness with its appraised property valuation and its population) (**Table 8**).³⁴

Revenue Bonds and Installment Financing. Revenue bonds can be offered publicly with a typical 25-year term. The debt is secured by the net revenues of the project and no voter approval is required. However, specific financial tests must be met and specific covenants are required. Alternatively, installment financing can be provided without voter approval with a typical 20-year term. The security for installment financing is a pledge to appropriate funding for debt service and a lien on the financed asset. However, there are challenges putting liens on utility assets³⁵.

34. Analysis of Debt at 6-30-2007. Department of State Treasurer, Division of State and Local Government Finance.

35. Presentation entitled “Utility Financing Alternatives and The Financing Team” by Rebecca B. Joyner, Attorney with Parker Poe Adams & Bernstein, LLP. January 22, 2008.

Table 8. Analysis of General Obligation Debt

	Ratings		Ratio of Total General Obligation Debt ²	
	Moody's	S&P	Property Valuation (%)	Per Capita (\$)
Cumberland County	AA3	AA-	1.050	537
Counties (250,000 pop. and over)			2.179 (avg.)	2,063 (avg.)
City of Fayetteville	AA3	AA-	.448	255
Municipalities (100,000 pop. and over)			1.457 (avg.)	1,335 (avg.)

Grants and Loans. The federal role in financing water and wastewater projects has declined in recent years. The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Agriculture (USDA) have significantly reduced the number of grant funds available for water and sewer improvements.³⁶ Nonetheless, several sources of potential financing for water and wastewater projects remain, particularly at the state level. The following agencies have grant and/or loan programs available.

- Appalachian Regional Commission
- Economic Development Administration, U.S. Department of Commerce
- U.S. Department of Agriculture
- N.C. Department of Environment and Natural Resources, Division of Water Quality
- N.C. Department of Environment and Natural Resources, Public Water Supply Section
- N.C. Department of Commerce, Division of Community Assistance
- N.C. Department of Commerce, Commerce Finance Center
- N.C. Clean Water Management Trust Fund
- N.C. Rural Economic Development Center

Tap Fees, Impact Fees, and Special Assessments. In general, utilities charge three types of fees in North Carolina: tap fees, impact fees, and special assessments. Tap fees are designed to recover all or a portion of the cost (materials and labor) of water or sewer service line installation; impact fees are associated with system-capacity development. Because individual utilities have great flexibility in setting tap and impact fees, these fees can vary widely from one locale to another. Special assessments, on the other hand, are strictly defined in the NC General Statutes and may only be assessed by utilities (municipalities, counties, and authorities) under specific circumstances defined by the authorizing statute (§162A-216, §153A-185 and §162A-6,

36. N.C. Rural Economic Development Center, Water 2030 Executive Summary.

respectively)³⁷. Refer to the Water, Wastewater, and Solid Waste appendix for a comparison of fees across the state.

Solid Waste: The increase in solid waste resulting from the projected population increase is expected to have some impact on county and municipal solid waste programs as well as the program at Fort Bragg. It is likely, however, that these impacts can be handled by existing facilities and practices. Nonetheless, the city's recent recycling efforts should be applauded and other municipalities in the county should consider implementing additional recycling programs. Available funding includes:

Community Waste Reduction and Recycling Grants are standard, annual grants that the State Division of Pollution Prevention and Environmental Assistance (DPPEA) offers to local government and non-profit recycling programs to expand and improve community recycling efforts.

Business Recycling Grants, also offered by DPPEA, are designed to help businesses afford or leverage a critical capital expenditure and thereby expand their material-handling capacity. These expansions, in turn, translate into new market opportunities for local government recycling programs and for waste generators of all kinds.

The State's Recycle Guys and RE3 Outreach Campaigns increase public participation in recycling.

In addition to the above opportunities, North Carolina offers a tax exemption on equipment and facilities used exclusively for recycling and resource recovery. The tax program also includes special tax treatment for the corporate state income tax and the franchise tax on domestic and foreign corporations. The N.C. Division of Waste Management administers the Tax Certification Program.

37. One-time Fees for Residential Water and Sewer Connections in North Carolina. A publication of the Environmental Finance Center at the University of North Carolina at Chapel Hill, Report by: Andrew Westbrook, westbrok@sog.unc.edu. 3/27/06.

4. Recommended Actions

Important Action 1: Proactively plan water and sewer projects in conjunction with development activities

Description: Because water and sewer services are such crucial components of any community's utility infrastructure, it is important that planning for their construction and maintenance be done with the utmost care and professionalism. The City of Fayetteville/Cumberland County 2030 Vision Plan recommends several principles that planners in general and those in the Fort Bragg region in particular should observe. General principles include:

- The placement of water and sewer lines should determine where development is done, rather than the other way around.
- Development density should be determined by the availability of infrastructure.
- Generally, infrastructure with excess capacity should be utilized first before additional monies are spent to install and maintain new infrastructure elsewhere.
- Adequate utilities infrastructure (water supply, sewage collection and treatment capacity, stormwater management, etc.) must be in place before the new development it serves is occupied.

Responsible Parties: Municipal and county public works and planning directors, local elected officials, and planning commissions should work collaboratively to share best practices and implement new policies as necessary. The BRAC Regional Task Force could facilitate such regional collaboration.

Important Action 2: Coordinate local water and wastewater planning with the Fort Bragg Garrison

Description: New infrastructure should not be placed in areas where it would encourage development incompatible with the mission of the Fort Bragg/Pope military complex. Fort Bragg should be included in all major local infrastructure planning. This will be especially important as Fort Bragg and surrounding local communities seek mutually beneficial opportunities to enhance services.

Responsible Parties: Municipal and county public works and planning directors, local elected officials, and planning commissions should work collaboratively to share best practices and implement new policies as necessary. The BRAC Regional Task Force could facilitate such regional collaboration.

Important Action 3: Seek special funding from the North Carolina Legislature for capital improvements

Description: As part of its effort to meet anticipated water and sewer capital needs, the county should give its support to State of North Carolina legislation that would address the utility needs of all the state’s BRAC-impacted communities. This legislation would create a fund, to be administered by the N.C. Rural Economic Development Center, designed to mitigate the critical present and future water and sewer problems facing these communities. Federal and local matching funds should also be pursued.

Responsible Parties: Local and state elected officials and the BRAC Regional Task Force could work together to advocate the introduction and passage of new legislation.

Important Action 4: Update financial plans for capital water and sewer improvements

Description: The county and its municipalities should ensure that their estimates regarding both the quantity and the condition of their physical assets are up to date and accurate. It is important that local governments have reliable estimates as to how many and what kind of new water and wastewater facilities will be needed over the next five years. One set of estimates will target those new water and wastewater facilities that are used to expand capacity or address environmental health concerns. A separate set of estimates will be needed for those assets used for rehabilitation or for the replacement of existing infrastructure.

Careful consideration should be given to the identification of funding sources and to determining what percentage of total funding will come from each source (grants, debt, capital reserves, user rates, tap and impact fees, and special assessments). Local Capital Improvement Plans should be updated as necessary.

Responsible Parties: Municipal and county managers and local elected officials should work collaboratively to share best practices and identify funding sources as necessary.

Important Action 5: Work collaboratively with regional suppliers of water and sewer services

Description: Counties and local governments in the region should collaborate in the attempt to identify and better understand the resources available to them in the region. Together the region’s local governments should promote

a regional approach to ensuring water quality (and thus the public health) and should support one another, where feasible, by buying and selling water and sewer services across municipal and county lines.

Responsible Parties: Municipal and county managers, local elected officials and other clean water stakeholders should work collaboratively to share best practices and implement new regional policies as necessary. The BRAC Regional Task Force could facilitate such regional collaboration.

G. Information and Communication Technology

High-speed Internet access is available for purchase at more than 93% of Cumberland County households. This rate of availability is the highest in the Fort Bragg region and is well above the state average of 83.54%. It is lower, however, than the 97% access availability in Atlanta, the current location of the FORSCOM personnel who will be relocating to Fort Bragg. Improved connectivity is especially needed in two underserved parts of the county that are expected to see significant growth, a small community on the Hoke County border and a larger region surrounding Spring Lake.

1. Current Conditions

a. Internet Access

Cumberland County leads the Fort Bragg region in connectivity, with high-speed Internet access supposedly available for purchase at 93.86% of the county’s households. This figure includes cable and DSL-based access, as self-reported by the provider

companies. The ways that providers define service coverage are not wholly reliable, however, which means that the composite figure may not reflect the actual percentage of households that can obtain broadband access. For example, cable companies designate service areas that are identified by zip codes as “covered,” when in fact all locations within a given zip code may not be served by the cable companies. Thus, the 93.86 % composite figure undoubtedly overstates the level of access available in large portions of the county.

Another factor that compromises existing coverage estimates is the significant overlap between the areas served by cable-modem and those having DSL-based services. Removing the cable-served locations from the map shown in **Figure 17** would not significantly enlarge the portion of the county that does not have adequate service. This means that in Cumberland County there may be significant overlap between areas served by cable-modem and by DSL-based services.

The extent of Internet availability for Cumberland County is shown in Figure 17. As this map indicates,

Figure 17. Average availability of DSL service and location of videoconferencing sites in Cumberland County

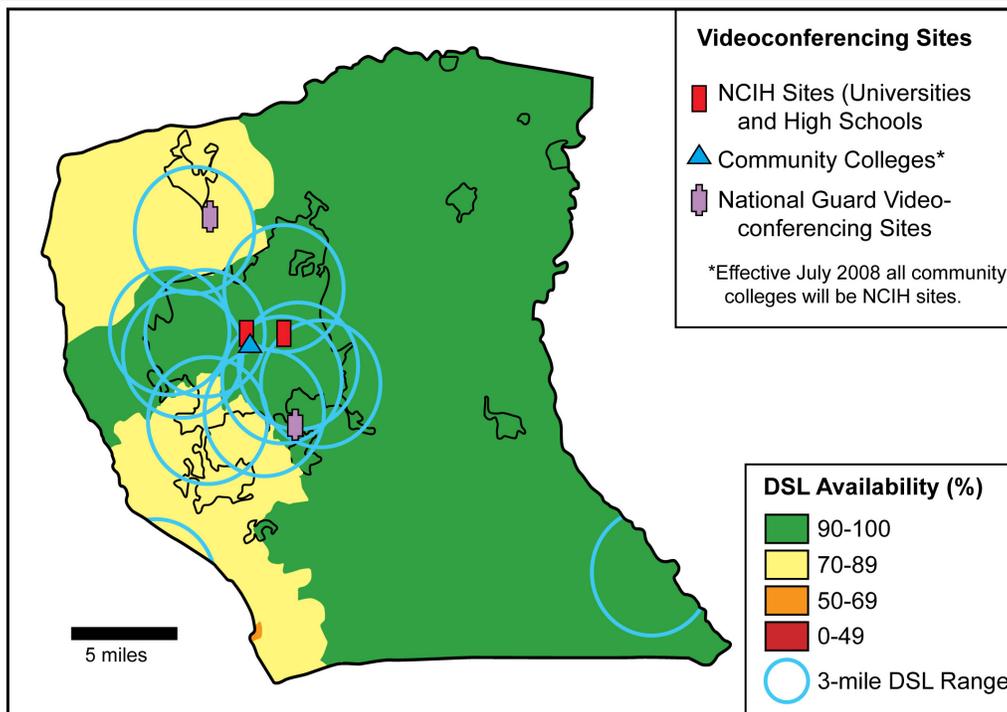


Table 9. High-speed Internet Access Providers Serving Cumberland County

Cable	Time Warner
Telcos	Embarq and Star Telephone Membership Corporation
Satellite	Cumberland County customers with a clear view of the southern sky have access to Direcway & Starband high-speed Internet Service.
Wireless	No wireless high-speed Internet access providers in Cumberland County have registered with the e-NC Authority.

access varies widely according to specific location.

Access in Cumberland County is provided primarily by DSL and cable-based services (**Table 9**). The two types of providers have different service footprints, resulting in some communities having two options for connectivity services, others having one and some having none. DSL has the broadest footprint. Its wirecenters (represented by the blue circles in the map above) are the smallest geographical area that telecom service providers use for reporting availability of DSL. On the map the different color zones are determined by the specific wirecenter(s)³⁸ that serve that zone.

Two areas in the county are notably underserved. One community near the southeastern perimeter of Fort Bragg has access is in the 50-69% range, and a larger area surrounding Spring Lake, represented by the color yellow, has access is in the 70-89% range. Both regions are expected to experience significant growth related to the influx of new personnel at Fort Bragg.

In addition to localized problems of inadequate access, there is the more generalized issue of inadequate speed and bandwidth. As noted above, high-speed Internet access in Cumberland County is largely accomplished through cable modem and DSL-level access speeds. The speeds and bandwidth supported by these types of technologies will be increasingly inadequate as a growing number of voice, data, and video applications use Internet protocols for service delivery. Health, educational, and government sectors are just beginning to tap the benefits of ICT-driven transformation, even as

38. Verizon describes a wirecenter as a building or space within a building that serves as an aggregation point on a local exchange carrier's network, where transmission facilities and circuits are connected or switched. "Wire Center" can also denote a building in which one or more central office, used for the provision of exchange services and access services, is located. (<http://www22.verizon.com/wholesale/glossary/?l=w>)

new ICT technologies—such as Radio Frequency Identification (RFID), wireless broadband, and voice recognition—begin to drive new applications. The result is that, as acceptable transmission speeds ratchet up, broadband standards are in flux.³⁹

ICT providers in Cumberland County are listed in **Table 9**.

b. Sector-Specific Connectivity Issues

Efforts already underway in Cumberland County highlight the need to make ICT and universal broadband access a cornerstone of the county's economic and community development plans. These efforts are described below.

Public Safety

Cumberland County is working to fully equip all public safety and emergency response personnel to be part of the Voice Interoperability Plan for Emergency Responders (VIPER) first-responder communication network that is managed by the Sate Highway Patrol.⁴⁰ Partial implementation of this network has been funded through grants made to North Carolina by the U.S. Homeland Security Agency. A combination of local and federal funds is expected to cover the costs of fully implementing this program. At present, one of the county's two VIPER transmission towers is operational (Cedar Creek). A second tower (Fayetteville TWC) is scheduled to be on the air and operational in sixty days. An additional 1,308 radios with a total cost of \$4.251 million are needed to complete the Cumberland VIPER network. The number of radios required by specific sectors of

39. Acceptable transmission speeds are expected to rise from the current recommended minimum of 384 kbps to an anticipated minimum need at home and at businesses for 1.5 mbps symmetrical (up and down). (FCC Order on Broadband, issued March 19, 2008)

40. More information about the VIPER program is available at <http://www.nccrimecontrol.org/Index2.cfm?a=000001,001148>

Table 10. VIPER Implementation Status - Emergency Services Radio Requirement for Cumberland County

Agency	Number of Radios
Law Enforcement (1 Per Sworn + 1 Per 1/3 Civilian not VIPER Compatible)	770
Fire Department not currently VIPER compatible	464
Rescue Squad not currently VIPER compatible	74
TOTAL Radios for Emergency Responders	1,308

Cumberland County’s first responders is shown in **Table 10**.

Education: The Cumberland County school system, like school systems nationwide, is facing difficult challenges arising from increasing student populations, inadequate school infrastructure, increasing use of technology in the development and delivery of instructional content, and the need to support “anytime, anywhere” instruction through distance-learning programs. The county already has a rapidly growing demand for broadband Internet access to support the educational and training needs of learners in K-12, professional development, and training programs. Several existing statewide initiatives will significantly improve the network through which web-based resources are delivered to the county’s schools.⁴¹ Availability of these programs to Cumberland County students will depend on the presence of robust high-speed connectivity.

High-speed broadband connectivity to all public schools that are elements of the Local Education Agency (LEA) is fully funded by a combination of federal e-Rate dollars and the N.C. School Connectivity Initiative. Time Warner Communications provides fiber-based service to the LEA Central Office. A Wide-Area Network (WAN) connects all schools in the system to the LEA at speeds up to 100 Mbps. Through the LEA, all schools

41. Web-based resources available to the county’s schools include distance-learning programs originating with the military and National Guard and designed for their personnel; the Business Education Technology Alliance (BETA) study and state investment in regional education networks; the N.C. School Connectivity Initiative to support K-20 virtual-learning programs; the N.C. School of Science and Mathematics Distance-Learning courses; NC Wise; AMDG; OSU; North Carolina Virtual Public Schools; the Learn and Earn Initiative’s online college courses; Two-plus-Two programs that integrate community college curricula with university degree programs; UNC-Greensboro iSchool courses; the UNC Tomorrow program, and even the pioneering web academies.

are linked to a statewide education network, managed by the North Carolina Research and Education Network (NCREN). This network links schools to all of the state’s on-line education resources, to the public Internet, and to the higher level Internet-2 research network. At this point, the county’s primary responsibility for ensuring on-going access to the schools consists of regular and timely filing of its annual e-Rate application.

Hardware and Software: Establishing connectivity is only one of the ICT issues facing public schools in Cumberland County. There is a continual need for upgrading of the hardware and software that is required by the BETA project, Earn and Learn, Learn NC, and Impact projects. Even End-of-the-Year testing requires up-to-date computers and software. Schools cannot just use donated or other outdated equipment and software but must make ICT equipment a fixture in their annual budgets.

Impact of Connectivity on School Infrastructure: Enhanced access affects other areas of county school planning. Changes in the construction codes for schools and other public sector buildings are required to ensure that the wiring and HVAC needs for additional ICT equipment are supported. During a BRAC ICT focus group meeting, for example, representatives of the region’s public schools cited the lack of sufficient electrical outlets in classrooms as a serious challenge to delivering web-assisted instruction.

Impact of Connectivity on School Human-Resource Needs: A shortage of skilled network-management technicians may emerge as one of the most critical impediments to meeting the demands of growth in Cumberland County schools. Additional ICT personnel at the professional and certificate levels will be needed to support more stringent requirements for

ICT infrastructure in schools and other public settings. Schools in the Fort Bragg region were surveyed regarding the numbers and types of ICT support personnel they employed. Results varied widely and did not include quality considerations (the quality of the technicians' training or current job performance, for example). The data are none-the-less revealing and raise some serious concerns. Each ICT technician in Cumberland County serves an average of 4.7 schools, the second highest number among the region's Tier I counties. A still more troubling finding was the fact that very few of the eighteen technical-service personnel employed by Cumberland County reported being certified in the LAN/WAN technology that connects each school to the central office. It is clear that more and better trained technical-support personnel are needed to manage the growing ICT needs of Cumberland County schools. This need should be factored into plans for expanding ICT-relevant programs and degree offerings at Fayetteville Technical Community College and area universities.

Proximity to the tech-intensive RTP often makes it difficult to attract and keep highly trained ICT personnel in the Fort Bragg region. Both instructors and graduates of the region's computer and network training programs are frequently drawn to more lucrative employment opportunities in the Research Triangle.

Higher Education/Adult Learning: Colleges and Universities in Cumberland County are well positioned to provide the skilled technicians and professionals needed to meet the growing demand for ICT services in the county and the region. Fayetteville Technical Community College, Fayetteville State University, and Methodist University offer relevant programs, courses, and degree programs. The issue is one of throughput—more graduates are needed.

Infrastructure Issues: Videoconferencing facilities provide an efficient approach to delivering distance-education programs to multiple students. Such facilities are particularly important in Cumberland County, where they are used to support the on-going training needs of military and National Guard personnel. The National Guard supports two controlled-access networks (Guard Net II and Guard

Net 132), with access at National Guard Armories in Fayetteville and Spring Lake. In addition, the National Guard is paying to build computer labs at Fayetteville Technical Community College, where Guard members can take non-credit continuing education courses. The Guard's community college-based facilities are also available for use by civilians. As is shown in Figure 17, Central Cumberland County and the Spring Lake area are relatively well equipped with videoconferencing centers. Students at any level in southern and eastern Cumberland County, however, do not have ready access to facilities that support distance learning in a group setting.

Government: Movement of government services to an electronic platform ("e-government") allows for cost-effective delivery, improved responsiveness, and increased transparency. E-Government is proving to be particularly important in that it allows military personnel to access local government services while deployed. Military-related growth is expected to significantly impact the demand for government services.

Cumberland County has made appreciable strides in developing a website that is useful to existing citizens and businesses. The county has also developed useful links as well as content that targets newcomers and relocating military personnel. Further enhancements are recommended. Cumberland County's e-government website has been evaluated on the basis of content and usability against best practice models in Havelock, NC (<http://www.cityofhavelock.com/>) and Northwest Florida (<http://www.welcometonorthwestflorida.com/index1.html>). Results of the analysis are summarized in **Table 11**. In general, the site is well designed and useful; however, the absence of a newcomers' guide and links to properties for sale detract significantly from the usefulness of the site to incoming residents and businesses.

While smaller towns and communities would benefit from having an attractive website populated with current content, most of them lack the means to develop and maintain such a site. Montgomery County provides a model that Cumberland might consider; the county provides a common template that its smaller municipalities can populate with

Table 11. Cumberland County Website Analysis

Website Address	www.co.cumberland.nc.us
Preliminary Questions	Observations
Links to Local Government?	YES
Links to BRAC-RTF?	YES
General Items	Observations
Website Appearance	Professional appearance
Usability	Easy to navigate; very interactive
Site Structure	N/A
Audio/Visual Capabilities	NONE
External Web links	Links to local, state, and federal information
Contact Information	Contact information on every page
Employee Directory	Complete listing by department
Calendar	No community calendar
Searchable Databases	Search and retrieve Register of Deeds information
Forms, Applications, & Permits	Various downloadable and online forms available
Scheduling System	NONE
Transactional Capabilities	Online tax payment
BRAC Information	Links for visitors and newcomers/welcome message and links for BRAC newcomers
GIS	GIS Mapping
Newcomer's Guide	NONE
Listing of Property for Sale	NONE
Tax Information	Tax information
Employment Opportunities	Downloadable employment application
Library Link	Link to library website
Website's Capacity to Facilitate Citizen Involvement	NONE
Feedback Form	NONE
Alert Mechanisms	NONE
Translation of Content	NONE
Intranet	NONE
Content Copyright	Copyright protection where applicable
Frequency of Updates	Does not have a last-updated notation or a way to contact webmaster in case of incorrect information

current information. The county then maintains the site for the municipalities. This approach leverages ICT resources to better serve all of its citizens and to support balanced growth across the county.

Finally, a shortage of skilled network management technicians may emerge as one of the most critical impediments to meeting the demands of growth in Cumberland County and the region. Additional ICT personnel at the professional and certificate level will be needed to support the growing number of web-based government services.

2. Future Needs

Information and communication technologies (ICT), especially those supporting high-speed broadband Internet functions,⁴² are becoming increasingly critical to local, state, and national economic and community development, with real and

42. On March 18, 2008, the FCC issued an order (FCC 08-89) that called for defining “high-speed” connections as those that are faster than 200 kbps and defining “broadband” connections as those faster than 768 kbps. The e-NC Authority, which tracks high-speed Internet access across North Carolina, promotes the use of broadband connections. For more information about the FCC order, visit www.fcc.gov

measurable impacts in employment, the number of businesses overall, and the number of businesses in ICT-intensive sectors. ICT will be particularly important in Cumberland County as it adapts to changes caused by military-related growth. Many of the military personnel being transferred to Fort Bragg are technologically adept and will expect to have immediate and sophisticated access to ICT functions such as e-government, e-learning, e-health, and e-commerce. If they are to establish immediate professional and personal connections with the community, these personnel need access to a high-speed, broadband Internet connection, both on- and off-base. As bandwidth needs increase for base operations, new applications will continue to be developed and these will create further connectivity challenges for the region.

As part of its overall effort to support the incoming FORSCOM and US Army Reserve Command (USARC), and to sustain the incumbent military units as a vital economic engine for the region, Cumberland County would greatly benefit from upgrading its telecommunications capacity. The county’s ability to attract and support a diverse and growing economy beyond the military will also be inextricably tied to the quality, speed, and ubiquity of high-speed broadband Internet connectivity.

The level of broadband access that will be needed to accommodate the area’s military-related growth is suggested by the results of

a November, 2007 survey conducted among FORSCOM personnel in the Atlanta region. Ninety-seven percent of the respondents have and use broadband access at home. This percentage is higher than the percentage of home Internet connections available in Cumberland County. Sixty-one percent of the FORSCOM personnel use DSL to access the Internet, 36% use cable, and only 4% rely on dial-up modem connections. As shown in **Table 12**, the survey respondents and their families use the Internet at home for a wide range of tasks. It is highly likely, therefore, that the influx of FORSCOM personnel will increase the demand for high-quality broadband availability and web-based services in Cumberland County.

Table 12. Routine uses of the Internet at home by FORSCOM personnel and their families

Check mail	98%
Educational (research, course, or Army on-line training)	52%
General Information searches (news, weather, sports)	86%
Work, professional information searches (government, business)	72%
Pay utility bills	74%
Pay taxes	33%
Search for medical information	73%
Do job-related tasks	43%
Search for jobs	47%
Commercial activities (shop, pay bills, etc.)	83%

3. Gaps

This assessment revealed several specific ICT-related gaps that need additional attention.

Internet Access: Two areas in the county are notably underserved. One community near the southeastern perimeter of Fort Bragg has access is in the 50-69% range, and a larger area surrounding Spring Lake has access is in the 70-89% range. Both regions are expected to experience significant growth related to the influx of new personnel at Fort Bragg.

Public Safety: An additional 1,308 radios are needed to complete the Cumberland VIPER network.

School Human Resources: It is clear that more and better trained technical-support personnel are needed to manage the growing ICT needs of Cumberland County schools.

Web Presence: While smaller towns and communities would benefit from having an attractive website populated with current content, most of them lack the means to develop and maintain such a site. Montgomery County provides a model that Cumberland County might consider. Montgomery provides a common template that its smaller municipalities can populate with current information, and the county then maintains the site for the municipalities. This approach leverages ICT resources to better serve all of its citizens and to support balanced growth across the county.

4. Recommended Actions

Critical Action 1: Improve ICT infrastructure throughout the county to have high-speed access available at 100% of households

Description: Updated and new network technology needs to be implemented in underserved areas of the county to make high-speed access (defined as >200 kilobits per second) available to 100% of households.

Responsible Parties: A partnership of public (federal, state, and local) and private (corporate and foundation) organizations.

Critical Action 2: Fully equip public safety and emergency personnel to participate in North Carolina's VIPER first-responder network

Description: The Voice Interoperability Plan for Emergency Responders (VIPER) System being implemented by the NC Highway Patrol will enable public safety officials at all levels to communicate directly with one another over a secure and reliable network without having to relay messages through a communications center. The value of this capability in times of emergency is becoming more important as the influx of military personnel into the Fort Bragg region significantly raises the threat profile of the region.

Responsible Parties: Local, state, and federal government should partner to fully implement and equip the network. A request for federal support to equip the region has been developed by the e-NC Authority for the BRAC Regional Task Force; prospects for federal funding are not certain at this time.

Important Action 3: Participate in formation of Regional K-20 Education Connectivity Task Force and Planning Group

Description: Strong potential exists to realize greater returns on investment with the utilization of regional strategies for developing and supporting the K-12 connectivity infrastructure, sponsoring professional development opportunities in instructional technology, and increasing throughput of certified and trained network and communications specialists from higher-education and technical training programs in the region.

Responsible Parties: Leaders from county government and education leaders from public and private schools K-16 in the Fort Bragg region—in collaboration with state BETA and the e-learning commission

Important Action 4: Make connectivity a strategic focus for the county and a springboard for regional planning and economic and community development efforts

Description: Cumberland County should partner with counties in the region to develop a regional ICT Council. Composed of a Chief Information/Technology Officer from each county in the region and Fort Bragg, this council would be responsible for guiding the development and use of connectivity. Outcomes will include collaborative learning, cost efficiencies realized through joint purchasing agreements and regional software licenses, and more competitive bids for federal and state program support.

Responsible Parties: CIO/CTOs for each county and Fort Bragg are the best positioned to lead this task.

Important Action 5: Champion effort to define and establish a Regional Health ICT Network

Description: Cumberland County should work with the N.C. Telemedicine Network to support the region’s efforts (funded by the Federal Communications Commission) to extend connectivity and champion its use by appropriate health and medical institutions, including the public health department and public and private health clinics.

Responsible Parties: County government and health leaders in collaboration with the N.C. Telemedicine Network, the e-NC Authority, and NCHICA are encouraged to take the lead in this action.

Important Action 6: Establish Cumberland County as a best-practice e-government model

Description: So as to improve its delivery of information and government services to both private and corporate citizens, Cumberland County should re-engineer its website to best-practice status and should provide its municipalities with the electronic platforms, hosting services, and training needed to make Cumberland an e-county of e-communities.

Responsible Parties: Cumberland County CIO/CTO, local government IT directors, the e-NC Authority, the N.C. League of Municipalities, and the Center for Public Technology at the UNC School of Government at UNC-CH are all encouraged to participate in this effort.

H. Health Care

Cumberland County, which has the largest supply of health-care providers and facilities in the Fort Bragg region, supports regional referral centers for the Department of Defense (DoD), the Veterans Administration (VA), and civilian patients. Although the expansion of Fort Bragg is not likely to create any new health-care needs in the county, it will magnify existing needs for medical and surgical specialists and will further strain referral relationships between military and civilian providers. In addition, Cumberland County TRICARE beneficiaries will continue to face financial barriers that must be addressed by either adding providers to TRICARE panels, improving TRICARE payments, or both. The return of approximately 17,000 troops from abroad will create additional needs for clinical services, especially behavioral health, orthopedics, inpatient rehabilitation, neurology, and obstetrics.

1. Current Needs

a. On-Base Facilities

Fort Bragg has an extensive variety of on-base services, ranging from four primary care clinics to a 150-bed acute-care hospital, Womack Army Medical Center. Nearly 220 physicians and physician

extenders practice at the medical center and the co-located medical and surgical specialty clinics.

Womack Army Medical Center (Womack), Fort Bragg’s Department of Defense Hospital, serves as the medical home for all active-duty troops and their families, as well as for retirees and their family members. In 2000, Womack opened the doors of a state-of-the-art 1,020,359 square foot facility located off of North Reilly Road. The medical center provides both inpatient and outpatient services for over 160,000 eligible beneficiaries, more than any other army facility in the United States. Womack has been an active participant in the process of planning for the expansion of Fort Bragg, and representatives from Womack have identified several key concerns that will likely persist and even worsen following this expansion, including:

- Shortages of physician specialists, including orthopedic surgery, dermatology, general surgery, and neurology
- Deployment of key specialists, including orthopedic surgeons and obstetricians
- Nursing shortages
- Lack of space in primary care clinics
- Existing On-Base Services
- Health-Care Providers

Table 13. Number of Physicians and Physician Extenders Practicing in Specialty Areas at Womack in 2007

Specialty	Clinicians	Direct Care Professionals	Total
Primary Care	31.0	52.3	83.3
Emergency Room	10.9	5.3	16.2
Internal Medicine Subspecialties	4.5	5.1	9.6
Dermatology	0.6	0.0	0.6
Otorinolaryngology	1.5	0.0	1.5
Mental Health	2.4	35.3	37.6
Obstetrics	9.4	5.2	14.6
Optometry	2.2	6.9	9.1
Orthopedics	4.8	22.9	27.8
General Surgery	4.0	0.0	4.0
Surgical Subspecialties	1.6	0.0	1.6
Other*	2.4	9.7	12.1
Total	75.3	142.7	218.0

Other health-care professionals include anesthetists, community health providers, and nurse midwives.

In fiscal year 2007, 218 physicians and physician extenders⁴³ practiced at Womack, as shown in **Table 13**.

- Representatives from Womack indicated that the medical center has an established plan in place to handle the growth in its primary care volume caused by the expansion of Fort Bragg. However, shortages of specialty health professionals will likely limit Womack’s ability to open its specialty clinics to more patients than are currently being served. Shortages across existing service lines at Womack can be attributed to the inability to recruit additional physicians⁴⁴ and the deployment of physicians to Iraq and Afghanistan. Substantial provider-coverage needs were identified within the following specialties at Womack:⁴⁵
- Orthopedic surgery
- Dermatology
- General surgery
- Neurology

With the exception of dermatology, these specialties are in high demand within the military population, particularly those returning from overseas. However, Womack and other providers in the region have experienced a great deal of difficulty recruiting and retaining specialists in these areas. Although HealthNet contractors⁴⁶ have indicated that they are presently in the process of developing more attractive recruitment packages for physicians in needed specialties, it is not known when these packages will be available.

In the summer of 2007, the deployment of at least one physician resulted in a temporary shortage of services in the following specialties:

- Allergy
- Physical medicine
- General surgery

As a result of physician deployments, patients are often sent to Cape Fear Valley Medical Center (CFVMC) and other civilian facilities. Although civilian providers are generally willing to accommodate referrals from Womack, the unplanned nature of some deployments puts pressure on civilian facilities to rapidly adjust their own capacity to meet the needs of Womack patients. For example, CFVMC’s obstetrics department continues to operate at well above existing capacity, as is detailed in a later section of this report. In this case, the overwhelming number of patients seeking care outside of Womack compromises CFVMC’s ability to effectively utilize its existing department. Alternatively, when providers return from a deployment overseas, civilian providers are left with excess capacity as patients return to Womack. These fluctuating expectations can unduly burden referral relationships with other community providers.

Womack does not provide the following specialties:

- Endocrinology
- Nephrology
- Neurosurgery

Although it is a state-of-the-art medical facility, Womack—based on the level of services it provides—functions more as a community hospital than as a tertiary medical center. Patients in need of certain advanced specialty services must seek care at other facilities, including Walter Reed Medical Center, Bethesda Naval Hospital, and Cape Fear Valley Medical Center.

b. On-Base Outpatient Services

Outpatient services at Fort Bragg are provided to active-duty soldiers, the families of active-duty soldiers, and military retirees and their families. All active-duty soldiers are required to enroll with a primary-care manager at a primary-care clinic designated by their service unit. Family members of active-duty personnel are strongly encouraged

43. The methodologies used for the health-care analysis presented in this chapter are described in the Appendix.

44. For reasons discussed at length later in this chapter, facilities across the Fort Bragg region have difficulty recruiting physicians.

45. The needs referenced here were identified through interviews with representatives from Womack Army Medical Center, Cape Fear Valley Regional Medical Center, The Fayetteville VA Medical Center, Sandhills Physicians, Inc., HealthNet, and the Cumberland County LME.

46. HealthNet is the contracting agency for TRICARE beneficiaries in this region. TRICARE is the U.S. government-sponsored health insurance plan for active military members, their families, and retirees.

Table 14. Persons Served at the Primary-Care Clinics Located on Fort Bragg

Clark Clinic	USASOC, 20th Engineer Brigade, 50th Signal Brigade, and XVIII Corps Artillery (Airborne)
Womack Family Medicine Residency Clinic	Active duty and family members of Dragon Brigade, WAMC, DENTAC, most Military Police units, most Military Intelligence units, U.S. Army Garrison, XVIII Airborne Corps Headquarters, JSOC, SOTF, Readiness Group-Bragg, TEXCOM, 18th Personnel Group, 107th Finance, 126th Finance, 1st Chemical, 1112 Signal, US Trial Defense, 18th EOD, NCO Academy, NBC, 297th MI, ROTC, 19th Replacement Det; and retirees enrolled in TRICARE Prime
Joel Health and Dental Clinic	Soldiers and family members of the TSC, 44th Medical Brigade, 507th Trans BN, U.S. Army Parachute Team, and retirees and their family members
Robinson Health Clinic	Soldiers and family members of the 82nd Airborne Division along with retirees

to enroll as well. Primary-care clinics have been serving the maximum number of retirees they can accommodate; but, because clinic capacity is greater during times of high deployment, there has recently been movement to increase the number of retirees served.

There are four primary care-clinics located at Fort Bragg: Clark Clinic, Womack Family Medical Residency Clinic, Joel Health and Dental Clinic, and Robinson Health Clinic. **Table 14** indicates the populations served at each.

Primary-care management is considered essential for ensuring that all active-duty soldiers maintain deployment-ready status and for reducing future health-care costs for family members.

Primary-care managers/clinics are responsible for providing referrals to specialty clinics. All outpatient and ancillary clinics are conveniently located within the medical mall and the ancillary services building at Womack. Specialty clinics include:

- Allergy Clinic
- Behavioral Health
- Breast Clinic
- Cardiology
- Dermatology
- ENT/Audiology
- Endocrinology
- Exceptional Family Member Program
- Gastroenterology

- General Surgery
- Hematology/Oncology
- Immunization
- Internal Medicine
- Neurology Clinic
- OB/GYN
- Ophthalmology
- Optometry
- Orthopedics
- Pediatric Clinic
- Pain Clinic
- Podiatry
- Pulmonary/Respiratory Therapy Clinic

If no appointment for a specialty service is available at Womack, the patient is referred to HealthNet Federal Services, which helps the patient book an appointment with a civilian provider. Additional information regarding referrals to civilian providers is presented in later sections of this report.

In addition to its outpatient clinics, Womack provides a full-service outpatient pharmacy—located in the main medical mall—that fills approximately 4,500 first-time prescriptions a day. All prescriptions, which are sent electronically to the pharmacy from physicians in the outpatient clinics, are filled by three large robots. Due to the overwhelming number of new prescriptions filled at Womack, all refills are handled in satellite pharmacies located in each of the primary care clinics and in two additional on-base locations.

Table 15. Occupancy at Womack in FY 2007

Unit	Patient Days	Beds	Occupancy ³
Surgical Ward	6,025	29	56.9%
Pediatric Ward	1,316	10	36.1%
Mother-Baby Unit	10,082	48	57.5%
Labor & Delivery	2,198	8	75.3%
Medical Ward	5,257	23	62.6%
Psychiatric Ward	1,479	7	57.9%
Intensive Care Unit	1,223	8	41.9%
Neonatal Intensive Care Unit	2,285	12	52.2%
Step-down Unit	783	5	42.9%
Total	30,648	150	56.0%

c. Inpatient Acute-Care Hospital Services

Womack currently operates 150 acute-care beds, but has the ability to expand to 258 beds. Occupancy levels (**Table 15**) indicate that Womack has capacity for increasing the volume growth of its acute-care services.

It is important to note that during fiscal year 2007 approximately 20% of Fort Bragg service members were deployed as part of the Global War on Terrorism mission. This deployment has resulted in a decrease in admissions and patient days at Womack, primarily due to fewer injuries related to airborne operations and training on the base (specifically, fewer jump injuries) and fewer births. Upon return of this population, Womack anticipates a substantial increase in admissions, patient days, and births. The physical capacity to treat additional patients at Womack exists, particularly if the facility expands to its full capacity of 258 beds; but, without an adequate supply of nurses, physicians, and physician extenders, the medical center will be unable to handle significant growth.

2. Cumberland County Facilities

Cumberland County, which has the largest supply of health-care providers and facilities in the Fort Bragg region, supports regional referral centers for the Department of Defense, Veterans Administration, and civilian patients. The most pressing health care issues in Cumberland County are:

- Access to services
- Behavioral health
- Communication and collaboration between civilian and military providers.
- Existing Services in Cumberland County

Approximately 400 civilian providers practice in Cumberland County. They serve the Cape Fear Valley Medical Center—the county’s only civilian hospital—as well as multiple outpatient locations. In addition, active-duty and retired military personnel have access to Womack Army Medical Center and the Fayetteville Veterans Affairs Medical Center.

a. Civilian Health-Care Provider Supply

Cumberland County has the largest number of civilian health-care providers in the Fort Bragg region; however, there is a shortage of physicians where specific specialties and TRICARE access are concerned.⁴⁷ Key stakeholders⁴⁸ in Cumberland County identified the need for more physicians in such key specialty areas as Orthopedics as well as a need for timely and convenient access for TRICARE beneficiaries.⁴⁹

47. TRICARE is the U.S. government-sponsored health insurance plan for active military members and their families and retirees.

48. Key stakeholders were identified as the leadership in all acute-care facilities, the Cumberland County IPA, HealthNet, and the LME. Each of these stakeholders was interviewed as part of this process.

49. Health Planning Source, Inc. interviewed representatives from Womack Army Medical Center, Cape Fear Valley Regional Medical Center, the Fayetteville VA Medical Center, Sandhills Physicians, Inc., HealthNet, and the Cumberland County LME. Please see the methodology section in the Appendix for more details.

In addition to the providers at Womack, there are just over 400 full-time equivalent (FTE) civilian health-care professionals (including physicians and physician extenders) working in Cumberland County.⁵⁰ Of that group, 203.6 are primary-care providers, 61.5 are surgical providers, and 72.5 are medical specialty providers. Approximately 67.5 FTEs—including psychiatrists, counselors, and social workers—practice in the behavioral health arena. Because only nine of these are psychiatrists, a significant amount of the behavioral health needs of the county are being handled by physician extenders. In addition, Cumberland County has 120.0 dentist FTEs.

The most important and pressing concern expressed by interviewees is the limited availability of care available for TRICARE beneficiaries.⁵¹ According to HealthNet, the contractor for TRICARE services in this region, nearly two-thirds of the health professionals in the region are enrolled to provide services to TRICARE beneficiaries. However, since payment from TRICARE has historically been low—often below Medicaid rates—and slow, it is common for providers to limit the number of TRICARE patients treated in their practices. Thus, the availability of providers for TRICARE beneficiaries remains limited in Cumberland County.

Interviewees also identified a need for specific physician specialists in Cumberland County, including, but not limited to orthopedic surgeons, neurosurgeons, and behavioral health professionals.

b. Acute-Care Hospital Services

Cumberland County has three acute-care facilities, including one on-post Department of Defense hospital (Womack Army Medical Center), one Veterans' Affairs hospital (Fayetteville VA Medical Center), and one civilian hospital (Cape Fear Valley Medical Center). Womack (discussed in a previous section) is an integral component of the overall system in Cumberland County. In total, these hospitals provide 600 acute-care beds, seventy-eight inpatient

rehabilitation beds, and sixty-nine psychiatric and substance-abuse beds (**Table 16**). Each of these facilities represents an integral piece of the military health-care network, both in Cumberland County and in the Fort Bragg region as a whole.

Womack and Cape Fear Valley Medical Center (CFVMC) provide a wide array of specialty services, such as comprehensive cardiac⁵² and cancer care.⁵³ In addition, both Womack and CFVMC have the ability to provide specialty mild-traumatic brain injury (TBI) services. It has yet to be determined whether both facilities will provide these services in the long term. At this time, patients are sent to Womack first and to CFVMC when Womack reaches capacity. More serious cases are sent to Walter Reed Army Medical Center (Walter Reed) and Bethesda Naval Hospital (Bethesda). Womack, CFVMC, and the VA offer full-service emergency departments and also provide clinical psychology, outpatient rehab, and dialysis.

Womack is the first line of defense for medical services for enlisted personnel and their families. When Womack reaches capacity and/or does not provide a specific specialty service, however, patients must seek treatment elsewhere. While active-duty personnel are often sent to Walter Reed and Bethesda for specialty care, Womack referral personnel seek to refer other patients (families, retirees, and active duty personnel who wish to stay in the area) to facilities within a one-hour drive time of their homes. In general, therefore, Womack patients are referred to CFVMC first, as it is the closest facility. The medical center also regularly refers to FirstHealth Moore Regional Hospital, UNC Hospitals, Duke University Hospital, and Pitt County Memorial Hospital. In many cases, facility preference is based on additional factors, such as the receiving facility's capacity and the availability of specialty services.

Cumberland County's civilian medical center is CFVMC. With 397 acute-care beds, CFVMC is the largest civilian provider in the region. In fiscal year 2007, patients from each of the eleven counties in the Fort Bragg region accounted for 26,287 of the 27,113 total patients admitted at the medical center (**Table**

50. Please see the health-care methodology section in the Appendix for greater detail regarding FTE status and physician extenders.

51. Health Planning Source, Inc. interviewed representatives from Womack Army Medical Center, Cape Fear Valley Regional Medical Center, the Fayetteville VA Medical Center, Sandhills Physicians, Inc., HealthNet, and the Cumberland County LME.

52. CFVMC only.

53. Womack provides medical oncology only.

Table 16. Acute-Care Facilities in Cumberland County
("x" indicates that the service is available)

	Womack Army MC	Fayetteville VAMC	CFVMC	Total
Acute-Care Beds				
Acute-Care Beds	143	60	397	600
Inpatient Rehabilitation Beds	0	0	78 ⁴	78
Psychiatric and Substance-Abuse Beds	7	30	32	69
Additional Hospital-Based Services				
Comprehensive Cardiac Services ⁵			X	
Comprehensive Oncology Services ⁶			X	
Emergency Services	X	X	X	
Clinical Psychology	X	X	X	
Outpatient Rehab	X	X	X	
Dialysis			X	

17). Moreover, CFVMC served 26.9% of all patients from the eleven-county region admitted to hospitals in North Carolina.

CFVMC serves as the region’s “safety net provider,” treating military as well as civilian patients who may have been turned away elsewhere. Military patients are referred to CFVMC for treatment when services at Womack reach capacity, an occurrence that varies depending on physician deployments. As a result

of growing civilian and military volume, CFVMC’s acute-care beds operated at 96% occupancy in FY 2007; and three out of five specialties operated at over 100% occupancy, as shown in **Table 18**.⁵⁴

In January 2008, CFVMC received approval from the North Carolina Certificate of Need Section of the Division of Health Services Regulation to add twenty-

54. Source: Cape Fear Valley Regional Medical Center 2008 Hospital License Renewal Application.

Table 17. Percentage of Patients Admitted to CFVMC from Counties in the Fort Bragg Region

County	Patients	% of CFVMC Total	% of County Discharges at CFVMC
Cumberland	21,201	78.2%	84.3%
Robeson	1,887	7.0%	10.6%
Hoke	1,142	4.2%	43.4%
Sampson	937	3.5%	12.8%
Harnett	552	2.0%	6.0%
Bladen	279	1.0%	7.1%
Lee	144	0.5%	2.2%
Scotland	72	0.3%	1.5%
Moore	55	0.2%	0.5%
Richmond	16	0.1%	0.2%
Montgomery	2	0.0%	0.2%
Other Counties in NC and Other States	826	3.0%	N/A
Total No. of Patients	27,113	100.0%	26.9%

two medical/surgical beds to accommodate existing and future demand for these services.⁵⁵

CFVMC treats a significant portion of the Obstetrics (OB) patients from Fort Bragg. One source noted that Womack places a cap on OB services and will only accept a certain number of patients. Once that cap is reached, patients are referred to CFVMC, regardless of capacity at the medical center. CFVMC expects to experience significant OB volume growth over the next two years, following the return of approximately 15,000 soldiers from overseas in 2008.

The Fayetteville VA Medical Center (VAMC) represents another important component of the Cumberland County and regional health-care systems. However, its services are available only to persons who have served in active military, naval, or air service and who were discharged or released under conditions other than dishonorable. Reservists and National Guard members may also qualify for VA health-care benefits if they were called to active duty (other than for training only) by a Federal order and completed the full period for which they were called or ordered to active duty.⁵⁶ Veterans are seen at the VAMC based according to priority groupings. As a result, the health needs of the population affected by the growth at Fort Bragg are likely to have limited

55. The North Carolina Certificate of Need Law prohibits health-care providers from acquiring, replacing, or adding to their facilities and equipment, except in specified circumstances, without the prior approval of the Department of Health and Human Services. Prior approval is also required for the initiation of certain medical services. The law restricts unnecessary increases in health-care costs and— based on geographic, demographic, and economic considerations—limits unnecessary health services and facilities. Please visit <http://www.ncdhhs.gov/dhsr/coneed/index.html> for more information.

56. Federal Benefits for Veterans and Dependents, available at <http://www1.va.gov/opa/vadocs/fedben.pdf>.

Table 18. Occupancy Rates for Services at CFVMC in FY 2007

Service	Occupancy
Intensive Care*	106.7%
Medical/Surgical	101.4%
Level III Neonatal	69.6%
Pediatrics	40.2%
Obstetrics	101.4%
Facility Total	96.0%

*Includes Level IV neonatal beds

impact on the VAMC.

c. Comprehensive Outpatient Services

Cumberland County serves as a regional “hub” for outpatient services. The county is home to three acute-care facilities with extensive diagnostic imaging services and four diagnostic imaging centers (Table 19). Other providers in the county, such as physicians’ offices and urgent care centers, also have general diagnostic equipment. In addition, there are two ambulatory surgery centers and thirteen urgent care centers in Fayetteville. There also are two urgent-care centers in Hope Mills. Outpatient services available in Cumberland County are listed in **Table 19**.

d. Home Health

Health services are provided in the home to individuals that are confined to the home. Such services are offered to individuals who do not need hospitalization but who need nursing services or therapy, medical supplies, and/or special outpatient services. Currently there is no need for additional home-health agencies in Cumberland County, and the military expansion at Fort Bragg is expected to have minimal impact on the short-term need for such services.

The following home-health agencies serve Cumberland County:

- Cape Fear Valley Home Health and Hospice
- Liberty Home Care
- First Home Health and Hospice, Inc.
- Amedisys Home Health of Fayetteville
- Emergency Medical Services

The EMS service in Cumberland County is owned and operated by Cape Fear Valley Medical Center. Information about this service is provided in the Public Safety portion of this report.

e. Behavioral Health

Local Management Entities (LMEs) are agencies

Table 19. Outpatient Services Available in Cumberland County

Facility Name	Location
Diagnostic Imaging	
Cape Fear Valley Medical Center	Fayetteville
Womack Army Medical Center	Fayetteville
Fayetteville VA Medical Center	Fayetteville
Highsmith-Rainey Memorial Hospital	Fayetteville
Carolinas Imaging, Inc. of Fayetteville	Fayetteville
HealthSouth Diagnostic Center of Fayetteville	Fayetteville
Cross Creek Imaging ⁷	Fayetteville
Ambulatory Surgery Centers	
Fayetteville Ambulatory Surgery Center	Fayetteville
Highsmith-Rainey Memorial Hospital	Fayetteville
Urgent-Care Centers	
NextCare Urgent Care	Fayetteville
Cedar Creek Urgent Care and Family Clinic	Fayetteville
Express Care of Health Pavilion North	Fayetteville
Highsmith-Rainey Express Care	Fayetteville
MedEx Urgent Care	Fayetteville
Northside Urgent Care	Fayetteville
Physicians Urgent Care	Fayetteville
Rapid Care Family Medicine & Urgent Care (two locations)	Fayetteville
Well Point Urgent Care and Family Clinic	Fayetteville
Doctors Urgent Care Centre, Inc	Fayetteville
Doctor's Urgent Care Center	Fayetteville
Cross Creek Urgent Care	Fayetteville
Owen Drive Children's Clinic and Children's Urgent Care	Fayetteville
Lakeview Urgent Care	Hope Mills
Hope Mills Urgent Care and Medical Clinic	Hope Mills

Source: Interviews, 2008 State Medical Facilities Plan; Yellow Pages

of local government (area authorities or county programs) that are responsible for managing, coordinating, facilitating, and monitoring the provision of mental health, developmental disability, and substance-abuse services in the catchment area served. LME responsibilities include offering consumers twenty-four hours a day, seven days a week, 365 days a year access to services, developing and overseeing providers, and handling consumer complaints. The Cumberland County Mental Health Center serves as the Cumberland County LME; it provides four locations at which clients can access services (**Table 20**).

The Cumberland County Mental Health Center also provides a number of services that would typically

fall in the social services arena. For example, at the time of interview, the LME was the court-appointed guardian for about fifty children and adolescents, approximately 15% of whom had a military connection. In addition, the LME is often an interested party in North Carolina Department of Social Services custody cases.

Like all health care-providers, the behavioral health system in Cumberland County relies heavily upon TRICARE payments, which—as noted above—are inadequate and slow. Along with other health-care providers, psychiatrists throughout the region have placed limits on the services they provide to

TRICARE patients. Some have even terminated their TRICARE contracts. This situation is of particular concern given the current deployment environment; the LME is quickly becoming overwhelmed by the increase in the behavioral health needs of adults, children, and adolescents. In response, HealthNet contractors are currently working in concert with the leadership at Fort Bragg to ensure that enough appropriate providers are in place to meet the needs of current and returning soldiers and their families.

The serious capacity limitations that the LME system has created for North Carolina’s mental health system is compounded by a lack of adequate funding. In addition, as detailed in a recent series in the Raleigh News & Observer, LMEs across the state have recently purged their list of eligible behavioral-health providers to eliminate those who were abusing the system.⁵⁷ The Cumberland County LME is no exception to this development. Although the LME is left with a higher-quality system, the reduction in the number of providers will undoubtedly result in reduced access to mental health and related rehabilitation services.

As shown in Table 16, there are sixty-nine psychiatric and substance-abuse beds in Cumberland County. CFVMC provides twenty-eight psychiatric beds—including twelve licensed adult beds and sixteen licensed child and adolescent beds—in addition to four detoxification beds. The thirty-seven licensed beds at the VA and Womack are mental health,

57. Please see the Health Care appendix for a copy of articles related to this series.

substance-abuse, and co-occurring capable.⁵⁸ It is important to note that nearly half of the psychiatric and substance-abuse beds in the county are located at the VA and, as such, are inaccessible to the majority of the population.

I. Future Conditions

Cumberland County’s greatest need is for surgical specialists. Qualitative analyses demonstrate that there are also needs for behavioral-health services, TRICARE providers, and civilian- and military-capable inpatient acute-care and psychiatric beds.

1. Physician Needs

a. Qualitative Analyses, Interview Summaries

In 2007, Health Planning Source, Inc. staff met with several key stakeholders in Cumberland County to discuss physician needs in the region. Among the key trends and issues that emerged from these discussions, the following three received particular emphasis:

- Poor payor⁵⁹ mix in Cumberland County
- Difficulty in recruiting physicians to Fayetteville
- Need for physicians in key specialties

As stated previously, TRICARE reimbursement is a major concern for all providers in the region, both at a physician practice level and at a facility level.

58. Co-occurring refers to both mental health and substance-abuse issues.

59. A Payor is an institution or agency responsible for making payments for health services.

Table 20. Locations in Cumberland County Where Clients Can Access Mental Health Services

Facility	Location	Services
Bradford Avenue Center	109 Bradford Avenue, Fayetteville	Psychiatric services Counseling Care coordination for adults with mental health, developmental disabilities, or substance abuse diagnoses
Executive Place	711 Executive Place, Fayetteville	Child and adolescent services Juvenile Court Outreach Smart Start Early Intervention Team for Mental health Services
Roxie Avenue Center	1724 Roxie Avenue, Fayetteville	Adult crisis-stabilization services Non-hospital medical detoxification services Child-respite services
Treatment Accountability for Safer Communities Program	412 W. Russell St., Fayetteville	Treatment accountability for safer communities

TRICARE payment to hospitals and physicians is often lower than the payment from patients lacking any form of health insurance. Although many physicians believe it is part of their patriotic duty to provide services to TRICARE beneficiaries, physicians would be unable to remain in business if they treated only TRICARE beneficiaries. As such, providers are generally unwilling to accept a full panel of TRICARE beneficiaries. Yet, in 2007, over 118,700 persons in Cumberland County were enrolled in TRICARE. The high proportion of Cumberland County's population that is covered by TRICARE is common among communities in close proximity to a military base. In order to make timely service available to these patients, additional providers who are willing to accept TRICARE patients are needed.

An additional challenge facing Cumberland County is that the percentage of uninsured persons in the county is 18.8—slightly above the state average of 17.2%. This includes 12.5% of children and adolescents under the age of seventeen and 21.8% of adults between the ages of seventeen and sixty-four. The abundance of uninsured persons means that the profitability of physicians in Cumberland County is low in comparison with other, more favorable markets. Poor payor mix is one of many factors that hinder recruiting efforts in Cumberland County. In addition, physicians often cite schools, housing options, malpractice costs, and spouse preferences as deterrents to practicing in Fayetteville.

Finally, interviewees identified several physician specialties in which they perceive a need, including:

- Neurosurgery
- General Surgery
- Behavioral Health
- Orthopedic Surgery
- Cardiology (VA Specific)
- Dermatology (TRICARE access specific)
- Quantitative Analyses, HPS Physician Demand Model

Figure 18 compares the projected supply of health-care professionals to estimated needs in 2013, for both the normal growth and expected (including military expansion) growth scenarios. For fields in which

the supply is greater than the projected need, no additional health-care professionals will be necessary. For fields in which the need is greater than the supply, incremental growth in the number of physicians will be necessary.

As determined by the HPS Physician Demand Model⁶⁰ and numerous interviews, the greatest need in the county is for surgical specialists. Although the quantitative analysis showed a need for only one or two additional surgeons, interviewees identified a greater need in certain specialties. Specifically, there is a need for additional neurosurgeons, orthopedic surgeons, and general surgeons. In addition, the growing population could support twenty to thirty more dentists.

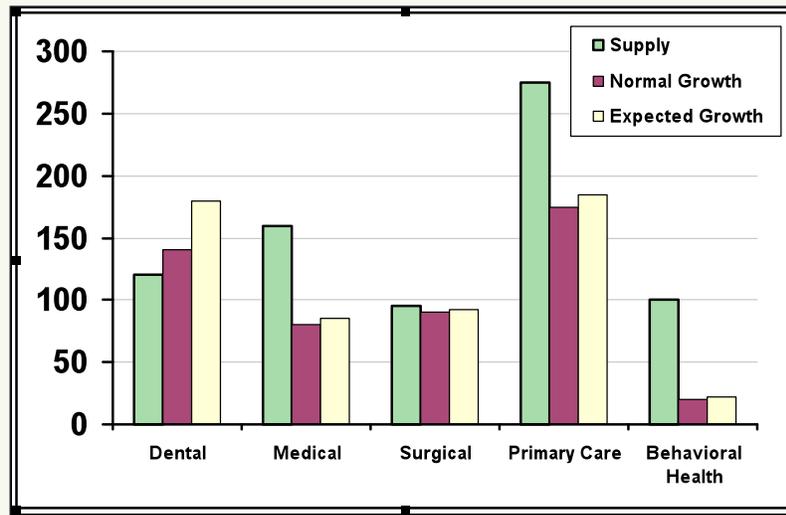
Although Cumberland County has a sufficient supply of primary-care physicians and medical specialists to support its closed population, it is important to note that its providers often treat patients who live outside of the county. That being the case, the demand for these services is likely to be much closer to the current supply.

Cumberland County could also support additional psychiatrists and community behavioral-health providers that accept TRICARE patients. Physician extenders are handling a significant number of the mental health patients in the region. Since these extenders are unable to prescribe medication or admit patients to an inpatient facility, there is likely to be a need for additional mental health physician support in the county.

- Acute-Care Bed Need
- Qualitative Analyses, Interview Summaries
- Key stakeholders in Cumberland County identified the following acute-care services areas of concern:
- Communication and collaboration between facilities
- Competition for nursing staff
- Behavioral health
- Shortage of obstetrical space
- Poor payor mix in Cumberland County

60. Please see the methodology section in the Appendix for a discussion of this model.

Figure 18. Projected number of health-care professionals needed in Cumberland County in 2013 compared to the estimated supply



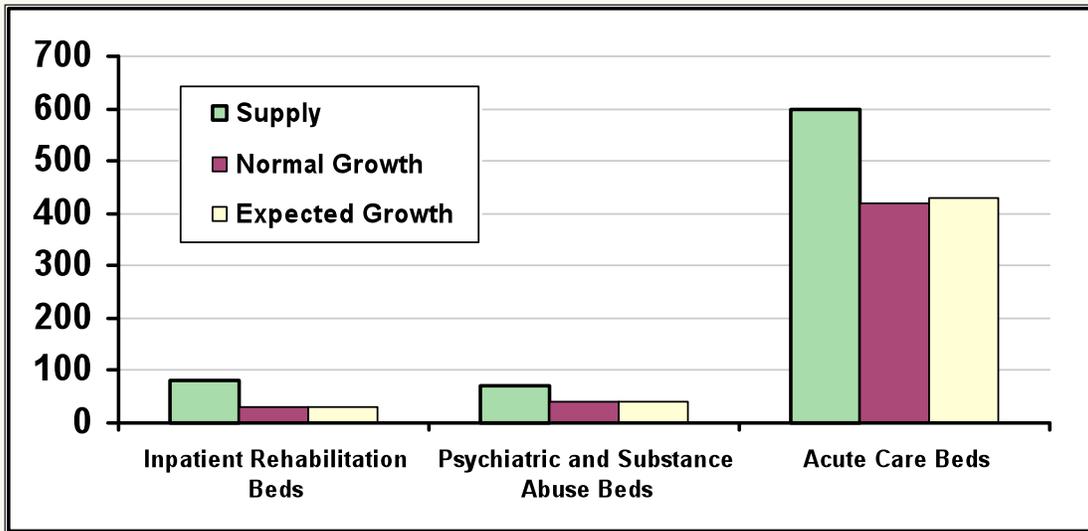
Key stakeholders identified problematic communication between civilian and military providers as one of the major concerns in the region. The command at Womack rotates approximately every three years. The resulting change in leadership is accompanied by a transitional period in which the organization and the new command must become accustomed to one another’s leadership and communication styles. This transitional period may also result in a reevaluation of priorities at the medical center. During this time of adjustment, the primary focus is the dynamic within the organization and, as a result, Womack staff may experience periods in which they have little collaboration with civilian providers. As a result, collaboration efforts can be stalled and frustration between civilian and DoD providers can be generated. The concern is that--without greater efforts to promote continuity and smoother transitions between command rotations—collaboration may never reach its full potential.

Another major health-related concern is the county’s substantial nursing shortage. Although this is true nationwide, the problem is particularly severe in Cumberland County because there are three facilities competing for an already small pool of acceptable applicants. As the highest paying facility, Womack often has the “upper hand” when recruiting, and has historically hired nurses away from CFVMC and the

VA. Each of the hospitals has attempted to recruit nurses from outside of the area. However, nurses report many of the same concerns as physicians when asked to relocate to the Fayetteville area, and providers find it hard to compete with facilities in larger areas such as Raleigh. Although there are a few local training programs, they are not producing enough nurses who are sufficiently qualified (and who wish to stay in the area) to fully support all three hospitals in the county.

CFVMC also has significant needs for additional behavioral health and Obstetrics (OB) capacity. Because outpatient behavioral health support is limited, behavioral health patients often end up in the emergency department at the region’s acute-care facilities. Although CFVMC has an inpatient psychiatric and substance-abuse unit, its capacity is not sufficient to meet the needs of current and future residents of the county. In addition, OB volume continues to be greater than CFVMC’s capacity, and there is no space for providing additional OB services. Although CFVMC could probably shift a larger portion of its licensed bed capacity to OB services, there is no space for these services within the maternity department. To ensure the availability of these services, CFVMC will need to consider renovation and expansion options in the near future.

Figure 19. Projected need for inpatient beds in Cumberland County in 2013 compared to the estimated supply



As discussed in the physician need section, Cumberland County has an unusually high percentage of TRICARE beneficiaries and uninsured persons. This has an impact not only on physicians but also on the acute-care facilities that are responsible for treating these persons. CFVMC has historically treated the bulk of these patients, thereby further taxing a system that is already overcrowded and lacks sufficient revenue. Providers continue to lobby for additional payment, but this will probably continue to be a concern.

b. Quantitative Analyses

Figure 19 compares the total inpatient bed supply with the projected need for beds (for both the normal growth and expected growth scenarios) in 2013. In areas where the supply is greater than the projected need, no additional beds will be required. In areas in which the need is greater than the supply, incremental bed growth will be necessary.

Cumberland County’s supply of acute-care, psychiatric, and substance-abuse and inpatient rehabilitation beds is quantitatively sufficient to support the current and future needs of the Cumberland County population (with or without the military-related growth). When significant qualitative factors driving the need for certain services are considered, however, it is clear that this quantitative analysis understates the bed needs of Cumberland

County. For example, half of the inpatient psychiatric and substance-abuse beds in Cumberland County are located at the VA, which is inaccessible to a large portion of the population. When the VA supply is removed from the analysis, the need for additional inpatient psychiatric beds is nearly double the current supply.

Further, although there appears to be a surplus of acute-care beds, those beds are not allocated to meet the needs of the current and projected Cumberland County population. In particular, although there are departments at each facility that are somewhat underutilized (such as pediatrics), there is a significant need for additional OB capacity both on-base and at CFVMC, a need which is not obvious when looking solely at the aggregate acute-care bed supply. What is more, as a result of nursing shortages and physician deployments, the licensed beds at Womack are not always fully staffed. As a result, Womack’s capacity is potentially overstated. Because CFVMC is the safety net provider for both civilian and military persons and because it provides the highest level of services in the county, there is a need to reallocate underutilized beds to higher-use areas and to add beds at the medical center to meet the needs of the existing and future population.

J. Recommended Actions

Critical Action 1: Develop an Integrated, Community-Based, Health Services Delivery Plan

Description: Despite recent progress, the major health care providers in the county—including acute-care hospitals (civilian, VA, and military); physicians, and other related services—have not sufficiently assisted with the delivery of care for military and their families. Despite the frequent, deployment-generated lack of physician and specialist care at Womack and in DOD outpatient facilities, existing providers throughout the county’s health system have not been encouraged to better coordinate and manage this care. In an era of declining professional capacity and growing demand, the local system has not worked consistently to identify workable solutions to addressing health manpower shortages.

Womack, Cape Fear Valley Medical Center, VA, physicians, and behavioral-health leaders should take the lead in developing a plan that addresses the health and related needs of military and families as well as capacity, access, and payment/reimbursement problems. This plan should be crafted and supported through the development of a Stakeholder Committee representing the major providers of health services in Cumberland County. The primary objectives of the plan should include:

- Improved inter-provider communication, triage, and referral
- Health-professional manpower development, including recruitment and retention strategies
- Periodic reporting on the capacities, accessibility, and availability of area health services—including physician services.

Responsible Party: The BRAC Regional Task Force should initiate the coordination and development of the Stakeholder Committee by engaging senior-level decision makers from Womack, CFVMC, and the VA, as well as Sandhills Physicians, the local AHECs, representatives of independent physicians, and the Cumberland County LME.

Critical Action 2: Develop additional behavioral-health capacity in Cumberland County

Demand for quality behavioral health services—in both the military and civilian populations—continues to outstrip existing capacity. As active-duty troops return and BRAC forces relocate to the area, the apparent shortage of mental health and substance-abuse services will be exacerbated, especially since, as is well documented, behavioral health problems are even more severe

with deployed and returning soldiers and their families. Local and regional behavioral-health care providers (chiefly the Cumberland County LME) should work together to expand the supply of and access to quality mental health and substance-abuse treatment services.

Responsible Party: Womack leadership and local behavioral-health professionals are best suited to lead this task.

Critical Action 3: Develop, via the proposed Stakeholder Committee, an advocacy function in support of enhanced payment for services

Description: The majority of military and their families rely on TRICARE for financial assistance with health care and related services. TRICARE reimbursement, however, is low paying and slow in coming, and out of network providers are payed more than in network physicians, giving providers little incentive to make their services available to eligible patients. The Cumberland County provider community, led perhaps by members of the local community of physicians, should develop a plan to formally petition for increased TRICARE funding for eligible beneficiaries.

Responsible Party: The Stakeholder Committee should assume the lead, supported by an ad hoc task force of provider representatives and HealthNet.

Important Action 4: Convene a task force to focus on the recruitment of additional specialists, particularly surgeons, to the region

Description: Current and projected military and family populations are expected to place greater demands on existing providers, particularly surgeons. A collaborative working group of regional providers should be convened to focus on physician recruitment in the region, paying particular attention to the needs identified in this document.

Responsible Party: CFVMC, Womack, and VA leadership, as well as representatives from the Southern Regional AHEC are encouraged to work cooperatively to implement this action.

Important Action 5: Develop/Update master program and facilities plans at Womack and other DOD sites

Description: Current and projected military and family populations are expected to place greater demands on existing facilities and services,

especially obstetrics, orthopedics, physical rehabilitation, and behavioral health. Master program and facility plans for Womack and DOD health facilities should be developed or updated.

Responsible Party: Womack leadership is best suited for this action.

Important Action 6: Recruit additional dentists to Cumberland County

Description: Additional dentists are needed to support population growth in Cumberland County. The Stakeholder Committee should work with the leadership at the UNC dental school and the ECU dental school (currently under development) to recruit additional dentists to the county.

Responsible Party: The Stakeholder Committee should assume the lead, supported by an ad hoc task force of provider representatives and HealthNet.

Important Action 7: Identify a consistent contact at Womack or a regional contact at DoD to support continued progress on regional efforts

Description: The leadership at Womack rotates every three years, and as such, regional providers are constantly reinventing the wheel. A consistent team member needs to be identified to provide continuity to the task force. A civilian employee at Womack or a DoD representative should be recruited to join the regional health planning task force.

Responsible Party: Womack is best suited to take the lead on this task.

K. Hospitality and Cultural Resources

A wide-array of lodging and food and beverage establishments are available in Cumberland County, though upscale facilities are limited. Meeting space is available around the county for small groups on up to large exhibitions and trade shows. A quality supply of meeting spaces co-located with accommodations is also available, though these spaces are generally better suited for small to mid-size meetings. Use of the Crown Center is limited by the lack of such supporting infrastructure as quality lodging, restaurants, and retail. An array of parks and recreational facilities and programs is available in Cumberland County; access to lakes and rivers and funding for additional programs are noted concerns. Cumberland County is a regional hub for cultural and arts events and attractions, with offerings ranging from theatre productions and arts festivals to sporting events. Funding and military participation in county programs are noted challenges.

1. Current Conditions

a. Lodging

Cumberland County has the greatest amount of available lodging, 5,493 rooms, in the eleven-

county region. The number of rooms available at each Cumberland County property is listed in the Appendix. Available accommodations feature a range of amenities, locations, and prices. Local convention and visitors’ bureau officials observed that Cumberland County’s hotel inventory appears sufficient in the short- to-mid-term to satisfy demand in all market segments, even with the impact of the military-related growth. A conversion from smaller, limited-service hotels to more upscale, full-service accommodations would be welcome, however. The availability of food and beverage establishments is generally adequate, though the area is somewhat lacking in fine dining opportunities.

The availability of lodging and food and beverage establishments in Cumberland County is critical to the Fort Bragg mission. The facilities that are available to support the installation are found primarily in four specific submarket areas (**Figure 20**):

- Mall
- I-95 Exit 49
- I-95 Business
- Spring Lake

While the supply of rooms was steady between 2000 and 2006, in Cumberland County, demand

Figure 20. Map showing the locations of the four sub-markets areas in which lodging and food establishments are concentrated within Cumberland County

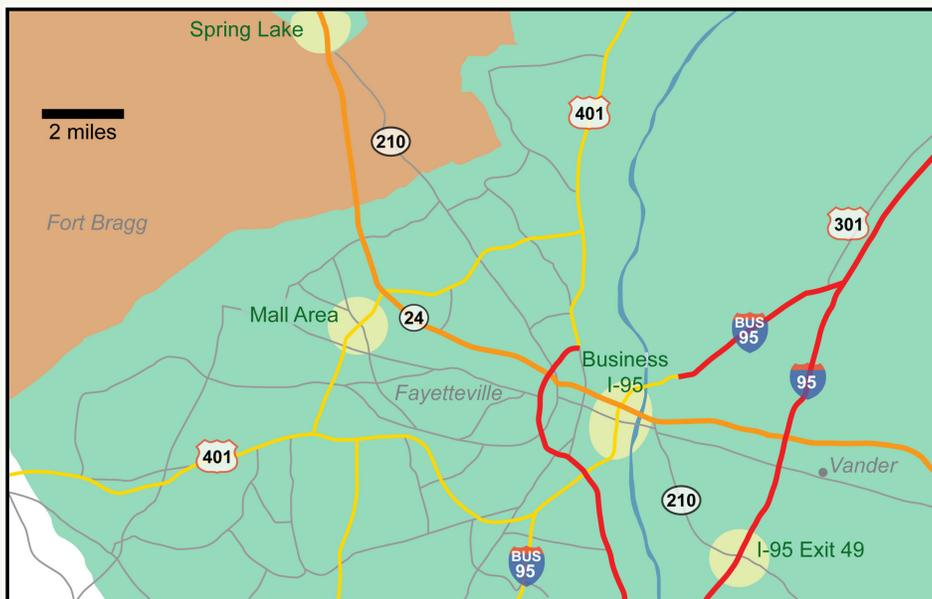
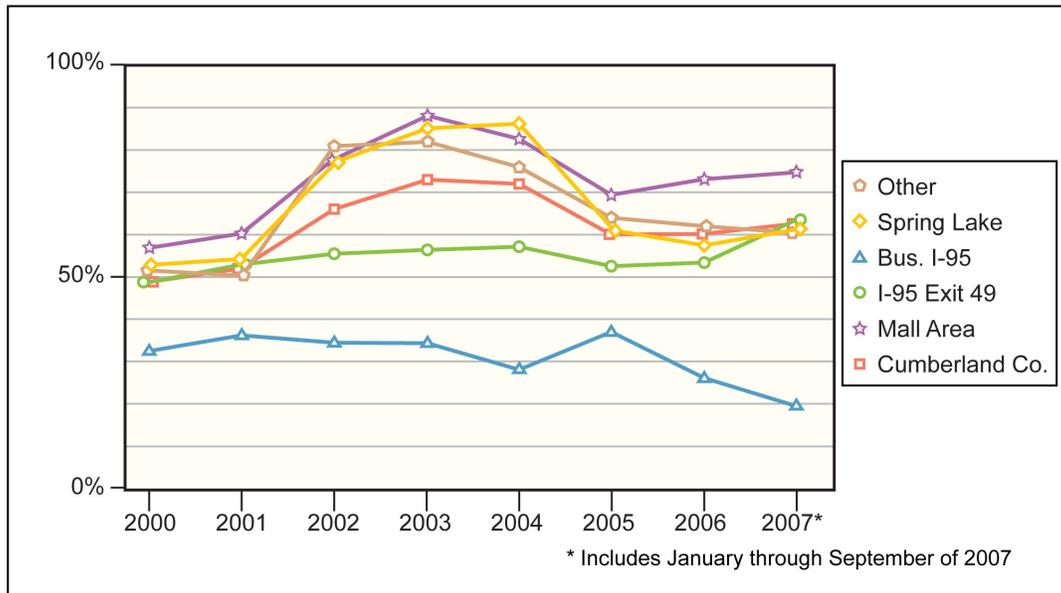


Figure 21. Lodging occupancy rates in Cumberland County between 2000 and 2007.

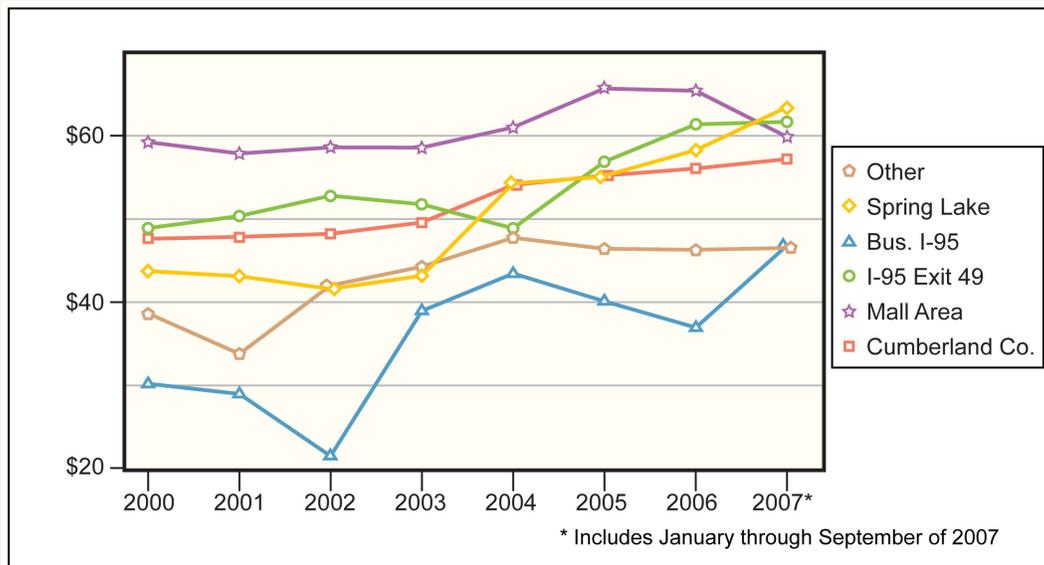


increased; as shown in **Figure 21**, occupancy rates rose from 48.8% in 2000 to a peak of 73.1% in 2003. Deployments during this time period affected the overall occupancy figure. In 2005, occupancy fell to 60.1%, a drop of 10%, and then leveled off through 2007. The overall historical performance of Cumberland County accommodations is summarized in the Appendix.

The average daily rate at hotels in this area shows

steady growth since 2002's \$48.23 figure. As shown in **Figure 22**, higher than average growth occurred in 2004 (from \$49.63 in 2003 to \$54.11 in 2004). The average daily rate in 2006 was \$57.20. Revenue per available room was \$23.27 in 2000. The average daily rate experienced periods of high growth in 2002 (\$31.94) and 2003 (\$36.29), reaching a high of \$39.07 in 2004. This was followed by a significant decline in 2005 (\$33.20). Revenue per available room was \$33.79 in 2006.

Figure 22. Average daily rate for Cumberland County lodging between 2000 and 2007



An increase in the supply of hotel rooms is partially responsible for the decline in overall occupancy rate and the slow increase in the average cost of hotel rooms per day. The market was subject to supply increases in 2000-2001 and between late 2005 and early 2007. During these two periods, a total of 830 rooms were added to the market inventory. These supply increases are reflected in the marginal rate of occupancy growth during both periods of time. The increase in revenue per available room between 2002 and 2003 occurred because demand increased during this period while supply remained steady. The 15% decrease in 2005 reflects a slow increase in the average daily rate and a drop in overall occupancy. Overall tourism trends in Cumberland County have been positive. According to the North Carolina Commerce Department, visitor spending increased at a rate of 3.6 percent in 2007. Visitors spent \$369 million in 2007, ranking Cumberland county tenth in terms of overall tourism spending in North Carolina. It should be noted, however, that the growth rate experienced by the county was below the state's overall increase of 7.2 percent.

Mall Area

Mall Area lodging refers to the midscale and economy properties located in close proximity to the Cross-Creek Mall. Lodging in this area, which is highly dependent on commercial visitors to Cumberland County and Fort Bragg, also caters to friends and family members that are visiting local residents. Mall accommodations are also in close proximity to large retail areas and restaurants and have easy access to Fort Bragg. The overall historical performance of accommodations in the Mall area is summarized in the Appendix.

Lodging facilities in the Mall area are generally newer and of higher quality than in the rest of Cumberland County, and there are more guest-support facilities such as retail facilities and restaurants nearby. As a result, occupancy averages 10.9% higher, average daily rate is \$9.69 higher, and revenue per available room is \$12.54 higher in the Mall area than in Cumberland County as a whole. Current lodging brands represented in the mall-area include Hampton Inn, Hilton Garden Inn, Courtyard by Marriott, Fairfield Inn, and Holiday Inn Express.

Occupancy rates in the Mall area increased from 57.3% in 2000 to a high of 88.2% in 2003 (Figure 21). This was followed by a decline, with occupancy at 82.8% in 2004 and 69.4% in 2005. This drop was in line with overall trends in the county. Because the market was in recovery by the time that the 104-room Hilton Garden Inn opened in November of 2005, that opening caused only minimal changes in 2006 occupancy rates. The average daily rate increased gradually between 2000 (\$59.25) and 2006 (\$65.41). However, the rate declined in 2007 (\$58.92 as of September 2007), with demand lagging relative to available supply. The opening of the ninety-two-room Residence Inn Fayetteville-Cross Creek Mall in December of 2006 slowed the growth in occupancy rate. As evidenced by the 2007 decline, further supply increases elsewhere in the county also suppressed rates and occupancy.

As is typical of heavily traveled areas having large, national retail establishments, the Mall area has a high concentration of branded, casual-theme restaurants and pubs. The inventory seems well suited for current and future users of hotel facilities in the area.

I-95 Exit 49 Area

Accommodations in the I-95, Exit 49 area generally cater to the highway traveler and group meeting markets. Hotels in the area include both economy and midscale, full-service properties. The Doubletree Fayetteville (formerly the Fayetteville Hotel & Conference Center) and the Holiday Inn I-95 are the most upscale properties in terms of the quality of accommodations and the level of service. The Doubletree Fayetteville recently completed an extensive conversion and renovation project. They offer a variety of meeting space options, from small boardrooms to ballrooms capable of handling up to 500 guests.

Historical occupancy in the I-95/Exit 49 area was in line with Cumberland County in 2000 and 2001, before periods of slow growth and decline. Occupancy rose from 48.9% in 2000 to a high of 57.3% in 2004, then declined to 52.7% in 2005, and reached a new high of 62.8% in September of 2007 (Figure 21). The January-September 2007 occupancy rate is in line with that in the rest of the county. The

4.6% aggregate growth in the average daily rate (from \$48.99 in 2000 to \$61.73 during January to September 2007) is slightly higher than in the county as a whole. The fact that revenue per available room (\$38.77 from January to September, 2007) lags the county by 1.2% is attributable to the lower occupancy rate during that time period. The overall historical performance of accommodations in this area is summarized in the Appendix.

Food and beverage establishments in the I-95 area are generally limited to fast food restaurants and restaurants located within hotel properties. These establishments meet the demands of highway travelers making a quick stop in the area, as well as those of travelers staying at the hotel properties.

Business I-95 Area

Accommodations in the Business I-95 area are in the economy and budget categories. Primary areas of lodging concentration are near the airport and at the Crown Center.

Over the last ten years, these hotels have consistently experienced a lower average rate of occupancy than have hotels in other parts of Cumberland County (Figures 21 and 22). The highest occupancy achieved in recent history, 37.0%, occurred in 2005. Average daily rate peaked during this period at \$43.43. This compares to the lowest levels achieved in Cumberland County during this same period—48.8% and \$47.66 for occupancy and average daily rate, respectively—which occurred in 2000.

Because of the generally lower quality and independent affiliation of the available accommodations, average daily rates are much lower in the Business I-95 area than they are in other parts of the county. The average daily rate was \$30.23 in 2000, reached a low of \$21.62 in 2002, increased to a high of \$43.43 in 2004, and dipped to \$37.08 in 2006. The rate for January to September 2007 increased to \$46.84. Growth trends between 2000 and 2006 were 1.2% higher in this area than in the county as a whole.

Historically, low occupancy rates in the area have negatively impacted revenue per available room performance; the area experienced a 0.6% decline

between 2000 and 2006. January through September 2007 figures indicate further declines in this market. The continuing addition of hotel inventory that is of much higher quality in more desirable areas of Cumberland County appears to be depressing occupancy in the Business I-95 area. The overall historical performance of accommodations in the Business I-95 area is summarized in the Appendix.

Food and beverage operations in the Business I-95 area are limited to fast-food establishments and independent quick-service restaurants. Of particular note, there is a lack of branded, casual-themed restaurants near the Crown Center, so visitors desiring a sit-down meal have to travel to other areas of Cumberland County. The lack of food and beverage establishments in the area is representative of the general scarcity of facilities and lack of infrastructure, both of which negatively affect the Crown Center.

Spring Lake Area

Accommodations in Spring Lake are newer on average than in other parts of the county, and benefit from their proximity to Fort Bragg, Pope AFB, and local businesses.

Hotel occupancy in the Spring Lake area was 53.1% in 2000, rising to highs of 85.2% in 2003 and 86.3% in 2004, and then dropping back down to 57.5% in 2006 (Figure 21). The high occupancy levels in 2003 and 2004 were consistent with performance in the county as a whole. The average daily rate rose gradually from \$43.74 in 2002 to \$58.31 in 2006 (Figure 22). Revenue per available room rose from \$23.23 in 2000 to a high of \$46.92 in 2004, and then dropped back down to \$33.53 in 2006. The compound growth in average daily rate is 2.6% higher than for the county as a whole, while revenue per available room growth is 0.1% lower. Rates in the Spring Lake area were lower than in the county as a whole until 2004, when the average daily rate was in line with the county average. The overall historical performance of accommodations in the Spring Lake area is summarized in the Appendix.

The seventy-seven-room Hampton Inn & Suites is the newest addition to the Spring Lake inventory, having opened in April 2007. Because of its quality and its

proximity to Fort Bragg/Pope AFB, the hotel has exerted upward pressure on occupancy, average daily rate, and revenue per available room. Reportedly, because it has plenty of more highly rated customers, the property accepts few, if any, military travelers at per diem.

Spring Lake offers a mix of fast-food and casual-themed restaurants and pubs. The area's food and beverage establishments appear to meet the current needs of the military, government commuters, and visitors to the area.

b. Other Cumberland County Areas

Lodging not associated with a previously discussed area includes properties in downtown Fayetteville and the Holiday Inn Bordeaux, together with other properties in the outskirts of the county. The Holiday Inn Bordeaux recently completed major property renovations, and the Prince Charles Hotel downtown is currently under a transition program spearheaded by a New York developer. Plans for the building include retail space, restaurant and boutique-style hotel.

Lodging in these market areas follows the general trends of Cumberland County. Occupancy rose from 51.6% to highs of 80.9% in 2002 and 82.1% in 2003, then fell to 62.1% in 2006 (Figure 21). The average daily rate rose from \$38.61 in 2000 to a high of \$47.75 in 2004, and then dropped slightly to \$46.23 in 2006 (Figure 22). Occupancy averaged 4.9% higher than the rest of the county, and the average daily rate averaged \$8.51 lower. The average daily rate, however, exhibited a 3.7% compound growth rate, which was 0.4% higher than the growth in the county as a whole. Revenue per available room rose from \$19.91 in 2000 to a high of \$36.35 in 2003, then dropped to \$28.73 in 2006, giving the area a slightly lower compound annual growth than rest of the county's. Year-to-date 2007 figures indicate a continued decline, while the county figures indicate an increase.

Food and beverage establishments in these other areas of Cumberland County vary in nature. Fast-food and casual-themed restaurants are available throughout the county, particularly along the major thoroughfares. Downtown Fayetteville offers revitalized areas with

generally small, independent restaurants and cafes. These areas appear to accommodate demand for the kind of upscale and trendy establishments unavailable in the rest of the county.

c. Meeting Space

Meeting space is distributed throughout the Fayetteville area, with additional space in Spring Lake and other communities. Space is currently available to accommodate a range of meeting types, from small, secure meetings to large events, at the Crown Center.

Group business comprises a significant portion of room-nights and total spending in the area. Of the 106 meetings held in FY07 (July 1, 2006 through June 30, 2007), nine meetings of military and other government groups comprised 9.4% of total room-nights in the area. Four military meetings generated 190 room-nights, while the five government groups generated 1,575 room-nights over the same period. The expansion at Fort Bragg is expected to measurably increase group bookings.

Accommodations co-located with meeting space make up the majority of the conference facilities in Cumberland County. Several area hotels have meeting space, in a range of sizes, capabilities, and locations; however, available meeting space is generally geared toward smaller groups. These facilities fulfill the need for small- to-medium-size meetings requiring general sessions, breakout rooms, and food and beverage service. There are also a number of large and small facilities that are not connected to lodging, the Snyder Memorial Baptist Church and the various community center buildings located around the county for example. The major meeting facilities at area hotels and other facilities are listed in the Appendix.

The area's major conferences, exhibitions, and sporting events are held at the Crown Center complex, which has by far the most, and most diversified, meeting spaces in Cumberland County. The Center includes five different spaces for meetings and events:

- Arena/Auditorium: 11,552 sq. ft. of exhibit space, concession stands, dressing rooms, portable seating; 5,000-attendee capacity
- Theatre: Permanent stage and seating, dressing

- rooms; 2,500-attendee capacity
- Coliseum: 20,000 sq. ft. of exhibit space, dressing rooms, concession stands, flexible seating capacities from 7,000 to 13,500 attendees
- Expo Center: 60,000 sq. ft. of exhibit space (unobstructed), full-service food and beverage facilities, seating capacities from 2,000 to 7,000 attendees
- Ballroom: 3,250 sq. ft. of pre-function space, 8,000 sq. ft. of ballroom space, ability to subdivide ballroom into four separate meeting rooms, full food and beverage facilities, seating capacities from 250 to 650 attendees

The Crown Center, which is located in a relatively undeveloped area along Business I-95 in Fayetteville, lacks a supporting hotel. Accommodations near the complex consist of small, limited motel properties located in the Business I-95 area. This area’s previously noted lack of upscale and branded restaurants has a direct negative impact on the ability of the Crown Center to book group-meeting events.

d. Parks and Recreation

The City of Fayetteville, through Fayetteville-Cumberland Parks and Recreation, operates nearly all of the parks and recreation facilities and programs offered in Cumberland County. The organization administers a substantial recreation program at a wide array of facilities (as is evidenced by the variety and number of offerings featured on its website [www.fcpr.us]). Parks and trails are in particular abundance and appear to be well-utilized by both the military community and Cumberland County residents. Although data for the overall use of parks and recreation facilities is scarce, discussions with representatives of Fayetteville-Cumberland Parks and Recreation indicate that military use of facilities has leveled off over the last five years as a result of the significant number of deployments. Military families, however—as has not been the case in previous deployments—have tended to stay in the area, utilizing parks and recreation much the same as during peacetime.

- Parks and recreation offerings in Cumberland County include:
- Cape Fear River Trail
- Lake Rim Park

- Senior centers
- Multi-use sports facilities
- Indoor sports facilities
- Water parks and pools
- Outdoor recreation, including golf, tennis, and equestrian

County residents, including military personnel, utilize recreational facilities and programs located within the City of Fayetteville and on Fort Bragg. Fort Bragg has a greater number of unique facilities—a hockey rink, for instance—but has fewer traditional amenities. While use of Fort Bragg facilities by the general public is normally not allowed, there are occasions (such as athletic events) when organizations not affiliated with the military have access to the installation’s facilities. Heightened security requirements enacted in recent years have served to reduce the public’s ability to use on-post facilities. There appears to be great desire among both military and community officials to encourage more joint use of facilities and programs, where practical.

Recurring concerns cited in interviews with local officials include the lack of optimal access to lakes and rivers and the lack of funding to improve existing facilities. Although Lake Rim, for example, has water access for fishing and boating, it lacks quality, updated facilities. Although Clark Park offers a put-in point for boats on the Cape Fear River as well as tours of the river and various related programs, the remainder of the county generally lacks public access to the river. Future community funding efforts might focus on improved water access and the addition of new programs, especially those designed for senior activities and adult athletics. While new funding mechanisms appear to be scarce, local officials seem to be making optimal use of existing methods for generating new and increased funds for programs.

e. Cultural Resources

Cumberland County serves as the hub for cultural and arts events and attractions for the region east of Fort Bragg. This is primarily due to the presence of a population base that is able to financially support and attract arts and cultural programs. Cultural and arts programs offered in the county include:

- Theatre productions: Cape Fear Regional Theatre, Fayetteville State University Theatre
- Military-related museums: Airborne and Special Operations Museum, 82nd Airborne Division Museum, JFK Special Warfare Museum
- Art museums: Fayetteville Arts Center, Cape Fear Studios
- Historic locales: Market House, Heritage Square
- Events venues: Crown Center, J.P. Riddle Stadium, Fayetteville State University
- Festivals: Dogwood, Dickens, Folk

The Crown Center and J.P. Riddle Stadium offer venues for spectator sports and area events. The Crown Center hosts sporting events, including professional wrestling, bull riding, indoor football, and hockey. National music tours—featuring such performers as Reba McEntire, Kelly Clarkson, and Kenny Rogers, for example—also make stops in Fayetteville. The Center hosts local trade shows, the Cumberland County Fair, and numerous theatre events. It is also home to the Fayetteville FireAntz of the Southern Professional Hockey League, who play regular-season games from October through March. J.P. Riddle Stadium is home to the Fayetteville Swampdogs of the Coastal Plain League, a summer collegiate baseball league. The team typically plays thirty or so games between late May and early August.

Fayetteville’s Festival Park, which opened in 2006, attracts visitors from Cumberland and surrounding counties as well as from the southeast region, the nation, and foreign countries. Most notably, the International Folk Festival draws participants from approximately thirty countries. The Dogwood Festival, held annually in April, drew 160,000 people (including Cumberland County residents) over three days in 2007. The Dogwood Festival offers arts and crafts, live entertainment, rides, fireworks, and other special events.

Fayetteville State University, a major contributor to the area’s artistic and cultural offerings, has significant infrastructure and facilities for hosting events that are open to the general public. University events include the Chancellor’s Distinguished Speaker Series, indoor sporting events at the Capel Arena, outdoor sports at Luther Nick Jerald Stadium, and

theatre at the Seabrook Auditorium.

A recent visitor profile developed by the Fayetteville Area Convention and Visitors’ Bureau indicated that travelers to the Fayetteville area desire more programs related to the area’s military history. Cumberland County, which has sent soldiers to every major military engagement since the American Revolution, has a network of historical sites, attractions, and museums related to this history. Residents consider the area’s military/historical offerings, which range from roadside markers to more extensive facilities, to be among its most attractive features.

The Arts Council of Fayetteville/Cumberland County is the leading promoter of arts and cultural programs in the county and surrounding areas. Its mission is to fund art programs, assist and promote arts organizations, educate children, manage the Arts Center, and serve as a key contributor to Cumberland County’s quality of life. The Fourth Friday program, for example, is a monthly cultural event that attracts 2,000-4,000 people to downtown Fayetteville to enjoy arts exhibits, entertainment, and refreshments. The Arts Council also plays a significant role in supporting and attracting area festivals. The council supports local artists and arts initiatives through various grants and also provides venues for arts and cultural education.

According to representatives of local arts and cultural organizations, marketing to the military has historically been challenging. Young, single soldiers living on or close to Fort Bragg typically do not typically frequent downtown Fayetteville. Interest in doing so is gradually building, however, as is evidenced by military residents’ increasing participation in community information sessions on the installation.

As is the case with the other counties in the area, Cumberland County has the facilities for arts and cultural events, but faces funding challenges. Capital campaigns are a major source of funding for arts and cultural initiatives.

2. Future Needs

There are several needs that warrant further consideration, including:

Lodging: A wide-array of lodging and food and beverage establishments are available in Cumberland County, though upscale facilities are limited. Demand for lodging has been heavily affected by military deployments; overall market growth has been strong, though reliant on an atypical turn-away demand from Fort Bragg.

Meeting Space: Meeting space is available around the county for small groups on up to large exhibitions and trade shows. Additionally, a sufficient inventory of meeting space co-located with accommodations is available, though such space is generally better suited for small to mid-size meetings. The Crown Center has the largest amount of space available, but supporting infrastructure such as quality lodging, restaurants, and retail is lacking.

Parks and Recreation: Cumberland County offers a large network of parks and recreational facilities and programs, which generally support surrounding counties as well. Access to lakes and rivers and funding for additional programs are primary concerns.

Cultural Activities: A wide array of programs and attractions is available to county residents and non-residents, alike. Programs cater to a range of interests, from spectator sports to theatre production. The Arts Council provides major support for arts and cultural programs. Funding and military participation in county programs are noted challenges.

3. Gaps

According to the analyses of both the on- and off-post lodging market and the projected transient lodging and meeting space needs to be created by the military-related growth, an additional full-service hotel of 200 to 250 rooms seems warranted. It is not likely, once all the military-related changes have occurred, that the existing number of hotels within Cumberland County will be adequate to support the mission of Fort Bragg. While meeting space for small- to-mid-size meetings is available in sufficient quantities

throughout the county, there are no venues that provide lodging together with large-meetings space. Though development of a free-standing hotel with in-house capabilities for large meetings might be worthy of further study, the county should also consider the possibility of developing a hotel in close proximity with underutilized, already existing large-meeting spaces.

Presently, the lodging market's average daily rate in Cumberland County as a whole is well below the established lodging per diem rate for government travelers. This is due to the abundance of inexpensive, limited-service properties located throughout the county, facilities whose low prices serve to depress the county's average lodging rate and thus the government's lodging per-diem rate. In order to attract additional full-service hotel brands to the county, and to ensure that existing higher quality lodging facilities continue to offer rooms to government travelers, the lodging per-diem rate needs to increase. An important step toward achieving this goal would be to limit the further development of low-priced accommodations while encouraging the development of mid-market, limited-service, and full-service hotels. As smaller, older, budget properties inevitably close, they should, as much as is possible, be replaced with higher quality and higher rated facilities.

The Crown Center is presently underutilized, in large part because of the immediately surrounding area's lack of a supporting infrastructure. While ample retail and other development consistent with the needs of overnight visitors has been developed in and around the Cross Creek Mall area, no such concentration presently exists near the Crown Center.

While the analysis of the county's parks, recreation, and cultural resources organizations did not reveal any need for additional facilities, it was recognized that funding for operations continues to be a pressing problem that is expected to be amplified, however minimally, by the incoming population associated with the military-related growth. Additional funding sources, available from the entities established to assist BRAC-impacted communities, should be explored.

4. Recommended Actions

Critical Action 1: Conduct a detailed feasibility study for a new full-service hotel with meeting space

Description: An additional full-service hotel of 200 to 250 rooms seems warranted. A new full-service hotel would provide a venue that provides lodging together with large-meetings space.

Responsible Party: The Fayetteville Cumberland Conventions and Visitors Bureau, in conjunction with the Fayetteville Economic Development Council and other City officials, should initiate a more detailed study to determine an appropriate location, the scope, and the financial feasibility of such a hotel.

Critical Action 2: Discourage the development of additional economy-grade hotel properties

Description: The County should limit the further development of low-priced accommodations while encouraging the development of mid-market, limited-service, and full-service hotels.

Responsible Party: The Fayetteville Cumberland Convention and Visitors' Bureau and Fayetteville Economic Development Council should manage this initiative.

Important Action 3: Encourage future development of ancillary retail, food, and beverage support facilities near the Crown Center

Description: Ample retail and other development consistent with the needs of overnight visitors should be encouraged near the Crown Center.

Responsible Party: The Fayetteville Economic Development Council, together with the Fayetteville Cumberland Convention and Visitors Bureau, should develop a marketing strategy to encourage the necessary development.

Important Action H-4: Solicit additional operational funds for county parks, recreation, and cultural resources organizations

Description: Additional funding sources, available from the entities established to assist BRAC-impacted communities, should be explored to supplement existing parks and recreation operating budgets.

Responsible parties: Fayetteville-Cumberland Parks and Recreation and Fayetteville Area Arts Council

L. Appendix A – Residential Development

Cumberland County planners report residential growth hotspots in areas around the county, specifically the Jack Britt High School area in western Fayetteville, the Gray’s Creek area on NC 87 south of I-95 and Fayetteville, and the north Fayetteville area near I-295. The Jack Britt High School area, roughly centered on the Gates Four subdivision, is located to the west of Hope Mills extending to the Hoke County border, and includes an area ranging from south of Camden Road on the south to north of Strickland Bridge Road on the north. The Gray’s Creek area is located in southwestern Cumberland County, extending from the Robeson and Sampson County borders northward to I-95. The North Fayetteville area extends north along Ramsey Street from Country Club Road to north of the current terminus of I-295.

According to county planners, residential development in the Gray’s Creek area consists mainly of three- and four-bedroom, two-bath, single-family housing units. Houses in the Cypress Lakes subdivision reportedly sell for \$200,000 or more, while houses not located in subdivisions were said to be less expensive, selling for \$150,000 and up. According to planners and other contributors, residential developments in this area attract employees from a DuPont facility in Bladen County, managers from a Smithfield packing plant in Tar Heel, and military personnel from Fort Bragg.

The Jack Britt High School attendance area is also favored by families associated with the military, according to interviews. Housing in this area is reportedly more expensive than in many others, although large homes are available for under \$300,000.

County planners characterized the Jack Britt High School area, the Eastover area, the area along the Cape Fear River to the north of the city, and the Cypress Lakes area as being likely to attract continuing residential development as a result of the BRAC activities. The Spring Lake area is growing more slowly; however, two multi-family developments are reportedly under construction in Spring Lake, with the potential for residential development on two additional parcels on NC 210.

No new mobile-home parks have been approved recently, and some older mobile-home parks, such as in Spring Lake, have closed.

The average selling price of a single-family house in Cumberland County was estimated to be somewhat over \$180,000, and a large subdivision was characterized as having approximately 50 or more units.

Fayetteville planning staff stated that the primary area for growth in that city would continue to be to the west and to the north. Planners expressed some concern that there are several hundred isolated 1-2 acre lots located to the east of the Cape Fear River that are being developed. Since those lots are not within a subdivision, children from those houses might not be included in the focus on subdivisions, but would add to the student populations, particularly of Sunnyside and Seabrook Elementary Schools.

Current residential subdivision developments in Cumberland County cited in interviews and/or compiled from the windshield survey include the following:

Western Area

The Lake Rim Elementary School District is located in the extreme western portion of the county, and includes an area roughly bisected east-west by South Raeford Road. Approximately 700 total lots have been approved for development in the far western part of the city including:

Scott’s Mill—on Hoke Loop Road, approximately 25 percent built out; two to three years until build-out; sales prices from the \$140,000s. The windshield survey showed 24 houses completed and ready for occupancy and 22 houses under construction.

James Creek—located on the west side of Hoke Loop Road. The windshield survey found 27 houses completed and ready for occupancy and nine houses under construction.

Harris Place—150 additional lots. Streets had been constructed, but no houses were under construction at the time of the windshield survey.

Maple Ridge Apartments—under construction on the north side of Hoke Loop Road.

Bristol Park—150 condominium units on the north side of Hoke Loop Road; build-out is likely in 18 months.

Unnamed—100 single-family units on a parcel on the north side of Hoke Loop Road; build-out is likely in approximately two years.

Potential apartments—at the intersection of Hoke Loop Road and South Raeford Road.

Parker's Ridge—located off Century Circle; 300 total lots; 150 additional lots in addition to the 150 lots now built. The windshield survey revealed 27 houses occupied, 11 houses completed and ready for occupancy, and five houses under construction. Sales prices were listed as \$212,000 and up.

Canterbury—located on Strickland Bridge Road. The windshield survey found 10 houses occupied, three completed and ready for occupancy, and eight under construction.

The Stoney Point Elementary School district includes an area roughly centered on the Gates Four subdivision, and bisected east-west by Rockfish Road. Residential development is expected as follows:

Gates Four—approximately 300 additional houses are likely, with a four- to five-year build-out. An additional 101 lots were to be recorded in late August for a development phase for which streets had been constructed; an additional 85 lots were planned for future recording.

Surry Meadows—located on Dundle Road; a build-out is anticipated in three to four years. A windshield survey showed that clearing had been completed for the start of road construction, but no house construction had yet started.

Mariner's Pointe—at the Hoke County border off Camden Road; the windshield survey revealed one house completed and ready for occupancy and two houses under construction.

Woods at Birch Creek—258 single-family and apartment units on a parcel at the intersection of Lakewood Road and Stoney Point Road, priced from \$190,000. The windshield survey found four houses completed and ready for occupancy, and seven houses under construction.

Camden Woods—located on Camden Road at the intersection with Waldo Beach Road. The windshield survey showed seven houses completed and ready for occupancy and 16 houses under construction.

Pear tree—located on Camden Road, and priced from the \$160,000s. The windshield survey revealed 17 houses completed and ready for occupancy and four houses under construction.

Unnamed—150 lots on Camden Road.

The E. Melvin Honeycutt Elementary School district is located to the east of the Stoney Point Elementary School district, and includes an area centered on Fisher Road and Strickland Bridge Road. The following residential development is anticipated.

Adams Lake—approximately 150 apartment units on a parcel off Fisher Road near the school.

Unnamed—approximately 40 housing units on a parcel near the intersection of Strickland Bridge Road and Fisher Road.

The Loyd Auman Elementary School district is located to the north of the Honeycutt Elementary School district and includes an area centered on Raeford Road and South Reilly Road. Two unnamed developments in a 72 condominium units project located on a parcel on Old Bunce Road. Plans appear to be complete but not yet submitted for approval plus approximately 150 units on Seventy First School Road.

The Brentwood Elementary School district is located to the southeast of the Auman Elementary School district and to the east of the Honeycutt Elementary School district, and includes an area generally south of Raeford Road and bisected by Bingham Drive. This district includes an unnamed multi-family

development of approximately 200 apartments that is planned for a parcel on Bingham Drive.

The C. Wayne Collier Elementary School district includes the area located to the west of downtown Hope Mills and the intersection of Rockfish Road and Camden Road. Construction of Millstone, a single family development containing 327 units, is imminent.

Gray's Creek Area

The Gallberry Farms Elementary School district is located south of Hope Mills and includes an area bisected by I-95 and by Chickenfoot Road. Expected development includes:

Braxton Farms—located on Braxton Road. The windshield survey found 18 houses completed and ready for occupancy and six under construction.

Unnamed—plans were ready for submission for development of 70 lots on the north side of Braxton Road.

Unnamed—approximately 150 lots planned by Bill Clark Homes, also located on Braxton Road.

The Gray's Creek Elementary School district is located in the southwest portion of the county, and bordered on the west by Robeson, on the south by Sampson Counties, on the north by the Gallberry Farms Elementary School district and on the east by the Cape Fear River. Developments include:

The Links at Cypress—located on H. Bullard Road. The windshield survey showed nine houses completed and ready for occupancy.

Cypress South—The windshield survey revealed eight houses occupied, two completed and ready for occupancy, and none under construction.

Cypress Lakes—The windshield survey found seven houses under construction in this subdivision.

Cypress Lakes Village—The windshield survey showed five houses completed and ready for occupancy and five houses under construction. In

addition, six to eight existing houses were listed for resale.

Gray's Creek Villas—The windshield survey revealed three houses occupied, six completed and ready for occupancy, and four under construction.

Unnamed—73 lots on the north side of Sand Hill Road; streets were in place, and house construction had started.

Unnamed—110 lots on the south side of Sand Hill Road.

Unnamed—approximately 20 lots on Canady Road.

Northern Area

The College Lakes Elementary School district is located to the west of Ramsey Street, and centered on the College Lakes subdivision. Residential development includes approximately 180 total townhouse and condominium units located on Rose Hill Road. Approximately 29 townhouses were under construction at the time of the survey.

The Howard Hall Elementary School district is located to the west of Ramsey Street and to the north of the College Lakes Elementary School district, and south of McCloskey Road. Development in this area includes:

King's Grant—additional sections are planned with 56 and 21 lots, respectively.

Springfield—located off Wolfpoint Road; priced from the \$110,000s. The windshield survey revealed one house completed and ready for occupancy, and three houses under construction.

Stonegate—located on Andrews Road, adjacent to Howard Hall Elementary School; will total approximately 300 units, of which 50-75 units (~25%) were said to have been constructed. Plans have been approved for an additional 80 lots, with construction to start in fall 2007. Approximately 200 additional lots will be developed. This subdivision was said to be developing at a relatively slow rate. The windshield survey found 24 houses occupied, four completed and

ready for occupancy, and six under construction.

The Lillian Black Elementary School district includes Spring Lake and should expect the following developments.

Cliffs at Waterford—144 condominium units located on NC 210.

Unnamed—approximately 400 single-family homes could be built on a parcel on the east side of NC 210.

Other Potential—a large parcel north of Overhills Park was noted as likely for future residential development. Development of this parcel would require the developer to pay for an approximately 0.6-mile extension of sewer lines.

The Manchester Elementary School district is located to the northeast of Spring Lake, and is roughly bisected by NC 210. Phase II of the Village on the Lakes is expected to contain 108 apartment units and is located on Laketree Boulevard.

Northeastern Area

Unnamed—approximately 50 townhouses planned for a parcel located near the intersection of Business I-95 and Middle Road east of the Cape Fear River in the Armstrong Elementary School district.

Unnamed—approximately 40 single-family and 88 condominium units on the west side of US 401, near Long Hill Elementary School.

Unnamed—approximately 300 modular homes on Sunnyside School Road near L A Dunham Road.

Central city Fayetteville

Unnamed—73 units located at Wagoner Drive and Sycamore Dairy Road, in the Alger B. Wilkins Elementary School district. The windshield survey revealed construction had not started.

Unnamed—88 condominium units to be constructed at Raeford Road and the All-American Freeway, in the Mary McArthur Elementary School district.

“Downtown condos”—located in downtown Fayetteville; no school-age children anticipated.

Fayetteville development regulations do not allow for the construction of additional mobile-home parks within the city limits, and no new mobile-home parks have been constructed recently. In addition, mobile homes are generally not allowed on individual lots within the city.

M. Appendix B – Health Care Methodology

Footnotes

As part of this regional assessment HPS made several assumptions in order to most appropriately determine the need for health services in the region. Each of these assumptions is detailed in turn below.

1. Each county is a “closed” market

The chief assumption used for all quantitative modeling employed in this health care assessment is that all counties in the Ft. Bragg region function as closed markets. In actuality, patients flow freely from one county to another; however, in order to determine the direct impact of the projected population growth scenarios on health service need, each county must be examined in isolation. In order to determine a more accurate picture of the need in each county, HPS has attempted to marry qualitative information with these quantitative analyses to demonstrate the real impact of population growth on the region, rather than each county as an individual unit.

2. TRICARE enrollees are based on the FY 2007 ratio of TRICARE enrollees to population

Military populations tend to use health services differently than civilian populations. As such, all inpatient bed analyses used different use rates for civilian versus TRICARE populations. In order to determine the number of TRICARE beneficiaries in each county, HPS examined the historical FY 2007 ratio of TRICARE enrollees to population and applied it to the total future population.

3. Health care providers known to be over the age of 62 were excluded from the physician supply analysis due to their proximity to retirement. As a result, communities will need to plan to recruit additional practitioners in these specialties over the next five years.
4. Physician extenders, which are an essential part of the health delivery system and perform many functions that a physician performs, were assumed to be less than one full time equivalent in their given service area. Physician extenders include Physician Assistants, Nurse Practitioners, Certified Nurse Midwives, Certified Registered Nurse Anesthetists and mental health providers, such as licensed social workers and psychologists. Extenders cannot perform all of a physician’s duties, and are accounted for as partial full time equivalents in the Health Planning Source, Inc. Physician Demand Model.

Data Sources

HPS used the following sources to the health care assessment of this report:

N. Appendix C – North Carolina Behavioral Health System

North Carolina's 2001 attempt to overhaul the state mental health system has been widely criticized for failing to truly provide better care for the mentally ill and for resulting in millions of dollars in misspent state funds. Prior to the 2001 reform, community mental health was provided directly by local Area Authorities which operated independently from one another. In an effort to create a unified, community-based model, the state mandated that these area authorities divest their direct care services, and instead contract with providers for services. The newly created Local Management Entities' (LMEs) primary function is to manage access, cost and quality of services, rather than provide services. LMEs are funded with State and Federal money, including all Medicaid funded outpatient services.

Since its inception, the LME system has been rife with problems, which include: requiring clinical personnel to provide management services they were not trained to perform, divestiture of services prior to the development of new services, abuse of the community support programs (for which providers can make \$51 to 61 an hour), failing to fund critical mental health services and closure of state psychiatric facilities without community provider back-up. Most, if not all, of the problems that have continued to arise since 2001 when the LME system was developed are due to a lack of attention to the details of the proposed system. As such, the system continues to malfunction in ways that no one anticipated, most often without a way to fix the problem under the current legislation. Further, there appears to be little that can be done to control the program which is quickly hemorrhaging the state budget while doing little to actually improve the mental health system in North Carolina. For additional details regarding the problems with the current system please see the pages following this summary for a recent series in the Raleigh News & Observer regarding the state of mental health reform for more details on these issues.

Due to a call to reform "reform efforts," the North Carolina Department of Health and Human Services engaged an independent evaluation of the 25 LMEs statewide in late 2007. A report of this evaluation was published in April 2008, ranking the performance of each LME in three major areas including financial and business operations, information technology and claims management and clinical operations and governance. Each of the LMEs was ranked into three tier groups. Tier one groups performed the best and tier three groups performed the worst.

Alphabetical Overall Ratings of LMEs

	Financial and business management operations	Information technology and claims management	Clinical operations and governance
Tier One			
Crossroads Behavioral Healthcare	Tier One	Tier One	Tier One
East Carolina Behavioral Health	Tier Three	Tier One	Tier One
Mecklenburg County Area MH, DD & SA Authority	Tier One	Tier One	Tier One
Mental health Services of Catawba County	Tier One	Tier One	Tier Two
Piedmont Behavioral Healthcare	Tier Three	Tier One	Tier One
Smoky Mountain Center	Tier One	Tier One	Tier Two
Western Highlands Network	Tier Two	Tier One	Tier Two
Tier Two			
Alamance-Caswell-Rockingham LME	Tier Two	Tier One	Tier Two
Albemarle MH Center & DD/SAS	Tier Three	Tier One	Tier Two
The Beacon Center	Tier Three	Tier Two	Tier Two
CenterPoint Human Services	Tier One	Tier Three	Tier One
The Durham Center	Tier Three	Tier One	Tier Two
Five County Mental Health Authority	Tier One	Tier Three	Tier One
Foothills Area MH/DD/SA Authority	Tier Two	Tier One	Tier Two
Guilford Center for Behavioral Health and Disability Services	Tier One	Tier Two	Tier Two
Onslow Carteret Behavioral Healthcare Services	Tier One	Tier Two	Tier Two
Orange-Person-Chatham MH/DD/SA Authority	Tier Three	Tier Three	Tier One
Pathways MH/DD/SA	Tier Two	Tier Two	Tier Two
Southeastern Center for MH/DD/SAS	Tier One	Tier Two	Tier Two
Southeastern Regional MH/DD/SA Services	Tier One	Tier Two	Tier Two
Tier Three			
Cumberland County Mental Health Center	Tier Two	Tier Three	Tier Two
Eastpointe	Tier Three	Tier Three	Tier Three
Johnston County Area MH/DD/SA Authority	Tier Two	Tier Three	Tier Three
Sandhills Center for MH/DD/SAS	Tier Three	Tier Two	Tier Three
Wake County Human Services	Tier Three	Tier Three	Tier Three

The Tier I counties in the BRAC region are served by three LMEs, including Cumberland County Mental Health Center, Sandhills Center for MH/DD/SAS and Southeastern Regional MH/DD/SAS Services. As demonstrated in the table above, Cumberland

County Mental Health Center and Sandhills Center for MH/DD/SAS ranked among the lowest performers in the state and comprised two of the five tier three organizations. The remaining LME in the region, Southeastern Regional MH/DD/SAS, ranked in the second tier of performers in the state.

- First Person Interviews, including representatives from the following organizations:

<i>Organization</i>
Womack Army Medical Center
Cape Fear Valley Health System
The Fayetteville Veteran’s Affairs Medical Center
Sandhills Physicians, Inc.
FirstHealth of the Carolinas
HealthNet Federal Services
Cumberland County Mental Health Center

- North Carolina Hospital License Renewal Applications
- North Carolina State Medical Facilities Plan
- Cecil G. Sheps Center for Health Services Research Physician and Dentist Databases
- FirstHealth of the Carolinas Physician Database
- National Center for Health Statistics
- HealthNet Federal Services TRICARE Utilization Data
- Yellow Pages
- North Carolina Office of EMS
- BRAC RTF Population Estimates

O. Appendix D

1. Lodging

	Location	Rooms	Restaurant	Lounge	Meeting Rooms	Number Meeting Rooms	Largest Meeting Room Capacity
Holiday Inn Fayetteville Bordeaux	Fayetteville	289	Y	Y	Y	14	1400
Holiday Inn Fayetteville I 95	Fayetteville	198	Y	Y	Y	11	600
Doubletree Fayetteville	Fayetteville	148	Y	N	Y	6	600
Ramada Inn Fayetteville	Fayetteville	130	N	N	Y	4	200
Prince Charles Hotel	Fayetteville	101	Y	Y	Y	4	200
Hilton Garden Inn Fayetteville Fort Bragg	Fayetteville	104	N	N	Y	3	50
Holiday Inn Express Hotel Spring Lake Fort Bragg	Spring Lake	85	N	N	Y	3	100
Regency Inn	Fayetteville	100	N	N	Y	2	150
Baymont Inn and Suites	Fayetteville	116	N	N	Y	1	75
Comfort Inn Fayetteville	Fayetteville	120	N	N	Y	1	45
Courtyard Fayetteville	Fayetteville	108	N	N	Y	1	35
Fairfield Inn Fayetteville I 95	Fayetteville	64	N	N	Y	1	30
Hampton Inn Fayetteville	Fayetteville	121	N	N	Y	1	20
Hampton Inn Fayetteville Cross Creek Mall	Fayetteville	131	N	N	Y	1	75
Hampton Inn Spring Lake Fort Bragg	Spring Lake	77	N	N	Y	1	50
Holiday Inn Express Hotel & Suites Fayetteville Ft Bragg	Fayetteville	89	N	N	Y	1	90
Residence Inn Fayetteville Cross Creek	Fayetteville	92	N	N	Y	1	30
Sleep Inn & Suites Spring Lake	Spring Lake	92	N	N	Y	1	25
Wellons Gateway Inn	Spring Lake	107	N	N	Y	1	175
Wingate By Wyndham Fayetteville	Fayetteville	85	N	N	Y	1	40
Airport Inn Budget Motel	Fayetteville	30	N	N	N	N/A	N/A
Americas Best Value Inn Fayetteville	Fayetteville	52	N	Y	N	N/A	N/A
Becks Motel	Fayetteville	23	N	N	N	N/A	N/A
Bel Aire Budget Motel	Fayetteville	32	N	N	N	N/A	N/A
Best Western Of Fayetteville	Fayetteville	55	N	N	N	N/A	N/A
Boulevard Motel	Fayetteville	30	N	N	N	N/A	N/A
Budget Inn	Fayetteville	20	N	N	N	N/A	N/A
Carolina Motor Inn	Fayetteville	47	N	N	N	N/A	N/A
Cloverleaf Motel	Fayetteville	22	N	N	N	N/A	N/A
Coliseum Inn	Fayetteville	75	N	N	N	N/A	N/A
Comfort Inn Cross Creek	Fayetteville	123	N	N	N	N/A	N/A
Cottonade Square	Fayetteville	39	N	N	N	N/A	N/A
Days Inn Fayetteville	Fayetteville	87	N	N	N	N/A	N/A
Days Inn Fayetteville North	Wade	117	N	Y	N	N/A	N/A
Deluxe Inn	Fayetteville	51	N	N	N	N/A	N/A
Econo Lodge Fayetteville	Fayetteville	150	N	N	N	N/A	N/A
Economy Inn	Fayetteville	50	N	N	N	N/A	N/A
Extended Stay America Fayetteville Owen Drive	Fayetteville	120	N	N	N	N/A	N/A
Extended Stay Deluxe Fayetteville Cross Creek Mall	Fayetteville	76	N	N	N	N/A	N/A
Fairfield Inn Fayetteville	Fayetteville	133	Y	Y	N	N/A	N/A
Fayetteville Inn	Fayetteville	54	N	N	N	N/A	N/A
Howard Johnson Express Fayetteville	Fayetteville	132	N	N	N	N/A	N/A
Innkeeper Fayetteville	Fayetteville	125	N	N	N	N/A	N/A
Knights Inn Fort Bragg Fayetteville	Fayetteville	64	N	N	N	N/A	N/A
Landmark Inn Fort Bragg	Fayetteville	200	N	N	N	N/A	N/A
Motel 6 Fayetteville East	Fayetteville	113	N	N	N	N/A	N/A
Quality Inn Ambassador	Fayetteville	62	N	N	N	N/A	N/A
Quality Inn East	Fayetteville	100	N	N	N	N/A	N/A
Red Carpet Inn Fayetteville	Fayetteville	50	N	N	N	N/A	N/A
Red Roof Inn Fayetteville	Fayetteville	61	N	N	N	N/A	N/A
Road Side Inn Motel	Fayetteville	20	N	N	N	N/A	N/A
Sleep Inn Fayetteville	Fayetteville	63	N	N	N	N/A	N/A
Starlite Motel	Spring Lake	28	N	N	N	N/A	N/A
Suburban Extended Stay Hotels Fayetteville	Fayetteville	143	N	N	N	N/A	N/A
Super 8 Fayetteville	Fayetteville	60	N	N	N	N/A	N/A

Cumberland County

Super 8 Spring Lake	Spring Lake	62	N	N	N	N/A	N/A
Town & Country Motel	Fayetteville	24	N	N	N	N/A	N/A
Tropical Motel	Fayetteville	80	N	N	N	N/A	N/A
Value Place Fayetteville	Fayetteville	121	N	N	N	N/A	N/A
Value Place Fayetteville	Fayetteville	121	N	N	N	N/A	N/A
Value Place Fayetteville	Fayetteville	121	N	N	N	N/A	N/A
<i>Wide variety of hotels and motels in five distinct markets</i>							

2. Meeting Space	Location	Number Meeting Rooms	Largest Meeting Room Capacity
Systex Conference and Meeting Room	Fayetteville	2	40
J. Wesley Vineyards	Linden	4	60
The Belmont Village	Fayetteville	4	60
Baywood Golf Course	Fayetteville	1	100
Cape Fear Botanical Gardens	Fayetteville	6	100
Fascinate-U Children's Museum	Fayetteville	2	100
Lake Rim Recreation Center	Fayetteville	1	100
Cameo Theatre	Fayetteville	2	125
Docks at the Capital	Fayetteville	4	150
Rainbow Room	Fayetteville	1	150
Camp Dixie	Fayetteville	4	200
Museum of the Cape Fear	Fayetteville	1	200
College Lakes Recreation Area	Fayetteville	1	225
Kiwanis Recreation Center	Fayetteville	3	250
Hope Mills Community Center	Hope Mills	1	300
McKellar's Lodge	Fayetteville	5	300
Cumberland County Public Library	Fayetteville	1	357
Airborne & Special Operations Museum	Fayetteville	5	375
Gates Four Golf & Country Club	Fayetteville	2	400
AIT Center	Fayetteville	2	450
Heritage Square	Fayetteville	3	1000
Methodist University	Fayetteville	6	1200
Fayetteville Museum of Art	Fayetteville	2	2000
JP Riddle Stadium	Fayetteville	1	2500
Fayetteville State University	Fayetteville	4	2500
Crown Center	Fayetteville	5	13,500
<i>Meetings of all sizes can be accommodated in Cumberland County</i>			