

# A Health and Wellness Initiative for Columbus County





# A HEALTH AND WELLNESS INITIATIVE FOR COLUMBUS COUNTY

## Acknowledgments

This project was made possible by a Healthy Communities grant obtained by the Columbus County Health Department and also through funding from the Community Transformation Grant Project. *A Health and Wellness Initiative for Columbus County* was prepared with the gracious support and feedback of county health department staff and the Health and Wellness Advisory Committee. The County would like to thank the following committee members:

- Kim Smith
- Sarah Gray
- Gabriela Maggioli
- Lorraine Mathews
- Tammie Robinson
- Henry Hawthorne
- Terrie Priest
- Robert Lewis/Gary Lanier

Special thanks are also given to the Columbus County Board of Health, the Columbus County Planning Board, and the Columbus Board of County Commissioners for initiating this process:

### Board of Health

- Darryl Diefes, DDS, Chairman
- Peggy Blackmon
- Franklin Boone
- Nicole Martin, DVM
- Charles T. McDowell
- Christy T. Perdue, MD

- George Floyd
- Patty Hobbs
- Jeremy Hooks
- A. Dial Gray, III
- Dr. Thomas Kirby

### Planning Board

- Barry Gelezinsky, Chairman
- Haywood Corbett, Vice Chairman
- Franklin Thurman
- Marshall Nichols
- Glenn Evans
- Al Leonard
- Daryl Hardwick
- James Sarvis

### Board of Commissioners

- Charles T. McDowell, Chairman
- Ricky Bullard, Vice Chairman
- Amon E. McKenzie
- James E. Prevatte
- Giles E. (Buddy) Byrd
- P. Edwin Russ
- Trent Burroughs

The project was completed with the assistance of Holland Consulting Planners, Inc.:

- T. Dale Holland, AICP - Principal
- Wes MacLeod, ASLA - Urban Designer & Planner



## Table of Contents

### Chapter 1: Introduction

A.	Plan Purpose.....	1-1
B.	Planning Process.....	1-2
C.	Historical Context of Planning & Public Health.....	1-3
D.	Planning: Land Use & Transportation Basics.....	1-3

### Chapter 2: Community Profile

A.	Introduction.....	2-1
B.	Population.....	2-1
	1) Population Growth.....	2-1
	2) Population Age.....	2-3
	3) Gender and Racial Composition.....	2-5
	4) Housing.....	2-5
	5) Income.....	2-6
	6) Educational Attainment.....	2-8
	7) Travel Time To Work.....	2-9

### Chapter 3: Health and Wellness Concerns

A.	Introduction.....	3-1
B.	Health & Wellness Issues.....	3-1
C.	Planning for Public Health Survey.....	3-2
D.	Barriers to Health and Wellness.....	3-4
E.	Access to Health & Wellness Services.....	3-5
	1) Medical Facilities.....	3-5
	2) Dental Health.....	3-7
	3) Mental Health.....	3-7
	4) Health Insurance.....	3-7
F.	Chronic Disease Factors.....	3-8
G.	Obesity Mechanisms.....	3-8
H.	Nutritionally Disparate.....	3-9

	1) Full Service Grocery Access.....	3-9
	2) Quick Service Restaurants.....	3-10
I.	Concentrations of Population Vulnerable to Chronic Disease.....	3-13
J.	Mobility and Public Health.....	3-14
K.	Non-Motorized Transportation (Access to Active Transportation).....	3-15
L.	Physical Activity and Recreational Facilities.....	3-17
M.	Health & Wellness Priority Areas.....	3-17

### Chapter 4: Strategies

A.	Health and Wellness Related Agencies and Initiatives.....	4-1
B.	Health and Wellness Implementing Strategies.....	4-5

### Appendices

A.	Meeting Sign-in Sheets
B.	Health and Wellness Priority Area Map

### List of Maps

Map 1 – Population Density.....	2-1
Map 2 – Change in Population Density.....	2-2
Map 3 – Concentration of the Elderly.....	2-4
Map 4 – Median Income.....	2-7
Map 5 – Individuals with No High School Diploma.....	2-8
Map 6 – Healthcare Provider Access.....	3-6
Map 7 – Socioeconomic Status.....	3-10
Map 8 – Full Service Grocery Availability.....	3-12
Map 9 – Quick Service Restaurant Proximity.....	3-13
Map 10 – Population Vulnerable to Chronic Disease.....	3-14
Map 11 – Non-Motorized Transportation Access.....	3-17
Map 12 – Physical Activity & Recreational Facilities.....	3-19
Map 13 – Health and Wellness Priority Areas.....	3-20

## List of Tables

Table 1 – Advisory Committee.....	1-2
Table 2 – Population Growth.....	2-2
Table 3 – Population By Age.....	2-3
Table 4 – Housing Summary.....	2-5
Table 5 – 2005-2009 Per Capita Income.....	2-6
Table 6 – 2008 Commuting Patterns.....	3-9
Table 7 – Full Service Grocery Stores.....	3-11
Table 8 – Change in Travel Choices (1980-2010).....	3-14

## List of Figures

Figure 1 – Barriers to Health and Wellness.....	3-4
Figure 2 – Desired Health Living Neighborhood Amenities.....	3-4
Figure 3 – Infectious Diseases vs. Chronic Diseases, 1880 -2005.....	3-8
Figure 4 – Changes in Share of Calories, 1977-2005.....	3-11
Figure 5 – Motor Vehicle Death Rates.....	3-15
Figure 6 – Driving is a Risk Factor for Obesity.....	3-16



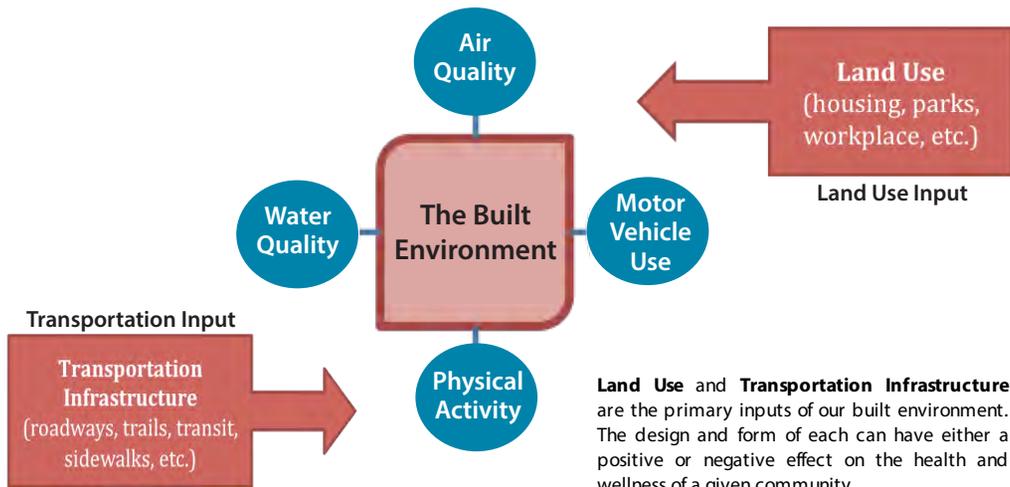
# CHAPTER 1 – INTRODUCTION

## A. Plan Purpose

Our health and wellness is affected in many ways by the environment around us, including the built environment. Defined as “the environment as humans have shaped it,” our built environment includes our neighborhoods, buildings, roadways, and parks. Across the country, the design of our residential developments, roadways, and settlement patterns all contribute to the relative health and wellness of citizens. Land use and transportation planning lay the foundation for changes to our built environment, in turn affecting our air and water quality, our level of motor

vehicle use, and ease of access to open space amenities (physical activity opportunities.)

Over the past ten years, community officials have seen an increasing need to address health disparities through changes to the built environment. This plan is a result of this evolving thought process and will be unlike most traditional planning documents—its focus is primarily on health related issues. The diagram below details the impact of land use and transportation systems on our built environment.



Local food stand in Whiteville, NC (Image Source: HCP)

“A Health & Wellness Initiative for Columbus County” is an addendum to the Columbus County Comprehensive Plan adopted in January of 2012. The comprehensive plan is a plan that guides development and directs change for a community. It provides the basis and direction for a community’s land use policies and regulations. This plan examines the interrelationships among land use, transportation, utilities, the local economy, food sources, recreation, and community character. The increasing emphasis on public health as part of the comprehensive planning process has created a new model for community officials.

This new type of plan addresses the basic elements of urban form and land use, but also focuses on planning for public health — including increasing the availability of nutritionally vigorous foods, increasing physical activity in our communities by ensuring community walkability, and providing access to parks and recreational facilities. All of these factors can foster healthy and sustainable communities. Through collaboration with a broad range of interest groups and disciplines, a community planning strategy may be developed that has impacts well beyond the issues of transportation and land use policy.





Residential street, Lake Waccamaw area (Image Source: HCP).

## B. Planning Process

This project was conducted as an addendum to the Columbus County Comprehensive plan. A Health and Wellness Advisory Committee was selected to provide guidance during the project. The committee was composed of public health practitioners, hospital staff, and planning professionals.

Table 1: Health and Wellness Advisory Committee

Name	Representing
Kim Smith	Columbus County Health Department
Sarah Gray	Columbus County Health Department
Gabriela Maggioli	Columbus County Health Department
Lorraine Matthews	Columbus County Health Department
Tammie Robinson	Columbus County Health Department
Henry Hawthorne	Columbus Regional Hospital
Terrie Priest	Columbus Regional Hospital
Robert Lewis	Columbus County Planning Department

The project was a six-month effort that included monthly meetings to solicit committee feedback and review completed work. Multiple academic sources and research reports were used to establish a general information base related to health and the built environment. Communi-

- Socioeconomic status
- Concentration of elderly individuals (65+)
- Access to full-service grocery stores
- Proximity to quick service restaurants (fast food establishments)
- Population vulnerable to chronic disease
- Access to non-motorized transportation (bicycle and pedestrian facilities)
- Access to parks and recreation facilities
- Identification of health and wellness priority Areas

ty data and health information has been collected from the 2012 Columbus County Community Health Assessment and local public health officials to create this “Health & Wellness Initiative for Columbus County.” The following items are addressed in this plan:

## C. Historical Context of Planning & Public Health

In the 19th and early 20th centuries, architects and urban planners in cities across the country helped defeat infectious diseases like cholera and tuberculosis by retrofitting buildings, streets, neighborhoods, clean water systems, and parks. In particular, buildings and streets were designed to increase air flow and provide daylight in an effort to combat bacteria.

In the 21st century, planners and urban designers can again play a crucial role in combating the biggest public health epidemics of our time: obesity and related chronic diseases such as diabetes, heart disease, and some cancers. Today, an unhealthy diet and the lack of physical activity are second only to tobacco use as the main cause of premature death in the United States.

## D. Planning: Land Use & Transportation Basics

The term land use planning is often used interchangeably with urban planning. At its most basic, land use planning determines which parts of a community will be used for residential, commercial, industrial, or recreational uses. This effort is achieved through land use ordinances such as zoning and subdivision regulations. Places we live, work, and play – planned and regulated by the aforementioned ordinances – are connected by transportation networks that require a planning process to become a reality.

Land use decisions also have an effect on the health and wellness of individuals within the community. Studies have shown that communities with a mix of land uses (residential, commercial, recreation, etc.) serve to increase the walkability of an area. Yet, conventional zoning districts often restrict multiple land uses, making new development single use in nature, thus, contributing to a lack of walkability and active transportation users.

Transportation planning includes several components. In the United States, the automobile is often the dominant force driving urban design. Prior to the last decade, transportation planning primarily dealt with the efficient flow of only the automobile. The vast demand for private vehicular transportation regu-

larly dictates the scale of our streets, the relationship between buildings, and the speed at which we experience our environment. A shift in thinking has changed the way departments of transportation now perceive roadway design.

Now, planning for all modes of travel – the pedestrian, bicyclist, transit user, and motorist – has become increasingly important. This element of transportation planning has a tremendous effect on our ability to make travel mode choices. Roadways designed for all modes of use provide increased travel options with enhanced access to healthy food sources and support for a more active living lifestyle.



*Roadways designed with only the automobile in mind (shown above) deter pedestrians and bicyclists from use and create barriers to these active transportation choices (Image Source: HCP).*



*Roadways designed for all users (shown above) have proven to increase multi-modal travel and active transportation use (Image Source: HCP).*



# CHAPTER 2 – COMMUNITY PROFILE

## A. Introduction

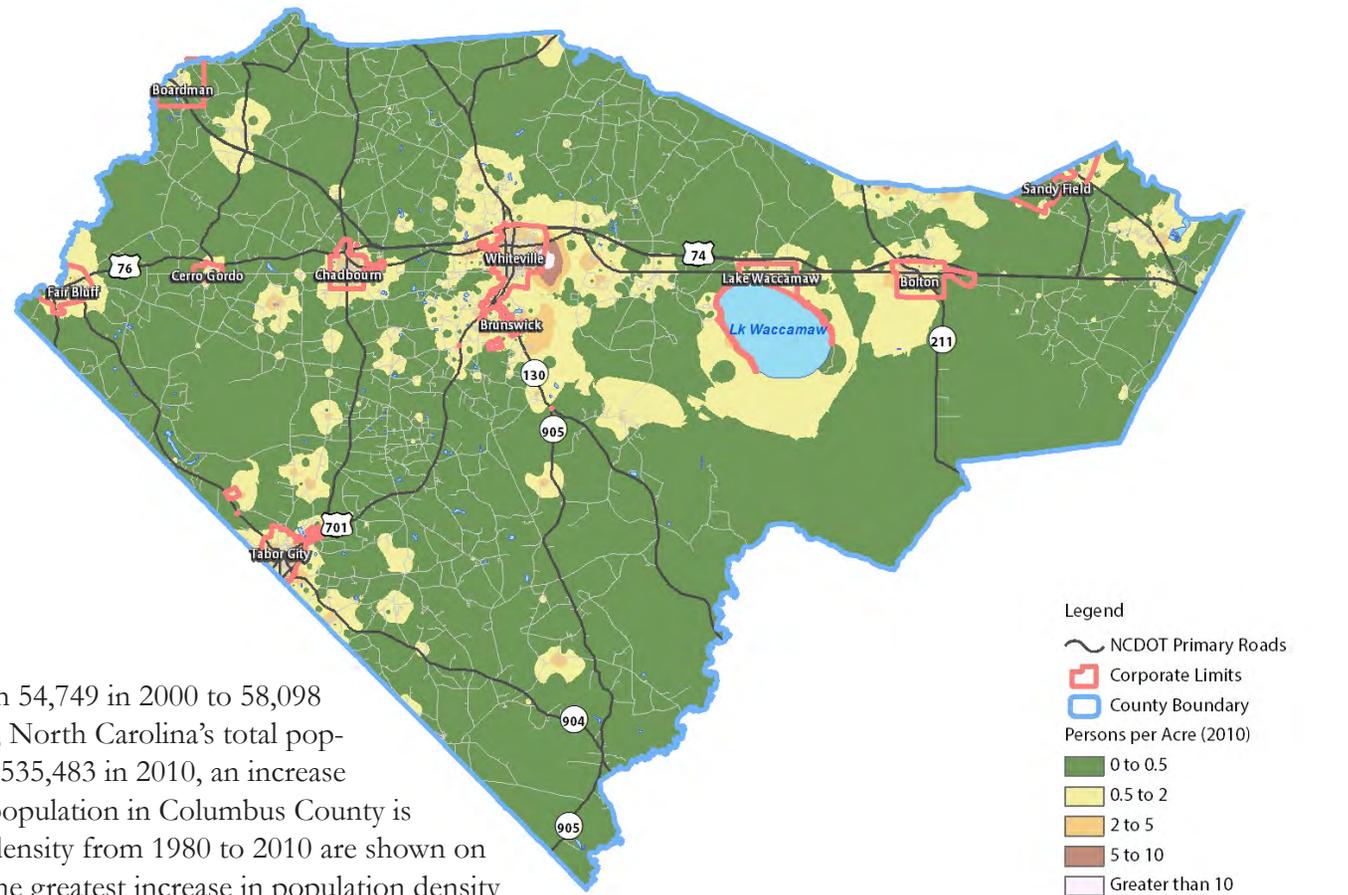
This section provides a synopsis of the current population, housing, and economic conditions in Columbus County. Public Health and Wellness statistics have been summarized based on the 2012 Columbus County Community Health Assessment. Demographic data is sourced from both the 2000 & 2010 Census, NC Office of State Budget & Management (NC OSBM), and the NC Department of Commerce, Division of Employment Security Commission.

## B. Population

### 1) Population Growth

Columbus County's population increased from 54,749 in 2000 to 58,098 in 2010, an increase of 6.1%. By comparison, North Carolina's total population increased from 8,049,313 in 2000 to 9,535,483 in 2010, an increase of 18.5%. A generalized distribution of the population in Columbus County is delineated on Map 1. Changes in population density from 1980 to 2010 are shown on Map 2. Areas that are dark blue experienced the greatest increase in population density during that time.

## Map1: Columbus County Population Density 2010



## 1) Population Growth Continued

Table 2 provides a comparison of Columbus County's 2000-2010 population to that of the surrounding counties of Brunswick, Pender, Bladen, and Robeson.

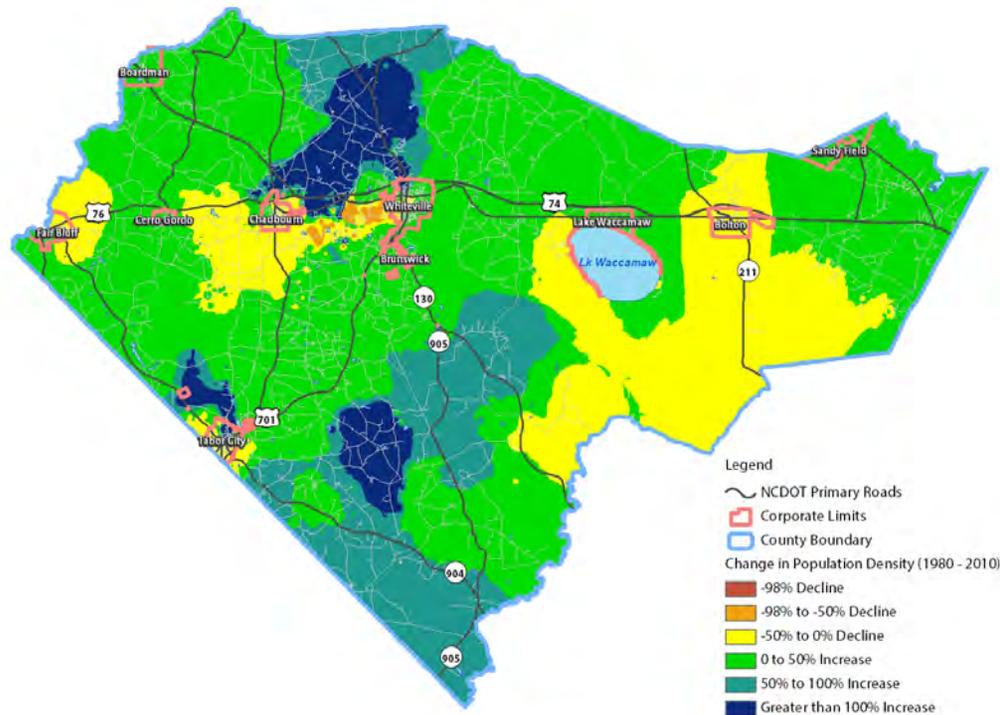
Columbus County's rate of growth significantly lagged behind that of the State and slightly trailed adjacent rural North Carolina counties. However, unlike many predominantly rural eastern North Carolina counties, Columbus County is not losing population. The County's population size is influenced by the overall growth in southeastern North Carolina.

Table 2: Population Growth, Columbus County and Adjacent NC Counties

Location	2000	2010	%
Bladen County	32,278	35,190	9.0%
Brunswick County	73,143	107,431	46.9%
<b>Columbus County</b>	<b>54,749</b>	<b>58,098</b>	<b>6.1%</b>
Pender County	41,082	52,217	27.1%
Robeson County	123,339	134,168	8.8%
North Carolina	8,049,313	9,535,483	18.5%

Source: US Census Bureau

## Map 2: Columbus County - Change in Population Density



## 2) Population Age

Table 3 provides a summary of Columbus County and North Carolina's 2000 and 2010 population by age distribution. The County's overall population is older than that of the State. For the County overall, 43.9% of the 2010 population is below the age of 35, while 46.8% of North Carolina's population falls below the age of 35. In addition, 15.2% of the County's 2010 population is over the age of 65, while 12.9% of North Carolina's population is over the age of 65. The population is aging as evidenced by the increase in the 55 to 64 age group from 2000 to 2010.

Table 3: Population by Age

Age	Columbus County			North Carolina		
	2000	2010	% Change	2000	2010	% Change
0 to 14 years	11,475	11,143	-2.9%	1,653,429	1,899,089	14.9%
15 to 34 years	14,231	14,357	0.9%	2,330,854	2,567,757	10.2%
35 to 54 years	15,849	15,948	0.6%	2,372,270	2,695,797	13.6%
55 to 64 years	5,656	7,820	38.3%	723,712	1,138,761	57.4%
65 to 74 years	4,278	5,192	21.4%	533,777	697,567	30.7%
75 years and over	3,260	3,638	11.6%	435,271	536,512	23.3%
<b>Total Population</b>	<b>54,749</b>	<b>58,098</b>	<b>6.1%</b>	<b>8,049,313</b>	<b>9,535,483</b>	<b>18.5%</b>
<b>Median Age</b>	<b>36.9</b>	<b>39.8</b>	<b>-</b>	<b>35.3</b>	<b>37.4</b>	<b>-</b>

Source: US Census Bureau

The 2000 median age for Columbus County was 36.9, which increased to 39.8 in 2010. The 2010 median age for North Carolina was 37.4. Since 2000, the median age has increased statewide from 35.3 to 37.4; however, the population age in Columbus County has increased significantly from just over 36 years of age to 39.8 (see Table 3 above). Using the same percent increase, it is expected that the median age in Columbus County will be 46.3 by 2030.

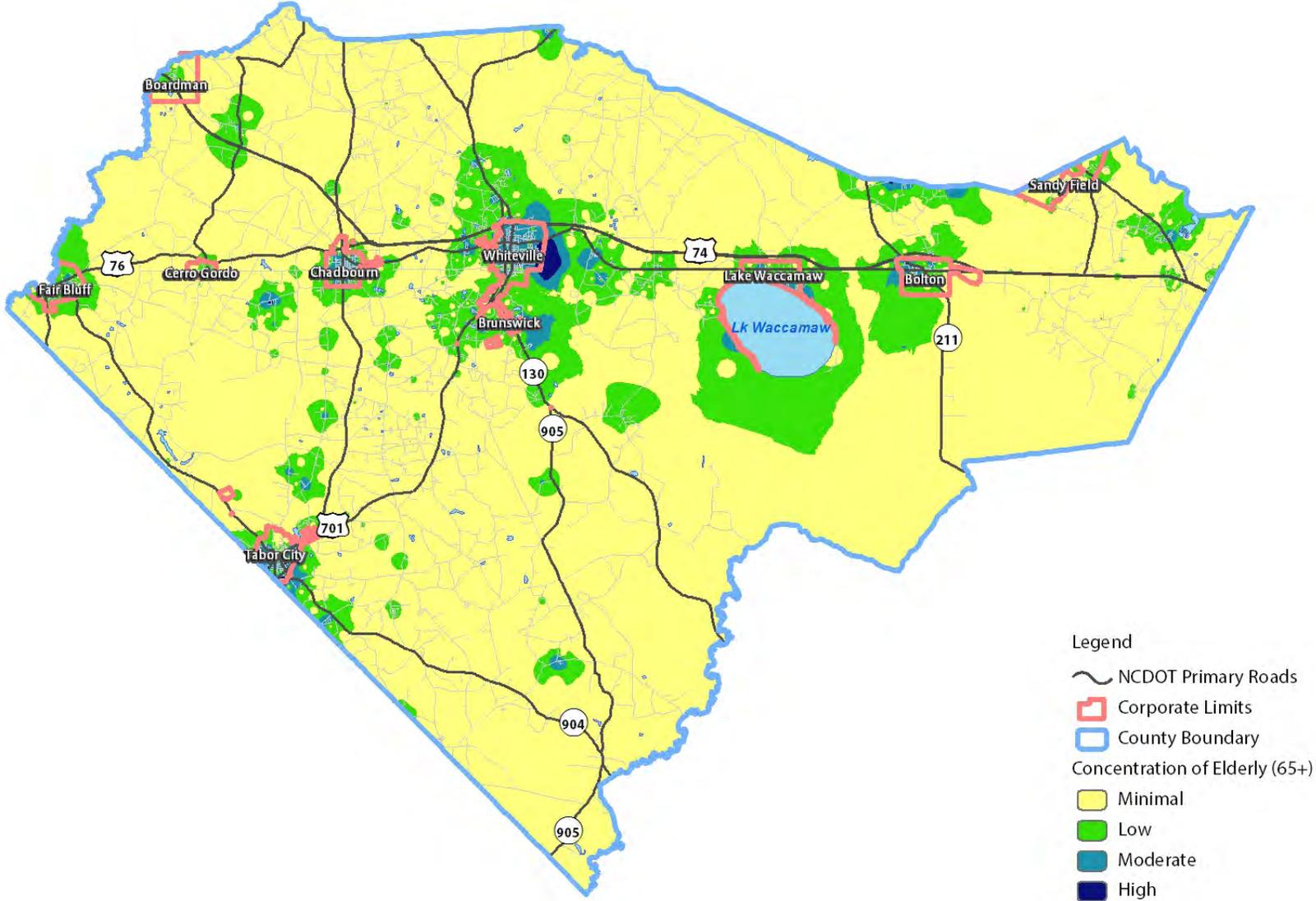
This increase in median age in Columbus County can be attributed to both the "aging in place" trend – whereby older adults are less likely to move from their residences – as well as a net migration of the younger segment of the population. In Columbus County, between the years of 2000 and 2010, the elderly population increased 33%. In 2010, 15% of the total population was considered elderly.

In the United States, over ninety percent of the elderly population has at least one chronic disease and more than 75% have at least two (1). To exacerbate the issue, in the next thirty years, the portion of the population over the age of 65 is expected to more than double (2). Although estimates vary in terms of the extent to which this segment of the population will increase, all are certain that increases will be nothing

short of significant. In addition, by 2030, more than nine percent of the population is estimated to be over the age of 85 (3). In Columbus County, elderly populations are scattered throughout the jurisdiction (see Map 3). This finding is consistent with findings nationwide that show elderly populations are found in rural and urban areas alike.



# Map 3: Concentration of the Elderly



- Legend
- ~ NCDOT Primary Roads
  - ▭ Corporate Limits
  - ▭ County Boundary
  - Concentration of Elderly (65+)
  - Minimal
  - Low
  - Moderate
  - High

### 3) Gender and Racial Composition

Columbus County's gender and racial composition has been constant. In 2000, the male/female composition was 26,323/28,426, for a 48%/52% mix. By 2010, the male/female composition was almost the same at 28,753/29,354, for a 49%/51% mix. By comparison, the 2010 North Carolina distribution was 48.7% male and 51.3% female.

In 2000, 63.5% of the County's population

was White, with 30.9% Black and 5.6% Other. By 2010, the racial mix was 61.5% White, 30.5% Black, and 8.0% Other. The Other racial category increased from 5.7% in 2000 to 8.0% in 2010. This trend is expected to continue. The Black percent of total population decreased from 30.9% to 30.5% while the White population decreased from 63.5% to 61.5%. Thus, in 2010, the County's total minority population was 22,363, or 38.5% of the total population.

### 4) Housing

Affordable housing is an increasing public health concern. Recent studies show that families contributing a large percentage of their income to housing are less likely to provide sufficient funds for essential items like food, health care, and medical insurance (4). Table 4 provides a summary of Columbus County housing problems based upon 2000 Census data. The summary has been compiled by the US Department of Housing and Urban Development (HUD) through its 2000 Comprehensive Housing Affordability Strategy. More recent HUD data is not available.

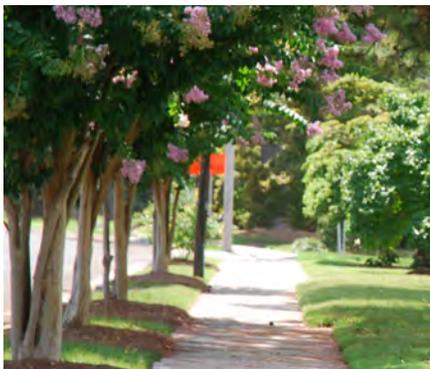
Table 4: Housing Summary, Columbus County

Renters					Owners				
Income Level	Total Renter Households	% Reporting Housing Problems	% Cost Burden >30%	% Cost Burden >50%	Total Owner Households	% Reporting Housing Problems	% Cost Burden >30%	% Cost Burden >50%	% Cost Burden >50%
Very Low ≤30% MFI	1,666	61.9	59.7	43.5	2,312	70.8	69.5	47.8	3,978
Low >30% to 50% MFI	1,010	54.1	47.5	11.5	2,119	49.7	47.2	22.0	3,129
Moderate >50% to 80% MFI	871	18.0	11.7	0.5	2,958	38.2	34.7	12.7	3,829
Above LMI >80% MFI	1,478	6.9	0.3	0.0	8,903	11.6	9.9	1.3	10,381
Total Households	5,025	36.5	31.5	16.8	16,292	29.8	27.7	12.6	21,317

#### 4) Housing, continued

Of Columbus County households reporting in 2000, 36.5% of rental households and 29.8% of owner-occupied households had some housing problems. Approximately 31.5% of renters and 27.7% of owners had a cost burden greater than 30% of gross income, and 16.8% of renters and 12.6% of owners had a cost burden greater than 50% of their gross income.

As of 2011, over half (52.2%) of Columbus County's housing stock was greater than 30 years old, highlighting the potential for large concentrations of substandard housing units.



Residential street, Whiteville, NC (Image Source: HCP).



Residential housing unit, Lake Waccamaw (Image Source: HCP).

#### 5) Income

Income plays a significant role in health outcomes of individuals. Countless studies have noted the correlation between low-income populations and unhealthier lifestyles. In 2011, the Columbus County median household income

was \$34,938, compared to North Carolina's \$46,291 median household income figure. In addition, nearly a quarter (23%) of Columbus County's population is considered below the poverty line. Concentrations of low-income

individuals are located south of Whiteville, along the US 74/76 corridor between Cerro Gordo and Chadbourn, and north/south of Tabor City. See Map 4 for additional information.

In terms of personal income, Columbus County has continued to lag behind the state and nation. Table 5 provides a summary of per capita income from 2005 to 2009.

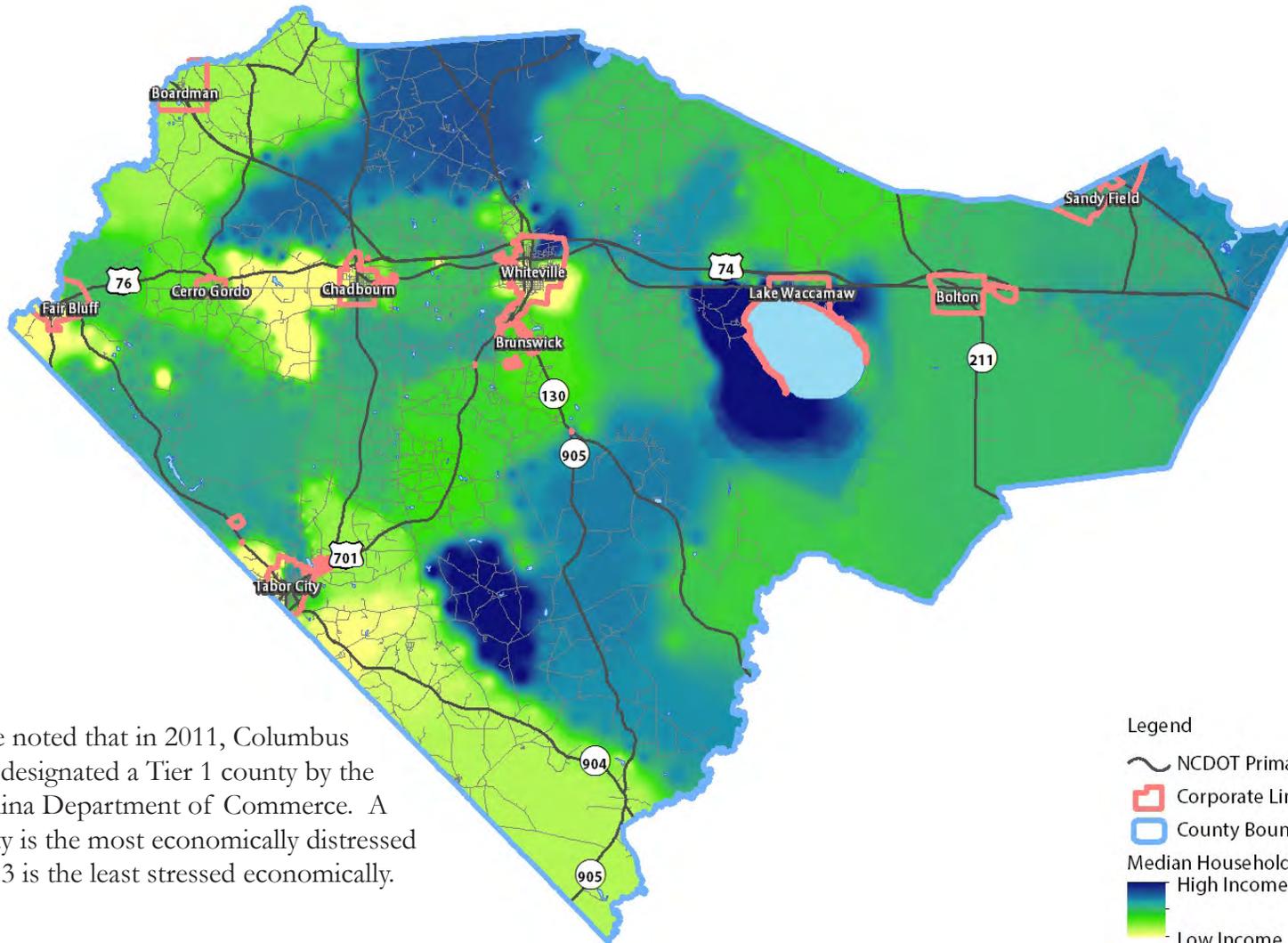
Table 5: 2005-2009 Per Capita Income, Columbus County, North Carolina, and United States

	2005	2006	2007	2008	2009
<b>Columbus County</b>	\$26,978	\$27,571	\$28,333	\$29,660	\$29,822
<b>North Carolina</b>	\$32,037	\$33,562	\$34,968	\$35,683	\$34,879
<b>United States</b>	\$35,424	\$37,698	\$39,461	\$40,647	\$39,635

NOTE: Data not adjusted for inflation.

Source: Bureau of Economic Analysis, Regional Accounts Data

# Map 4: Columbus County Median Income



It should be noted that in 2011, Columbus County was designated a Tier 1 county by the North Carolina Department of Commerce. A Tier 1 county is the most economically distressed while a Tier 3 is the least stressed economically.

## Legend

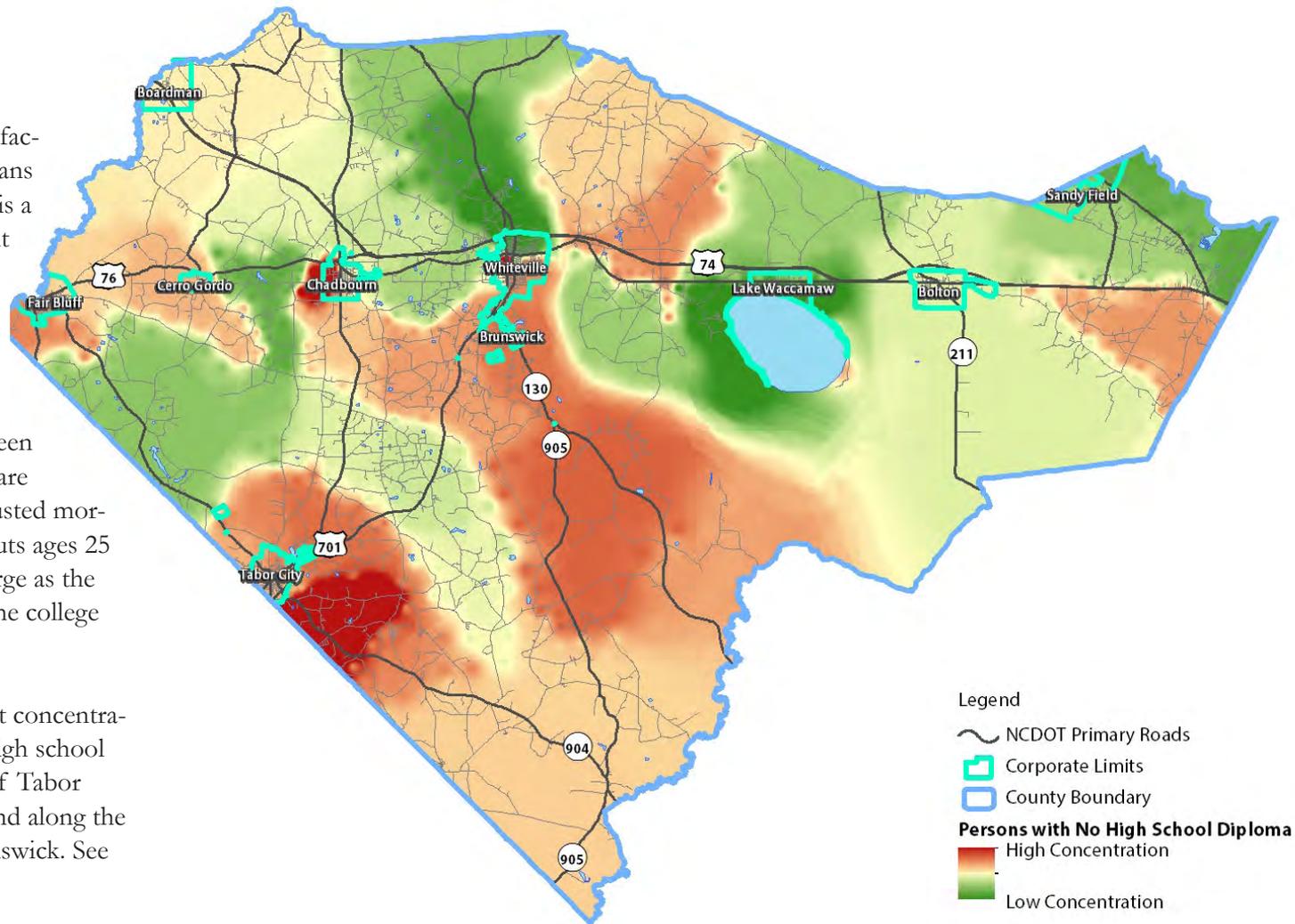
- NCDOT Primary Roads
- Corporate Limits
- County Boundary
- Median Household Income
  - High Income
  - Low Income

# Map 5: Individuals with No High School Diploma

## 6) Educational Attainment

Educational attainment is a key factor in the overall health of humans across the United States. There is a well-known, large, and persistent association between education and health. This pattern has been observed in many countries and time periods, and for a wide variety of health measures. The differences between the more and the less educated are significant: in 1999, the age-adjusted mortality rate of high school dropouts ages 25 to 64 was more than twice as large as the mortality rate of those with some college education (5).

In Columbus County, the largest concentrations of individuals without a high school diploma are located southeast of Tabor City, just west of Chadbourn, and along the NC 130 corridor south of Brunswick. See Map 5 for more information.



## 7) Travel Time to Work

In North Carolina, Columbus County is the third largest county in terms of land mass. Because the county is also rural, residents experience, at times, lengthy travel times between destinations such as work or food outlets. As a result, the Columbus County labor force is very mobile. In 2008, approximately one-half of the County's workforce traveled out of the County to their place of

employment. In 2011, the mean travel time to work was 25.1 minutes. A 2006 study of 33 California cities found that adults who drove the most had obesity rates that were three times higher than those who drove the least, leading some public health researchers to identify excessive drive times as a risk factor for obesity (6).



Commercial street, Whiteville, NC (Image Source: HCP).

Table 6. 2008 Commuting Patterns, Columbus County

Columbus County Residents Who Live and Work in Columbus County		10,290	
Total Workers Commuting out of Columbus County		10,439	
Total Workers Commuting into Columbus County		6,211	
<b>Out of Columbus County</b>		<b>Into Columbus County</b>	
<b>Destination County</b>	<b>Number of Workers</b>	<b>Origin County</b>	<b>Number of Workers</b>
Horry County, SC	1,561	Horry County, SC	505
New Hanover County, NC	1,449	New Hanover County, NC	874
Brunswick County, NC	1,035	Brunswick County, NC	781
Wake County, NC	971	Robeson County, NC	555
Bladen County, NC	829	Bladen County, NC	967
Other Areas	4,594	Other Areas	2,529
Source: US Census Bureau			



# CHAPTER 3 – HEALTH & WELLNESS CONCERNS



Columbus Regional Hospital, Whiteville, NC (Image Source: HCP).



## A. Introduction

A century ago, infectious diseases were the primary cause of death in the United States, but proper hygiene, environmental design, and immunization have led to the downfall of such diseases in the United States.

Now, chronic diseases, such as diabetes and heart disease, are the most common diseases in the US—they are also the most preventable. Chronic disease differs from infectious disease (or communicable disease) in the way that it occurs in individuals. Infectious diseases usually occur because of contact with an affected host, while chronic diseases may occur solely because of a sedentary lifestyle.

Obesity is a leading cause of chronic disease in the United States and increases the risk for a variety of chronic diseases including heart disease, stroke, glucose intolerance, and some forms of cancer. It is not a direct cause of most diseases, but unfavorably alters the risk factor profile.

For example, obesity may lead to increases in blood pressure and blood cholesterol, which in turn, can lead to cardiovascular disease and strokes. The design of the built environment plays a role in both chronic disease and obesity.

**“Chronic diseases - such as heart disease, stroke, cancer, diabetes, and arthritis are the leading cause of death and disability in the United States.”**

*Source: Centers for Disease Control*

## B. Health & Wellness Issues

In 2010, the Columbus County Health Department collaborated with the Healthy Carolinians Task Force to initiate a county-wide survey and to complete the “2012 Columbus County Community Health Assessment,” to gauge the health of county residents. Surveys were distributed to 1,300 residents of Columbus County. The surveys were available both online and on paper.



## B. Health & Wellness Issues, Continued

The results of the survey were collected and compared to statistical data compiled by other local or state agencies to create a picture of the health of the community. According to the Assessment, the "Top 5 Serious Disease & Disability Problems" were listed as the following:

1. Heart Disease
2. Cancer
3. Stroke
4. Diabetes
5. Homicide/Violence

According to the Centers for Disease Control (CDC), chronic diseases – including heart disease, stroke, and diabetes - are among the most costly of all health problems in the United States. In Columbus County, the primary cause of death is heart disease. Columbus County identified seven priorities over the last few years as a result of the Community Health Assessments. These priorities are as follows:

1. Drug/Substance Abuse
2. Access to Health Care
3. Heart Disease
4. Physical Activity/Nutrition
5. Infectious Diseases
6. Unintentional Motor Vehicle Injuries
7. Diabetes



*Columbus Regional Hospital, Whiteville, NC (Image Source: HCP).*

## C. Planning for Public Health Survey

Part of the planning for public health process included an active living and healthy eating-focused survey distributed to Columbus County health department clients. The short survey was completed by health department patients prior to receiving service. It was distributed in both English and Spanish versions. A total of 76 surveys were collected. Survey questions are as follows:

### 1. Where do you most commonly shop for food items?

- Convenience Store/Gas Station
- Discount Store (Family Dollar, Dollar General, etc.)
- Grocery Store (Hill's, Food Lion, Wal-Mart)
- Farmers' Market
- Eat at restaurants most often/go to drive-through

# Health Department: Survey Responses

2. **What is your primary transportation mode?**

(Choose one)

- Car/Truck
- County Van Service
- Walk
- Bicycle
- Friends/Family

3. **When do you feel safe walking around your neighborhood?**

- At night
- During the day
- Both night and day
- Don't feel safe

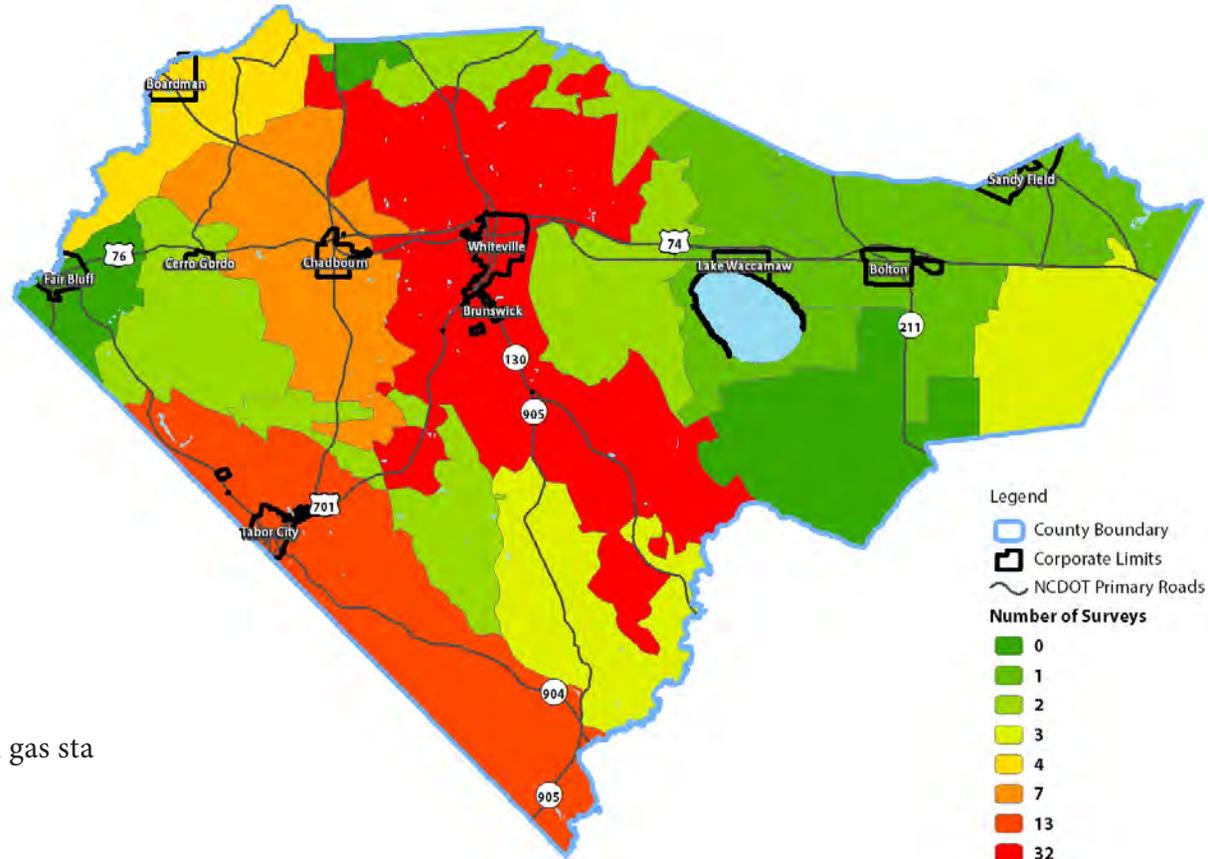
4. **Which of the following would you like in your neighborhood?**

(Please check ONLY two)

- Mobile (trucks) food markets
- Farmer's market
- Neighborhood food bank
- Community gardens
- Sidewalks
- Parks
- Fresh fruits and vegetables available in gas stations/convenience stores
- Classes on home vegetable gardening

5. **How long have you lived in Columbus County?**

- 0 – 5 years
- 5 – 10 years
- 10 – 20 years
- 20 years or more
- My whole life



*The majority of respondents listed 28472 as their zip code of residence.*



Survey results were similar for all but one question, that being number 4. The majority of respondents (94%) reported the “grocery store” as the place they most commonly shop for food. Close to 85% of respondents reported the private “car or truck” as their primary means of transportation. Less than 10% of respondents reported not feeling safe walking around their neighborhood. Nearly 65% of respondents have lived in Columbus County for more than twenty years.

Question number 4, asking what types of active living/healthy eating amenities would you like in your neighborhood, had varying results as mentioned earlier. The two highest scoring amenities were “parks,” with 29 points, and “farmers’ market” with 21 points (see Figure 2).

#### D. Barriers to Health and Wellness

The advisory committee was asked to list the “Top 3” barriers to improving health and wellness outcomes for Columbus County residents. Lack of insurance, low incomes and wages, reliable transportation, education, and access to recreational opportunities were the most commonly listed barriers to health outcomes. All of the barriers were recorded and a word cloud was created to better represent the results (see the Figure 1).



Figure 1: Barriers to Health and Wellness

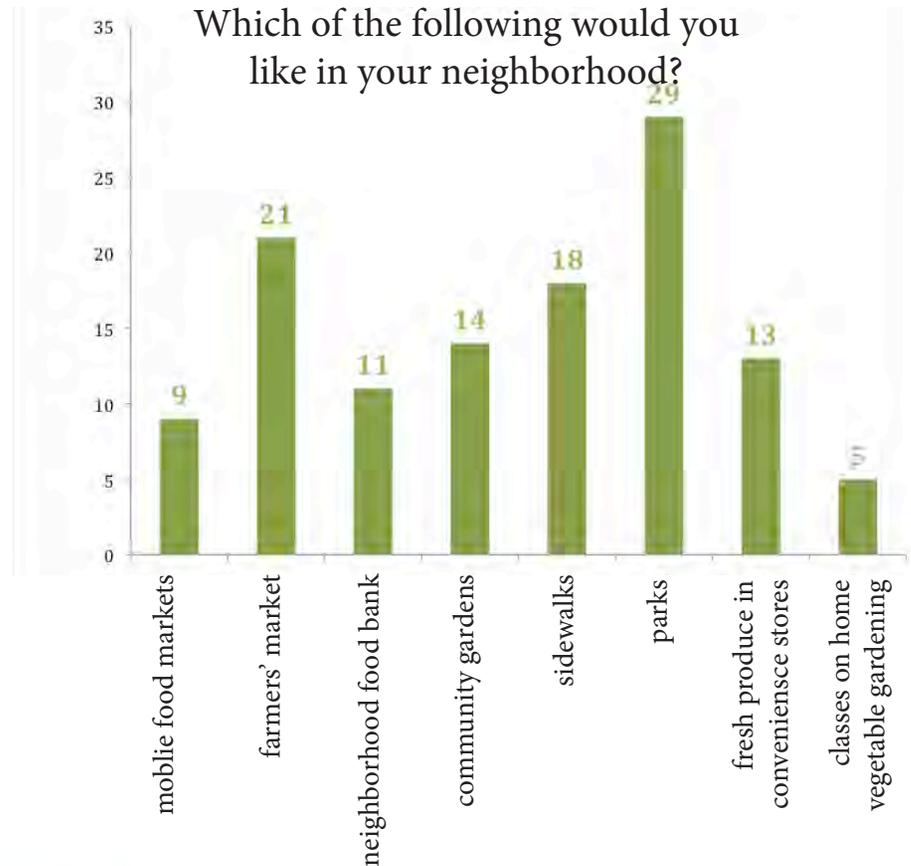


Figure 2: Desired Healthy Eating and Active Living Neighborhood Amenities

## E. Access to Health & Wellness Services



*Medical practitioner with stethoscope (Image Source: Creative Commons).*

### 1) Medical Facilities

Columbus Regional Healthcare System (CRHS) serves as Columbus County's primary healthcare provider. In addition to the main hospital located at Whiteville, NC, there are five additional locations that provide primary and preventive care and services.

Columbus Regional Healthcare System was founded by local physician Dr. Warren Edwin Miller in 1935. It started as a 12-bed hospital in White-

ville, NC. One year later, the home's porches were enclosed to accommodate more patients and over the next 70 years, the hospital would be replaced twice. Licensed for 154 beds, governed by a local board of trustees, and managed by Carolinas Healthcare System, the current facility continues to grow and expand to meet the needs of its community. Carolinas Healthcare System is one of the nation's leading healthcare organizations and provides a full spectrum of healthcare and wellness programs throughout North and South Carolina.

Today, highly trained medical staff and other healthcare professionals represent a range of specialties and are dedicated to the well-being of every patient in their care. Columbus Regional Healthcare System is licensed as a not-for-profit organization accredited by the Joint Commission on Accreditation of Healthcare Organizations. Carolinas Healthcare System (CHS) works to improve and enhance the overall health and well-being of its communities through high quality patient care, education and research programs, and numerous collaborative partnerships and initiatives.

Their collective goal is to deliver the best possible care, the latest procedures, and a continuous network of care with services including:

- Rehabilitation Services
- Infection Control
- Cardiac Services
- Laboratory Services
- Imaging
- Family Birthing Center
- Robotic Surgery
- Surgical Services
- Emergency Care
- Acute and Critical Care
- Cancer Care

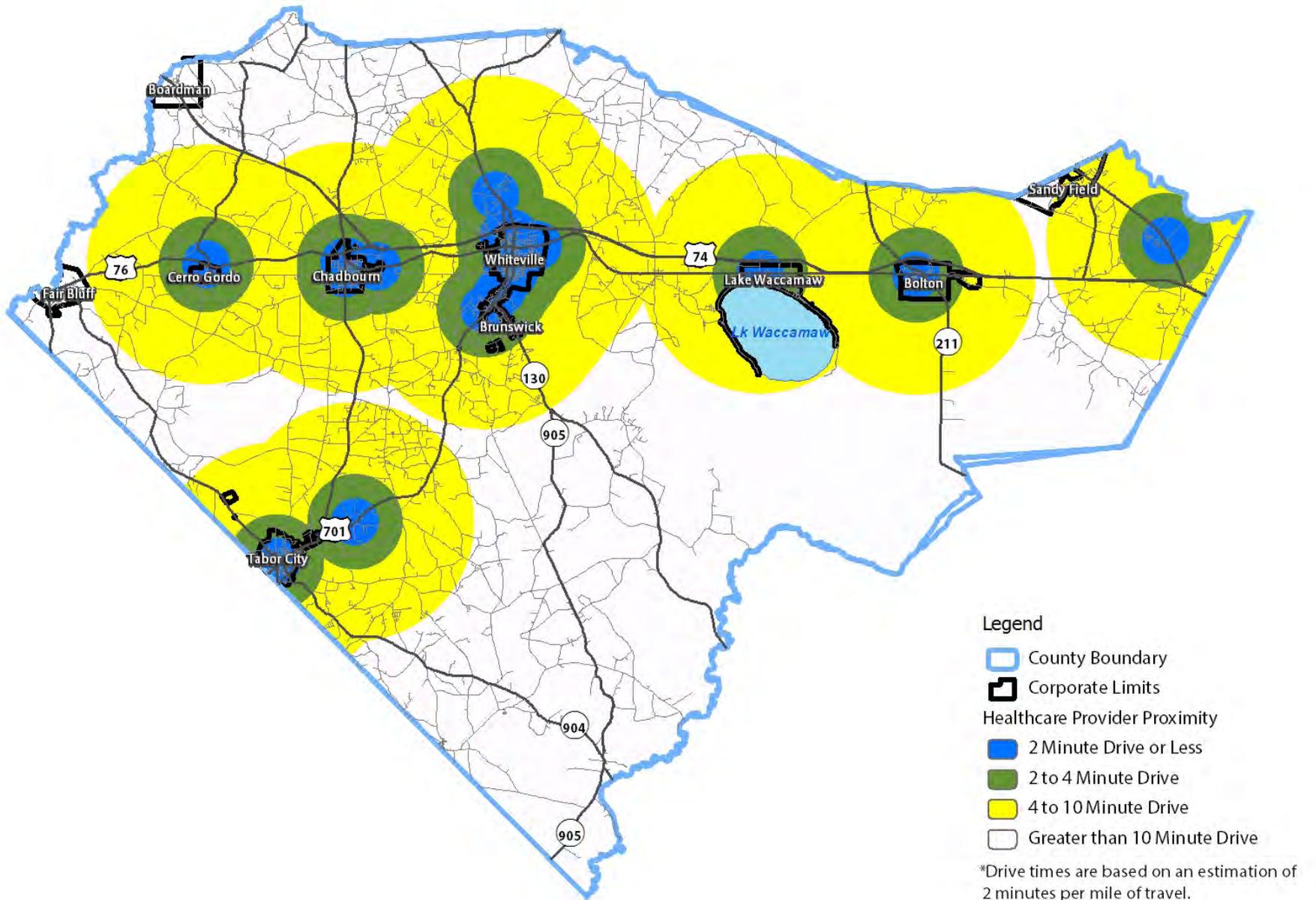
In addition, outreach and education services are available to residents of the area. These services include Diabetes Education, American Heart Association classes, and Safe Sitter Training, as well as sponsoring community events and expos, and providing speakers for off-site educational programs.

The other regional medical facilities under the Columbus Regional Healthcare System include:

- Southeast Primary Care
- South Columbus Medical Center
- Baldwin Woods Diagnostics
- Donayre Cancer Care Center
- Carolina Urology Associates

Healthcare providers with general practitioners were identified across the county. Locations and proximity to each were created using spatial analysis. Areas along the US 74/76 corridor have the greatest access to healthcare providers (see Map 6). Areas shown as white on the map are located greater than a ten-minute drive from the closest healthcare provider.

# Map 6: Healthcare Provider Access



## 2) Dental Health

North Carolina is ranked 47th in the nation for dentists per capita, with 4.3 dentists per 10,000 people. In fact, only eight North Carolina counties have dentist-to-patient ratios which exceed the national average of 6.0 dentists per 10,000 in population (Wake, Durham, Orange, Alamance, Guilford, Forsyth, Mecklenberg, and New Hanover Counties). Seventy-nine North Carolina counties are recognized as federally designated dental shortage areas.

Columbus County ranks significantly below the state average with 1.6 dentists per 10,000 residents and is currently recognized as a federally designated dental shortage area. The Columbus County Health Department provides an in-house dental clinic available to residents Monday through Thursday and a mobile clinic is available at Columbus County Schools Tuesday through Friday. Additionally, the East Carolina University School of Dental Medicine is working to improve access to dentistry throughout eastern North Carolina. This effort will involve the construction of several dental clinics to serve eastern North Carolina.

## 3) Mental Health

Local Management Entities (LMEs) are where people can go to find information for receiving mental health, developmental disability, or substance abuse services. Eastpointe is the LME that serves Columbus County residents.

### **Eastpointe Mission**

Eastpointe will work together with individuals, families, providers, and communities to manage our behavioral healthcare system to ensure accessibility, accountability, and empowerment of people to achieve valued outcomes.

The corporate office is located in Beulaville, NC, but there are three other regional offices - Goldsboro, Lumberton, and Rocky Mount - with over 600 service providers throughout the area, available to the resi-

dents of Columbus County. Eastpointe also offers a 24-hour access/crisis care line.

North Carolina has changed the way Medicaid pays for mental health, developmental disabilities, and substance abuse services. The change is known as the 1915(b)/(c) Medicaid Waiver. The goal of this change was to make sure that people who need help are able to easily get high quality services. Eastpointe has been identified as a 1915(b)/(c) Medicaid Waiver site and provides the following benefits to the people it serves:

- Telephone contact 7 days a week, 24 hours per day
- Emergency referrals 24/7 within one hour
- Emergency care within 2 hours and urgent care within 48 hours
- Routine care within 10 working days
- Must offer all medically necessary services in the benefit plan regardless of whether or not there is a provider in the network for that service
- Qualified staff to evaluate service requested by service providers
- A qualified provider network, with consumer choice between at least two providers within 30 miles or 30

minutes in an urban area

- Written material explaining the benefit plan, how to access services, and consumer rights
- Better communication with access to local decision makers
- Reimbursement rates to incentivize best practices
- Keep funding in the public system and better use of savings
- Adjust existing services to meet changing needs through consumer and family feedback in an annual Consumer Satisfaction Survey

## 4) Health Insurance

Lack of health insurance was identified by the advisory committee as a significant barrier to healthy lifestyles. According to a survey conducted as part of the 2012 Community Health Assessment, approximately 76% of respondents reported having health insurance coverage, 16% reported not having any health insurance, and 8% stated their health insurance coverage was with a previous job. Approximately 18% of North Carolinians are without health insurance according to the 2011 Small Area Health Insurance Estimates (SAHIE).



Other findings of the 1,300 survey respondents include:

- 26.04% feel that Columbus County residents lack the funds to pay for health insurance. (2008 statistic: 38%)
- 20.85% feel that Columbus County residents lack the funds to pay for medicine. (2008 statistic: 29%)

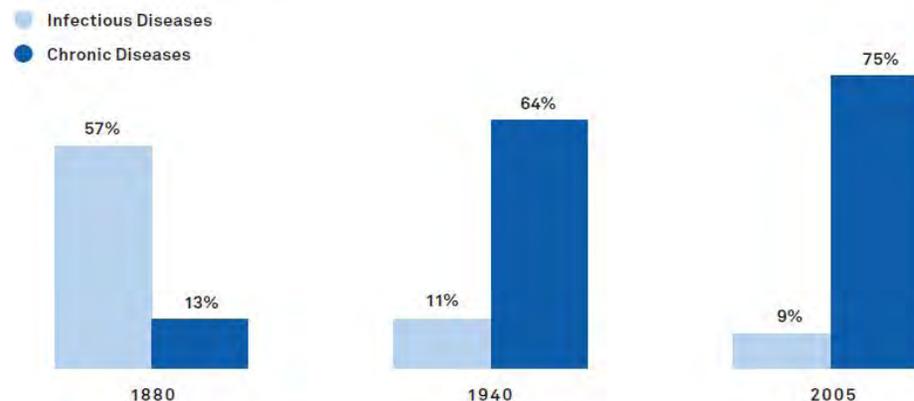
## F. Chronic Disease Factors

Whereas infectious diseases were the gravest health threats of an earlier era, the largest killers of our time have become chronic diseases such as heart disease and strokes, cancers, and diabetes, for which the leading risk factors are obesity, physical inactivity, poor diets, and smoking (see Figure 3).

Columbus County officials will use this plan to help combat factors in the built environment that may lead to obesity - the second leading preventable cause of disease and death in the United States - and chronic disease. Strategies and policies will relate to active living, healthy eating, and the prevalence of safe physical environments.

**“Two of the four most common causes of chronic disease include lack of physical activity and poor nutrition. Both causes can be altered by lifestyle changes.”**

Source: Centers for Disease Control



Source: The City of New York Summary of Vital Statistics 2005

Figure 3: Infectious Diseases Versus Chronic Diseases, 1880 - 2005

## G. Obesity Mechanisms

Obesity results from a positive caloric balance, meaning that the intake of calories is greater than caloric expenditure. Nutrition plays a direct role in determining caloric balance because it is the sole variable when accounting for caloric intake. Caloric output, however, is dependent on three specific variables. These include physical activity, resting metabolism, and the thermogenic effect of food. Thermogenesis occurs when your body raises its core temperature. When your body increases its heat or energy output, your metabolism increases and your

fat cells are used as the main source of energy. Of the three variables, physical activity is the most often altered in order to increase caloric expenditure (7).

In general, obesity tends to be a multi-faceted problem with no one solution to combating its occurrence. However, there are certain segments of the population that are more likely to be obese, as it is more prevalent in the low socioeconomic status (SES) segments of society. Investigations have shown similar results in urban,

suburban, and rural communities. In addition, a childhood spent in poor social and economic conditions has been shown to lead to a less healthy adulthood. In both adolescent boys and girls, low SES and parental education levels were related to an unfavorable risk factor profile indicating a need for early intervention in low SES communities.

To identify areas of Columbus County that are considered low in socioeconomic status, GIS analysis was used. Census estimates for educational attainment, employment, and income levels were combined to locate these areas. Concentrations of low SES are shown on Map 7.

## H. Nutritionally Disparate

### 1) Full Service Grocery Access

You are what you eat – a common statement that rings true for many health practitioners. Increasing access to and encouraging consumption of fresh, healthy foods are important ways to address disease incidence and health care expenditures, particularly in under-served communities throughout Columbus County.

North Carolinians face a number of health challenges related to our food system. One is the incidence of diet-related chronic diseases, including obesity and diabetes, which are associated with consumption of nutrient poor, high-calorie foods. At the

same time, food insecurity is present across the state, which exists when an individual or family lacks adequate or consistent access to the foods necessary to lead an active, healthy lifestyle.

Children’s health and wellbeing are connected to diet, nutrition and food security. Access to an ample quantity and variety of fruits and vegetables at school, at home, and in the community is critical. Access is especially important for school-age children, given that poor dietary habits can linger or worsen into the high school years and adulthood.



*Produce from fruit and vegetable stand in Whiteville, NC (Image Source: HCP).*

Programs such as Down East Connect and Feast Down East are actively trying to enhance our knowledge of the local food system while at the same time striving to increase our caloric intake of locally produced fruits and vegetables.

In Columbus County, there are 14 establishments that offer full service grocery items. For the purposes of this assessment, a “full service grocery” is defined as an establishment that is open 7 days a week, offers a variety of fresh fruits and vegetables at a competitive price, and accepts Supplemental Nutrition Assistance Program (SNAP), Electronic Benefits Transfer (EBT), and Benefits for Women, Infants, and Children (WIC).

Full service grocery stores are located primarily in the municipalities throughout the county (see Map 8). Areas shown white on the map are located greater than a ten-minute drive from a full service grocery store.

# Map 7: Socioeconomic Status (SES)

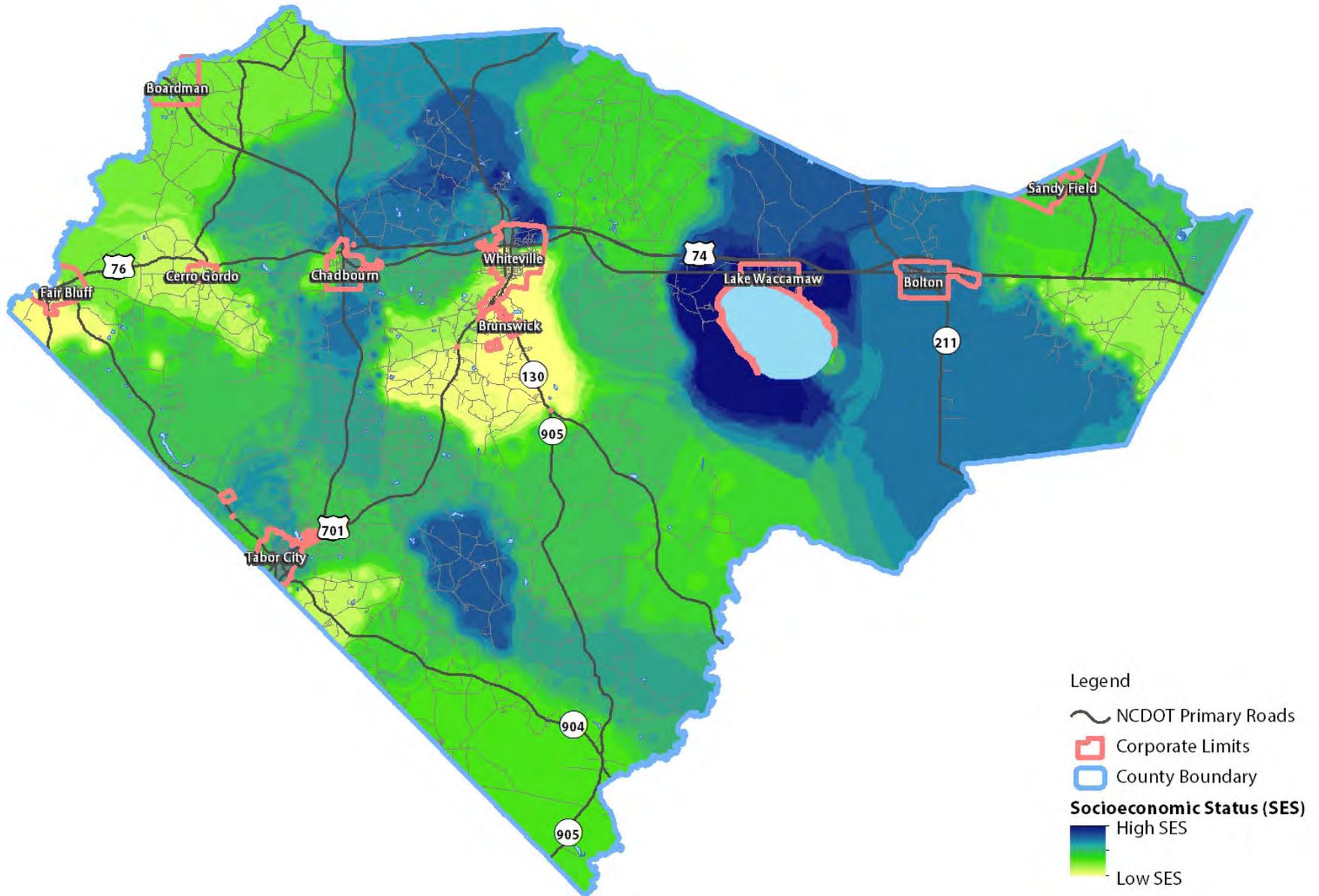


Table 7: Full-Service Grocery Stores, Columbus County, NC

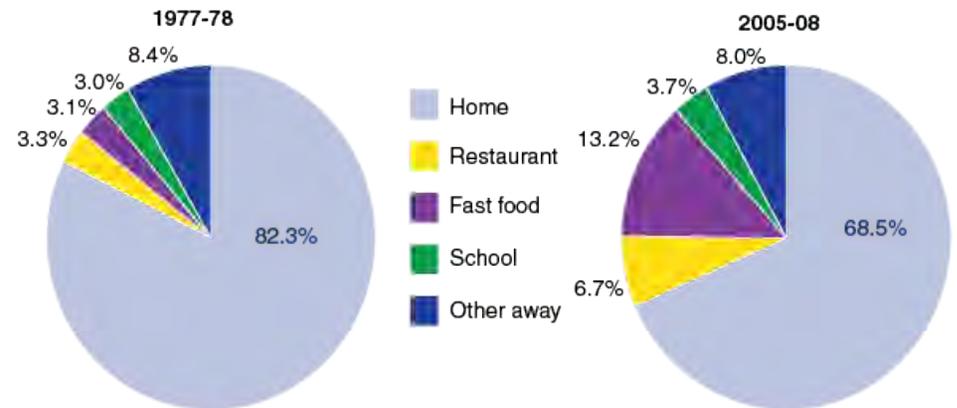
Store	Address	City
Food Lion	80 Whiteville Town Center	Whiteville
Food Lion	809 N Brown St	Chadbourn
Food Lion	1200 S JK Powell Blvd	Whiteville
Food Lion	108 S US 701 Bypass	Tabor City
Piggly Wiggly	872 Conway Rd	Fair Bluff
Piggly Wiggly	121 E Strawberry Blvd	Chadbourn
Piggly Wiggly	200 N Carolina 87	Riegelwood
Walmart Supercenter	200 Columbus Corners Dr	Whiteville
Tabor City IGA	806 E 5th St	Tabor City
Whiteville IGA/KJ's	604 Jefferson St	Whiteville
Hills Food Store	1727 S Madison St	Whiteville
Fowler's Supermarket	13564 Swamp Fox Hwy E	Tabor City
Hills Food Store	126 E Old US Highway 74/76	Lake Waccamaw
Hills Food Store	252 JK-Powell Blvd	Whiteville

## 2) Quick Service Restaurants

Quick Service Restaurants or Fast Food Restaurants are establishments that are able to provide customers with a quick, consistent meal, with little or no table service. Quite often, these establishments are chain restaurants with many locations in a given region. According to the USDA, fast food accounted for a 325% increase in share of calories in the U.S. diet from 1978 to 2008 (8).

In Columbus County, there are approximately 0.64 Quick Service Restaurants (Fast Food) per 1,000 residents. According to the journal Critical Public Health, there are only 0.0752 Quick Service Restaurants per 1,000 residents in the United States. This figure is significantly lower than that of Columbus County. However, when looking at figures from across southeastern North Carolina, the statistic appears more reasonable. For example, in Brunswick County and Bladen County the figures are 1.13 and 0.34 per 1,000 residents, respectively.

Between 1977-78 and 2005-08, food away from home, particularly fast food, provided an increasing share of calories in the U.S. diet



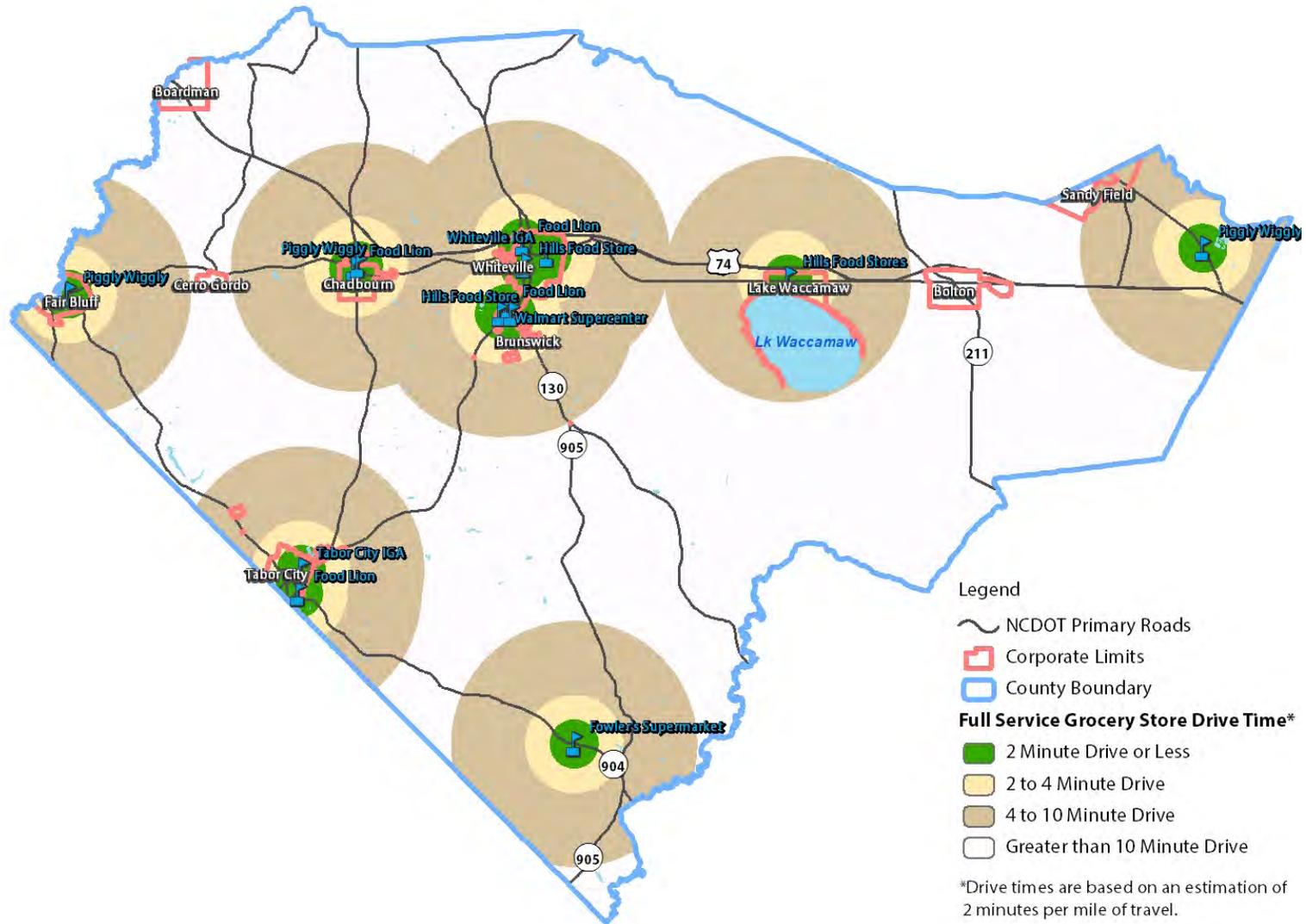
Note: Totals do not sum to 100 due to rounding.

Source: USDA, Economic Research Service analysis using data from the 1977-78 Nationwide Food Consumption Survey and the 2005-08 National Health and Nutrition Examination Survey.

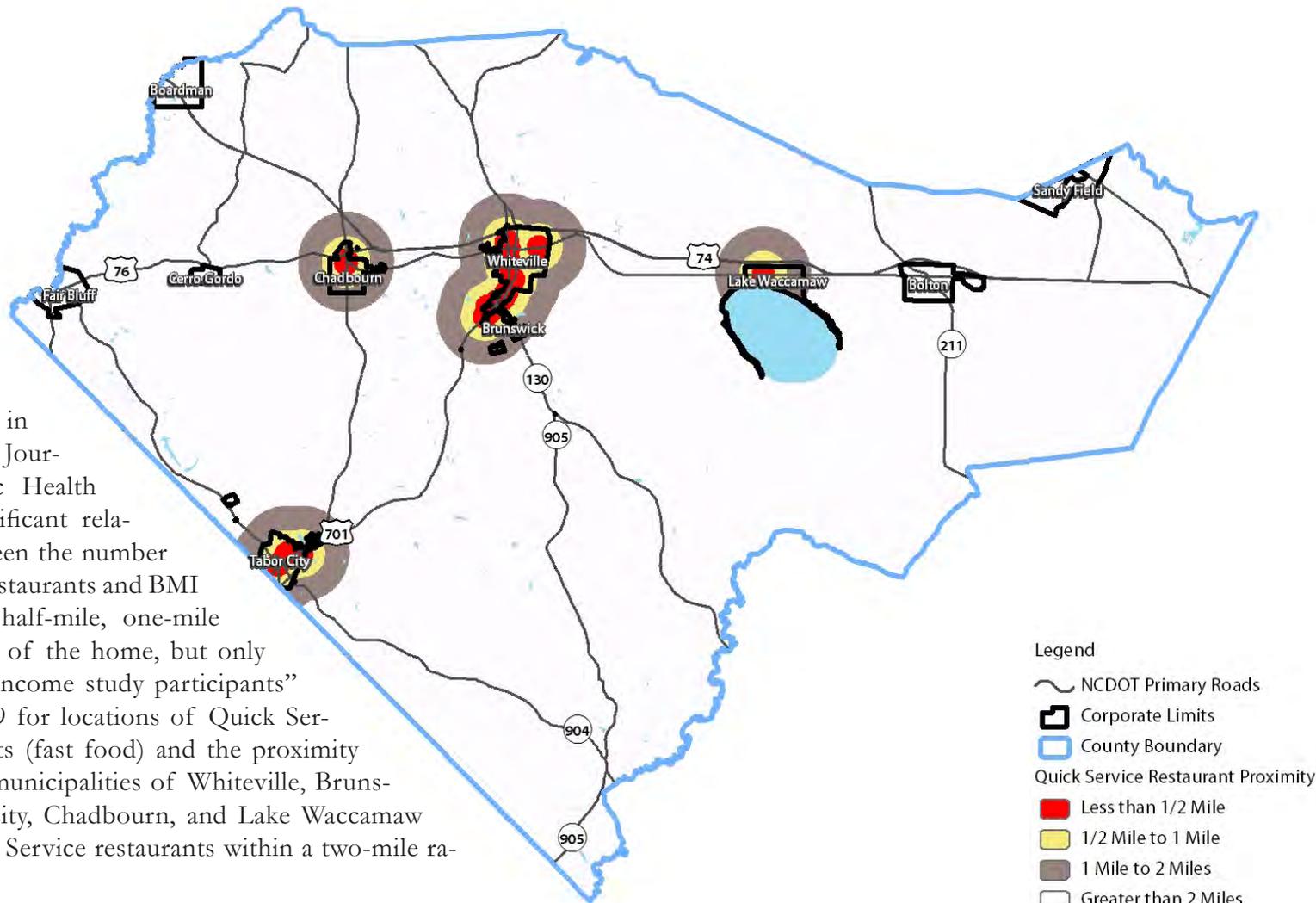
Figure 4: Changes in share of Calories from 1977 to 2008.



# Map 8: Full Service Grocery Availability



# Map 9: Quick Service Restaurant Proximity



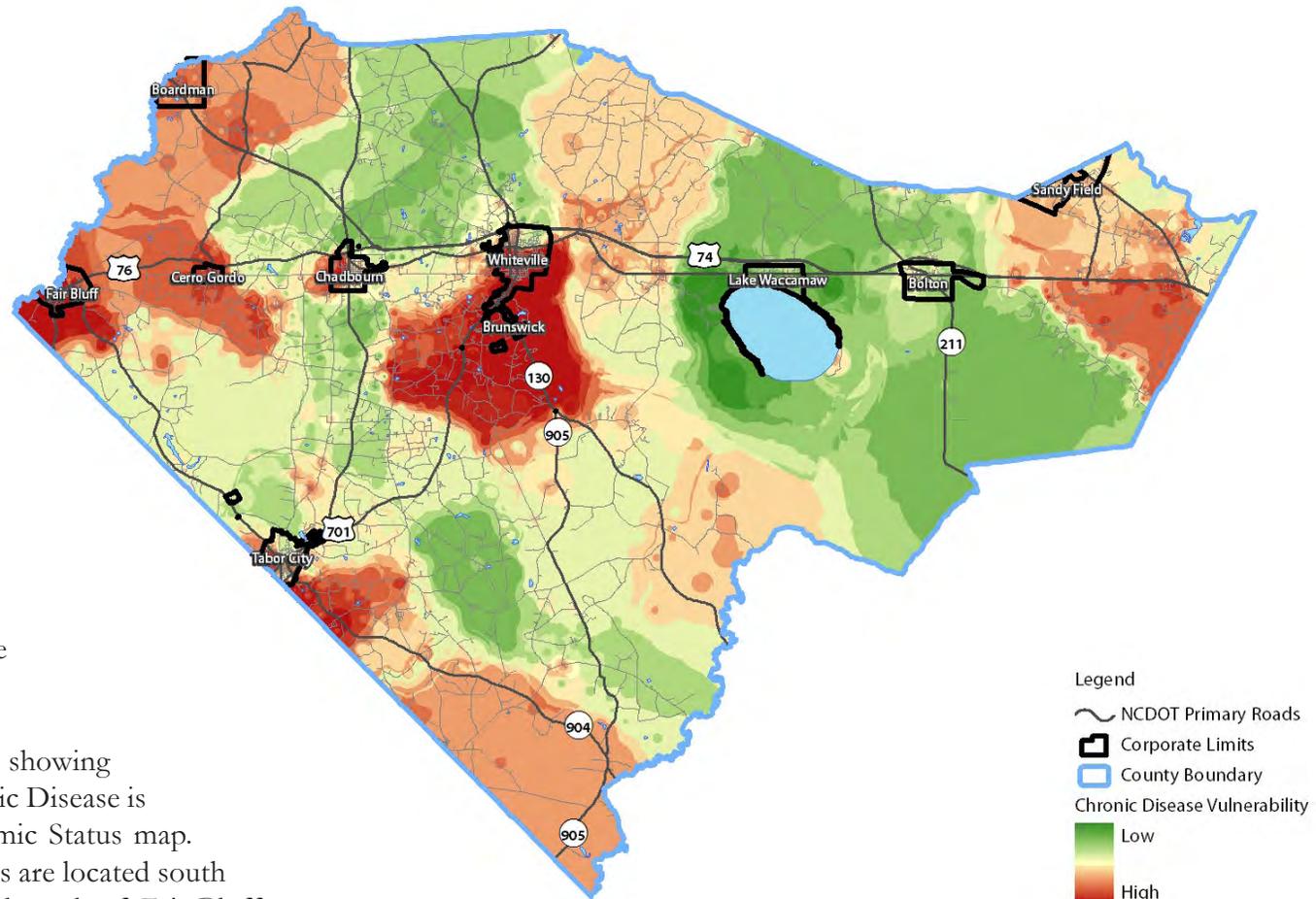
A recent study in the American Journal of Public Health noted “a significant relationship between the number of fast food restaurants and BMI for within a half-mile, one-mile and two-miles of the home, but only among lower-income study participants” (9). See Map 9 for locations of Quick Service restaurants (fast food) and the proximity to each. The municipalities of Whiteville, Brunswick, Tabor City, Chadbourne, and Lake Waccamaw all have Quick Service restaurants within a two-mile radius.

# Map 10: Population Vulnerable to Chronic Disease

## I. Population Vulnerable to Chronic Disease

In order to prioritize investment, it is important to locate spatially those areas most in need of health and wellness enhancement. To do so, GIS analysis was used to combine socioeconomic status and concentrations of the elderly population.

In general, the composite map showing Population Vulnerable to Chronic Disease is very similar to the Socioeconomic Status map. The most vulnerable populations are located south of Whiteville along NC 130 and south of Fair Bluff and Tabor City.



## J. Mobility and Public Health

Mobility is generally defined as the movement of people from place to place. In the last hundred years, travel modes have shifted dramatically. Unfortunately, over the last forty years little emphasis has been placed on the non-motorized forms of movement, often to the detriment of cyclists and pedestrians. In fact, it was not until 1998 that the Federal Highway Administration authored a guidance manual addressing the design of bicycle and pedestrian facilities (10). During that same time, obesity rates for children and adolescents has more than tripled (11).

Table 8: Changes in travel choices 1980 to 2010.

Means of Transportation to Work in the US (1980-2010)	Walking
1980	5.6%
1990	3.9%
2000	2.9%
2010	2.9%

Walking trips have experienced a dramatic decline in recent decades. From 1977 to 1995, the U.S. experienced a 30% decrease in the number of all walking trips. Meeting the recommended daily exercise guidelines can be easily accomplished by such trips.

Yet, research shows that less than 10% of adults meet the recommended thirty minutes of exercise per day (12). The design of roadways and the urban environment may have much to do with the lack of exercise experienced in our daily travels.

Efficient flow and speed of the private vehicle, the primary determinant of vehicular level of service, is often the only component considered in designing a particular roadway (13). As a result, non-motorized travelers face difficulties due to a lack of facilities that provide for their safe and efficient movement.

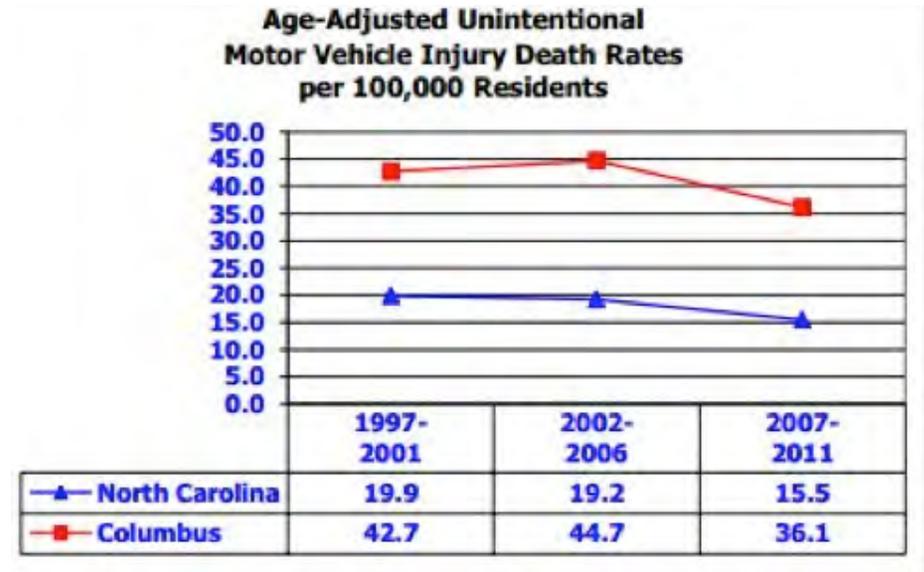


Figure 5: In Columbus County, motor vehicle death rates are 40% higher than the state average.

Motor vehicle deaths are a recurring problem for Columbus County residents. According to the North Carolina State Center for Health Statistics, motor vehicle deaths are approximately 40% higher than the statewide average. Columbus County ranks 96 out of 100 counties in motor vehicle death occurrences. Research has also proven that lengthy vehicular drive times can risk factor for obesity. Individuals that account for the highest number of vehicular miles traveled are much more likely to be obese.

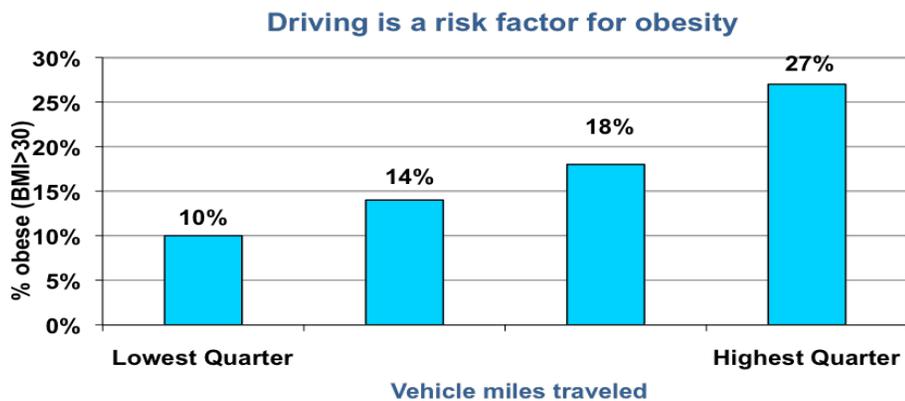
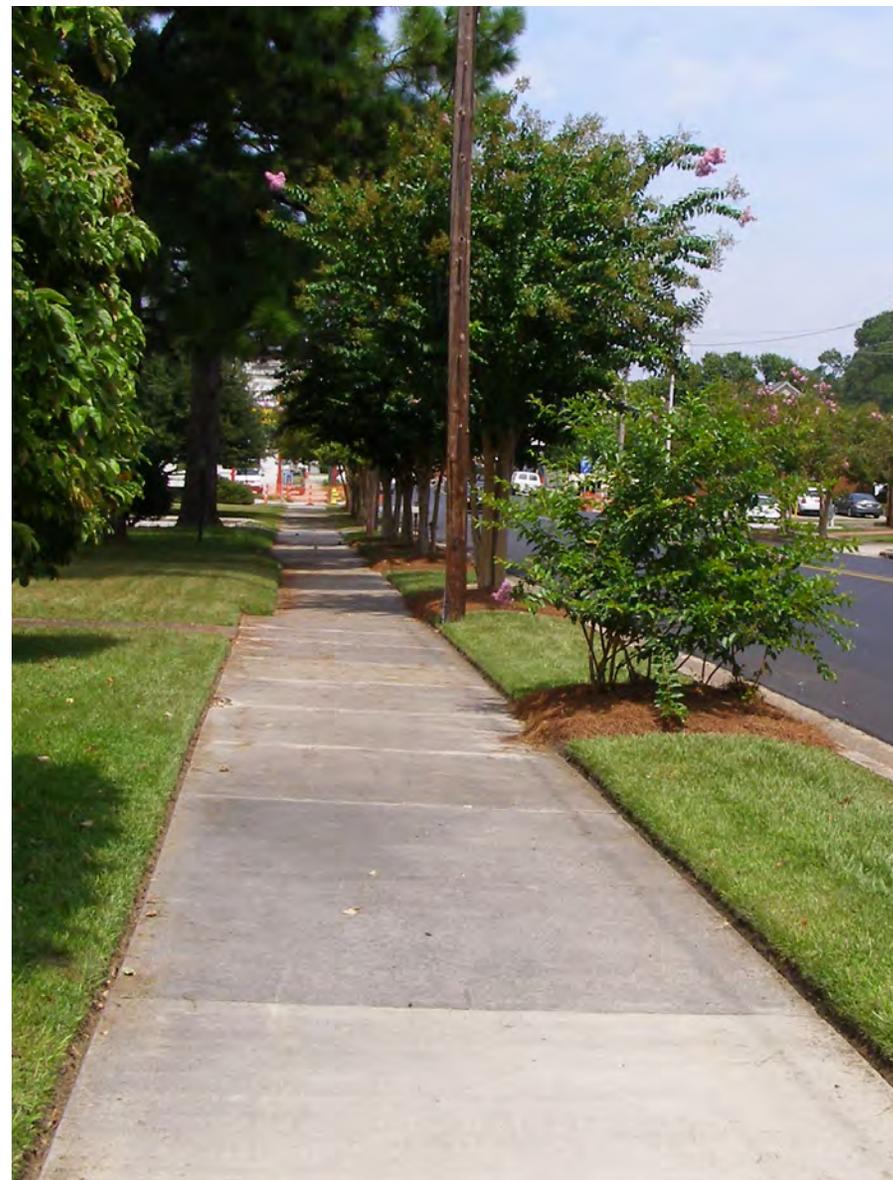


Figure 6: Excessive vehicular travel is a risk factor for obesity.

In the United States, the overwhelming majority of federal transportation funding (close to 80%) is dedicated to highways, yet over three-quarters of the population live in urban areas that do not necessarily need access to highways (14). At present, more emphasis is being placed on roadways that accommodate all modes of travel. Yet, in the United States the dominant mode of travel continues to be the private vehicle.

In 2010, only 1.9% of Columbus County residents listed walking as their primary means of transportation to work. That figure is significantly lower than the nationwide statistic. It is important to note, however, that Columbus County is very rural, decreasing the ability to walk for utilitarian purposes such as to work or to run errands.

Investments in transportation can either discourage or encourage use by non-motorized travelers. Research suggests that providing pedestrian and cyclist infrastructure will increase use and promote physical activity (15).



Buffered sidewalk facility, Whiteville, NC (Image Source: HCP).

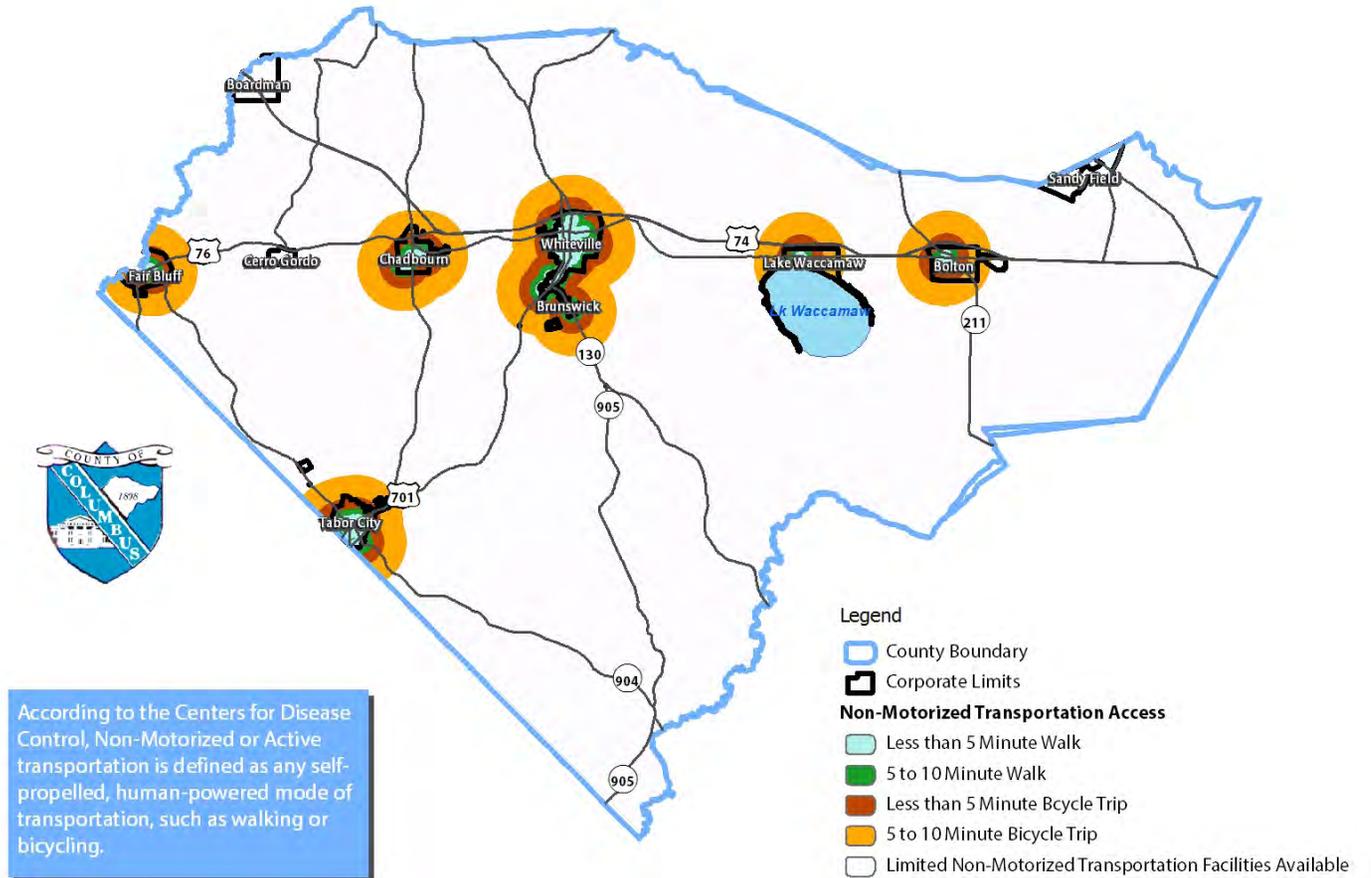
## K. Non-Motorized Transportation (Access to Active Transportation)

Non-motorized transportation options include travel modes that require an individual to expend energy to reach his or her destination. Bicycling and walking are the two most common modes recognized as active transport.

In Columbus County, only sidewalks are available to area residents. Currently, there are no dedicated bicycle facilities or off-street multi-use paths available to cyclists. Sidewalk facilities are available in every municipality within the county except for Boardman and Cerro Gordo. Residents located in neighborhoods outside of municipalities have few active travel options (see Map 11).

In rural areas, however, a lack of dedicated facilities may not directly correlate to a lack of activity as significant options exist for unorganized activity in the form of hiking, hunting, or bird watching.

# Map 11: Non-Motorized Transportation Access



## L. Physical Activity and Recreational Facilities

Studies show one of the most effective ways to offset weight gain is through increased physical activity. Coincidentally, individuals looking to increase physical activity encounter barriers when access to recreational facilities is limited. In particular, parks in Columbus County do not have active transportation connections to other recreation facilities or residential areas.

According to the Centers for Disease Control, the following is a list of items that can be accomplished through increased or regular physical activity:

- Weight Control
- Reduced risk of cardiovascular disease
- Reduced risk of Type 2 diabetes and metabolic syndrome
- Reduced risk of some cancers
- Stronger bones and muscles
- Improved mental health and mood
- Improved ability to do daily activities and prevent falls, for older adults
- Increased chances of living longer

Columbus County residents have many opportunities for active recreation within the county, though as mentioned previously, nearly every facility will require a motor vehicle for access, potentially lessening the amount of physical activity exerted at each facility (see Map 12).

## M. Health & Wellness Priority Areas

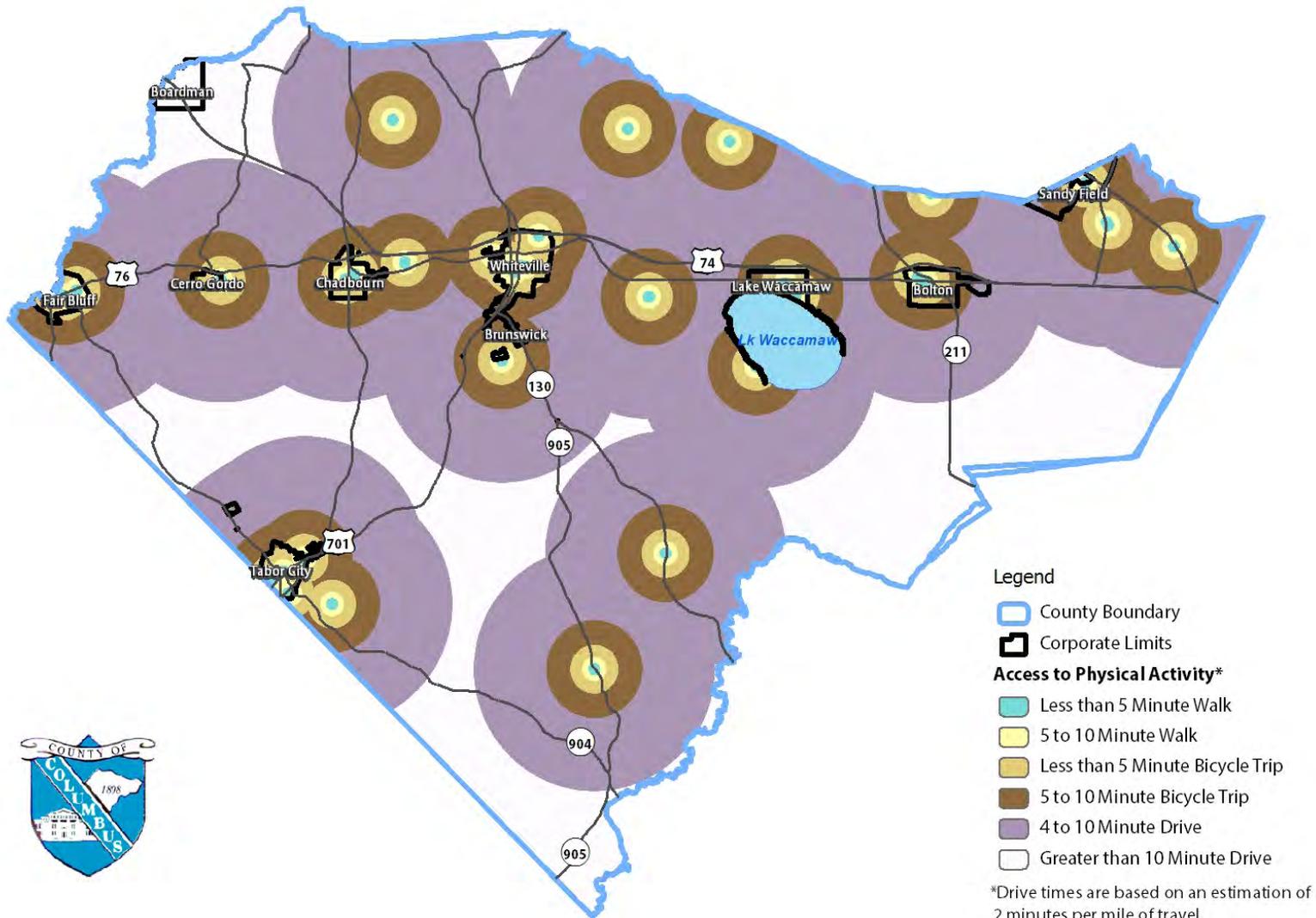
In Columbus County, public health officials should strive to focus their efforts in areas that are most vulnerable to wellness issues. Spatial analysis was used to identify those areas most in need of health and wellness related facilities. High priority wellness investment and enhancement areas are shown in red on the Health and Wellness Priority Area map.

Each of the health factors were ranked based on their impact on health outcomes. The advisory committee was tasked with identifying the most and least important factors impacting health outcomes. Low socioeconomic status was ranked as the most important contributing factor followed by proximity to a health care provider. Average commute to work was ranked as the least important.

The following factors were combined in a weighted overlay analysis, the result of which is the Health and Wellness Priority Areas (see Map 13):

1. Socioeconomic Status
2. Proximity to a Healthcare Provider
3. Proximity to Parks and Recreation Facilities
4. Proximity to a Full Service Grocery Store
5. Access to Non-Motorized Transportation
6. Concentration of Elderly (65+)
7. Proximity to a Quick Service Restaurant

# Map 12: Physical Activity and Recreation Access



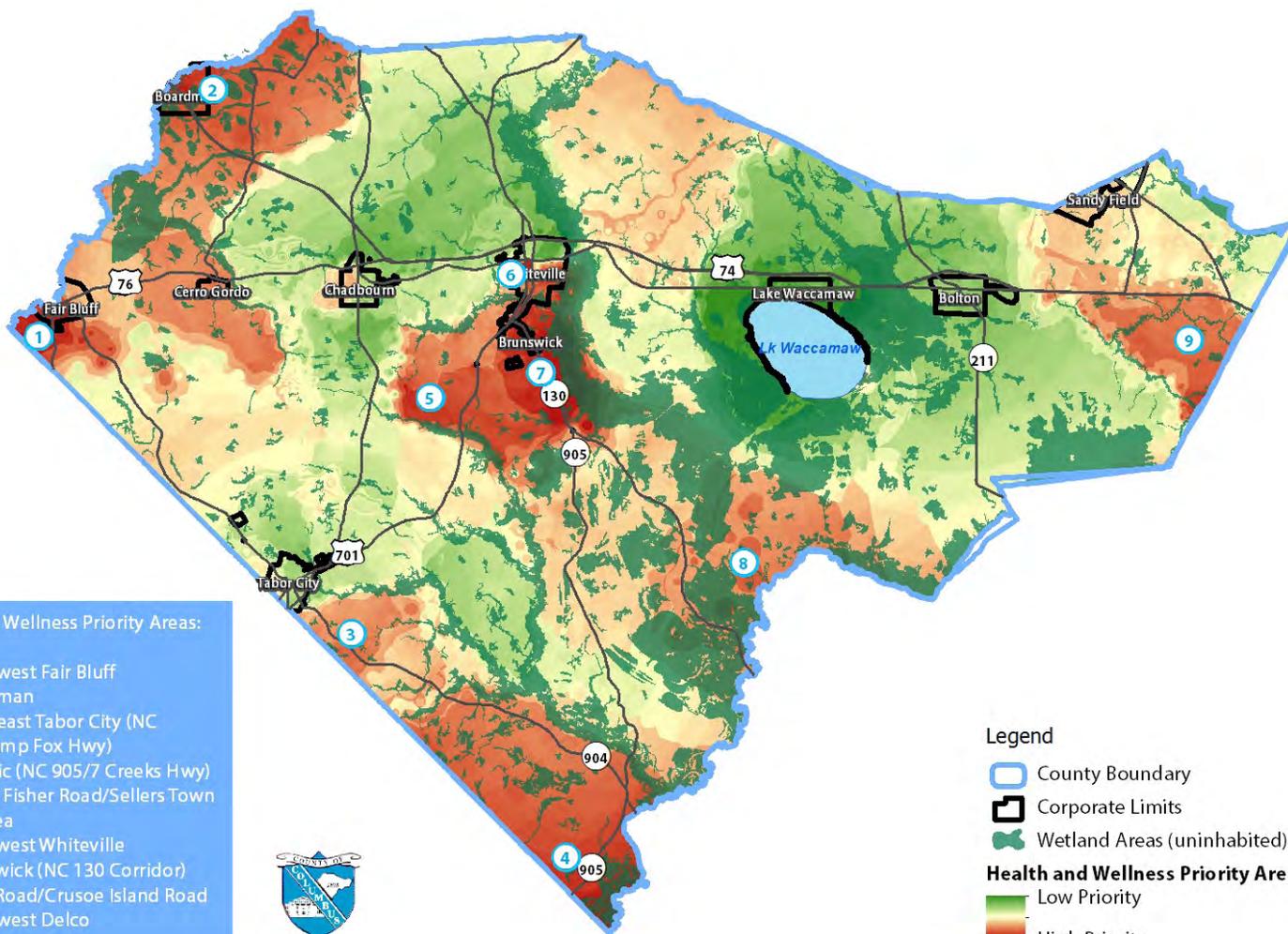
## Legend

- County Boundary
- Corporate Limits
- Access to Physical Activity\***
  - Less than 5 Minute Walk
  - 5 to 10 Minute Walk
  - Less than 5 Minute Bicycle Trip
  - 5 to 10 Minute Bicycle Trip
  - 4 to 10 Minute Drive
  - Greater than 10 Minute Drive

\*Drive times are based on an estimation of 2 minutes per mile of travel.



# Map 13: Health & Wellness Priority Areas



## Health & Wellness Priority Areas:

1. Southwest Fair Bluff
2. Boardman
3. Southeast Tabor City (NC 904/Swamp Fox Hwy)
4. Olyphic (NC 905/7 Creeks Hwy)
5. Shade Fisher Road/Sellers Town Road Area
6. Northwest Whiteville
7. Brunswick (NC 130 Corridor)
8. Dock Road/Crusoe Island Road
9. Southwest Delco



## Legend

- County Boundary
- Corporate Limits
- Wetland Areas (uninhabited)
- Health and Wellness Priority Areas**
- Low Priority
- High Priority

Areas shown as red on the map are considered high priority areas for health and wellness related capital improvements, policy changes, or community supported programming. These areas are, in general, considered to be of a low socioeconomic status and lack access to one or more amenities such as full-service grocery stores, recreational facilities, or healthcare providers.

Wetland areas (shown dark green) tend to be uninhabited. Health and wellness related improvements in these locations are not warranted.

# CHAPTER 4– STRATEGIES

Both initiatives and strategies are provided in this chapter. The county and municipalities are responsible for implementation and may proceed with the initiatives and strategies as each sees fit.

## A. Health & Wellness Related Agencies and Initiatives

Columbus County has been ranked the least healthy county in North Carolina since 2009, when the Robert Wood Johnson Foundation and the University of Wisconsin Popula-

tion Health Institute collaborated to launch the County Health Rankings & Roadmaps Program. Using data specific to each county, this program ranks the health of nearly every county in the nation. The Health Rankings illustrate factual data—what is known about what is making people sick or healthy. The Health Roadmaps help counties institute policies and programs to create healthier places to live, learn, work and play.

The Columbus County Health Department worked with the Columbus County Healthy Carolinians Task Force to create a community opinion survey in 2010. To ensure voices for as many Columbus County citizens as possible, the survey was offered throughout the county, accessible online, and on paper. The citizens' responses showed that the top three issues, or the leading causes of death,



in the community were heart disease, cancer, and stroke. The community assessment showed that chronic disease was the biggest health concern.

Since receiving the least healthy county rating, Columbus County officials and residents have worked to improve the health and mindset of its residents through education, programs, and actions. As of 2012, 3,000 residents have taken the opportunity to educate themselves and their families. Many businesses, churches, and other organizations have also taken positive steps to improve the health of their members.

Columbus County has several re-

sources in place to aid in the health and wellness of area residents. Some of the following programs and resources are common across the state, while others are considered innovative approaches to creating a more healthy community. Initiatives are separated into the following categories: Educational, Healthy Eating, and Healthcare Access.

It should be noted that these initiatives may require expenditures of the jurisdiction interested in completing the program or action item.

**The Mission Statement of the Columbus County Health Department is to prevent disease, promote health and protect the environment for all citizens, and to continually assess and respond to the health needs of the community as a whole. Public health looks not only at the individual but also the family and community.**



Lake Waccamaw, NC (Image Source: HCP).

## **Educational Initiatives**

### **Education Programs**

- Responsible Party: Columbus County/Municipalities/Volunteers
- Description: Educate citizens to help them make better, more informed decisions for their families.
- Action: Provide educational materials via presentations, workshops, classes, mailings, agri-tours, demonstrations, field days, community outreach, etc. Focus on safe, healthy eating, exercise, education.

### **Free Gardening Newsletters**

- Responsible Party: Cooperative Extension
- Description: Newsletters mailed (or emailed) to people who sign up, covering a range of topics related to gardening or other home projects

- Action: Newsletters covering do-it-yourself projects, food and gardening, simple living, health, environment & green energy.

### **Healthy U Crew**

- Responsible Party: Volunteers from Cooperative Extension, Health Department, and/or Healthcare Centers
- Description: Group of people (young and/or old) going into communities or establishments (community centers, YMCA/YWCA, daycares/schools, churches, etc.) to educate people about health and fitness.
- Action: Lunch & Learn - Employers allow presentations during work; Media Campaigns - Advertisements for healthier choices (food & exercise); Life Skills Courses - Students can attend free classes to learn healthful cooking & simple exercises.

### **Information Stations**

- Responsible Party: County/Cooperative Extension/Volunteers
- Description: Set up stations around the county, areas lacking access to resources (libraries, news stands, schools, businesses, rest area, etc.)
- Action: Make educational information (healthful eating, exercise, growing/preserving, recipes, etc.) available to public.

### **Poster/Design Contests**

- Responsible Party: Columbus County Farmers' Market
- Description: Poster contest for K-5 grades for "Choose Well, Eat Well"
- Action: Kindergarten thru Fifth Grade students create posters that highlight good nutrition and exercise, and benefits of healthier choices.

## **Active Living Initiatives**

### **Community Sports Days**

- Responsible Party: City/Parks & Recreation
- Description: Community-wide Field Days
- Action: Hold events in different community areas similar to those at school field days: tug-of-war, egg toss, three-legged race, obstacle courses, flag football, relay races, etc.

### **Eat Smart, Move More**

- Responsible Party: Columbus County Health Department
- Description: Simple marketing to help people focus on easy, controllable efforts for health
- Action: Presentations to schools, churches, hospital groups, civic clubs, county offices to promote message. Emphasize healthful eating choices and easy exercise.

### Employee Wellness

#### Programs

- Responsible Party: Columbus County Health Department
- Description: Exercise classes for employees
- Action: Zumba, Tuesdays 5:30pm, Whiteville Rescue Building

### Joint Use Agreement for Outdoor Use of School Facilities

- Responsible Party: County/Municipalities
- Description: Allow other organizations to use outdoor facilities for recreation
- Action: Allow interested organizations to use/reserve the outdoor facilities at area schools for recreation and activities.

### Park Days

- Responsible Party: City/County Parks & Recreation Department
- Description: Sponsor “Fun Days” at the Park.
- Action: Encourage communities to get out and go to the park. Park can host cook-outs or events sponsored by businesses in area.

### Sports Clinics

- Responsible Party: County/Municipalities

- Description: Offer sports clinics for the young and young-at-heart.
- Action: Sports clinics and leagues are usually geared toward children. Make sports clinics available to adult/older citizens as well. Can also offer family sports/activity clinics.

### Tourism Focus on Healthy Eating and Activities

- Responsible Party: Discover Columbus County
- Description: Health & Wellness categories on website
- Action: Provide health category on the tourism bureau website to include exercise facilities, healthy dining options, destination/activity farms, farmers market and/or produce outlets, area playgrounds, hiking trails, etc.

### Healthy Eating Initiatives

#### Community Farming

- Responsible Party: Cooperative Extension/County/Municipalities
- Description: Teach citizens how to grow plants inside or on patios/porches
- Action: Farmers or community



*Produce from fruit and vegetable stand in Whiteville, NC (Image Source: HCP).*

volunteers help individuals start their own “indoor” gardens. Volunteers help educate, provide “starter kits” and/or seedlings.

### Farm Fun Days

- Responsible Party: Local Farmers /Cooperative Extension
- Description: Farmers teaching planting/growing techniques specific to Columbus County
- Action: Focus on process and how to plant, grow, and harvest. Pick your own products, feeding farm animals, hayrides, picnics, etc.

### Farm to School

- Responsible Party: Cooperative Extension/County/Municipalities/Farmers
- Description: Schools purchase fresh foods from farmers at discount and farmers receive difference from county budget
- Action: Farmers volunteer for program; provide schools with fresh produce for lunches, snacks, at comparable prices with some remuneration from county or funding source.

### **Gardens - Community**

- Responsible Party: Cooperative Extension/County/Municipalities
- Description: Identify land in low-income and/or rural areas that will serve as a space for smaller communities to raise their own produce.
- Action: Cooperative extension and local farmers assist communities in starting and maintaining their own gardens. Volunteers help educate, provide “starter kits.”

### **Gardens – Individual**

- Responsible Party: Cooperative Extension/ County/ Municipalities
- Description: Volunteer Program for people who want to learn to plant and maintain a garden for their individual family.
- Action: Cooperative extension and local farmers assist individuals in starting and maintaining their own gardens. Volunteers help educate, provide “starter kits.”

### **Healthy Snack Vending Options**

- Responsible Party: County/ Municipalities
- Description: Adopt a policy regarding the types of foods available in vending machines on school property.

- Action: Adopt a policy that states at least 50% of foods in vending machines must meet the following standards: \*No more than 35% of calories from total fat (not including nuts or seeds); \*No more than 10% of calories from saturated fat; \*Zero trans fat ( $\leq 0.5$  grams per serving); No more than 35% of calories from total sugars (except yogurt with no more than 30 grams of total sugar per 8 oz. portion as packaged); At least 3 grams of dietary fiber per serving in grain products; No more than 200 milligrams of sodium per package; No more than 200 calories per portion as packaged.

### **Local Food Challenge**

- Responsible Party: Individuals or Organizations
- Description: Challenge members to complete a “Hundred Mile Diet.” Eat only foods that can be produced or made locally. Range can vary.
- Action: Pick a range and try to eat only foods that can be grown or made locally. Employers, churches, various organizations can implement.

### **Mobile Farmers Market**

- Responsible Party: Columbus County/ Local Partner



*Fruit and vegetable stand in Whiteville, NC (Image Source: HCP).*

- Description: Provide access to healthy fruits and vegetables to those rural residents who lack easy access to fresh produce.
- Action: Local produce delivery to rural areas, farmers or local partners can provide access to healthy fruits and vegetables to those rural residents who lack easy access to fresh produce.

### **Nutritional Food Access (Healthy Food Equipment)**

- Responsible Party: Blue Cross Blue Shield of NC
- Description: Provide equipment for faith-based organizations to bring healthier food to members and communities.
- Action: Old Zion Wesleyan Church will help increase access to healthy food via food pantry, community garden, and food preservation.

### **Show Off Your Garden**

#### **Contests**

- Responsible Party: Cooperative Extension/County
- Description: Participants submit photos & videos of their gardens or harvest to compete with others in the communities.
- Action: Contest can have specific themes: Largest Veggie/Fruit, Smallest Veggie/Fruit, Funniest, Most Variety, Prettiest, etc.

### **Start Your Own Farm Business**

#### **Classes**

- Responsible Party: Cooperative Extension/County
- Description: How-To Workshops for citizens interested in starting/growing a farming business
- Action: Farmers/volunteers help interested citizens start/grow a homegrown business.



*Fruit and vegetable stand in Whiteville, NC (Image Source: HCP).*

## Healthcare Access Initiatives

### Community Health Fairs

- Responsible Party: Health Department and/or Healthcare Centers
- Description: Set up free events throughout community for simple health checks (Body Mass Index, blood pressure, glucose, bone density, etc.)
- Action: Screening events set up around the community to offer health screenings & counseling/advice to those who request more information.

### Healthy Community Workshops or Health Counseling

- Responsible Party: County Health

### Department

- Description: Set up workshops for communities with individuals in healthcare or nutrition field.
- Action: Question & Answer Sessions, One-on-One Counseling, E-mail or Hot-Line Advice, etc.

### Home Visitation Program for Low-Income Mothers (Ongoing)

- Responsible Party: NC Dept of Health & Human Services
- Description: Funding to implement Maternal, Infant, and Early Childhood Development Home Visiting (MIECHV) Program
- Action: Columbus County Health

Department to hire four additional registered nurses for program; improve maternal & child health, decrease pre-term labor, increase

school completion & job readiness, healthy practices.

## B. Health and Wellness Implementing Strategies

In general, health and wellness involves multiple interrelated subcategories including: General Health and Wellness, Active Living, and Healthy Eating. As such, each implementing strategy is categorized into one of those subcategories. The strategies are authored to improve health outcomes through changes to the built environment and community supported programming. Each strategy coincides with one or more of the eight health and wellness priority areas (see Map 12 on page 3-19 for more information). It should also be noted that costs may be associated with each strategy and responsibility for implementation belongs to each jurisdiction within the county.



## Implementing Strategies: General Health and Wellness

**I.1** The Columbus County Planning Department, City of Whiteville, and other municipal or county departments should work closely with the County Public Health Department to coordinate the prevention of poor health issues outlined in the 2012 Community Health Assessment. Neighborhood Implementation should be guided by the eight Health and Wellness Priority Areas.

*Health and Wellness Priority Area(s): All*

**I.2** In general, Columbus County municipalities should revise ordinances to:

- Control the density and prevalence of tobacco/alcohol retailers and fast food restaurants in close proximity to schools;
- Offer incentives to developers who include grocery stores or fresh food markets in new development; and
- Make farmers' markets and urban agriculture a permitted use in specific zones.



*Fresh produce from fruit and vegetable stand in Whiteville, NC (Image Source: HCP).*

*Health and Wellness Priority Area(s): All*

**I.3** Columbus County and municipalities should support wellness initiatives via bicycle rallies, marathons, fishing tournaments, etc., that provide the county a link with regional and private resources.

*Health and Wellness Priority Area(s): All*

**I.4** The Columbus County Emergency Services Department and should work with local religious groups to provide emergency support systems for large scale or traumatic events.

*Health and Wellness Priority Area(s): All*

**I.6** The Columbus County Health Department should ensure that the results of the health and wellness analysis outlined in this plan are incorporated into the county's next Community Health Assessment update.

*Health and Wellness Priority Area(s): All*

**I.7** The Columbus County Health Department and Columbus County Planning Department should take steps to create an Active Living & Healthy Eating working group that will continue to champion the Health and Wellness-related implementing strategies included in this plan.

*Health and Wellness Priority Area(s): All*

## Implementing Strategies: Active Living

**I.8** The County Health Department in collaboration with municipal jurisdictions to increase access to active recreation facilities and programs to residents. These efforts will specifically target youth-aged and elderly populations. The County in conjunction with the Columbus County/Whiteville School System will undertake the implementation of this strategy through the establishment of joint use agreements.  
*Health and Wellness Priority Area(s): 2, 5, 7, 9*

**I.9** The Columbus County Planning Department should take steps



to ensure, to the maximum practicable, that all county buildings and facilities are handicap accessible and will work to provide recreation options specifically targeting persons within the community with disabilities.

*Health and Wellness Priority Area(s): All*

**I.10** In order to promote alternative means of transportation, the County Health Department may partner with Columbus County Planning Department and City of Whiteville to engage in the following:

- Conduct clinics to teach safe cycling to school age children.
- Strategically place signs and

provide maps outlining existing and proposed pedestrian and bicycle routes.

*Health and Wellness Priority Area(s): 5, 6, 7*

**Implementing Strategies:  
Healthy Eating**

**I.11** The Columbus County Planning Department, City of Whiteville, and other municipal/county departments should consider expanding working efforts with the Columbus County Extension Office and the Columbus County Public Health Department to achieve the following:

- Increase the opportunities for citizens to purchase and grow healthy foods.

- Support new opportunities for distribution of locally and regionally produced foods.
- Work to address disparities in access to healthy foods in inadequately served populations and neighborhoods.
- Support increased recovery of surplus edible food from businesses and institutions for distribution to food banks and meal programs.
- Work on increasing the availability of fresh fruits, vegetables, dairy and meat to the food support system including food banks and meal programs.

*Health and Wellness Priority Area(s): All*

**I.12** The County should promote the Voluntary Agricultural District Program through marketing efforts. The applicable governing boards should set a threshold of acreage or numbers of farms to be added to the program each year.

*Health and Wellness Priority Area(s): 4, 5, 8, 9*

**I.13** The County and City of Whiteville should continue to support the Columbus County Farmers' Market. Additionally, the Columbus County Cooperative Extension office will look for opportunities to expand upon the Farmers' Market operations. This task will include establishing farmers' markets aimed at serving areas of the County with few options for fresh fruits & vegetables.

*Health and Wellness Priority Area(s): 2, 3, 4, 5, 8, 9*



Whiteville, NC (Image Source: HCP).

**I.14** The County should support efforts to improve access to local produce and value-added agricultural products. This effort will serve as an economic development tool for improving access to healthy eating options for underserved populations, as identified in this plan.

*Health and Wellness Priority Area(s): All*

**I.15** The Columbus County Planning Department and City of Whiteville Planning Department should work in conjunction with the Columbus Health Department and the Columbus County Cooperative Extension office to establish a promotional campaign focused on increasing the availability of fresh fruits and vegetables at corner/country store locations.

*Health and Wellness Priority Area(s): 1, 5, 6, 7*

**I.16** The Columbus County Health Department should take steps to ensure that all food waste stemming from grocery and retail outlets is disseminated to non-profit entities that provide outreach for the county's needy populations.

*Health and Wellness Priority Area(s): All*

**I.17** The City of Whiteville may consider the establishment of zoning overlay districts, which may modify the regulations of the underlying land use zone categories that guide the development of FRESH food stores to promote and protect public health, safety, and general welfare. These general goals include, among others, the following purposes:

- Encourage a healthy lifestyle by facilitating the development of FRESH food stores that sell a healthy selection of food products.

- Provide greater incentives for FRESH food stores to locate in neighborhoods under-served by such establishments.
- Encourage FRESH food stores to locate in locations that are easily accessible to nearby residents.

A "FRESH food store" is a food store, where at least 6,000 square feet of floor area, or storage space is utilized for retailing the sale of a general line of food and non-food grocery products, such as dairy, canned and frozen foods, fresh fruits and vegetables, fresh and prepared meats, fish and poultry, intended for home preparation, consumption, and utilization. Such retail space utilized for the sale of a general line of food and non-food grocery products shall be distributed as follows:

- At least 3,000 square feet or 50% of such retail space, whichever

is greater, shall be utilized for the sale of a general line of food products intended for home preparation, consumption, and utilization; and

- At least 2,000 square feet or 30% of such retail space, whichever is greater, shall be utilized for the sale of perishable goods that shall include dairy, fresh produce, frozen foods, and fresh meats.

*Health and Wellness Priority Area: 6*

# REFERENCE

1. Anderson, Gerard, "The Growing Burden of Chronic Diseases in America." Public Health Reports, May-June 2004, Volume 119.
2. Rosenbloom, Sandra. The Mobility Needs of Older Americans: Implications for Transportation Reauthorization. S.I.: The Brookings Institution, 2003.
3. US Census Bureau. Projections of the Population by Age, Sex, Race, and Hispanic Origin for the United States. 1999 to 2010, Middle Series. SI: Department of Commerce, 2002.
4. Lipman, Barbara J. 2005. Something's Gotta Give: Working Families and the Cost of Housing. Washington, D.C.: Center for Housing Policy; Lee, Wang, Eric Beecroft, Jill Khadduri, and Rhiannon Patterson. 2003.
5. Cutler, David M. & Adriana Lleras-Muney, Education and Health: Evaluating Theories and Evidence. National Bureau of Economic Research.
6. Lopez-Zetina J, Lee H, Friis R. The link between obesity and the built environment. Evidence from an ecological analysis of obesity and vehicle miles of travel in California. Health & Place 2006; 12(4):656-664.
7. Obesity in the Lower Socio-Economic Status Segments: Forum on Public Policy 2008.
8. USDA, Economic Research Service analysis using data from the 1977-78 Nationwide Food Consumption Survey and the 2005-08 National Health and Nutrition Examination Survey.
9. Lorraine R. Reitzel, Seann D. Regan, Nga Nguyen, Ellen K. Cromley, Larkin L. Strong, David W. Wetter, Lorna H. McNeill. Density and Proximity of Fast Food Restaurants and Body Mass Index Among African Americans. American Journal of Public Health, 2013.
10. FHWA. Improving Conditions for Bicyclists and Pedestrians. Washington, D.C. : s.n., 1998.
11. High Body mass Index for Age Among US Children and Adolescents, 2003 - 2006. Ogden, C, Carroll, M and Flegal, K. 2008, Journal of the American Medical Association, pp. 2401 - 2405.
12. Physical Activity in United States Measured by Accelerometer. Troiano, R, Berrigan, D and Dodd, K. 2008, Medicine and Science in Sports Exercise, pp. 181 - 188.
13. Institute of Transportation Engineers. Context Sensitive Solutions in Designing Major Urban Thoroughfares. Washington, DC : s.n., 2006.
14. White House Office of Urban Affairs, blog post August 04, 2009. <http://www.whitehouse.gov/blog/A-Fresh-Conversation-on-the-Future-of-Americas-Cities-and-Metro-Areas>. [Online] August 4, 2009.
15. Associations of Perceived Social and Physical Environmental Supports with Physical Activity and Walking Behavior. Addy, C, Wilson, D and Kirtland, K. 2004, American Journal of Public Health, pp. 440 - 443.







Columbus County Comprehensive Plan  
Health and Wellness Element  
Advisory Meeting  
07/13

Kumamith

Lorraine Matthews

BOB BARDEN, CTP

BOB.BARDEN@HTH.CO.ROBESON.NC.US

Jamie Robinson  
Lewis

rlewis@columbusco.org

GLENN EVANS

allonzwand430@YAHOO

Bill CLARK

bclark@columbusco.org

Meleah Collier  
Gene Priest

meleah-collier@ncsu.edu

MARK GILCHRIST

tpriest@Cchealthcare.org

Nicole Cartrette

markgilchrist@whiteville.com

Randy Barrington

nicolecartrette@whiteville.com

not present today:

randy.barrington@carelcf.org

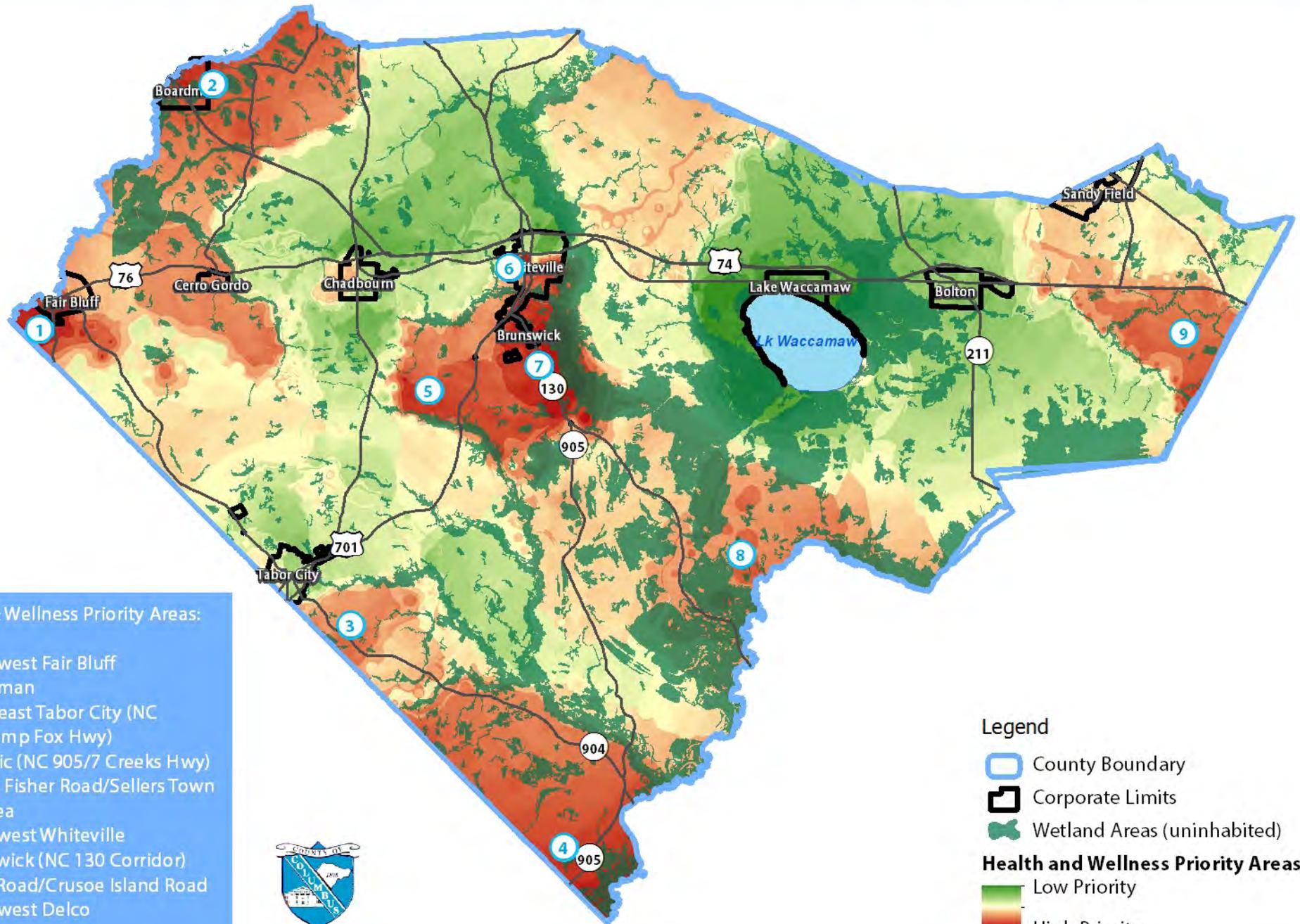
Pat Johnson

pat.johnson@carelcf.org





# Health & Wellness Priority Areas



## Health & Wellness Priority Areas:

1. Southwest Fair Bluff
2. Boardman
3. Southeast Tabor City (NC 904/Swamp Fox Hwy)
4. Olyphic (NC 905/7 Creeks Hwy)
5. Shade Fisher Road/Sellers Town Road Area
6. Northwest Whiteville
7. Brunswick (NC 130 Corridor)
8. Dock Road/Crusoe Island Road
9. Southwest Delco



## Legend

- County Boundary
- Corporate Limits
- Wetland Areas (uninhabited)
- Health and Wellness Priority Areas**
- Low Priority
- High Priority

