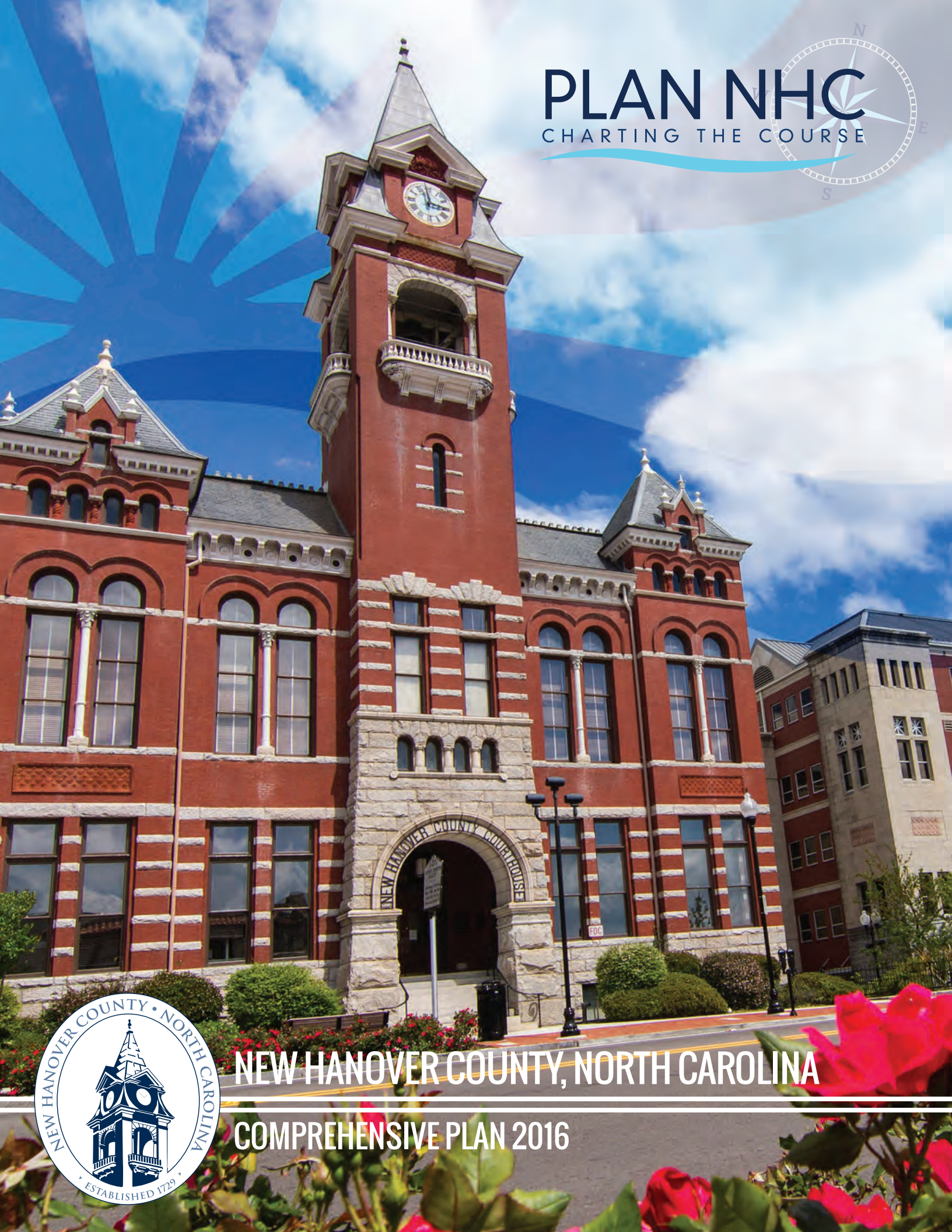
PLAN NHC

CHARTING THE COURSE



NEW HANOVER COUNTY • NORTH CAROLINA
ESTABLISHED 1729

NEW HANOVER COUNTY, NORTH CAROLINA

COMPREHENSIVE PLAN 2016

NEW HANOVER COUNTY BOARD OF COMMISSIONERS

RESOLUTION ADOPTING THE

NEW HANOVER COUNTY 2016 COMPREHENSIVE PLAN, TITLED PLAN NHC

WHEREAS, in July 2013, New Hanover County began the process of updating the CAMA Land Use Plan and creating a Comprehensive Plan for the unincorporated portion of the County; and

WHEREAS, the Board of Commissioners has validated Chapter 1: Public Engagement Plan; and

WHEREAS, the Board of Commissioners has validated Chapter 2: Evaluating the Present (a report of existing conditions); and

WHEREAS, the Board of Commissioners has validated Chapter 3: Framing the Policy; and

WHEREAS, the Board of Commissioners has validated Chapter 4: Visualizing the Future; and

WHEREAS, staff has worked with the community at large to develop the final chapter of the plan, Chapter 5: Building the Future with the appropriate Prologue and Appendix.

NOW, THEREFORE, BE IT RESOLVED, that the New Hanover County Board of Commissioners hereby validates "Building the Future" as the fifth chapter within the Comprehensive Plan, and adopts all five chapters, the prologue and the appendix as the final 2016 Comprehensive Plan: Plan NHC.

ADOPTED this the 11th day of July, 2016.

NEW HANOVER COUNTY

Beth Dawson

Beth Dawson, Chairman

ATTEST:

Teresa P Elmore

Teresa P. Elmore, Clerk to the Board

Acknowledgements

Citizen Advisory Committee

Henry Adams
Jeff Bellows
Dan Dawson
Karen Dunn
Jessica Gray
Don Harris
Bruce Holston
David Kellam
Dani McKeon
Earla Pope
Frankie Roberts
Stephanie Smith

Project Manager

Jennifer Rigby, AICP

County Commissioners

Beth Dawson, Chairman
Jonathan Barfield, Jr., Vice-Chairman
Woody White
Skip Watkins
Rob Zapple

Planning Board

Donna Girardot, Chairman
Anthony Prinz, Vice Chairman
Tamara Murphy
Ernest Olds
Thomas (Jordy) Rawl
Edward (Ted) Shipley, III
David Weaver

County Manager

Chris Coudriet

Planning Department Staff

Chris O'Keefe, AICP - Planning and Inspections Director
Ken Vafier, AICP, CFM - Planning Manager
Ben Andrea, AICP, CZO – Current Planning Supervisor
Christine Bouffard, CFM,CZO,CAMA LPO - Zoning Compliance Official
Denise Brown, Zoning Administrative Technician
Sam Burgess, Senior Planner
John Townsend, Planning Specialist
Dylan McDonnell, Long Range Planner
Linda Painter, CFM, CZO, CAMA LPO - Zoning Compliance Official
Brad Schuler, AICP – Current Planner
Megan Upchurch – UNCW MPA Fellow
Jackie Williams-Rowland, Planning Administrative Specialist

PROLOGUE

INTRODUCTION

New Hanover County is a vibrant, prosperous, diverse coastal community, committed to building a sustainable future for generations to come. With this in mind, citizens, elected officials, appointed officials, stakeholder groups, and planning staff have developed the first Comprehensive Land Use Plan for New Hanover County, titled Plan NHC. This plan is more than a document that provides land use policy recommendations. It is a series of reports, including statistical and historical information that incorporates extensive community input and provides a detailed implementation plan that will help achieve the overall vision for the future of New Hanover County. Plan NHC will provide guidance to elected officials and staff on development and redevelopment proposals, zoning regulations, as well as policies, programs and initiatives that will sustain New Hanover County as a vibrant, prosperous, and diverse coastal community.

New Hanover County is expected to experience a high level of employment and population growth. Currently, New Hanover County's population is approximately 214,000. This figure includes the population of Wilmington, Wrightsville, Carolina and Kure beaches, as well as the unincorporated areas of New Hanover County. By 2040, population is projected to grow to 337,000. This represents an increase of 123,000 (57%) from current population levels. If thought about in a more tangible way, it would be the equivalent of adding another city the current size of Wilmington to New Hanover County. With growth comes the need for responsible development and redevelopment of land, as well as thoughtful consideration concerning the county's infrastructure and natural resources. These are important topics to study because how the county grows and develops will have a direct impact on the ability of future generations to thrive and enjoy the natural beauty of this area.

COMMUNITY INPUT

New Hanover County's Plan NHC was developed in large part from community input. Meeting participants came from all walks of life, including college and high school students, local retirees, young working families, as well as numerous stakeholder groups. Community members provided planning staff with feedback through several mediums, including community meetings and surveys, as well as designated theme committees. The theme committees represent principles created by the American Planning Association that comprehensive plans should include. These theme committees included: The Livable Built Environment, Harmony with Nature, Interwoven Equity, Resilient Economy, Healthy Community, and Responsible Regionalism. Discussions from the numerous theme committee meetings led to the creation of 21 goals that aided in the creation of the future land-use map in Chapter 4: Visualizing the Future, as well as the implementation portion in Chapter 5: Building the Future of the comprehensive plan. These goals, developed by a Citizen Advisory Committee, will guide the next generation of development and ensure New Hanover County becomes an even better place to live, work, and play.

WHAT THE PLAN WILL DO

Plan NHC will be vital in terms of fostering economic development. Employment Centers and Commerce Zones, outlined in Chapter 4, will enable targeted industries to locate and flourish in New Hanover County. Striking a balance between economic development and environmental stewardship, Plan NHC also seeks to inform developers, elected and appointed officials staff, and other stakeholders on how existing natural features and systems may influence development.

In addition, Plan NHC will act as a guide for the creation of a new zoning ordinance. The original ordinance, written in 1969 and amended over the years, is outdated and does not entirely reflect the vision of New Hanover County today. The vision of today reflects the need for a change in development patterns and includes switching from traditional sprawling development patterns to a denser, mixed-use style of land use. This will allow New Hanover County to achieve higher levels of density where appropriate, leaving room to preserve and protect the county's natural resources. Additionally, mixed-use development will create more opportunities for citizens in terms of housing, jobs and shopping choices, as well as foster a more active lifestyle.

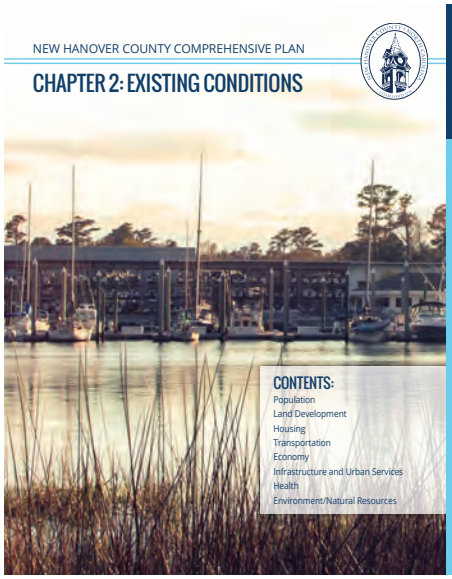
Planning staff would like to thank the New Hanover County Board of Commissioners, the New Hanover County Planning Board, and the appointed Citizens Advisory Committee for their guidance and leadership in developing this plan. In addition, the following groups and individuals were integral in the development of Plan NHC through their active participation:

- Business Alliance for a Sound Economy (BASE)
- Business organizations
- Cape Fear Community College
- Cape Fear Public Utility Authority
- Financial services organizations
- Homeowner's associations
- Interested citizens
- New Hanover County Schools
- New Hanover Regional Medical Center
- Non-profit organizations
- North Carolina State Ports Authority
- The City of Wilmington
- Tourism groups
- University of North Carolina at Wilmingon
- Wilmington Cape Fear Home Builders Association
- Wilmington Chamber of Commerce
- Wilmington International Airport
- Wilmington Regional Association of Realtors®

CHAPTER 1: PUBLIC ENGAGEMENT PLAN

CONTENTS:

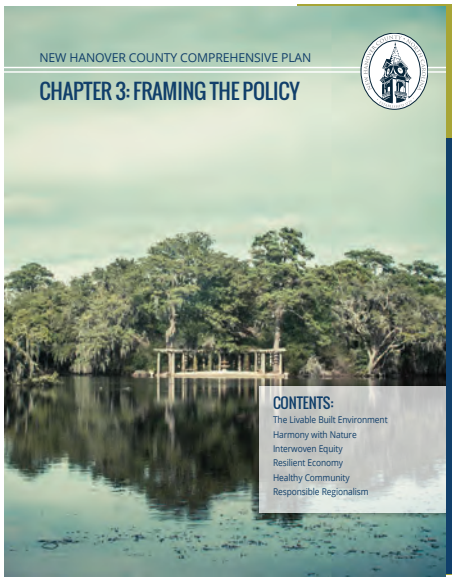
Mission and Vision
Purpose
Process
Opportunities for Involvement
Public Relations



CHAPTER 2: EXISTING CONDITIONS

CONTENTS:

Population
Land Development
Housing
Transportation
Economy
Infrastructure and Urban Services
Health
Environment/Natural Resources



CHAPTER 3: FRAMING THE POLICY

CONTENTS:

The Livable Built Environment
Harmony with Nature
Interwoven Equity
Resilient Economy
Healthy Community
Responsible Regionalism

CHAPTER 4: VISUALIZING THE FUTURE

CONTENTS:

Place Type Descriptions

Natural Systems

CHAPTER 5: BUILDING THE FUTURE

CONTENTS:

Implementation Initiatives

Implementation Guidelines

NEW HANOVER COUNTY COMPREHENSIVE PLAN

CHAPTER 1: PUBLIC ENGAGEMENT PLAN

CONTENTS:

Mission and Vision
Purpose
Process
Opportunities for Involvement
Public Relations

NHC MISSION AND VISION

New Hanover County (NHC) is committed to progressive public policy, superior service, courteous contact, judicious exercise of authority, and sound fiscal management to meet the needs and concerns of our citizens today and tomorrow.

We are a vibrant, prosperous, diverse coastal community, committed to building a sustainable future for generations to come.

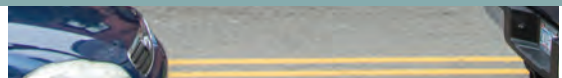
PURPOSE

The purpose of NHC engaging our citizens is to:

- Increase the likelihood that a common vision for our future will be widely accepted.
- Create more effective policies.
- Provide citizen direction for use of public funds and priorities.
- Improve citizens' knowledge and skills on specific issues, allowing citizens to see multiple sides of complex issues.
- Empower and integrate people from different backgrounds.
- Create local networks of community members.
- Create several opportunities for discussing solutions.
- Increase trust in local governance.
- Engage citizens to allow for effective partnerships that are healthy for our community.

GUIDING PRINCIPLES

- Inclusivity – We are committed to providing an inclusive process where all citizens are encouraged to be involved.
- Diversity – We encourage a representation of differing viewpoints in an effort to seek a workable solution.
- Equality – Citizens should know that although it is not possible to implement all ideas, all ideas will be heard in a respectful manner and considered with equal value.
- Transparency – All discussions, materials, and products will be available to the public on our website or by contacting staff.
- Legitimacy – Decisions and recommendations will be justified through participants' input.
- Deliberation – The process will lead to consensus.
- Substance – Opportunities for learning will be provided to all participants through webinars, field trips, and printed materials.
- Influence – The outcome of the citizens' work will result in policy changes.
- On-going – The process will allow time to review and consider the issue before a decision is made.
- Accommodating – Opportunities will be structured in a manner to accommodate all citizens and schedules.



TARGETED POPULATIONS

To ensure success with public engagement being inclusive of all residents, it is important to identify and seek out the involvement of groups that are not typically involved in county-wide planning efforts. These groups include college students, school-age children, seniors, and the Hispanic community.

Local middle and high school students and UNCW and Cape Fear Community College students will be engaged through facilitated focus groups where students will be asked what they like most and least about their community, recommendations for improvement, and ways we can retain them in our community after graduation.

Younger children are typically not included in planning efforts; however, their input is invaluable as a community plans for the future. Children's artwork will be gathered to seek their input as they illustrate their vision for New Hanover County's future, and appropriate children's activities will be provided at large public meetings.

Our community has experienced a significant increase in the senior population as the baby boomers have reached retirement age. Understanding the unique perspective this group of individuals brings to our community is important through the planning process. Specific efforts will be made to target seniors' input through the Osher Lifelong Learning Institute at UNCW.

The Hispanic community is often underrepresented in planning efforts. Staff will have translators at all public meetings. Likewise, brochures, press releases, and any other materials deemed necessary to engage the Hispanic population will be translated into Spanish.

PROCESS

The comprehensive planning process has been divided into "chapters" sections. Each of these sections will build on the previous to create the entire plan for the County. The plan is broken into these sections in order to provide a systematic approach for citizen engagement. Individuals will be allowed to participate in as many or as few opportunities as they desire.

Each chapter, or phase, of the plan will be presented to the Planning Board and Board of Commissioners as it is completed. This allows opportunity for each section of the plan to have a public hearing and adoption period. Therefore, encouraging participation from all citizens.

WINTER 2014

Evaluating the Present

- Public Launch
- Survey
- Website Launch
- Sign up for Theme Committees

SUMMER 2014

Framing the Policy

- Online Forum
- Theme Committee Meetings
- Citizen Advisory Committee Meets

FALL 2014

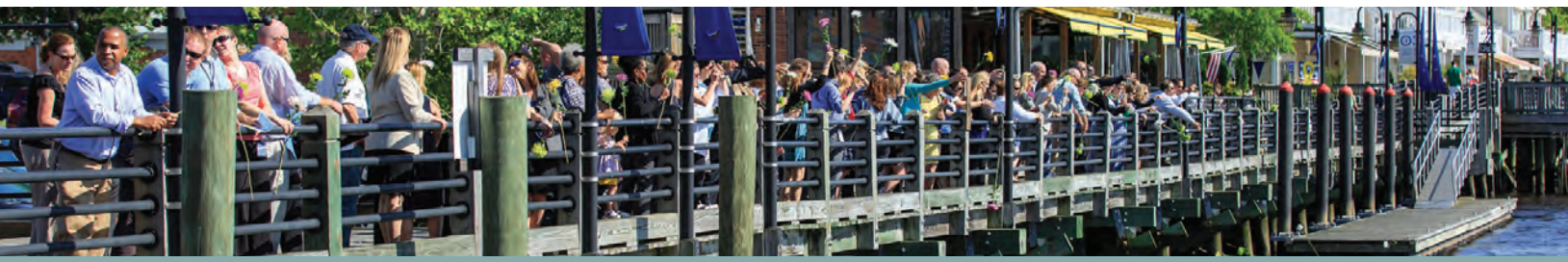
Visualizing the Future

- Public Meeting in Southern NHC
- Public Meeting in Northern NHC
- Public Meeting on Scenarios

WINTER 2015

Sustaining the Vision

- Public Meeting to present policy, recommendations, and Future Land Use Map



OPPORTUNITIES FOR INVOLVEMENT

Meetings: Public Meetings will be held throughout the planning process. Meetings will be held in familiar public buildings that provide a welcoming environment. Meeting times will vary throughout the day in order to gather input from as many different people as possible. Below is an estimated timeframe of public meetings for this process. Additional meetings can be scheduled as needed or desired by the public throughout the comprehensive plan.

- February 2014 – Public Launch to present current development trends and projected development trends.
- September 2014 – Neighborhood Meetings in Southern NHC. A mapping demonstration to gather input on areas of stability versus areas of opportunity.
- September 2014 – Neighborhood Meetings in Northern NHC. A mapping demonstration to gather input on areas of stability versus areas of opportunity.
- October 2014 – Public meeting and presentation on development scenarios.
- January 2015 – Public meeting to present policy recommendations and future land use.

In an effort for staff to speak with as many meeting attendees as possible and to build a welcoming and friendly environment, staff will wear navy shirts and khaki pants with their name badges. This allows citizens to immediately identify staff members in an informal and comfortable environment.

Public meetings can be stuffy and intimidating, particularly when they are technical in nature. Each public meeting will have two meeting greeters at each entrance. The meeting greeters will be the speakers for the evening. The purpose of this is to put people at ease, welcome them to the meeting, and provide a friendly face. Additionally, music, balloons, and refreshments will be used to create a positive and inviting environment. In an effort to encourage participation and promote local businesses, door prizes will be provided at each public meeting. These will be centered on a community experience such as paddle boarding, canoeing, museum admissions, passes to Airlie Gardens, sporting games, etc.

Finally, sign in sheets and name badges will be at every meeting and each meeting will be recorded to provide either a live feed or YouTube video of the presentation.

Survey: Staff is committed to gathering authentic feedback on the Comprehensive Plan and process. Staff will create and administer a statistically valid email survey at critical phases during the plan in order to gather input and direction from the community.

Website: New Hanover County staff understands that, while public meetings will be scheduled at varying times and locations to encourage participation, it is not always convenient for individuals to participate in a public meeting. Therefore, a significant web presence will be developed to further engage NHC citizens. A dedicated website for the NHC Comprehensive Plan will be user-friendly and include:

- The purpose of a comprehensive plan
- An overview of the process
- General questions and answers
- Resources and articles of relevance
- Press releases
- Minutes and videos of previous meetings
- All draft reports and maps
- An online engagement tool, County Forum

County Forum: An online public forum will be embedded into the county website. This forum will allow members of the public to read material about the project and to comment on it after completing a one-time registration with the site.

Online photo contests and children's artwork contests will be posted throughout the project as a source of input and a way to generate interest in the planning process.

Theme Committees: Theme committees will be an exciting opportunity for citizens to participate in a round-table discussion where issues are identified, best management practices are discussed, and implementation strategies can be developed. Theme committees are identified and defined as:

- Livable Built Environment: Ensure that all elements of the built environment, including land use, transportation, housing, energy, and infrastructure work together to provide sustainable, green places for living, working, and recreation, to produce a high quality life.
- Harmony with Nature: Ensure the contributions of natural resources to human well-being are explicitly recognized and valued and that maintaining their health is a primary objective.
- Resilient Economy: Ensure the community is prepared to deal with both positive and negative changes in its economic health and to initiate sustainable urban development and redevelopment strategies that foster business growth through technology and innovation and build reliance on local assets.
- Interwoven Equity: Ensure fairness and equity in providing housing, services, health, safety, and livelihood needs of all citizen groups.
- Healthy Community: Ensure public health needs are recognized and addressed through provisions for healthy foods, physical activity, access to recreation, health care, environmental justice, and safe neighborhoods.
- Responsible Regionalism: Ensure all local proposals account for, connect with, and support the plans of adjacent jurisdictions and the surrounding region.

Citizens will be encouraged to sign up to participate in a theme committee of their choice. County staff members, elected officials and local agency representatives will be asked to participate on theme committees in order to provide knowledge and expertise on specific topics. Additionally, one member of each theme committee will be appointed by the County Board of Commissioners.

It is anticipated each theme committee will meet four times for two hours each. Below is an estimated meeting time frame.

- March 2014 – First meeting to discuss issues.
- April 2014 – Second meeting to discuss best management practices and efforts other communities are implementing.
- May 2014 – Third meeting to rank recommendations.
- June 2014 – Fourth meeting to validate recommendations and select a member of the committee to serve on the Citizen Advisory Committee.

In addition to these meetings, staff may schedule various webinars, speakers, and/or "on-site" learning opportunities for the committees to better understand the workings of a particular issue. For example, staff may organize an opportunity for theme committee members to ride public transportation in an effort to better understand the benefits and challenges of the transportation system in our community. These learning opportunities will be developed and scheduled based on the conversations of the theme committees throughout the process.

Citizen Advisory Committee (CAC): The CAC will be comprised of the six representatives appointed by the Board of Commissioners to each Theme Committee and a representative of each theme group, selected by the group at large. The purpose of the Citizen Advisory Committee is to review the recommendations of all theme groups, identify policy conflicts, and finalize recommendations for the implementation plan. In addition to the committee meetings listed above, it is anticipated the Citizen Advisory Committee will meet three times for two hours each. Below is an estimated meeting time frame:

- August 2014 – First meeting to review all theme group recommendations
- September 2014 – Second meeting to review existing policies
- October 2014 – Third meeting to determine recommended policies

PUBLIC RELATIONS

Media Relations: Developing a strong relationship with the media is an important part of communicating with the public. Staff will utilize current resources through the Communications and Outreach department and their staff to hold regular media work sessions at each phase of the comprehensive plan. These work sessions will provide the media with a "sneak peak," answer questions, and provide information on important concepts and points.

In order to reach our target populations, press releases will be provided in Spanish and efforts will be made to target Hispanic, Senior, and children's newspapers and publications, in addition to traditional media outlets such as radio, television, and billboards.

Staff will also participate in New Hanover County Television (NHCTV) public service announcements and radio broadcasts. A video will be created to illustrate the purpose of the plan and opportunities for involvement.

Social Media will be used as a mechanism for announcing public meetings and important dates; however, it will not be utilized as a source of information gathering.

Community Relations: It is important for New Hanover County Planning Staff to develop community partners and relationships throughout this process. Talking points for each stage of the Comprehensive Plan will be developed and shared with partners so information can be easily distributed throughout the community.

These community partners include, but are not limited to:

- Educational Representatives
- Business Development Leaders
- Environmental Experts
- Civic Organizations
- Citizen Groups

Festivals and Outreach Opportunities: Our community is fortunate to have many festivals and organized community events. New Hanover County Planning Staff is committed to provide brochures and materials at these venues to build awareness and encourage public participation. These events include, but are not limited to:

- Airlie Concert Series
- SENC African American Heritage Festival
- Earth Day
- Festival Latino
- Azalea Festival
- Riverfest

Public Engagement Monitoring: The goal is to provide authentic public engagement, and it is important for staff to remain flexible in our approach. Staff will monitor and evaluate public engagement throughout the process to ensure all members of the community participate in the planning process. Staff will adapt engagement activities that may not be working and increase opportunities for new avenues of engagement, as needed. While the techniques may change slightly, the values will remain static.

CHAPTER 2: EXISTING CONDITIONS

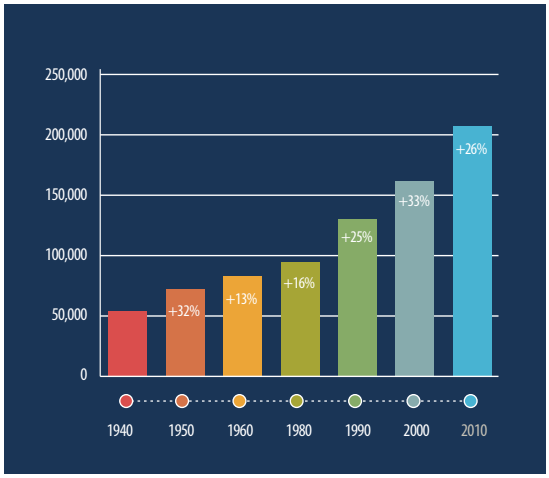
CONTENTS:

Population
Land Development
Housing
Transportation
Economy
Infrastructure and Urban Services
Health
Environment/Natural Resources

New Hanover County Historic Population Totals

The population of New Hanover County has more than quadrupled since 1940, increasing from slightly over 50,000 in 1940 to over 200,000 today.

The majority of New Hanover County's growth occurred in the period following 1990 after Interstate I-40 was completed. The construction of I-40 improved access to New Hanover County and led to the in-migration of residents from other counties in North Carolina, as well as from other states. Historically, other periods of high growth include the 1940s, with the issuance of the G.I. Bill providing home loans for veterans.



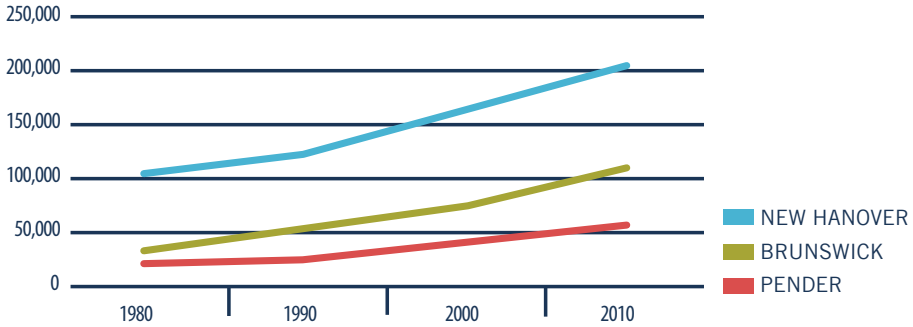
HISTORIC POPULATION GROWTH: NEW HANOVER COUNTY
FIGURE 2.1

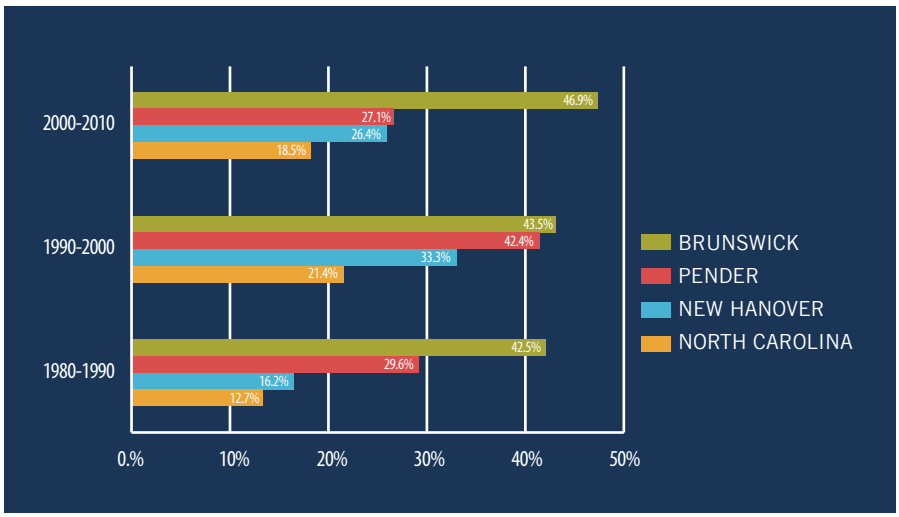
Regional Population Comparison: 1980 – 2010

A look at the tri-county population (New Hanover, Brunswick and Pender Counties) from 1980 to 2010 reveals that New Hanover County has nearly twice the population of Brunswick County and four times that of Pender County (Figure 2.2).

Figure 2.3 illustrates population growth rates for the tri-county area over the last three decades.

TRI-COUNTY POPULATION 1980-2010
FIGURE 2.2





TRI-COUNTY POPULATION GROWTH 1980-2010
FIGURE 2.3

Although New Hanover County has a larger population, Brunswick and Pender Counties have experienced higher growth rates than New Hanover County. The tri-county area overall has outpaced the state's growth rate.

Figure 2.4 shows the average annual growth rates for New Hanover County, Brunswick County, Pender County, Wilmington, and the unincorporated areas of New Hanover County. Since 1980, Brunswick County experienced the highest growth rate among the tri-county area.

	1980-1990	1990 -2000	2000-2010	2010-2012
New Hanover	1.6%	3.3%	2.6%	1.6%
Brunswick	4.2%	4.3%	4.7%	2.2%
Pender	3.0%	4.2%	2.7%	1.9%
North Carolina	1.3%	2.1%	1.8%	1.1%
Wilmington	2.6%	3.7%	4.0%	1.6%
Unincorporated New Hanover	0.7%	3.1%	1.4%	1.6%

AVERAGE ANNUAL POPULATION RATES
FIGURE 2.4

Population Projections

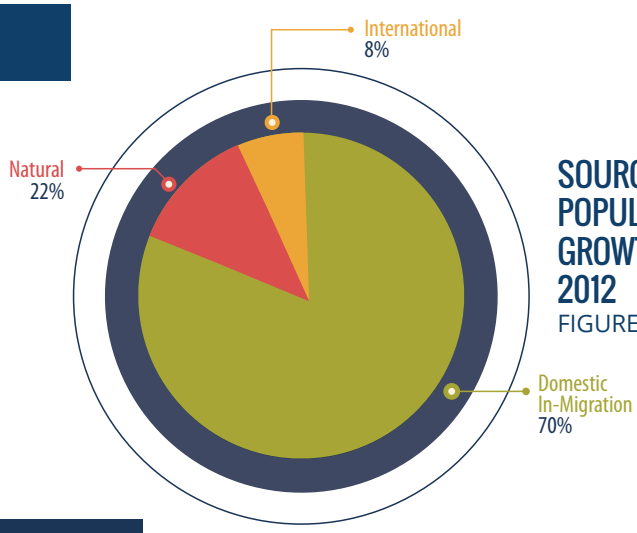
The tri-county area is one of the fastest growing regions in the country. The region as a whole is expected to grow nearly 90% by 2040, with New Hanover County capturing the majority of that growth at a rate of 66%.

As a part of the comprehensive plan, planners reviewed various methodologies for analyzing population projections, including those used by the North Carolina Office of State Budget and Management, the Wilmington Urban Area Metropolitian Planning Organization (WMPO), and Moody's Analytics (a globally recognized economics research organization). The low growth rate outlined below references the WMPO projections, and the high growth projections are calibrated from Moody's Analytics to represent current trends in our three county region. For planning purposes, it is recommended that the high growth population projections be used.

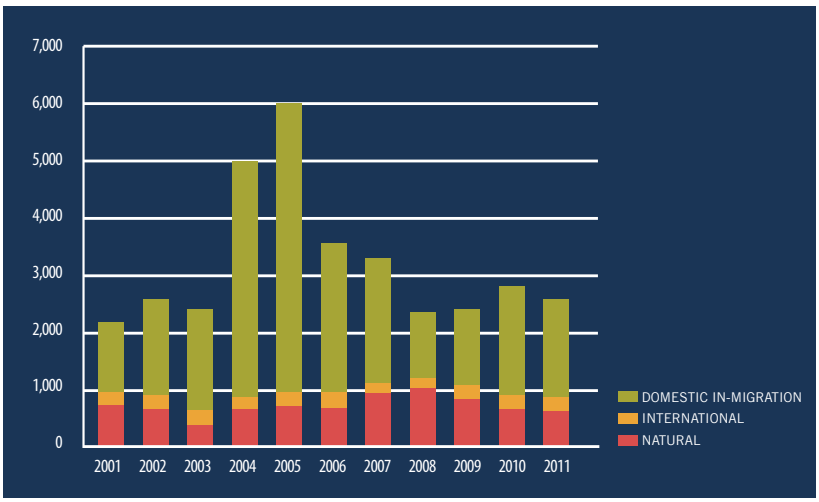
POPULATION FORECASTS FOR SUB-AREAS OF REGION
FIGURE 2.5

Population	2010	2040	
	Base	Low Growth	High Growth
New Hanover County	202,667	249,026	337,054
Unincorporated	85,973	105,639	152,157
Wilmington	106,476	130,832	167,904
Beach Towns	10,218	12,555	16,993
Brunswick County	107,431	212,355	234,833
Leland	13,672	27,025	44,886
Other Brunswick	93,759	185,330	189,947
Pender County	52,217	90,261	115,742
Southeast Pender	21,190	42,423	60,186
Other Pender	31,027	47,838	55,556
3-County Region	362,315	551,642	687,629

The majority of the population growth in the last decade consists of domestic in-migration (70%), while natural growth accounts for almost a quarter (22%) of population growth (Figure 2.6). As stated previously, this is likely due to the construction of Interstate 40 and the increased access to New Hanover County. Additionally, New Hanover County's temperate climate is appealing to retirees and individuals who are able to work from home offices or telecommute.



SOURCES OF POPULATION GROWTH 2001-2012
FIGURE 2.6



NEW HANOVER COUNTY SOURCES OF ANNUAL POPULATION CHANGE
FIGURE 2.7

New Hanover County Historic Population by Jurisdiction

The distribution of the majority of the County's population has alternated between the City of Wilmington and the unincorporated area of New Hanover County (Figure 2.8). Beginning in the 1960s, the City of Wilmington began to experience a decline in population as suburban housing patterns in the unincorporated areas became more attractive to residents. Major annexations of land by the City of Wilmington in 1995 and 1998 contributed to the City's increase in population during the 1990s. By 2000, the population of New Hanover County was almost equally distributed between the City of Wilmington and the unincorporated area. Today, the City of Wilmington contains the majority of the population. This fluctuation will likely stabilize with the current legislative requirements regarding annexation.

TOTAL POPULATION 1940-2010
FIGURE 2.8

	1940	1950	1960	1970	1980	1990	2000	2010
New Hanover	47,935	63,272	71,742	82,996	103,471	120,384	160,307	202,667
Wilmington	33,407	45,043	44,013	46,169	44,000	55,283	75,838	106,476
Unincorporated			25,521	33,069	53,976	57,815	75,668	85,996
Beach Towns			2,208	3,758	5,495	7,186	8,801	10,195

In 1960, 61% of New Hanover County's population resided in the City of Wilmington. However, a shift occurred, and by 1980, more than half of the county's population was living outside of the City's limits or in the unincorporated areas of the County. In the last two decades, two major annexations of land by the City of Wilmington, along with other factors, have caused the distribution to reverse itself again, such that the City presently holds a majority of the population (52.5%).

Year	Wilmington	Unincorporated	Beach Towns
1960	61.3%	35.6%	3.1%
1970	55.6%	39.8%	4.5%
1980	42.5%	52.2%	5.3%
1990	46.0%	48.1%	6.0%
2000	47.3%	47.2%	5.5%
2010	52.5%	42.4%	5.0%

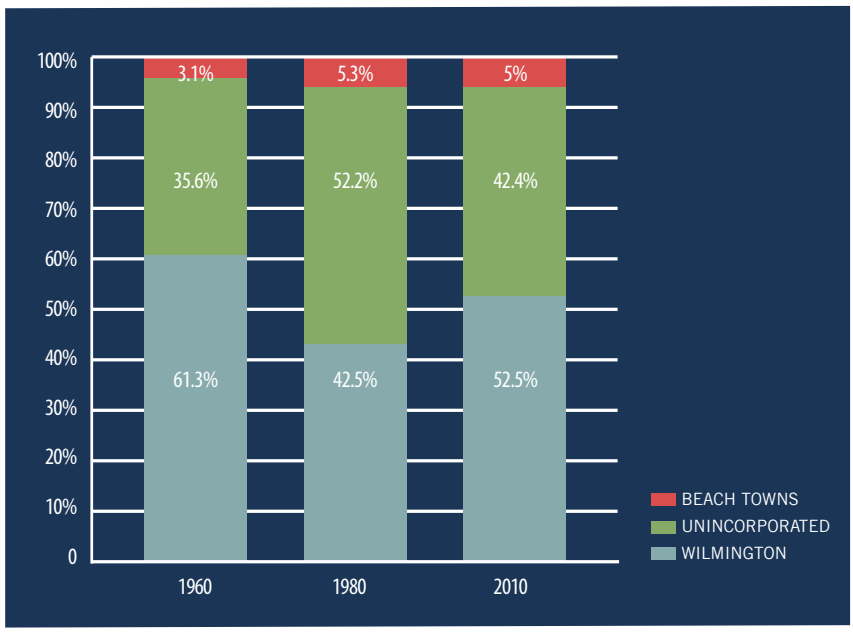
Source: U.S. Census Bureau

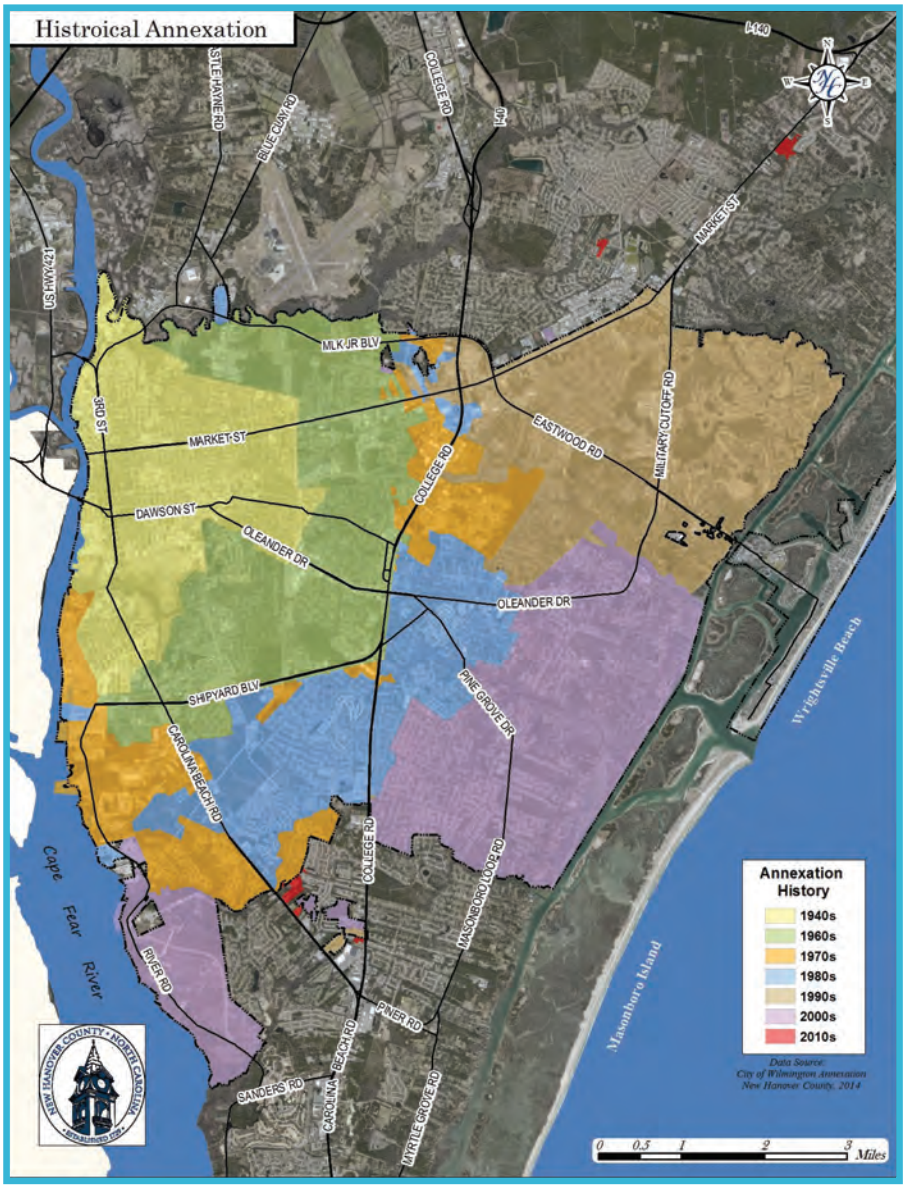
PERCENT OF POPULATION DISTRIBUTION BY JURISDICTION

(Beach Towns include Kure Beach, Wrightsville Beach and Carolina Beach)
FIGURE 2.9

POPULATION DISTRIBUTION BY JURISDICTION

(Beach Towns include Kure Beach, Wrightsville Beach and Carolina Beach)
FIGURE 2.10





HISTORICAL ANNEXATION

MAP 2.1

In the 1990s, the City of Wilmington began to regain its population through annexation and through downtown revitalization efforts. This map illustrates the historical annexation of New Hanover County by the City of Wilmington.

New Hanover County Racial Composition: 1990-2010

The racial composition of New Hanover County in 2010 showed that the majority of the population (77%) identified themselves as white, and 14% of the population identified themselves as African American.

In the last three decades, the proportion of the African American population in New Hanover County has decreased by approximately 5%, while the Hispanic population has grown and now represents approximately 5% of the County's population.

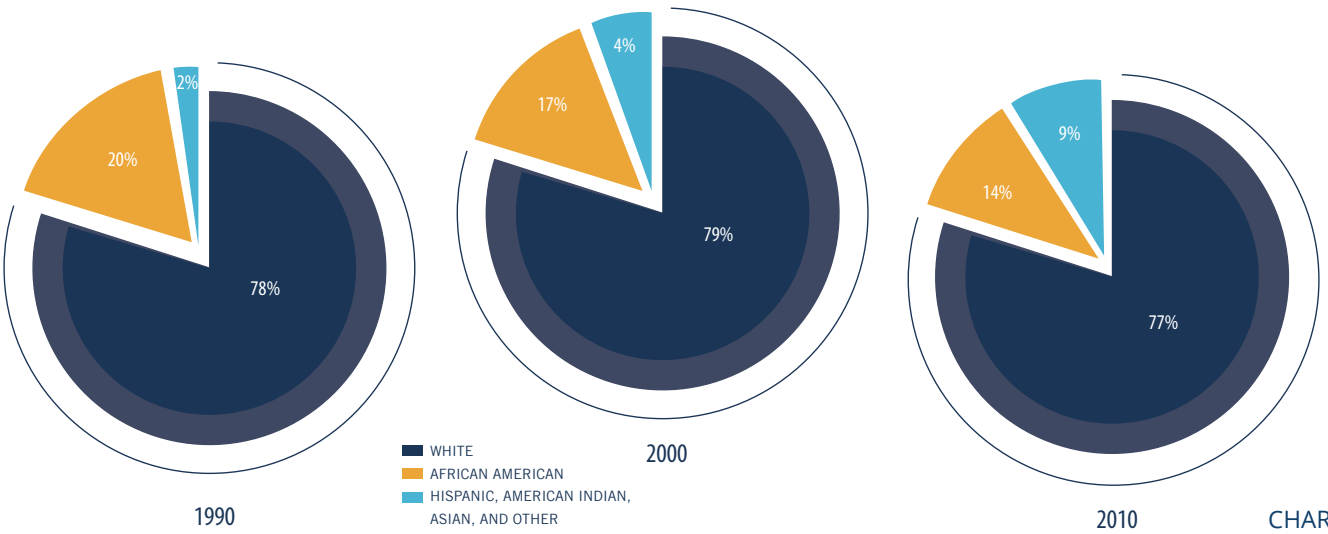


CHART 2.11

New Hanover County Racial Composition by Jurisdiction: 1990-2010

New Hanover County's African American and Hispanic populations represent higher proportions of the population within the City of Wilmington than within the unincorporated areas of the county. Since 1990, African Americans residing in the unincorporated area made up approximately 4% of the total county population, compared to African Americans residing in the City of Wilmington, who made up approximately 10 to 15% of the total County population. In the last 20 years, the proportion of the white population has decreased in the unincorporated area and increased in the City of Wilmington, likely due to annexation.

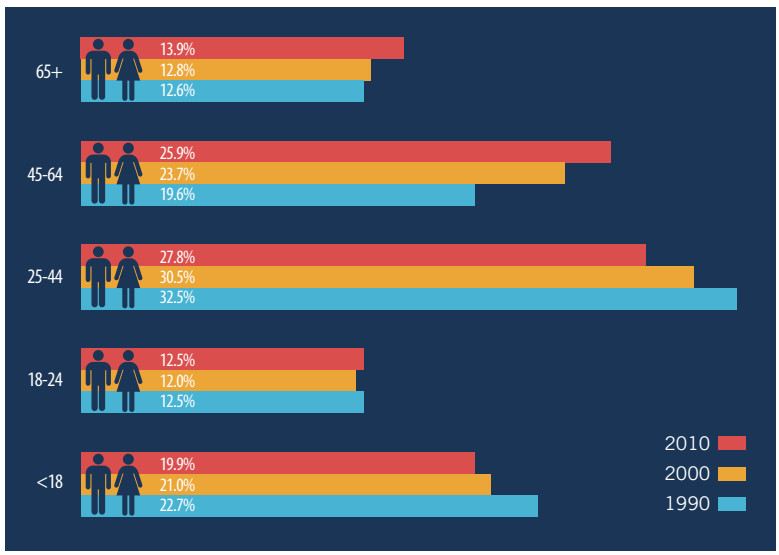
POPULATION PERCENT DISTRIBUTION BY RACE: 1990-2010

FIGURE 2.12

		White	African American	American Indian and Alaska Native	Asian and Pacific Islander	Other Races	Hispanic (of any race)
1990	Unincorporated	43.00%	4.36%	0.20%	0.24%	0.05%	0.33%
	Wilmington	29.98%	15.64%	0.14%	0.27%	0.14%	0.40%
	Beach Towns	5.91%	0.03%	0.02%	0.01%	0.01%	0.04%
2000	Unincorporated	41.17%	4.72%	0.20%	0.40%	0.24%	0.76%
	Wilmington	33.38%	12.21%	0.17%	0.47%	0.54%	1.24%
	Beach Towns	5.36%	0.04%	0.02%	0.02%	0.01%	0.04%
2010	Unincorporated	35.61%	4.28%	0.22%	0.57%	0.98%	2.00%
	Wilmington	38.63%	10.44%	0.25%	0.66%	1.39%	3.20%
	Beach Towns	4.87%	0.03%	0.03%	0.03%	0.03%	0.08%

New Hanover County Population by Age: 1990-2010

As the population of New Hanover County grows, its composition by age is changing. Since 1990, the 25-44 year age group has represented the largest proportion of the total population, but this age group has experienced a decline in its proportion of the population in the last 30 years. The 25-44 year age group is at risk of losing its majority to the 45-64 year age group, which now represents nearly the same proportion of the population. From 1990-2010, the population in New Hanover County in general has become older, with the largest percentage increase in the 45-64 age group population. This is an important factor for our community to consider as we consider housing needs for the Baby Boomer Generation.



POPULATION BY GROUP: NEW HANOVER COUNTY 1990-2010

FIGURE 2.13

Source: U.S. Census Bureau

New Hanover County Generational Composition: 2010

Another way to look at New Hanover County's age composition is by generation. As of 2010, Generation X (born 1966-1985) and the Baby Boomers (born 1946-1965) represented the two largest segments of New Hanover County's population. The proportion of Baby Boomers continues to experience an upward trend, while Generation X is losing its share of the population in New Hanover County.

NEW HANOVER COUNTY GENERATIONAL COMPOSITION: 2010

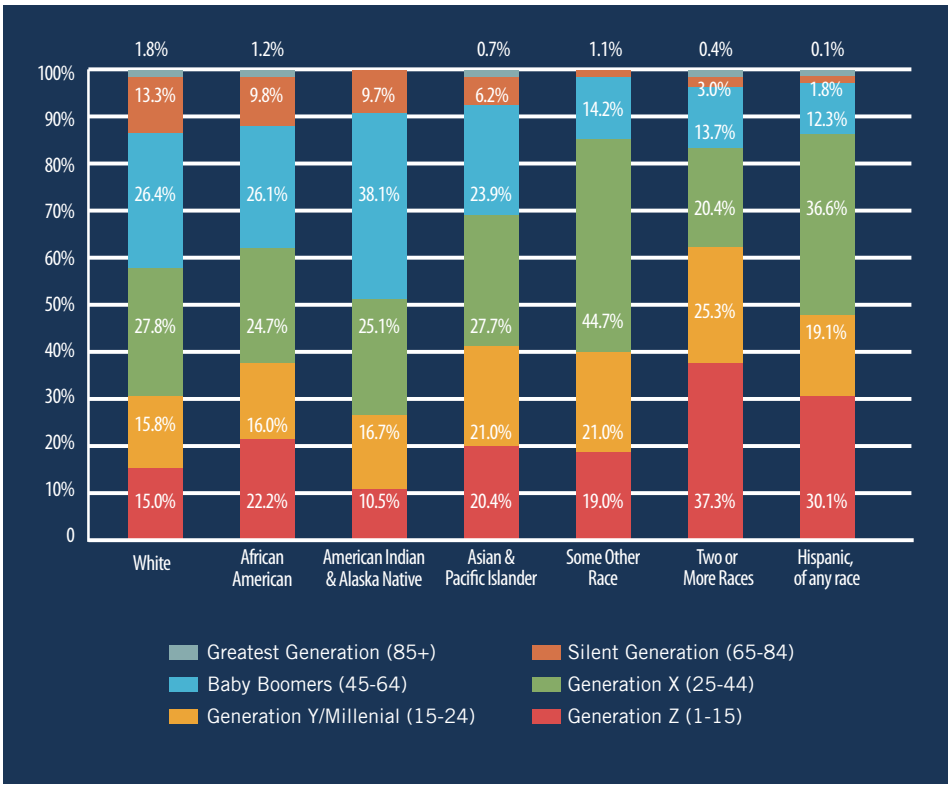
FIGURE 2.14

	2010	PERCENT OF POPULATION
Greatest Generation (85+)	3,673	2%
Silent Generation (65-85)	24,419	12%
Baby Boomers (45-65)	52,424	26%
Generation X (30-45)	56,393	28%
Generation Y/Millennial (15-30)	31,992	16%
Generation Z (1-15)	33,766	16%

Source: U.S. Census Bureau

New Hanover County Generational Composition by Race

Figure 2.15 shows the generational composition of New Hanover County broken down by race/ethnicity. Among those who indicated Hispanic ethnicity (of any race), 85.8% were also younger than 45 years of age, based on 2008-2012 estimates. By contrast, only 58.6% of the White population overall and 62.9% of the African American population overall fell below the age of 45. Although those who indicated Hispanic ethnicity may also fall into another racial category, based on the Census Bureau's definition of this characteristic, this finding is still significant, showing the relative youth of New Hanover County's Hispanic population compared to other groups.



POPULATION BY GENERATION AND RACE

FIGUE 2.15

Source: U.S. Census Bureau, American Community Survey, 2008-2012 Estimates

New Hanover County Population by Age and Jurisdiction

In both the City of Wilmington and the unincorporated areas of New Hanover County, the 25-44 year age group represents the largest segment of the population. However, this is a declining trend, with this age group's growth rate being outpaced by the 45-64 year age group. In the last decade, the 45-64 year age group's 10-year growth rate was 21% for the unincorporated area and 62% for the City of Wilmington, compared to only 2% and 32% respectively for the 25-44 year age group (see Figure 2.16).

10-YEAR GROWTH RATES (2000-2010)

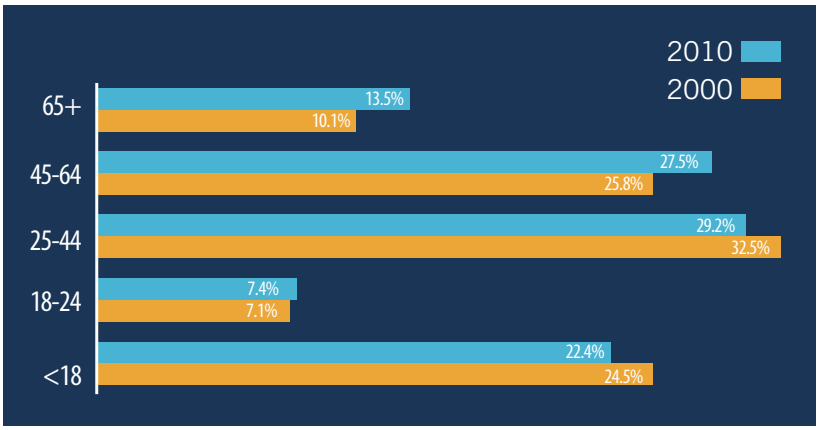
FIGURE 2.16

Age Group	Unincorporated	City of Wilmington
25-44	2%	32%
45-64	21%	62%

POPULATION DISTRIBUTION BY AGE AND JURISDICTION: 2010 (SOURCE: CENSUS)

FIGURE 2.17

		Unincorporated	%	Wilmington	%	Beach Towns	%
2010	<18	18,545	24.5%	13,942	18.4%	1,105	12.6%
	18-24	5,380	7.1%	13,033	17.2%	836	9.5%
	25-44	24,566	32.5%	21,594	28.5%	2,678	30.4%
	45-64	19,512	25.8%	15,632	20.6%	2,917	33.1%
	65+	7,665	10.1%	11,637	15.3%	1,265	14.4%

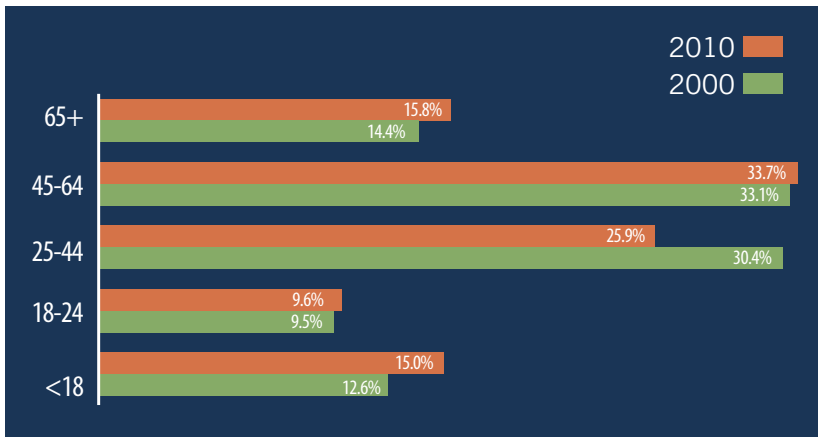


AGE GROUP TRENDS FOR UNINCORPORATED AREA: 2000-2010

FIGURE 2.18

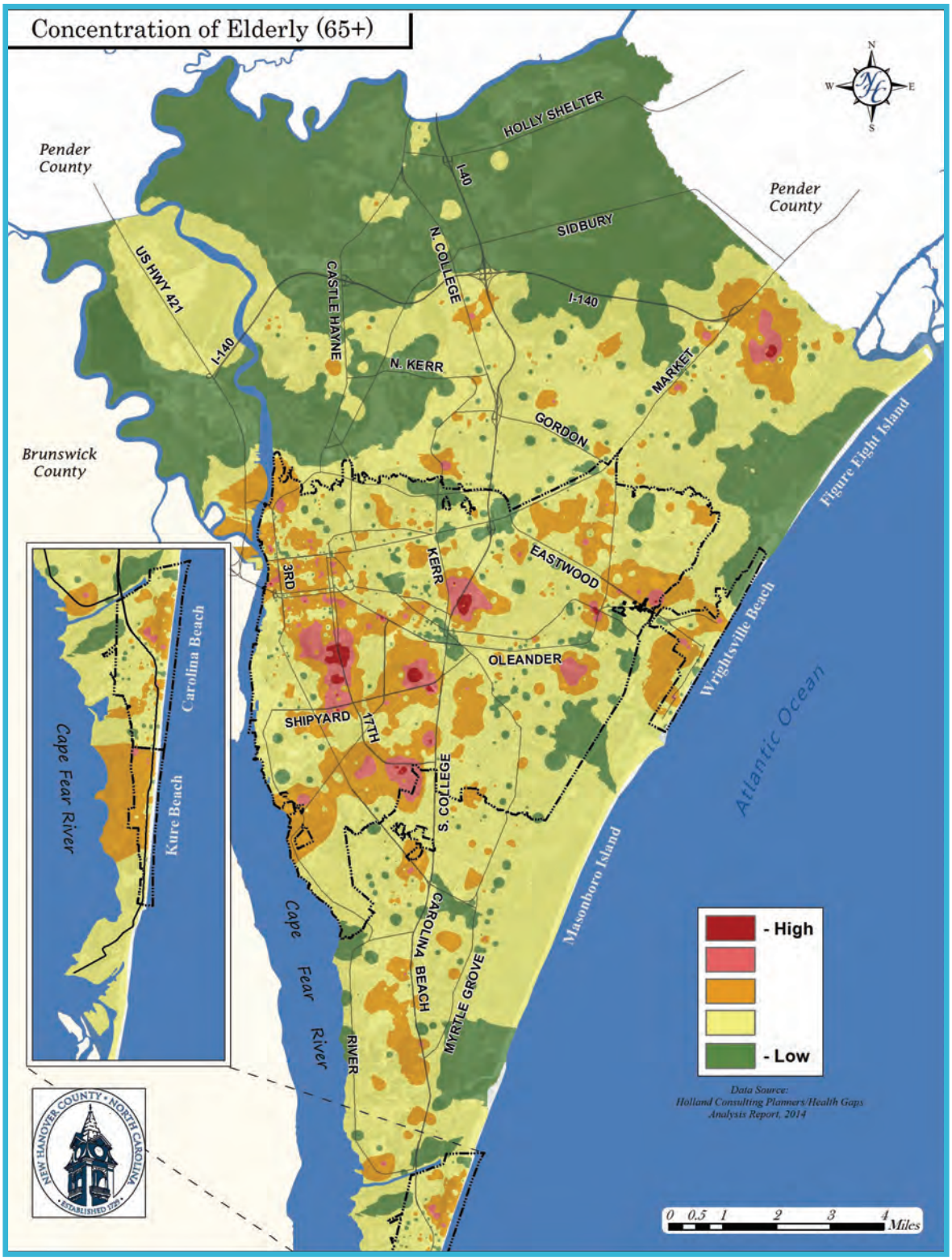
AGE GROUP TRENDS FOR BEACH TOWNS: 2000-2010

FIGURE 2.19



Map 2.2 shows the location of residents aged 65 years and older. Porters Neck, Landfall, Lions Gate, Downtown Wilmington, the 17th Street Corridor, Pine Valley, Beau Rivage, Wrightsville Beach and Kure Beach are areas with moderate to high concentrations of elderly populations.

MAP 2.2



New Hanover County Population by Gender

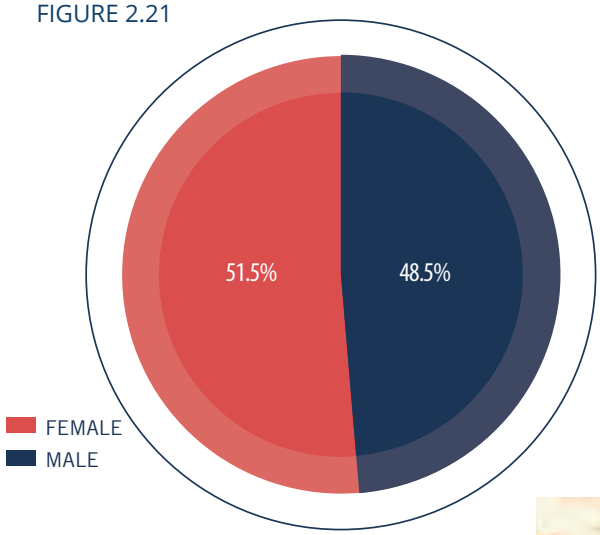
Since 1990 the proportion of males and females residing in New Hanover County has remained almost evenly split, with a slightly higher percentage of females. This remains true for both the City of Wilmington and the unincorporated areas of New Hanover County. However, the beach towns show the opposite split, with a slightly higher percentage of males.

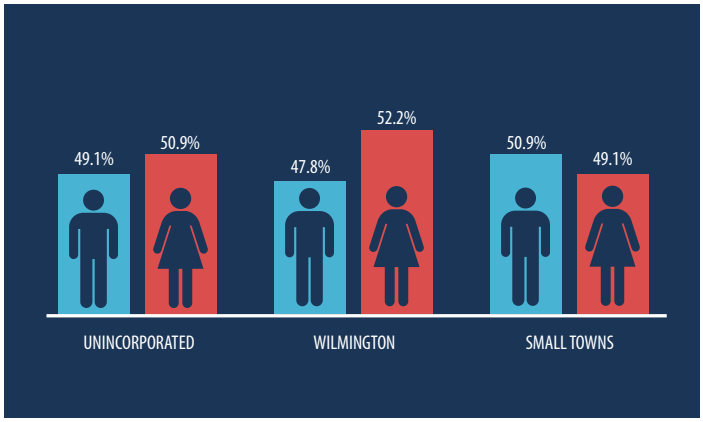
FIGURE 2.20

Year	Gender	New Hanover	%	Unincorporated	%	Wilmington	%	Beach Towns	%
1990	Male	57,071	47.4%						
	Female	63,213	52.6%						
2000	Male	77,371	48.3%	37,409	49.4%	35,397	46.7%	4,565	51.9%
	Female	82,936	51.7%	38,259	50.6%	40,441	53.3%	4,236	48.1%
2010	Male	98,269	48.5%	42,227	49.1%	50,857	47.8%	5,185	50.9%
	Female	104,398	51.5%	43,769	50.9%	55,619	52.2%	5,010	49.1%

NEW HANOVER COUNTY POPULATION BY GENDER: 2010

FIGURE 2.21





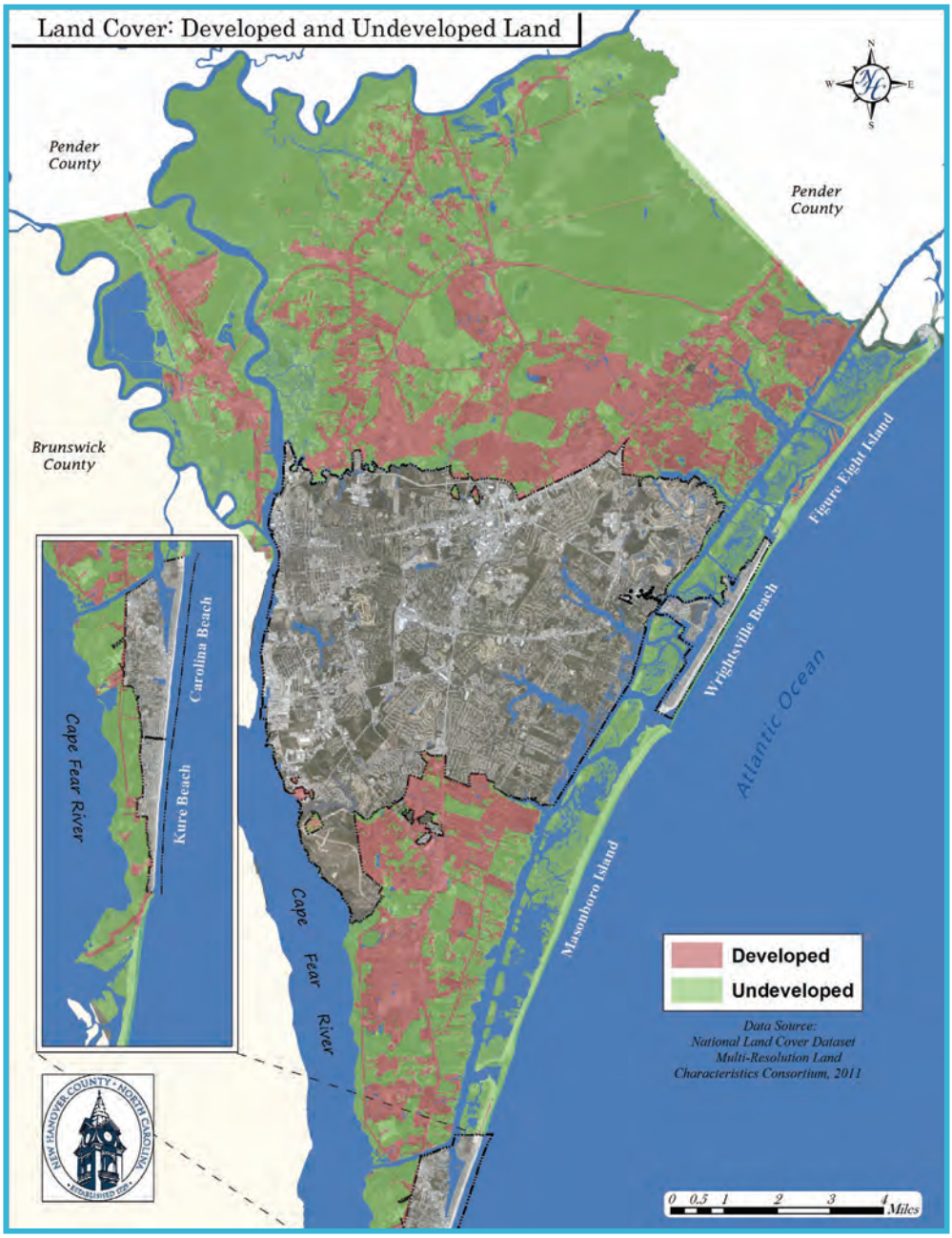
POPULATION BY GENDER AND JURISDICTION: 2010

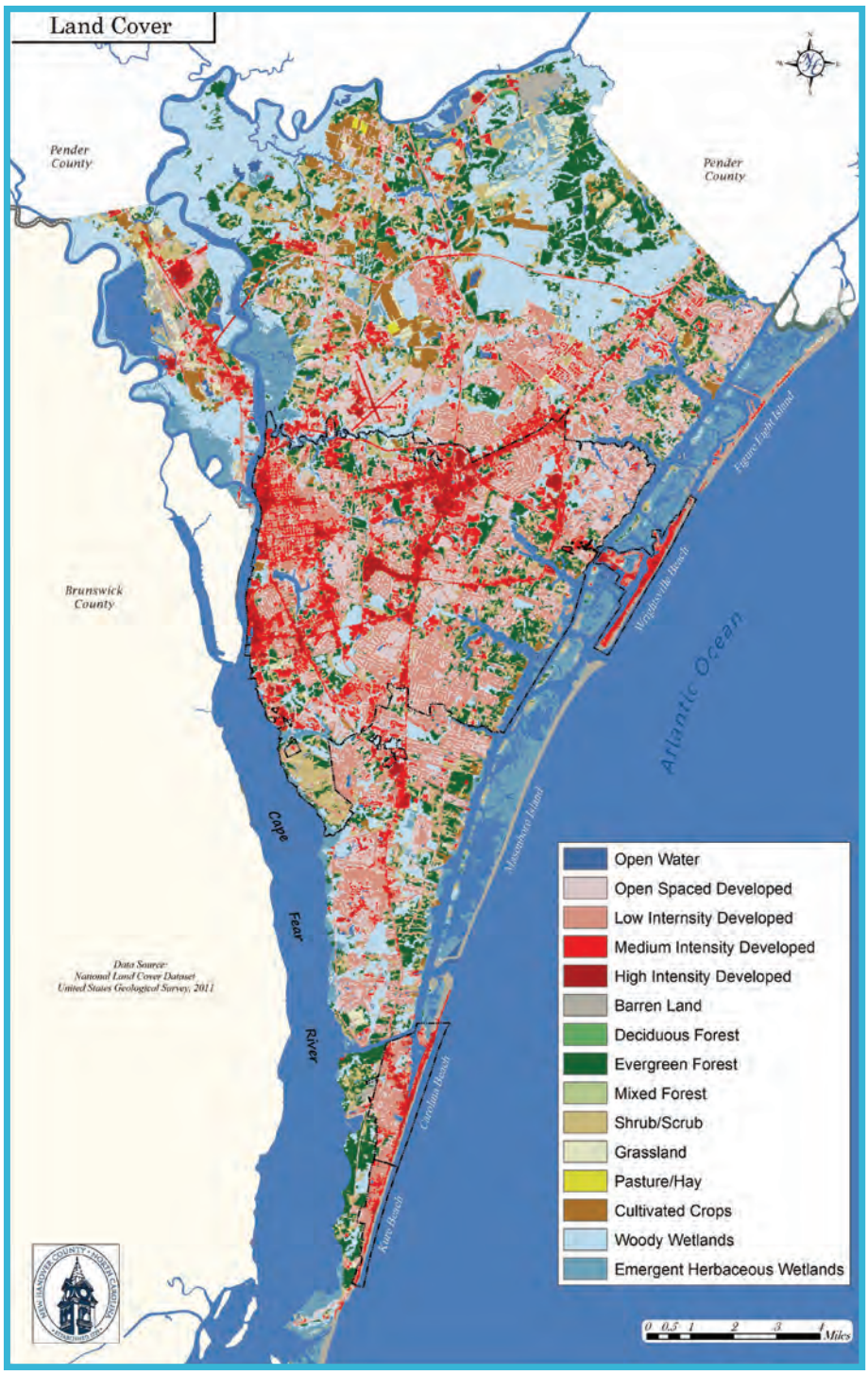
FIGURE 2.22

Definitions of developed land differ across municipalities and communities and are often determined by what data is available. The recent release of land cover data produced by the U.S. Department of the Interior gives a closer account of the physical land type than other available datasets. New Hanover County also produces a parcel by parcel dataset that is listed with tax data that includes land use. Though land cover and land use are fundamentally different, both datasets can be used to come to similar conclusions about undeveloped and developed land.

New Hanover County encompasses approximately 144,000 acres, which include land and water areas. Of the total land and water area, approximately 126,000 acres (87%) is land area. The unincorporated area of the county accounts for 106,000 acres, or 73%. While almost 60% of the physical land cover in New Hanover County is considered developed in some form (housing, commercial, industrial facility, or road network), the unincorporated area remains 70% undeveloped. A majority of the contiguous undeveloped areas of land are located in the northwest section of the county and the Castle Hayne area as well as the northeastern section of the county around the I-140 corridor, Sidbury Road and Holly Shelter Road.

MAP 2.3



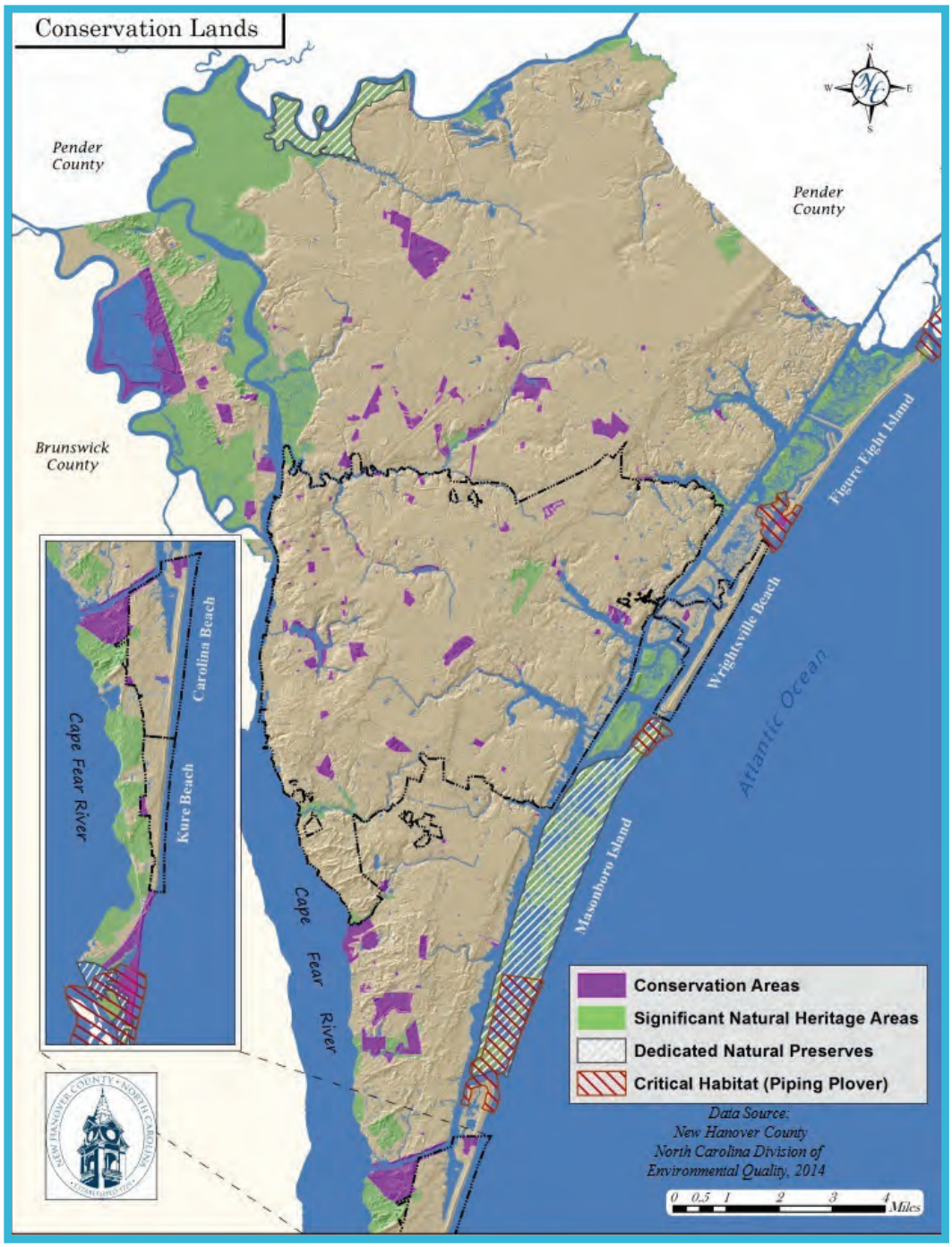


MAP 2.4

Though the land cover data will show more physical undeveloped land, analysis of developed and undeveloped land based on a parcel scale helps illustrate a different story of land use.

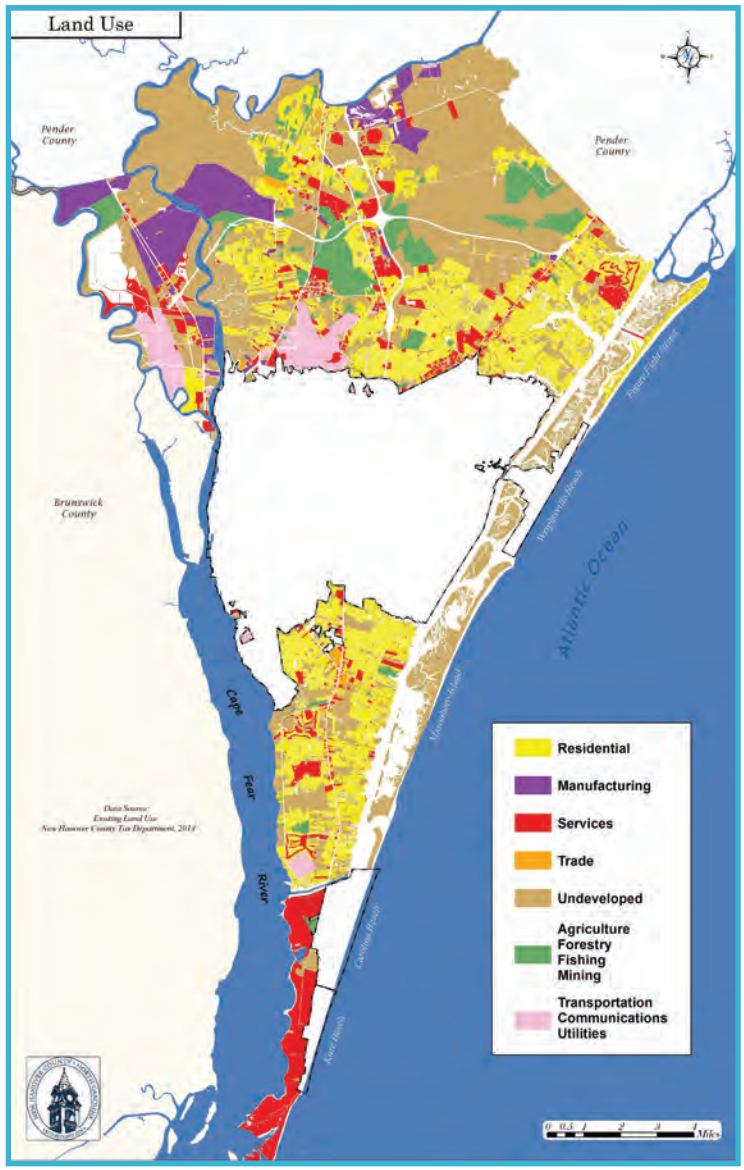
Looking at the parcel level, the unincorporated areas of New Hanover County include approximately 45,000 acres of undeveloped land. Of that land, however, about 16,000 acres are considered protected. Protected lands are not available for development due to ownership. These lands are managed by local, state or federal agencies, including New Hanover County. Protected lands include parks, public trust lands, Cape Fear Community College research lands, land owned by the State of North Carolina and land owned by the North Carolina Coastal Land Trust. Protected lands also include Dedicated Natural Preserves, which are conservation lands owned by state agencies like the NC Department of Environment and Natural Resources and NC Wildlife Resources Commission.

MAP 2.5



Though undeveloped land is spread across the unincorporated areas of New Hanover County, some of the largest contiguous parts include the northwest corner and the northeast section of the county around the I-140 corridor, Sidbury Road, Holly Shelter Road and Greenview Ranches. Other major areas include Wrightsboro and Castle Hayne. Although the marsh area between Wrightsville Beach, Figure Eight Island and the Intracoastal Waterway appears undeveloped on the map, these areas are still parceled out and owned privately. Development in these areas is unlikely, but the land will continue to appear in parcel-based analyses.

MAP 2.6



Existing Land Use

This study catalogs the types, extent, distribution and intensity of the uses or activities found on parcels of land in the unincorporated areas of New Hanover County. Knowing what activities currently occur in different locations in a community and the relationship between those uses is critical information for determining future land use.

Figure 2.23 shows land use by land class for New Hanover County, including the City of Wilmington and beach towns (Kure Beach, Wrightsville Beach and Carolina Beach).

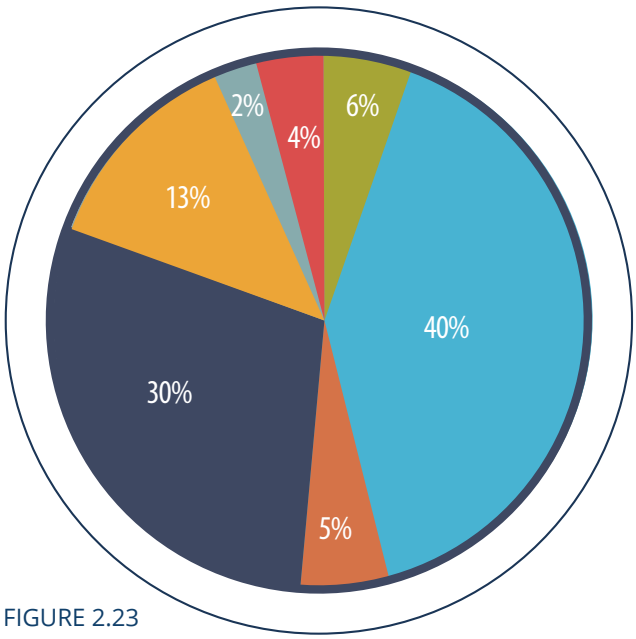


FIGURE 2.23

- AG/FOREST/FISH/MINING
- UNDEVELOPED
- MANUFACTURING
- RESIDENTIAL
- SERVICES
- TRADE
- TRANSPORTATION/COMMUNICATION/UTILITY

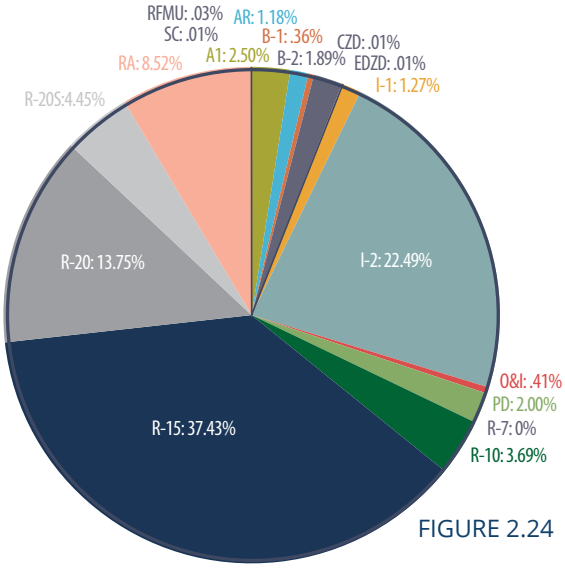


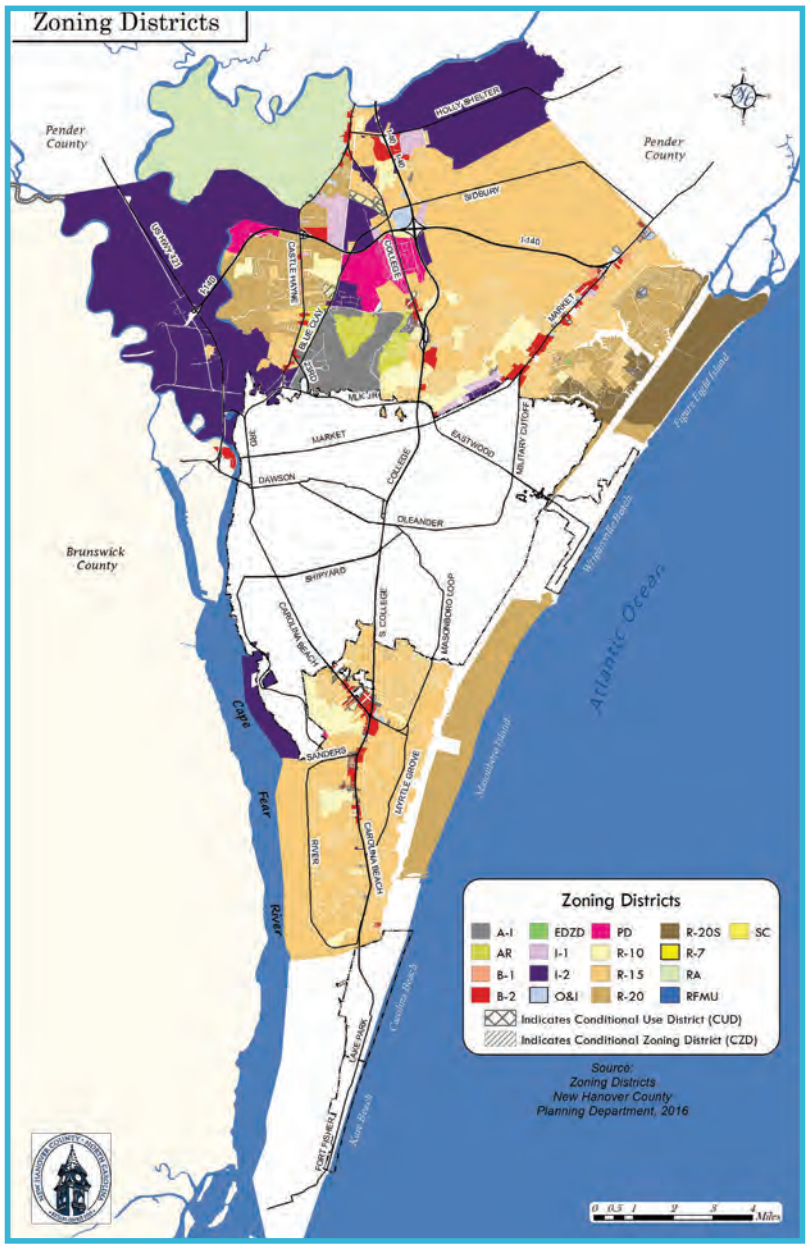
FIGURE 2.24

- AIRPORT INDUSTRIAL (AI)
- AIRPORT RESIDENTIAL (AR)
- BUSINESS (B-1)
- HIGHWAY BUSINESS (B-2)
- CONDITIONAL ZONING DISTRICT (CZD)
- EXCEPTIONAL DESIGN ZONING DISTRICT (EDZD
- LIGHT INDUSTRY (I-1)
- HEAVY INDUSTRY (I-2)
- OFFICE & INSTITUTIONAL (O&I)
- PLANNED DEVELOPMENT (PD)
- RESIDENTIAL DISTRICT (R-7)
- RESIDENTIAL DISTRICT (R-10)
- RESIDENTIAL DISTRICT (R-15)
- RESIDENTIAL DISTRICT (R-20)
- RESIDENTIAL DISTRICT (R-20S)
- RURAL AGRICULTURE (RA)
- RIVERFRONT MIXED USED (RFMU)
- SHOPPING CENTER (SC)

Existing Zoning

The Zoning Ordinance was adopted in 1969 and is updated as needed through approval by the County Commissioners. New Hanover County's zoning regulations detail the administration and enforcement of zoning for the promotion of health and general welfare of the community. Currently, New Hanover County has 5 main districts: residential, commercial, industrial, mixed use and overlay districts. Within those main districts, subdistricts define the specific regulations involved within each zoning area. There are seven residential districts: Airport Residential, Rural Agriculture, R-20S, R-20, R-15, R-10 and R-7; four business districts: (B-1) Business district, (B-2) Highway Business district, (O&I) Office and Institutional and (SC) Shopping Center; three industrial districts: Airport Industrial, (I-1) Light Industrial and (I-2) Heavy Industrial; three mixed use districts: (EDZD) Exceptional Design Zoning District, (PD) Planned Development and (RFMU) River Front Mixed Use; and five overlay districts: (COD) Conservation Overlay District, (CUD) Conditional Use District, (CZD) Conditional Zoning District, (SHOD), Special Highway Overlay District and (WSW) Water Supply Watershed. Each of the 22 districts specifies standards such as density, lot size minimum and setbacks.

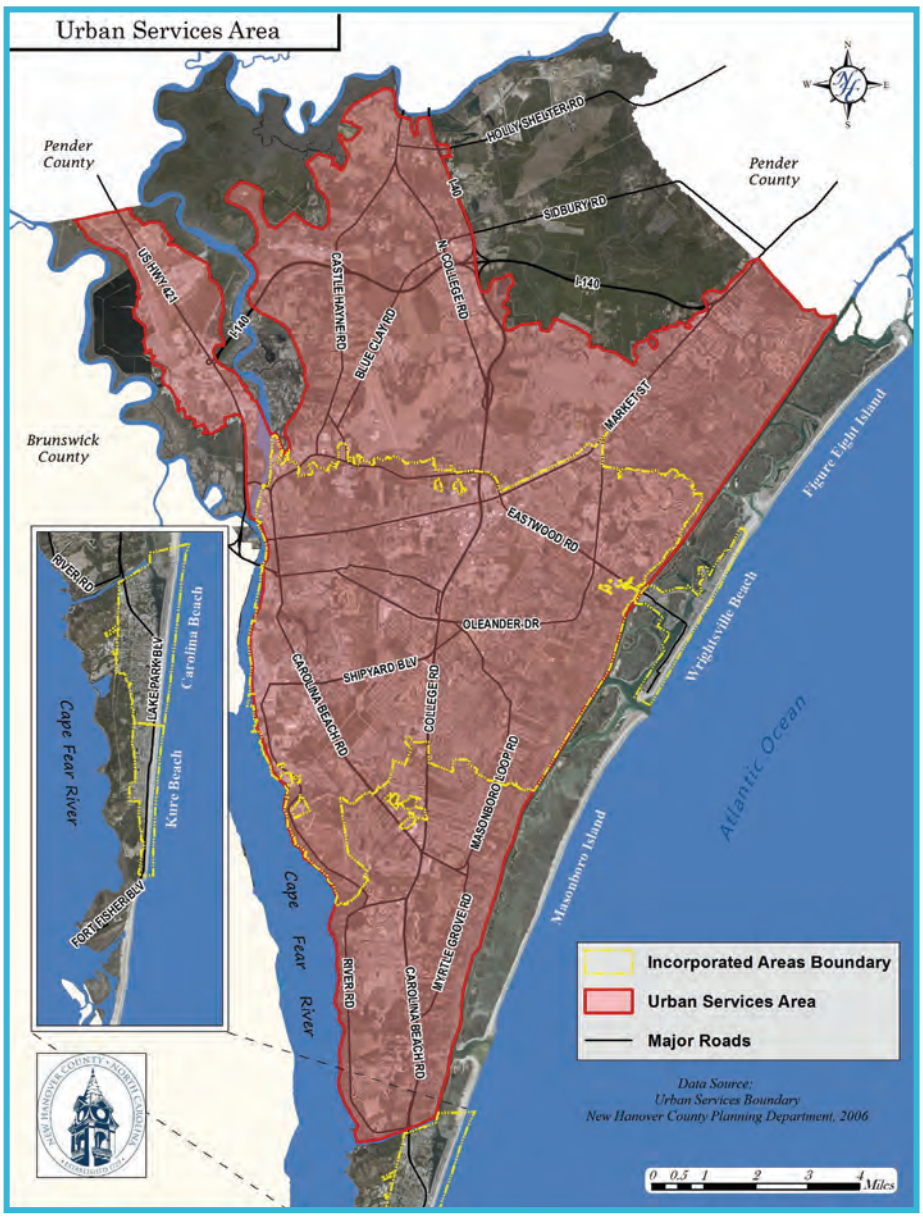
MAP 2.7



Almost sixty percent of the zoned land in unincorporated New Hanover County is residential. Thirty-seven percent of the land in residential districts is zoned R-15. The remaining residential zoning districts account for about 22 percent of the total zoned land in unincorporated New Hanover County. The second largest zoning district is I-2, heavy industry (23%). The majority of these districts are located in the northwestern and northeastern sections of the county along the Northeast Cape Fear River.

Urban Services Boundary

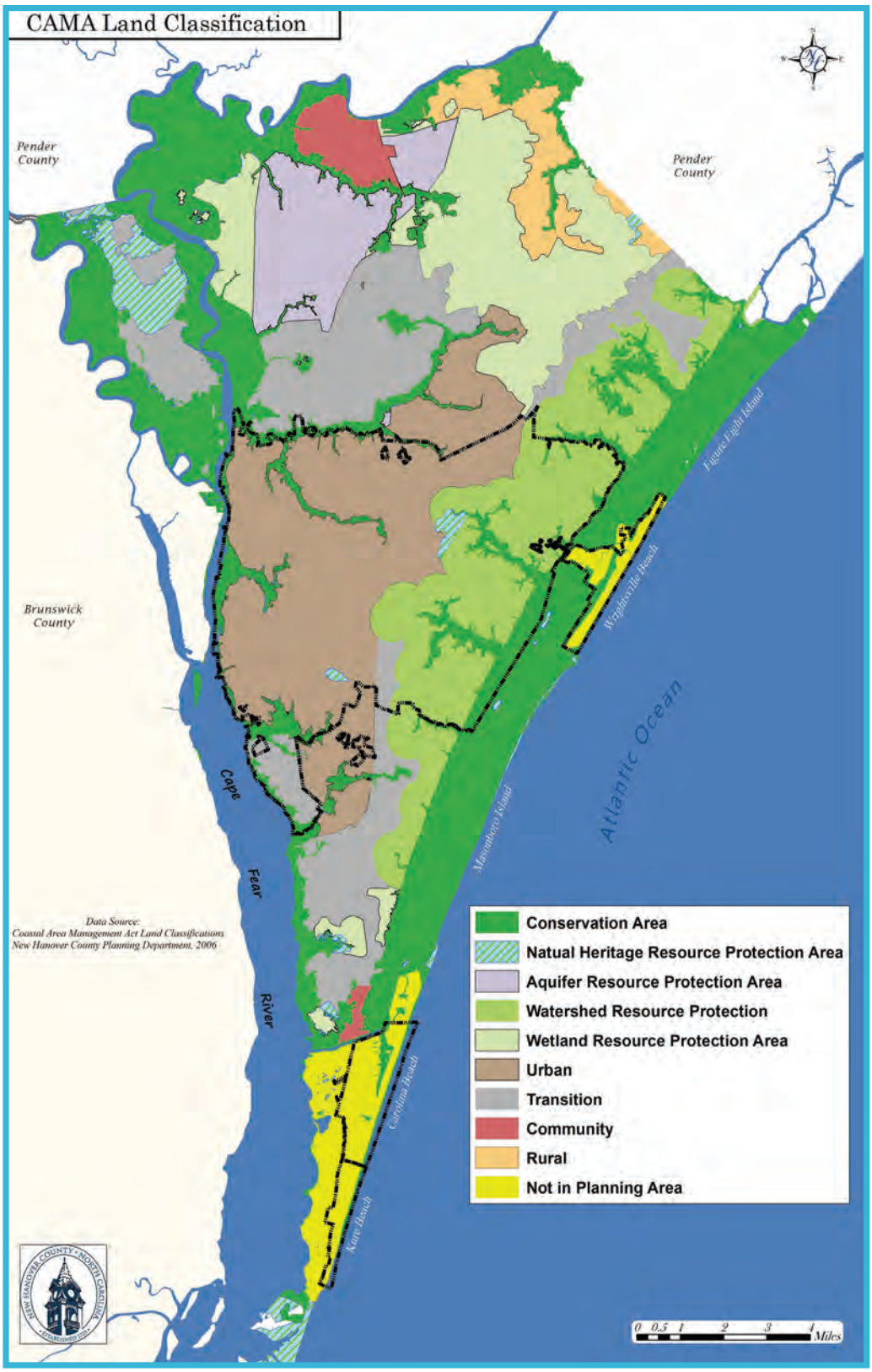
The Urban Services Boundary (USB) was established in conjunction with the creation of the 2006 New Hanover County Coastal Area Management Act Plan (CAMA). The urban services boundary was a tool that was used to help New Hanover County decision makers determine possible development and the cost of providing infrastructure such as water and sewer. The need for the urban services boundary has been studied through this planning process. A new Future Land Use map has been created to replace the 2006 CAMA Land Use map. Refer to Chapter 4 of the plan for additional information.



A majority of New Hanover County falls within the urban services boundary, with the exception of areas below Snow's Cut: Carolina Beach, Kure Beach and Fort Fisher. Other areas not within the USB include the northwest section of the county bordered by the Northeast Cape Fear River, and the northeastern section east of I-40, including Sidbury Road, Holly Shelter Road, the I-140 corridor and Greenview Ranches. Other notable areas outside the USB include Wrightsville Beach and Figure Eight Island. Areas outside of the Urban Services Boundary rely on septic tank systems and well water.

MAP 2.8

MAP 2.9

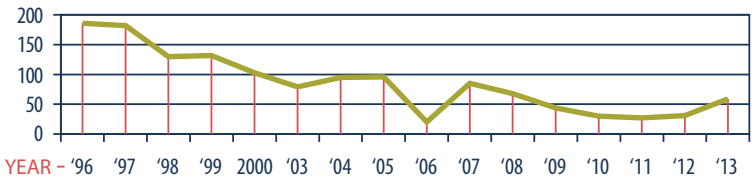


CAMA Land Classification Map

The CAMA land classification map was created in 2006. This map indicated the location of each of the land classes identified in the 2006 CAMA Land Use Plan: Urban, Transition, Community, Rural, Conservation and Resource Protection. This map is used to aid decision makers in future development plans.

Subdivisions

Subdivisions within the unincorporated areas of New Hanover County are processed through the Planning and Inspections Department and the current planning staff. Subdivision regulation is located within the adopted subdivision ordinance. The ordinance is to provide for orderly development: coordination of existing and proposed streets and public facilities; the dedication or reservation of rights-of-way or easements for streets and utility purposes; and for the distribution of population and traffic to avoid congestion and overcrowding.

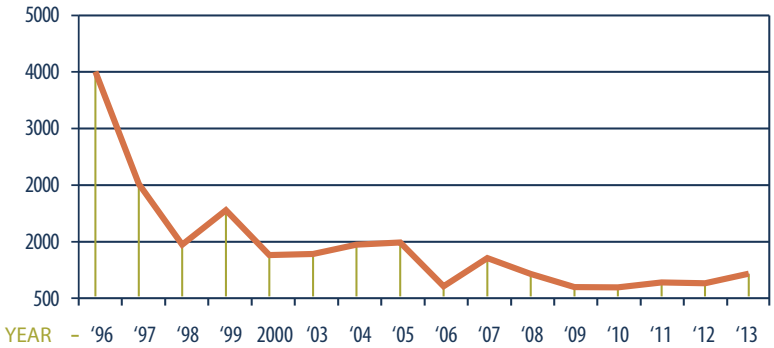


TOTAL NUMBER OF NEW SUBDIVISIONS BY YEAR

FIGURE 2.25

FINAL LOTS APPROVED

FIGURE 2.26



Since 1996, New Hanover County has received over 1,300 potential residential development projects. Of those projects, 14,236 lots were granted final approval. As seen in Figures 2.25 and 2.26, 1996 saw the greatest number of projects as well as the greatest number of final lots approved. After 1996,there was a significant decline in the number of proposed projects and final lots approved, and the trend continued until 2009 with few exceptions. In 1999 there was slight growth followed by a decline until 2003 when there was growth until 2005. Another sharp decline can be seen in 2006, with an immediate rebound in 2007. The rebound was followed by another decline with a slight increase in recent years.

The trend lines in the graphs can be attributed to important events occurring in the 1990s and 2000s. These events include the completion of Interstate 40 in 1990. Though not shown, I-40 contributed greatly to development in the early 1990s. The decline seen after 1996 shows the end of the development boom. The other major event, the economic recession in the mid 2000s, contributes to an almost complete halt of development. Though the incline of development in residential development can be correlated with an increase in economic activity, New Hanover County has much less undeveloped land than other North Carolina counties. As the second smallest county and the most developed, development trends will likely remain low compared to the 1990s.

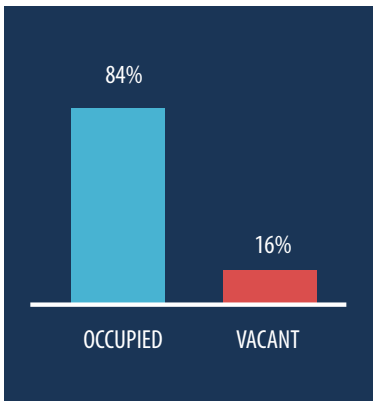
As New Hanover County's population is expected to grow, so will the demand for housing and jobs. New Hanover County has a diverse spectrum of housing, including single family, multi- family and mobile homes. New Hanover County as a vacation destination is also host to many second homes. It is important to understand the current housing characteristics and demographics in order to prepare for the future housing market.

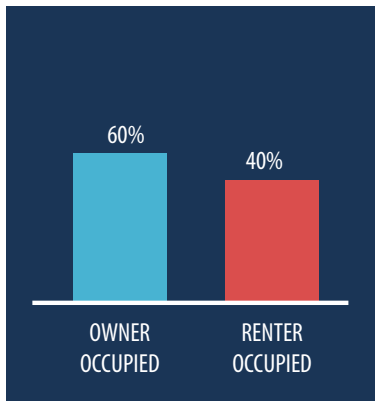
Housing Occupancy, New Hanover County

There are a total of 101,402 housing units in New Hanover County. Of that number, 85,183 are occupied, while 16,219 are vacant. Owners occupy 60% of occupied housing units in New Hanover County, while renters make up 40% of occupied units. Vacant housing units account for 16% of the total housing units in New Hanover County. The average household size of an owner-occupied home is 2.39, while the average size of a renter-occupied home is 2.22.

PERCENTAGE OF OCCUPIED VS VACANT HOUSING UNITS 2008-2012

FIGURE 2.27





PERCENTAGE OF OWNER-OCCUPIED VS. RENTER-OCCUPIED HOUSING 2008-2012

FIGURE 2.28

Source: U.S. Census Bureau

Affordable Housing Units by Location, New Hanover County

There are currently two affordable housing communities in the unincorporated area of the county: White Oak Apartments and Gresham Place Apartments. Gresham Place Apartments is an apartment community that is designated for seniors only and is located on Gordon Road in the northeastern part of the county. White Oak Apartments are also located in northern New Hanover County and are available to those who are considered to have low income.

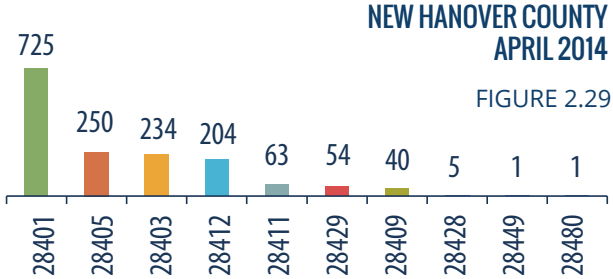
Public Housing and Housing Assistance, New Hanover County

As of April, 2014, there were 1,577 people receiving Housing Choice Vouchers according to the Wilmington Housing Authortiy. The Authority distributes vouchers and oversees eight public housing communities which are all located within the City of Wilmington.

The figure listed to the right depicts New Hanover County areas by zip code with the largest populations of those receiving Housing Choice Vouchers. The 28401 zip code represents the most Housing Choice Voucher recipients with 725 people, accounting for 46% of total vouchers distributed. This zip code represents the northwestern part of the county. The zip codes with the least population of Housing Choice Voucher recipients are 28480 and 28449. Zip code 28480 represents Wrightsville Beach; and zip code 28449 represents Kure Beach.

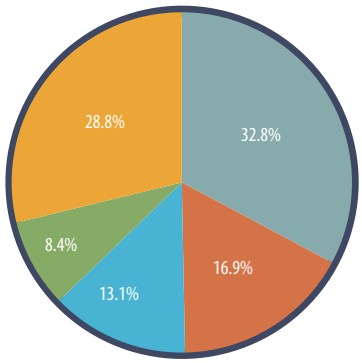
PERCENTAGE OF HOUSING CHOICE VOUCHERS BY ZIP CODE NEW HANOVER COUNTY APRIL 2014

FIGURE 2.29



Homeowner Housing Cost Conditions, New Hanover County

The median amount of income that homeowners spend on monthly housing costs is $1,521. The median household income for New Hanover County residents is $50,420. Therefore, a household earning the median income is spending $18,252 per year on housing-related costs. This expense accounts for 36.2% of their annual income. The chart to the left displays the percentage of income that homeowners in New Hanover County spend on housing costs. According to the graphic to the left, 37.2% of the households in New Hanover County are spending more than 30% of their income on housing-related costs.

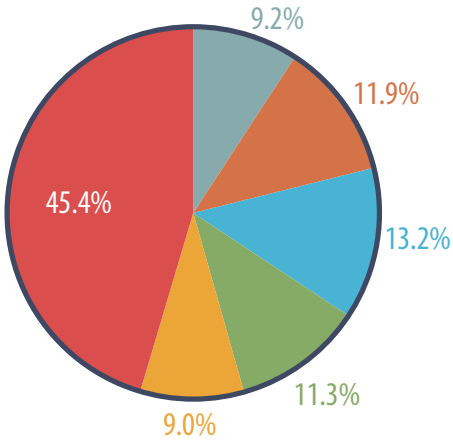


PERCENTAGE OF HOMEOWNER INCOME SPENT ON HOUSING COSTS, NEW HANOVER COUNTY 2008-2012

FIGURE 2.30

Renter Housing Cost Conditions, New Hanover County

According to the U.S. Census Bureau, 54.4% of New Hanover County renters spend more than 30% of their earnings on rental housing costs. The gross rent for an apartment in New Hanover County is $889. A person earning the per capita income of $29,834 would spend approximately $10,668 on rent each year, accounting for 35.8% of their income.

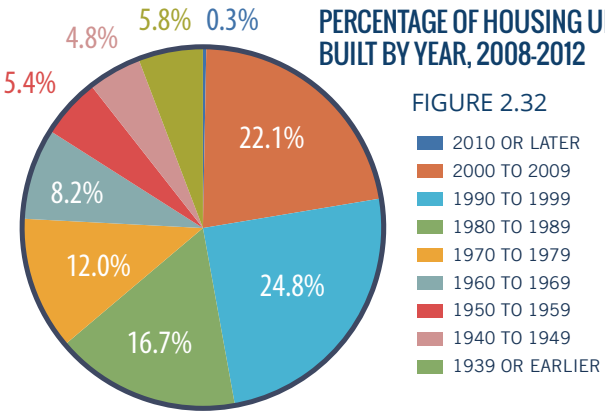


PERCENTAGE OF RENTER INCOME SPENT ON HOUSING COSTS, NEW HANOVER COUNTY, 2008-2012

FIGURE 2.31

Housing Stock, New Hanover County

The timeframe that accounts for the highest percentage of housing units built are years 1990 to 1999. Therefore, 24.8% of the housing units in New Hanover County were built 15 to 24 years ago, 22.1% built 5 to 14 years ago and 16.7% built 25 to 34 years ago.

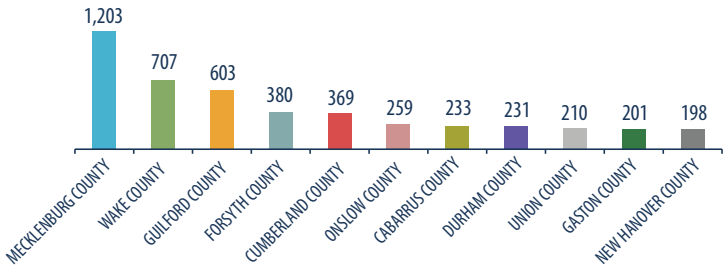


PERCENTAGE OF HOUSING UNITS BUILT BY YEAR, 2008-2012

FIGURE 2.32

Foreclosures

Out of the 100 counties in the State of North Carolina, New Hanover County ranks 11th for foreclosure filings. There were 198 foreclosure filings in New Hanover County during the first three months of 2014. Of the owner-occupied housing units in New Hanover County, 72.3% have a mortgage while the remaining 27.7% are without a mortgage.



NORTH CAROLINA COUNTIES WITH THE HIGHES NUMBER OF FORECLOSURE FILINGS: JANUARY 1, 2004-MARCH 31, 2014

FIGURE 2.33

Housing Units by Structure, New Hanover County

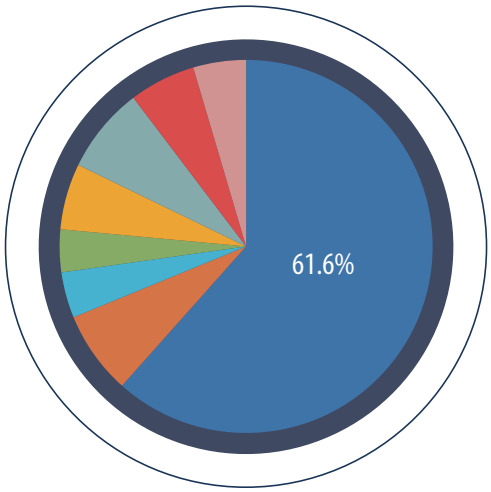
Over 50% of New Hanover County housing units are defined as 1-unit detached in structure. The smallest representation of housing unit structure is that which is classified as boat, RV, van, etc.

Housing Value, New Hanover County

The majority of owner-occupied housing units in New Hanover County are valued between $150,000 and $499,999. Those valued at less than $150,000 represent 20.9% of the total number of owner-occupied units.

Scattered Site Housing

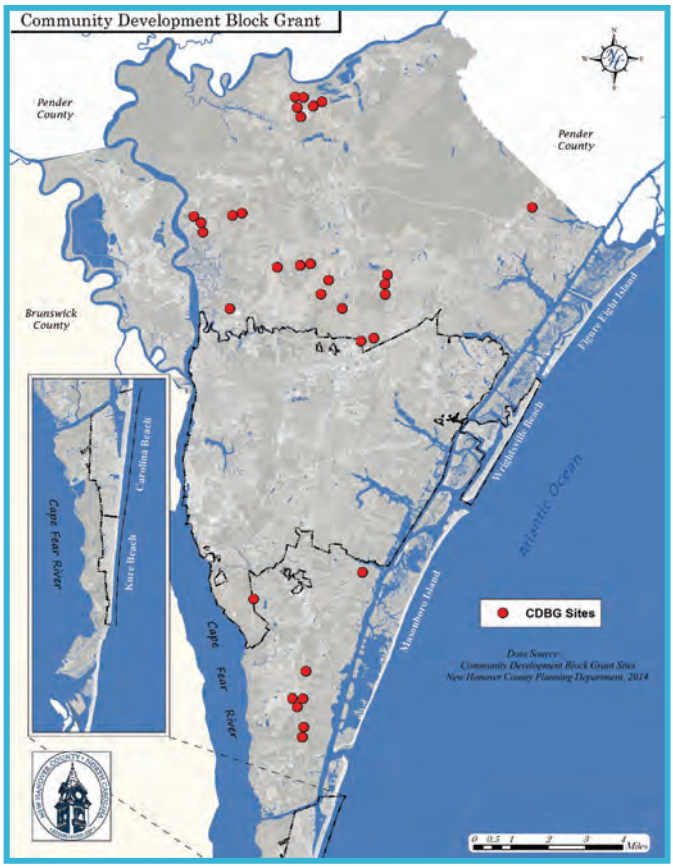
Beginning in 2001, Scattered Site Housing grants were awarded to approximately 33 counties on a non-competitive rotating basis every three years. The Scattered Site Housing Program was a grant category under the state-administered Community Development Block Grant (CDBG) Program that was awarded to local governments in non-entitlement areas. Cities with populations of less than 50,000,with the exception of cities that are designated principal cities of the Metropolitan Statistical Areas, and counties with populations less than 200,000 are considered as non-entitlement areas.



HOUSING UNITS BY STRUCTURE

FIGURE 2.34

MAP 2.10



The Scattered Site Housing Program grant has enabled the county to address the most critical housing needs of very low income owner-occupied households (incomes at or below 50% of the area median) residing in the unincorporated county. Under the Scattered Site Housing Program, the County has expended more than one million dollars to either rehabilitate or reconstruct 35 houses.

The county has also been awarded more than 1.7 million dollars in CDBG funds under the former Concentrated Need grant category. Under this grant category, funds were designated for a specific area. These funds were used to address critical housing needs in two specific areas for 51 very low income owner-occupied households and for sewer installation.

As New Hanover County grows both in population and economic development, it will continue to draw employees, shoppers, business associates, tourists and visitors from outside the region. An effective transportation network will need to be maintained to allow visitors and citzens alike to move about the community. It will be important for this network to include roadways, multimodal, waterways and the port, as well as railways.

Roadways

Currently, the automobile is the dominant mode of transportation, but as the county grows it will become more important to invest in different modes of transportation. Excessive automobile dependence will lead to continued and worsening traffic congestion regardless of investment and widening.

The Wilmington Metropolitan Planning Organization (WMPO) provides transportation planning services for New Hanover County, the City of Wilmington, Wrightsville Beach, Carolina Beach and Kure Beach as well as incorporated and unincorporated areas of Pender and Brunswick counties. The WMPO collects traffic counts at seventy (70) points along the unincorporated roadways of New Hanover County. Figure 2.35 provides the traffic count collection locations for the unincorporated area of New Hanover County.

FIGURE 2.35

STREET NAME	DESCRIPTION	VOL (2011)
BAVARIAN LANE	BETWEEN FARLEY DRIVE AND NORTH COLLEGE ROAD	13,648
CAROLINA BEACH ROAD (US 421)	NORTH OF MYRTLE GROVE ROAD	25,548
CAROLINA BEACH ROAD (US 421)	SOUTHEAST OF ANTOINETTE DRIVE	29,835
CAROLINA BEACH ROAD (US 421)	SOUTH OF SANDERS ROAD	34,585
CAROLINA BEACH ROAD (US 421)	SOUTH OF MONKEY JUNCTION	39,871
CASTLE HAYNE ROAD (US 117/NC 133)	BETWEEN SONDEY ROAD AND CROWATAN ROAD	10,894
CASTLE HAYNE ROAD (US 117/NC 133)	BETWEEN NORTH COLLEGE ROAD AND MARATHON AVENUE	11,270
CASTLE HAYNE ROAD (US 117/NC 133)	BETWEEN MLK PARKWAY AND DIVISION DRIVE	12,582
CASTLE HAYNE ROAD (US 117/NC 133)	BETWEEN SWARTVILLE ROAD AND OLD MILL ROAD	14,372
CASTLE HAYNE ROAD (US 117/NC 133)	SOUTH OF OLD BRIDGE SITE ROAD	15,356
CASTLE HAYNE ROAD (US 117/NC 133)	BETWEEN HICKORY STREET AND CHERRY STREET	17,751
CASTLE HAYNE ROAD (US 117/NC 133)	BETWEEN YORKTOWN DRIVE AND NORTH 23RD STREET	17,478
CASTLE HAYNE ROAD (US 117/NC 133)	BETWEEN BRENTWOOD DRIVE AND DIVISION DRIVE	52,065
GORDON ROAD	EAST OF I-40	21,367
MARKET STREET (US 17 BUSINESS)	NORTH OF SWEETWATER DRIVE	34,402
MARKET STREET (US 17 BUSINESS)	BETWEEN EL OGDEN DRIVE AND MIDDLE SOUND LOOP ROAD	46,898
MARKET STREET (US 17 BUSINESS)	BETWEEN LENDIRE ROAD AND WENDOVER LANE	50,780
MASONBORO LOOP ROAD	BETWEEN MOHAWK TRAIL AND SEMINOLE TRAIL	10,715
MASONBORO LOOP ROAD	NORTH OF OLD MYRTLE GROVE ROAD	11,680
MOHICAN TRAIL	EAST OF SOUTH COLLEGE ROAD	33,050
MYRTLE GROVE ROAD	SOUTH OF PINER ROAD	8,781
NORTH KERR AVENUE	BETWEEN BAVARIAN LANE AND TRUESDALE ROAD	10,724

NORTH 23RD STREET	BETWEEN DIVISION DRIVE AND AIRPORT BOULEVARD	12,642
NORTH COLLEGE ROAD (US 117/NC 132)	BETWEEN BLUE CLAY ROAD AND PARMELE ROAD	10,417
NORTH COLLEGE ROAD (US 117/NC 132)	SOUTH OF BAVARIAN LANE	25,978
NORTH COLLEGE ROAD (US 117/NC 132)	BETWEEN LONG RIDGE DRIVE AND BAVARIAN LANE	27,081
PINER ROAD	EAST OF MONKEY JUNCTION	15,050
SOUTH COLLEGE ROAD (NC 132)	BETWEEN JUNCTION CREEK DR AND JUNCTION PARK DR	29,576

The Federal Highway Functional Classification System classifies roadways into the following four hierarchical categories: principal arterial (interstate, freeway and other), minor arterial, collector (major and minor) and local streets. These designations characterize the role of a roadway within the network (i.e., a collector roadway collects vehicles from local roadways and carries them to the next higher functional class). Each classification includes unique characteristics that translate into roadway design, speed, capacity and relationship to existing and future land use.

New Hanover County is served by two interstates, I-40 and I-140, enabling access to the northern portion of the County, and one freeway, Martin Luther King Parkway, allowing east/west access through the northern portion of the County. These roadways serve as critical access points for future development within New Hanover County.

MAP 2.11

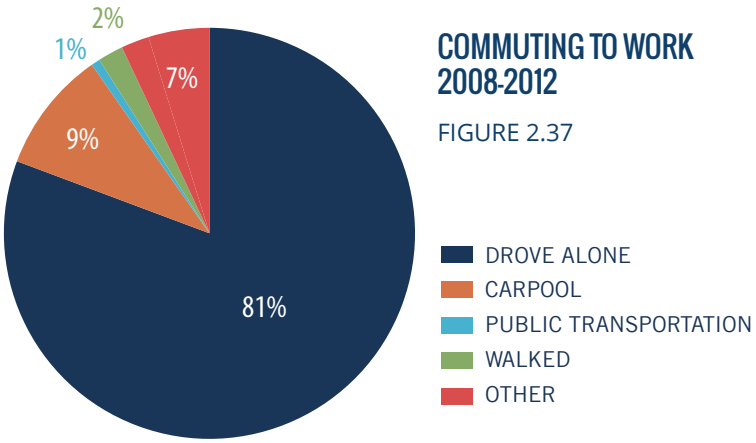
New roadway projects and improvements within the unincorporated areas of New Hanover County are primarily the responsibility of the North Carolina Department of Transportation (NCDOT), Division 3. Through the Strategic Mobility Formula and local input, roadway projects are scored and prioritized in accordance with criteria developed to evaluate benefit/cost, congestion, economic competitiveness, safety, and multimodal qualities of a roadway. Once scored, roadway projects are entered into the State Transportation Improvement Plan (STIP). NCDOT also operates a roadway maintenance program for resurfacing and widening projects for primary and secondary roads that occurs within a five-year horizon.

MultiModal Transportation

As previously mentioned, automobile-dominated transportation will lead to continued traffic congestion that will be difficult to remediate. Alternative modes of transportation are important for New Hanover County to consider in the future. Alternative modes include: pedestrians, bicycles, public transportation, and multiple occupant vehicles (carpools).

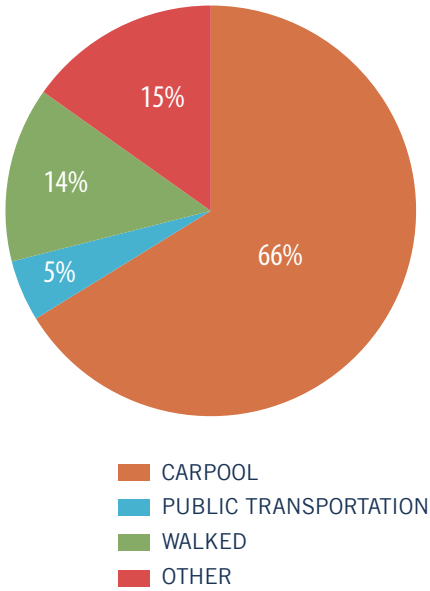
In New Hanover County, 14% of commuters use an alternative mode of transportation. Of those commuters, carpooling was the most popular alternative.

New Hanover County has the shortest commute time in the tri-county region at approximately 20 minutes. Additionally, New Hanover County has a shorter commute time than the state or the national average.



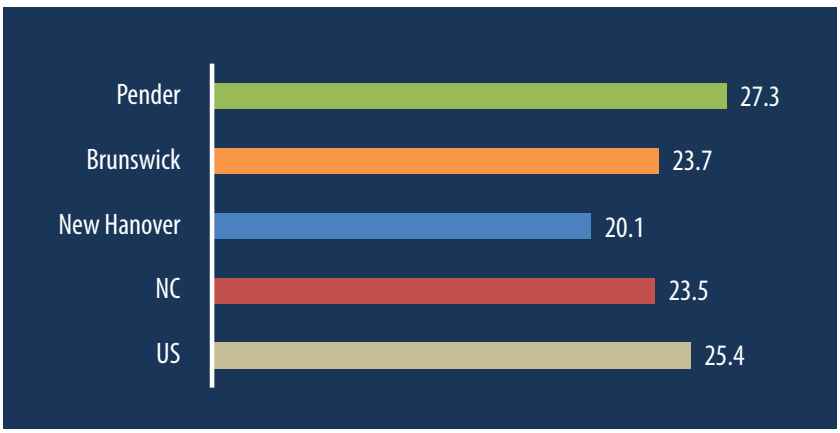
COMMUTING TO WORK 2008-2012

FIGURE 2.37



NEW HANOVER NON-SINGLE OCUPANY VEHICLE COMMUTE

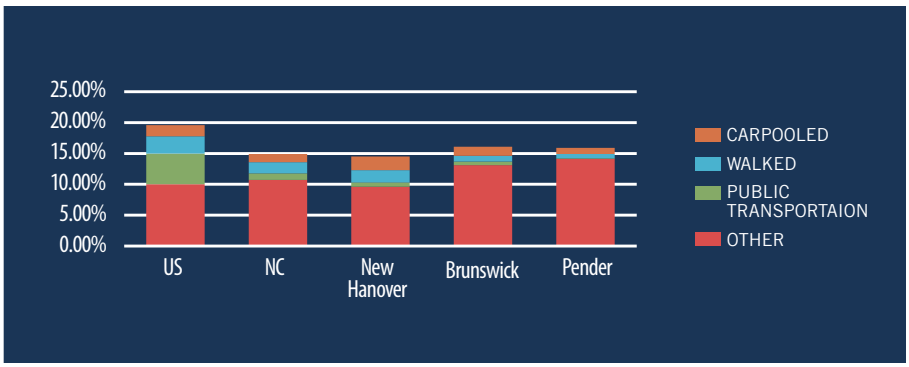
FIGURE 2.38



MEAN TRAVEL TIME TO WORK (MINUTES)

FIGURE 2.39

Regionally, New Hanover has a lower carpool rate than Pender County and Brunswick County but higher percentages of commuters walking to work or riding transit.



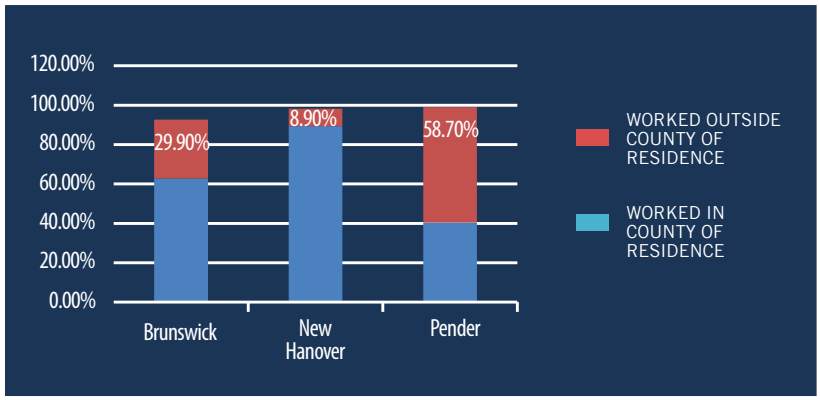
COMMUNTING TO WORK NON-SINGLE OCCUPANCY VEHICLE 2008-2012

FIGURE 2.40

Figure 2.41 shows the tri-county commuting patterns. Nearly 30% of Brunswick County's and nearly 60% of Pender County's working residents commute to another county for work. These commuting patterns suggest that New Hanover County serves as a regional employment hub.

TRI-COUNTY COMMUTING PATTERNS 2008-2012

FIGURE 2.41



Bus/Transit Service

Created in 1974, the Wilmington Transit Authority (WTA) was initially implemented to provide public transportation to the citizens of the Wilmington area.

In December 2002, the WTA adopted the name Wave, as well as a new logo and color scheme for the Authority. This change reflected a new vision for public transportation in Wilmington. Capitalizing on our coastal environment, the name Wave allowed greater name recognition throughout the area and positively represented public transportation throughout the region.

Rapid sprawl and rising traffic congestion throughout the region led the City of Wilmington and New Hanover County to enter into an historic agreement in June 2003. The City and County merged the WTA and New Hanover Transportation Services to form the Wilmington/New Hanover Transportation Agency (WNHTA). This agreement merged the respective organizations for one year, in order to provide oversight of both agencies under one public transportation authority.

In July of 2004 the WNHTA, the WTA and NHTS were dissolved and a new transportation authority was created. The merged entity officially became the Cape Fear Public Transportation Authority, but kept the name Wave Transit.

In an effort to better serve the community, Wave Transit has restructured all fixed routes in the region. The new routes are based on a modern transfer facility, Forden Station, which is centrally located within the service area. A new maintenance and operations facility off MLK Parkway is under construction. Construction is expected to be complete in the fall of 2014. A downtown multimodal transportation center is also in the early planning phase.

MAP 2.12

Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities provide important health, social, ecologic and economic benefits. Health and social benefits include opportunities for safe, physical activity and connected communities. New Hanover County is an ideal location for bicycle and pedestrian movement given its flat terrain, temperate climate, and significant student and tourist/vacationing populations. New Hanover County has over 30 miles of existing trails located predominately within parks, nearly 50 miles of on-road bicycle facilities, and over 70 miles of sidewalks (see Map 2.12).

In 2013, New Hanover County, the City of Wilmington and the beach towns collaborated on New Hanover County's first comprehensive greenway plan. Map 2.12 shows the adopted future network of bicycle and pedestrian facilities.

New Hanover County's bicycle and pedestrian infrastructure is emerging in an effort to safely accommodate residents, students and visitors who choose to walk or bike instead of drive. Planned bicycle and pedestrian infrastructure should address New Hanover County and the City of Wilmington's high rates of pedestrian and bicycle crashes.

New Hanover County and the City of Wilmington rank in the top ten statewide for bicycle and pedestrian crashes between 2008-2012 (University of North Carolina Highway Safety Research Center). New Hanover County has recently become a part of the NC Watch for Me Program, a comprehensive approach to reduce bicyclist and pedestrian crashes and fatalities in North Carolina. This campaign uses multi-media strategies to educate motorists, pedestrians and cyclists and provides resources to law enforcement.

Rail

Rail Service in New Hanover County consists of freight only and is operated by CSX with a short line operated by Wilmington Terminal Railroad. There are approximately 75 miles of historic rail lines throughout the county. The rail lines leading to Jacksonville were removed and the right of way was deeded over to the adjacent property owners. The State of NC purchased the historic rail line from Wallace to Castle Hayne. Currently, a feasibility study is being conducted to reestablish these lines as freight rail and long term passenger. New Hanover County currently has 75 miles of active rail lines.

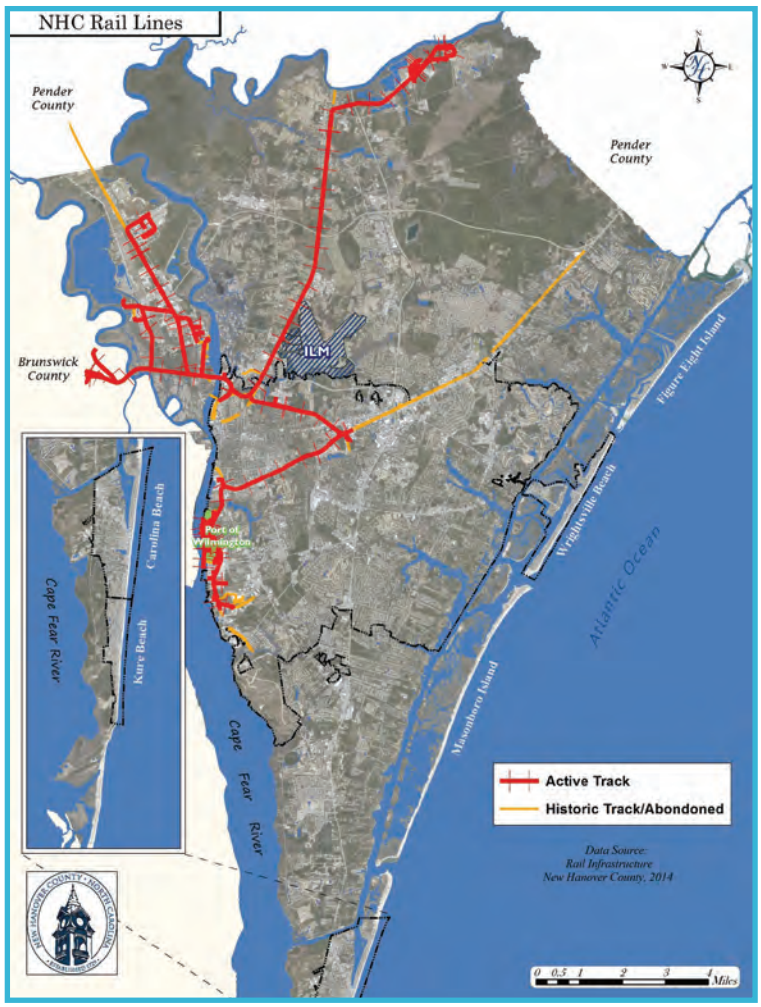
North Carolina Ports (Port of Wilmington)

The Port of Wilmington and the Port of Morehead City combined contribute approximately $500 million annually to the State's economy (Institute for Transportation Research and Education 2011). The ports' economic contribution represented two percent (2%) of the state's GDP in 2008 (ITRE). The movement of goods through the ports directly and indirectly supports over 65,000 jobs across North Carolina.

Container movement accounts for 85% of the economic impact that the ports generate for the state. The Port of Wilmington utilizes trucks for container movement and utilizes rail service provided by Wilmington Terminal Railroad and CSX for bulk and breakbulk movement. The Wilmington Port has acreage available for future development that may include the construction of internal roadways to improve truck access. The development of a wood pellet facility and associated infrastructure, as well as the development of a cold storage facility is underway at the Port of Wilmington.

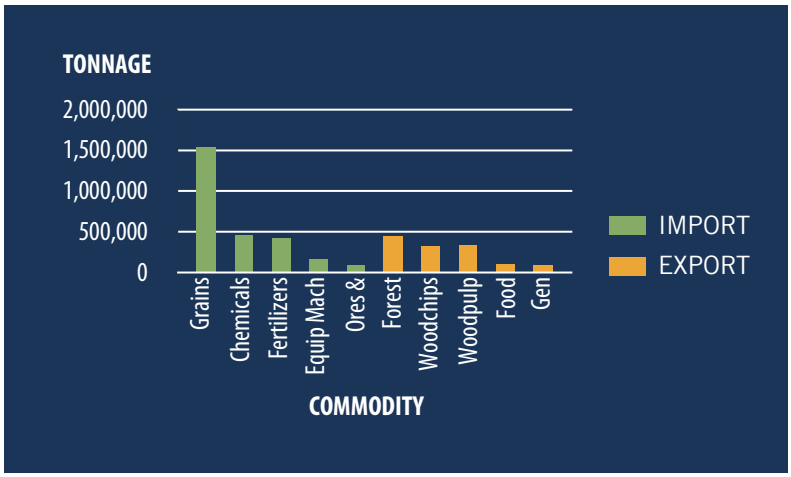
Consistent imports at the Port of Wilmington over the last decade include chemicals and cement. In 2013, grain import nearly quadrupled in response to the drought in the midwest; fertilizer is a new import, as well as ores and minerals. Several important commodities tapered off in 2008/2009, including imported lumber and general merchandise, a reflection of the declining housing market and overall economy at that time.

MAP 2.13



PORT OF WILMINGTON TOP 5 COMMODITIES 2013

FIGURE 2.42



At the Port of Wilmington, wood pulp and paper products, forest products, food products and general merchandise have been top exports over the last decade with periods of decline and rebound. Wood pulp and paper products, which represent the largest export, experienced a decline beginning in 2006 and began to rebound in 2011. Similarly, forest products have represented a significant export that declined in 2008 and rebounded by 2010. In 2007, chemical exports tapered off, as did military products in 2004. Since 2010, woodchips have been increasingly exported.

A quick snapshot of import/exports at the Port of Wilmington show that grains were the dominant imported commodity and forest products remain the dominant export.

Airport

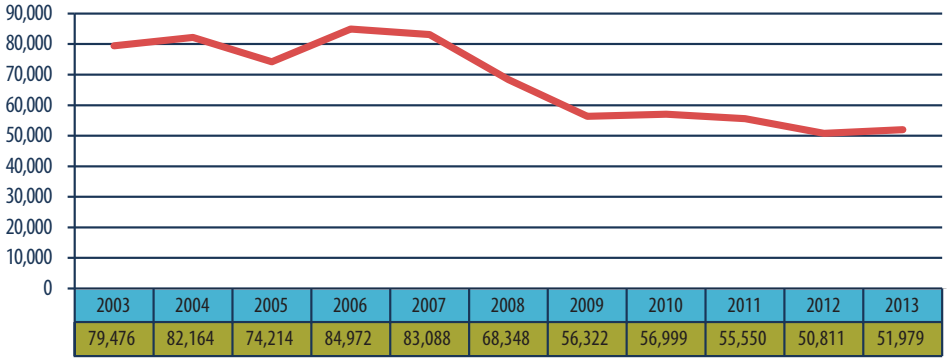
The Wilmington International Airport (ILM) is a key economic engine for our 8.5 county catchment area (where our passengers live) and a significant regional asset for our community.

In total, the airport property interests are approximately 1,780 acres, with 1,600 acres in fee-simple and 180 acres in easements. The airfield consists of two intersecting runways, Runway 17-35 and Runway 6-24, with Runway 6-24 achieving more favorable crosswind coverage and being better aligned with the prevailing ALL-Weather (IFR), capturing about 20% better wind coverage than Runway 17-35. Runway 6-24 is approximately 8,000 linear feet, accommodating air carrier, general aviation, and air cargo services and military aircraft.

Since 2003, the Wilmington International Airport (ILM) has experienced a 34.5% decline in total air traffic aircraft operations. This is consistent with national trends.

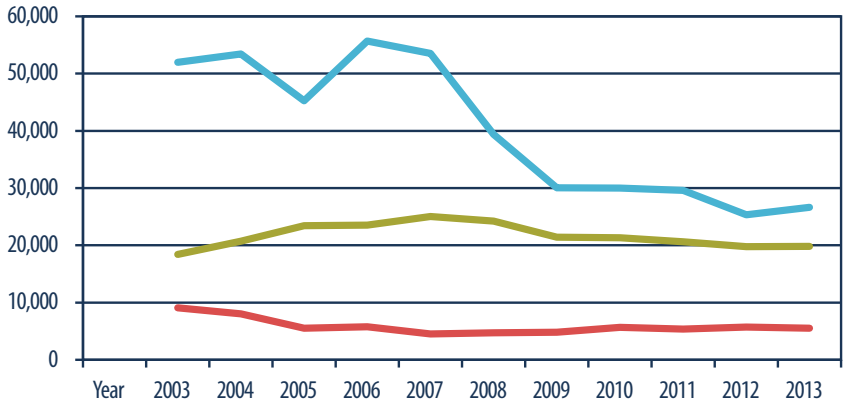
ILM TOTAL ANNUAL AIRCRAFT OPERATIONS

FIGURE 2.43



2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
79,476	82,164	74,214	84,972	83,088	68,348	56,322	56,999	55,550	50,811	51,979

Wilmington International Airport accommodates three classifications of aircraft: air carrier and taxi (for hire/commercial airlines), general aviation (private/company aircraft) and military aircraft. Air carriers and taxi operations represent commercial airlines, with air carriers being larger planes with more seats, and air taxis being smaller aircraft with fewer seats. These operations have remained consistent, averaging 23,836 flights annually between 2003 and 2013. General Aviation (GA) represents small private aircraft and corporate planes that are not for hire. These operations have been more dynamic and experienced a sharp decline in 2008 coinciding with the recession. Wilmington International Airport also receives military aircraft and has experienced consistent operations in the last decade due to its proximity to Camp Lejeune and Naval Air Station Cherry Point. The presidential fleet and Coast Guard aircraft also frequent ILM for training operations.



ILM ANNUAL AIRCRAFT OPERATIONS BY TYPE

FIGURE 2.44

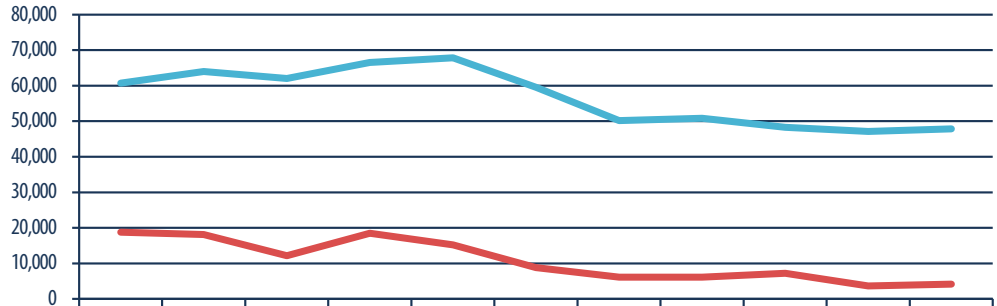
Itinerant flights represent flights that passed through Wilmington International Airport (ILM) but did not begin or end their flight at ILM. Local flights are flights that either began or ended at ILM airport. ILM experiences a much higher volume of itinerant flights than local flights.

	Air Carrier & Taxi	General Aviation	Military
2003	18,434	51,963	9,079
2004	20,707	53,433	8,024
2005	23,431	45,270	5,513
2006	23,535	55,665	5,772
2007	25,022	53,534	4,532
2008	24,252	39,394	4,702
2009	21,438	30,038	4,846
2010	21,309	30,001	5,689
2011	20,610	29,582	5,358
2012	19,783	25,317	5,711
2013	19,840	26,627	5,512

FIGURE 2.45

TOTAL ITINERANT AND LOCAL FLIGHTS 2003-2013

FIGURE 2.46



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Itinerant	60,707	64,020	62,039	66,525	67,855	59,526	50,215	50,848	48,316	47,135	47,827
Total Local	18,769	18,144	12,175	18,447	15,233	8,822	6,107	6,151	7,234	3,676	4,152

Since 2003, both itinerant and local flight volumes have decreased, but local flights have decreased at a more aggressive rate of nearly 78% over ten years. The primary factors for this decline are the economy, high fuel costs, declining pilot population, declining student pilot population, cost of aging aircraft, and the rapid decline of manufacturing new GA aircraft. GA forecsting by the FAA, however, has steadily remained positive. For example, local GA and itinerant GA operations are forecast to grow over the next 20 years by 27.8%.

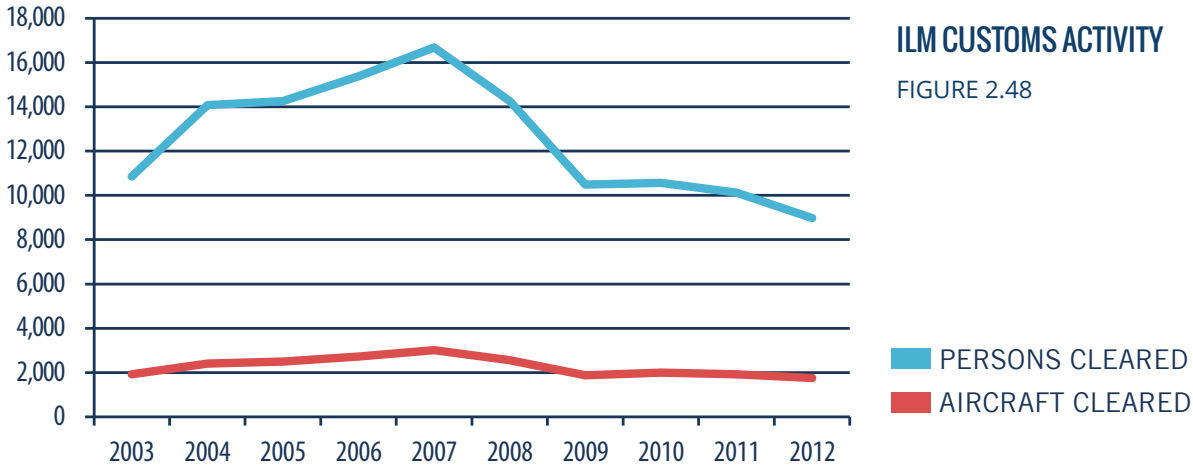
The Wilmington International Airport ranks fourth in North Carolina for most enplanements (passengers boarding an airplane), behind Charlotte, Raleigh and Greensboro, and has experienced an 84% increase over the last decade. Over the past several years, the commercial aviation industry has experienced a dramatic change. The number of domestic air carriers has declined from 21 to 8 with consolidations, mergers and bankruptcies. Air carriers' new business strategy is to focus on positive bottom lines and reduced costs.

Over the past 5 years, air carriers have reduced the number of departures by 14.2% and reduced seats by 9.7%. Considering the current economic environment in aviation, ILM has done well to maintain their enplaned passengers within 2%. Future air service at ILM looks very promising.

The Wilmington International Airport provides US Customs and Border Protections Port of Entry through the General Aviation/Fixed-Based Operators apron areas. Because of the increases in US Customs activity, this facility is in need of expansion. The year 2007 represented the peak of customs activity, with over 16,673 people cleared through customs. On average, 24 people are cleared daily through ILM, and during holiday peak seasons, 20 to 30 passengers may be cleared per hour. Similarly in 2007, 3,013 planes were cleared through ILM customs, and during peak seasons, up to 50 planes were cleared hourly. In November 2008, ILM opened a new state-of-the-art facility for Customs and Border Protection.

Year	Enplanements	Deplanements	Total
2003	216,220	216,399	432,619
2004	288,471	286,154	574,625
2005	350,980	349,447	700,427
2006	322,542	318,121	640,663
2007	405,072	396,115	801,187
2008	409,281	405,221	814,502
2009	405,874	401,252	807,126
2010	412,264	409,676	821,940
2011	403,836	401,675	805,511
2012	400,109	395,803	795,912

FIGURE 2.47



ILM CUSTOMS ACTIVITY

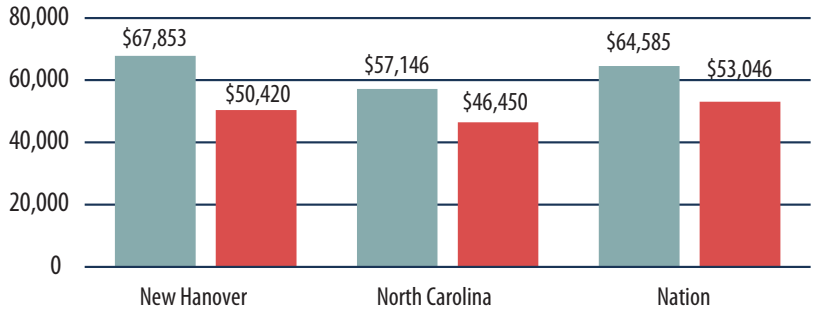
FIGURE 2.48

ILM receives no public funds or dollars from the County and therefore must be totally self-sufficient, generating funds to support its $7.4 million annual budget. With air carriers looking for ways to reduce their costs, they want airports to reduce the fees they charge airlines. Therefore, ILM has to find alternative revenue streams to remain financially solvent.

The ILM Airport is aggressively promoting and receiving interest in nearly 230 acres of available landside area for development as business office and commercial purposes for both aviation and non-aeronautical companies. Beyond the financial incentives, the airport reports strong interest in business park development, in part because of the railroad track CSX Railway located between the airport and Blue Clay Road. Hall Drive provides a track crossing from Blue Clay Road into the ILM Business Park. Although the track is now infrequently used, the Wilmington Urban Area Metropolitan Planning Organization stated that rail access plans call for this track to become more active, including passenger service in the future.

The airport also houses the National Weather Service and the North Carolina Museum of Aviation, managed by the Wilmington Aviation Foundation, a not-for-profit organization.

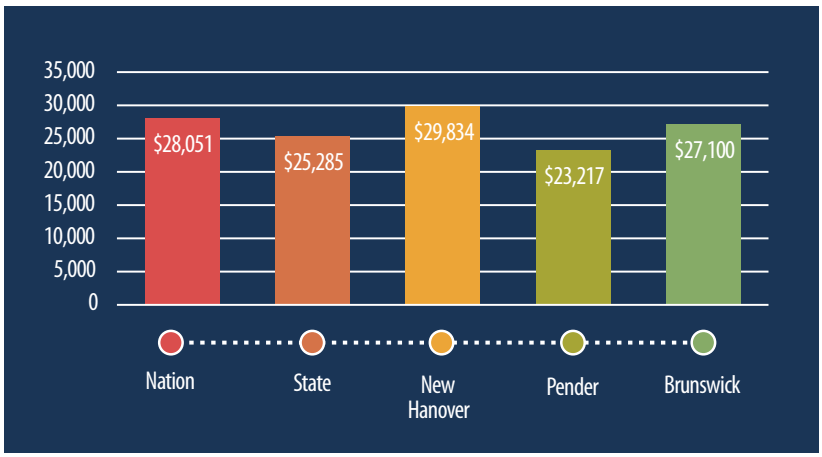
The 2008-2012 American Community Survey 5-year estimates show that New Hanover County's median family income is approximately $68,000 and household income (individuals not related, but living together in a household) is about $50,000. These estimates are higher than state and national incomes, with the exception of national households.



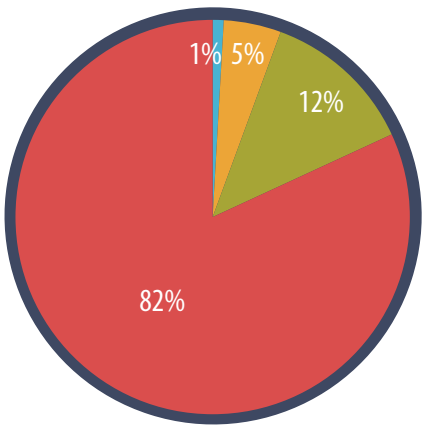
MEDIAN INCOME 2008-2012 ACS 5-YEAR ESTIMATES
FIGURE 2.49

Per capita income represents the total income of a community (including wages, investment income, and government payments) divided by its population. According to the American Community Survey 2008-2012 5-year estimates, New Hanover County's per capita income is higher than the state or the nation's per capita income.

PER CAPITA INCOME ACS 2008-2012
FIGURE 2.50

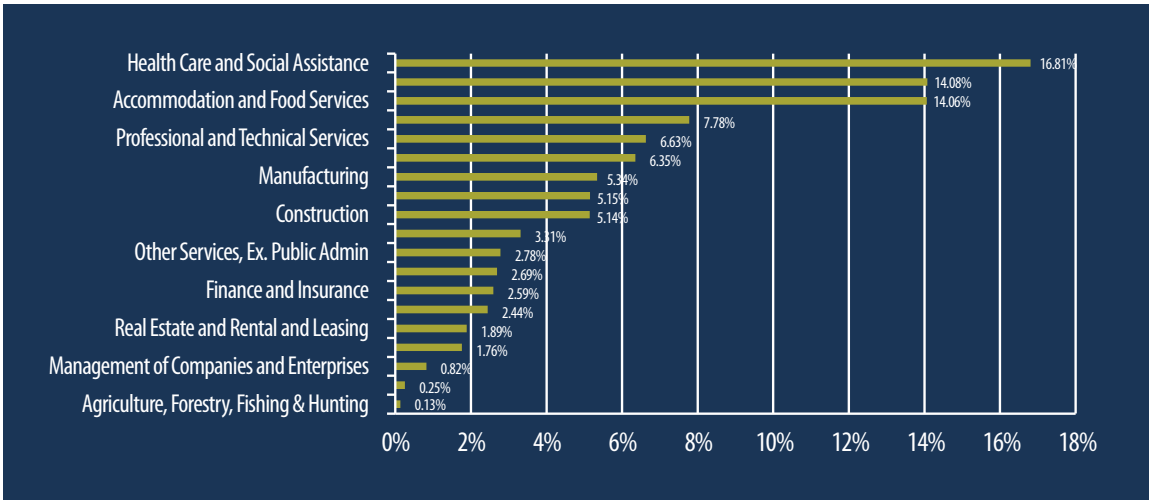


The vast majority of New Hanover County's jobs are located in the private sector, representing approximately 82% of employment. Government jobs represent approximately 18% of New Hanover County's employment. These percentages are similar to the State of North Carolina's percentages.



NEW HANOVER COUNTY EMPLOYMENT BY SECTOR 2013 Q2
FIGURE 2.51

Health care provides the largest proportion of employment in New Hanover County, followed by retail trade, then accommodation and food services. Combined, these three sectors account for nearly half of New Hanover County's industry.



NEW HANOVER COUNTY INDUSTRY SECTORS 2013 Q2

FIGURE 2.52

New Hanover Regional Medical Center is the largest single employer in New Hanover County followed by New Hanover County Schools and the University of North Carolina Wilmington (Figure 2.53).

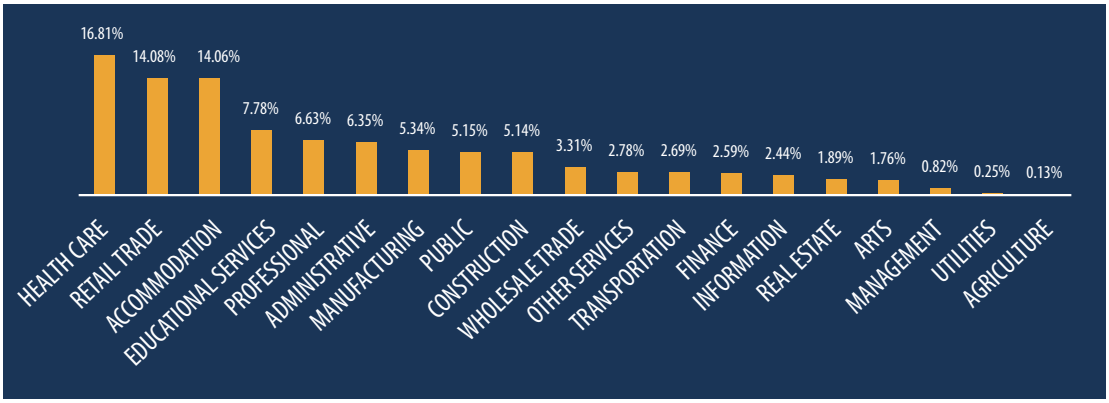
TOP 25 EMPLOYERS IN NEW HANOVER COUTY

FIGURE 2.53

	Company Name	Industry	Employment Range
1	New Hanover Regional Medical Center	Education & Health Services	1,000+
2	New Hanover County School System	Education & Health Services	1,000+
3	University of North Carolina	Education & Health Services	1,000+
4	The Shaw Group	Construction	1,000+
5	New Hanover County	Public Administration	1,000+
6	Cellco Partnership	Information	1,000+
7	PPD Development, LP	Pharmeceutical	1,000+
8	Wal-Mart Associates Inc.	Trade, Transportation & Utilities	1,000+
9	Cape Fear Community College	Education & Health Services	1,000+
10	Corning Incorporated	Manufacturing	1,000+
11	City of Wilmington	Public Administration	1,000+
12	GE Hitachi Nuclear Americas LLC	Manufacturing	500-999
13	Mundy Industrial Contractors Inc.	Construction	500-999
14	Harris Teeter Inc.	Trade, Transportation & Utilities	500-999
15	Global Network Fuel - Americas	Manufacturing	500-999
16	General Electric Corp.	Manufacturing	500-999
17	Food Lion LLC	Trade, Transportation & Utilities	500-999
18	Wells Fargo Bank Na (A Corp)	Financial Activities	250-499
19	WHA Medical Clinic PLLC	Education & Health Services	250-499
20	Forever 21 Retail, Inc.	Trade, Transportation & Utilities	250-499
21	Lowes Home Centers, Inc.	Trade, Transportation & Utilities	250-499
22	C N Davis Health Care Center	Education & Health Services	250-499
23	Department of Defense	Public Administration	250-499
24	Lowes Food Stores Inc.	Trade, Transportation & Utilities	250-499
25	AAI pharma Services Corp	Manufacturing	250-499

Source: NC Employment Security Commission

Shown in Figure 2.54 is the percentage of employers grouped by industry type. Shown from this perspective, retail trade and accommodation and food services are among New Hanover County's largest industry types representing nearly 30% of employment. Health care and social assistance represents the largest industry type in New Hanover County, representing approximately 17% of total employment.

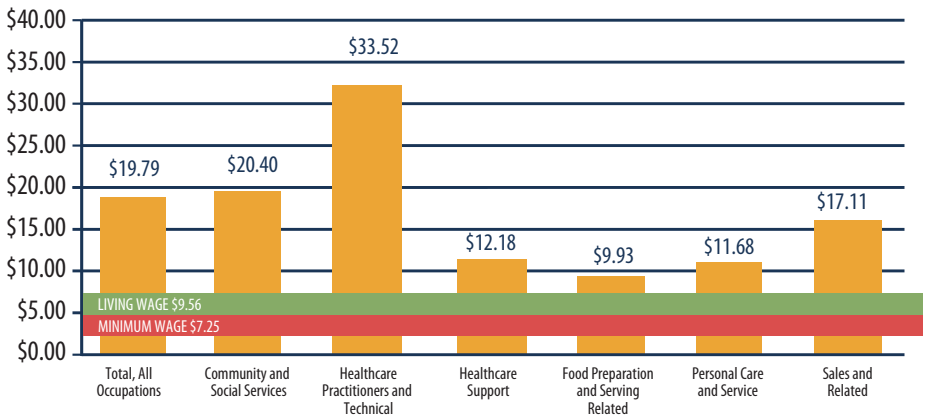


PERCENTAGE OF ESTABLISHMENTS NEW HANOVER COUNTY 2013 Q2

FIGURE 2.54

Source: North Carolina Employment Security Commission, Labor & Economic Analysis Division

Figure 2.55 shows the average hourly wage for occupations within New Hanover County's three largest industries (health care and social assistance, retail trade, and accommodation and food services). While some of these occupations, such as healthcare practitioners, can pay high wages, many occupations pay just slightly above the living wage. The living wage is the hourly rate that individuals must earn to support themselves. According to research from the Massachusetts Institute of Technology (MIT), the living wage for a single adult in New Hanover County is $9.56 per hour.



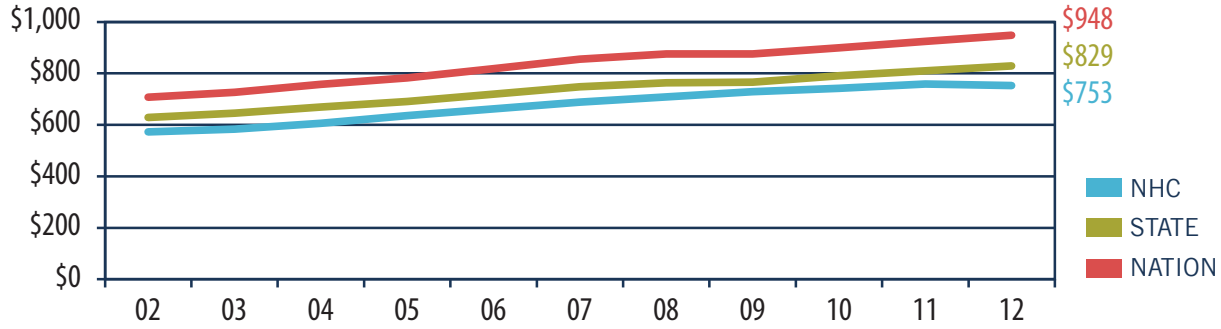
AVERAGE OCCUPATIONAL WAGES 2013 Q2

FIGURE 2.55

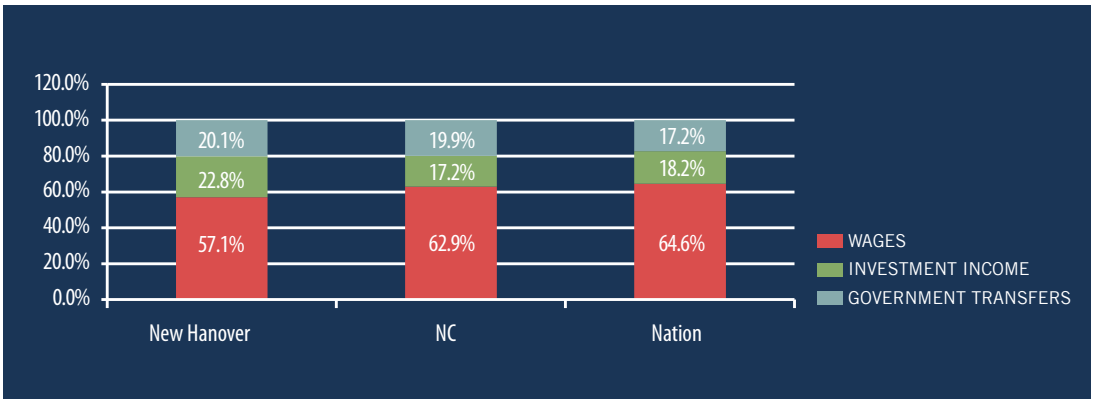
As of 2012, New Hanover County's wages were approximately 10% lower than the state's average and 26% below the national average.

AVERAGE WEEKLY WAGES HISTORICAL

FIGURE 2.56

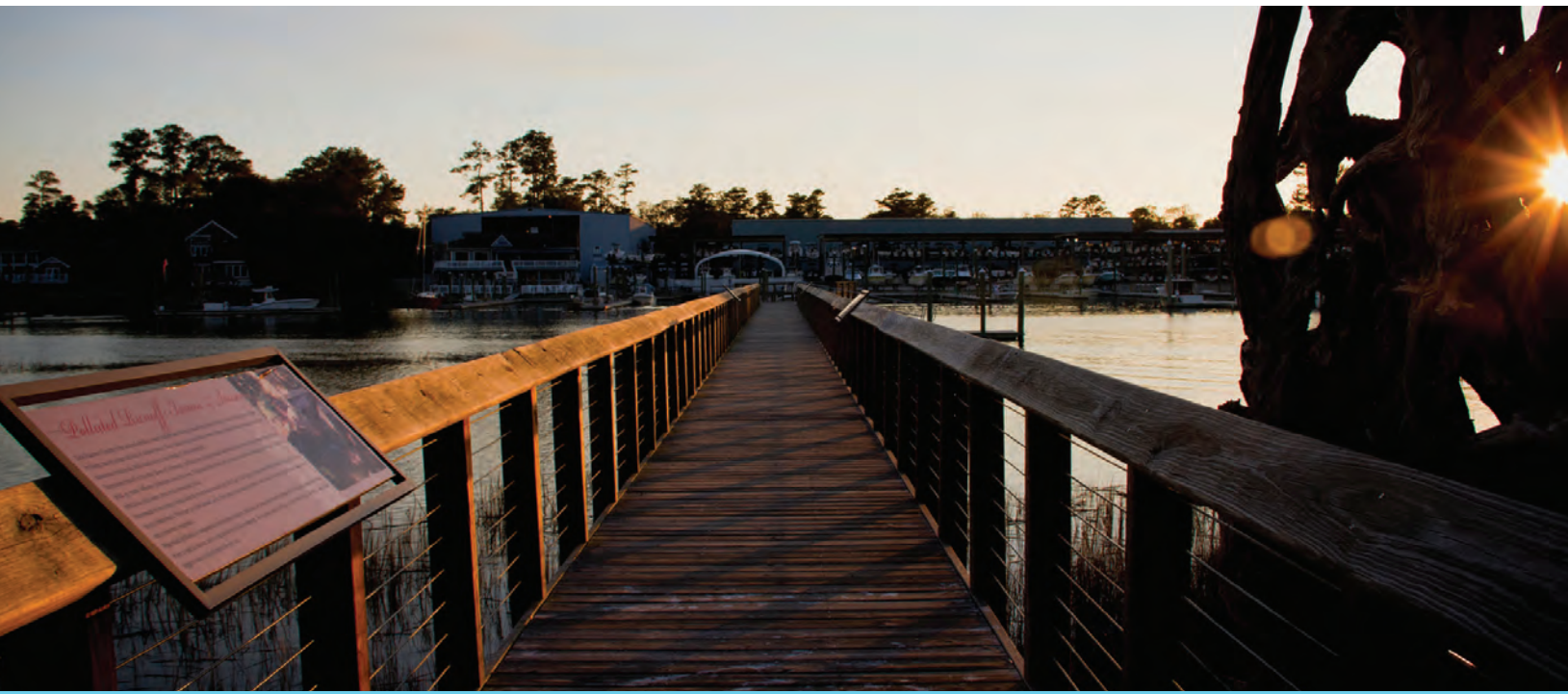


It is important to note that while New Hanover County's wages are lower than the state and the nation, the county's median income and per capita income are higher than the state's average. This may be attributed to other sources of income (other than wages) such as investment income, and government transfers such as social security.



ELEMENTS OF PER CAPITA INCOME

FIGURE 2.57



Unemployment

Historically, New Hanover County has experienced a lower unemployment rate than Brunswick or Pender counties. Prior to the recession, New Hanover County's unemployment rate was below both the state and the nation; but coming out of the recession, the nation, on average, has rebounded more quickly than the county or the state, with a national average unemployment rate of 7.4% for 2013 compared to NHC's average annual unemployment rate of 8.3%.

AVERAGE ANNUAL UNEMPLOYMENT RATES (UNADJUSTED) 2003-2013

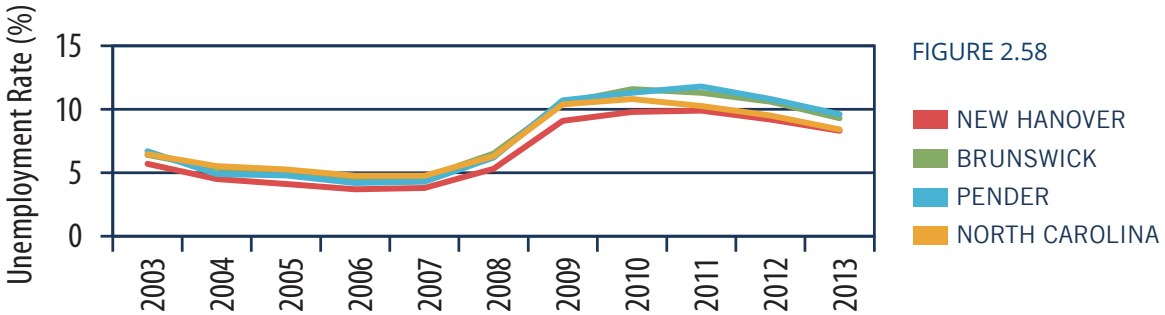
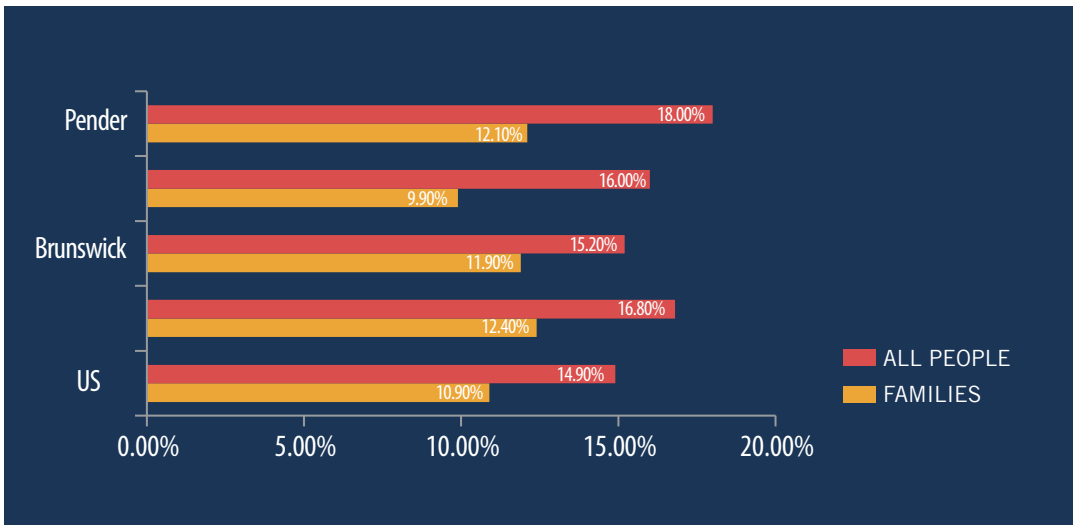


FIGURE 2.58

Overall, poverty rates for families are lower than the poverty rates for individuals in the tri-county area, the state and the nation. New Hanover County's family poverty rate is lower than the state and the nation. A lower family poverty rate than individual poverty rate might be attributed to a community's strong social service providers.



PERCENTAGE OF PEOPLE AND FAMILY INCOME BELOW THE POVERTY LEVEL: AMERICAN COMMUNITY SURVEY

FIGURE 2.59

Waste Management and Recycling

New Hanover County provides county residents and businesses with solid waste disposal services and recycling processing services for refuse collected within the County. During Fiscal Year 2012-2013, the County managed approximately 222,000 tons of materials through its system. The major categories and quantities of materials were:

- 208,194 tons of municipal solid waste and construction and demolition material disposed of in the Subtitle D Landfill.
- 5,174 tons of sheetrock, wood waste, cardboard, and carpet recycled from construction and demolition waste.
- 3,412 tons of tires
- 5,076 tons of recyclables

In 1981, the County installed the first double-lined landfill in North Carolina. The County implemented an innovative constructed wetlands leachate treatment system, which provides a sustainable solution to the ongoing challenge of leachate disposal. During the Fiscal Year 2012 – 2013, the landfill received, on average, 700 tons of waste per day. The current permitted operating life of the landfill will last until approximately January 2019.

The Environmental Management Department is currently working to permit an expansion to provide nine 10-acre cells that are estimated to extend the operating life of the landfill by 40 years or until the year 2059.

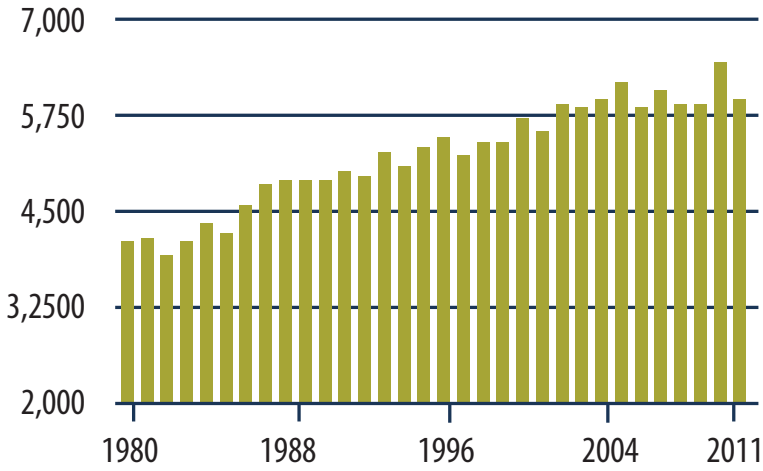
The county operates five unmanned recycling drop-off sites throughout the unincorporated area, as well as a manned recycling drop-off site at the Sustainable Energy Facility and a manned convenience center at the landfill. A pilot mini-recyclable process at the Sustainable Energy Facility where cardboard, plastics, glass, aluminum, mixed paper and aluminum are processed for sale on the open market. The Department processes almost 6,500 tons of material annually, with 5,000 tons coming from county collection efforts and an additional 1,500 tons of materials delivered from other sources.

Energy Generation and Usage

Presently, 100% of New Hanover County residents receive their electricity through Duke Energy. Before Duke Energy, Progress Energy was the main utility company powering New Hanover County. The two companies merged in July of 2012. Duke Energy is headquartered in Charlotte, North Carolina, and is the largest electric power company in the United States, serving approximately 7.2 million U.S. customers in the Carolinas, the Midwest and Florida.

Additionally, Piedmont Natural Gas services approximately 12% of New Hanover County's residents for heating purposes in their homes. Piedmont Natural Gas has been in operation for over 50 years, and is currently providing natural gas service to more than 1 million residential and business customers in North Carolina, South Carolina and Tennessee.

The figures on the following page illustrate residential energy consumption in North Carolina for about the past 30 years.



Source: EIA SEDS database and US Dept. of Energy report on North Carolina Residential Energy Consumption

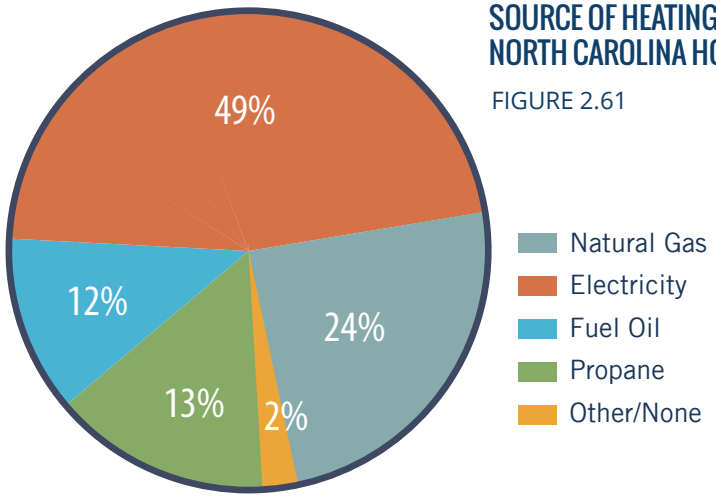
RESIDENTIAL ELECTRICITY CONSUMPTION PER CAPITA IN NC 1980 - 2011 (KWH)

FIGURE 2.60

In the figure to the left, the slope is an indicator of the relationship between electricity consumption and population growth. An upward slope indicates that electricity consumption is growing faster than population. A downward slope (from left to right) indicates that population growth is growing faster than electricity consumption. The smaller the slope, or the more horizontal the slope is, the stronger the correlation is between residential electricity consumption and population growth.

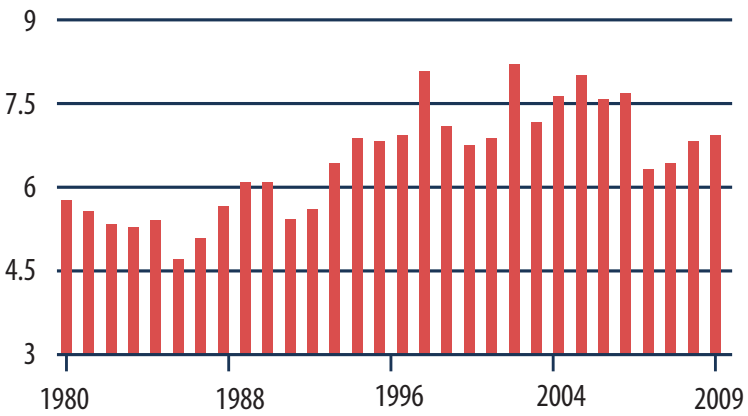
Approximately 58% of all households in the United States use natural gas. Not all pipelines extend to rural areas; therefore, alternate sources of heating are used for many households, such as electricity, fuel oil, propane, solar, and other or none. The graph to the right shows that, in North Carolina, electricity is the largest source of heating and natural gas is the second largest.

Source: 2000 US Census and US Dept. of Energy report on North Carolina Residential Energy Consumption



SOURCE OF HEATING FOR NORTH CAROLINA HOMES

FIGURE 2.61



RESIDENTIAL CONSUMPTION OF NATURAL GAS PER CAPITA 1980-2009 (MILLION BTU)

FIGURE 2.62

The small (more horizontal) slope of the curve displayed in the graph to the left indicates that the residential consumption of natural gas strongly correlates with population growth over time.

Source: US Dept. of Energy report on North Carolina Residential Energy Consumption

Further information regarding Duke Energy's overall power generation and energy usage is shown below. The three pie graphs demonstrate the percentages of generation diversity capacity, actual energy generated and the percentage of energy used by each sector.

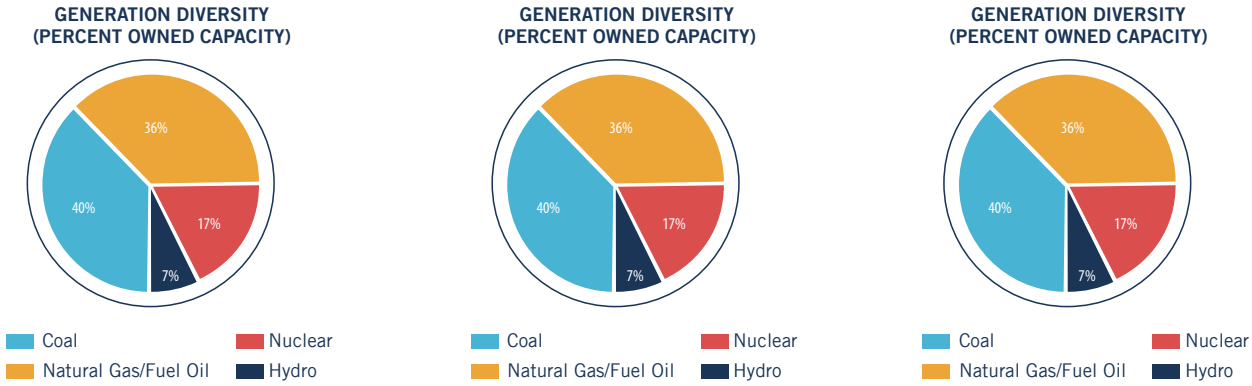


FIGURE 2.63

The Electrical System

Electricity is a secondary source of energy, and is a result of converting energy created by primary sources such as nuclear, coal, hydroelectric, petroleum, natural gas, wind, solar, and biomass. Duke Energy generates their electricity specifically from coal, natural gas, nuclear, petroleum, hydroelectric and some renewable sources. This energy generation occurs in power generation facilities. These facilities are connected to a network of transmission cables and power lines in order to provide electricity to consumers. These transmission lines are a part of the U.S. electrical grid. The grid, or transmission system, is the interconnected group of power lines and associated equipment for moving electric energy at high voltage between points of supply and points at which it is delivered to other electric systems or transformed to a lower voltage for delivery to customers. There are local grids, regional grids, and then the national grid that connects all of the smaller grids to protect all parts of the country from blackouts. If one part of the country has an outage of any of their power systems, then another part of the country can step in and send power to the area in need. Duke Energy provides power for New Hanover County via transmission lines that deliver electricity from a variety of power generation facilities throughout the region.

Power Sources Generated in New Hanover County

The only major power generation facility located within the County is the Sutton Power Plant. It was built as a coal-fired operation and has since converted to a natural gas-fired power plant. The first coal unit began operation in 1954, and two additional units were added at Sutton in 1955 and 1972. The coal-fired Sutton Plant had a capacity of 575-megawatt. In November 2013, the coal-fired combustion turbines were retired when a new natural gas-fired 625-megawatt combined-cycle unit began operation. The capacity of this new gas-fired plant is 625 megawatts, which is equivalent to powering about 500,000 homes.

Renewable Resources in New Hanover County

According to the North Carolina State Energy Profile, "in 2013, 7.5% of North Carolina's net electricity generation came from renewable energy resources, almost all of it from conventional hydroelectric power and biomass." Here in New Hanover County, we have ten registered solar projects that contribute to the electrical grid. These ten solar projects are currently connected through NC Green Power. NC Green Power is a non-profit organization in North Carolina that is connecting consumers with green energy and carbon offset providers. NC Green Power receives their funding either directly from consumers, or through an additional payment to a utility company. NC Green Power and their contributors assist in the generation of approximately 28 million kWh in renewable energy each year, which is equivalent to powering roughly 1,900 homes annually. NC Green Power's current generating sources are biomass, landfill-methane, solar, wind and hydro-power. The county's projects are located at Kure Beach (1), Myrtle Grove (1), Wilmington (5), Kings Grant (1), and Porter's Neck (2). These projects all contribute approximately 69,521 kWh annually. These are the only projects that are currently providing power back to the grid. There are a number of solar projects in the area that do not contribute directly to the grid, but do offset energy demand.

Water and Wastewater Infrastructure

Cape Fear Public Utility Authority (CFPUA) provides water and wastewater services for New Hanover County. CFPUA was established in July 2008 when the previously separate systems of the City of Wilmington and New Hanover County Water and Sewer District were combined. CFPUA operates the following water and sewer capital infrastructure in service to the community:

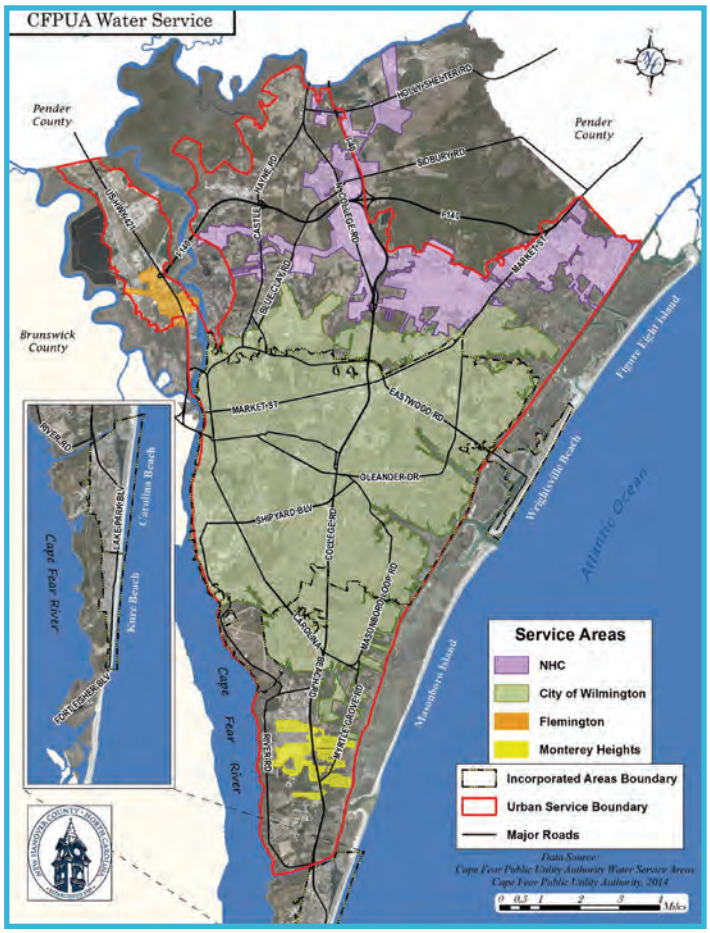
- More than 50 well sites
- More than 60 miles of raw water supply lines
- 2 water treatment plants
- More than 1,000 miles of water lines
- 11 elevated water tanks
- More than 7,700 fire hydrants
- 3 wastewater treatment plants
- More than 960 miles of sewer lines
- More than 140 sewer pump stations
- More than 16,800 water and wastewater valves

CFPUA processes and distributes approximately 16 million gallons of drinking water daily to homes and businesses. CFPUA has existing supply, treatment and transmission capacity to distribute over 41 million gallons per day. The two sources of water used include the Cape Fear River (surface water) and twogroundwater aquifers, the Castle Hayne and the deeper Peedee. CFPUA's multi-source abundant supply of raw water is a significant advantage for future growth and resiliency planning in the community.

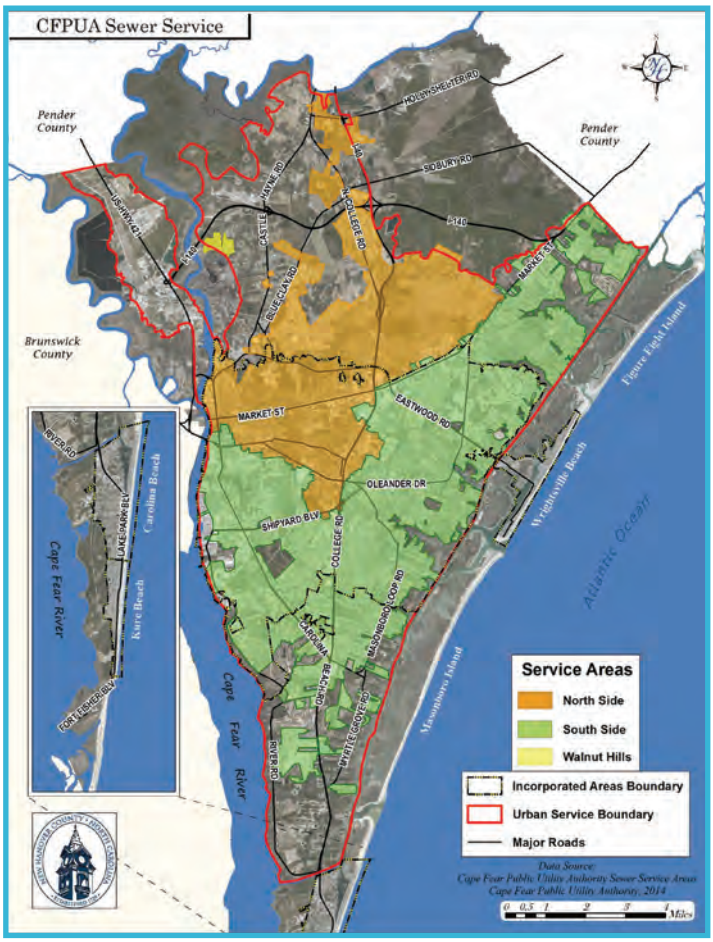
The Sweeney Water Treatment Plant, CFPUA's largest water facility, is supplied through surface water drawn from the Cape Fear River in Columbus County and piped to the treatment plant. The Sweeney Plant can treat up to 35 million gallons of water per day. The Sweeney Plant's distribution area includes the incorporated area of the City of Wilmington and increasing portions of the unincorporated area of New Hanover County, including Ogden, Monkey Junction and Kings Grant. The second largest water treatment facility is the Nano-filtration facility which services Murrayville, Wrightsboro, Porters Neck and parts of Castle Hayne and Ogden. The Nano-filtration facility is supplied by groundwater wells. The Nano Plant has the capability of treating up to 6 million gallons of groundwater per day. There are also two smaller groundwater well facilities at Flemington on U.S. Highway 421 and Monterey Heights near Veterans Park. Active capital projects are in planning to supply the customers at Flemington and the Monterey Heights systems with water from the Sweeney Plant.

The Cape Fear Public Utility Authority also operates and maintains three wastewater treatment facilities, M'Kean Maffitt (Southside), James A. Laughlin (Northside) and Walnut Hills. The Northside Plant is located near the ILM Airport and has a treatment capacity of 16 million gallons per day. CFPUA substantially upgraded the Northside Plant in both treatment capacity and the quality of the treated water returned to the river. The Southside Plant is located on River Road and has a treatment capacity of 12 million gallons per day. CFPUA has completed the design and permitting to increase the capacity of the Southside Plant up to 24 million gallons per day, but plans to construct additional capacity by increments only as needed to stay ahead of growth. The Walnut Hills Plant is a 100,000-gallon-per-day facility, and is nearing the end of its service life. An ongoing capital project will install infrastructure to pump the wastewater currently treated at the Walnut Hills Plant to the recently upgraded Northside Plant.

MAP 2.14



MAP 2.15



A key element of CFPUA's wastewater capacity management plan is creating opportunities to shift wastewater flows between different wastewater plants, pump stations and force mains. This provides a significant advantage over previous conditions, prior to CFPUA, by increasing opportunities to route sewer flows in pipes around damaged pipes or work areas and shifting flows from one plant to another to optimize capacity and enable maintenance activities. This resiliency reduces spills and enables growth by enhancing opportunities for ready capacity throughout the system ahead of service demand.

Storm water

The New Hanover County Engineering Department is responsible for overseeing storm water as it relates to new development and redevelopment. In 2000, the County adopted a storm water management ordinance. This ordinance requires development to limit post-development discharge rates of storm water to the rate of discharge prior to development. The restriction of discharge rate will better protect all new development while it helps keep the flooding problem in existing areas from getting worse. The ordinance also addresses water quality by encouraging non-direct discharges, requiring ponds to draw down from below water surface which prevent oils and floating debris from being discharged.

Since the adoption of the storm water ordinance, over 9,000 acres have been permitted and 883 permits have been issued.

Telecommunications

With improvements in computing and communication technology, the demand for updated telecommunication infrastructure to support new technologies becomes extremely important. The need for higher speed broadband internet connection and greater cell phone coverage are the two greatest demands. Currently 99.9% of the populated areas of New Hanover County, including Wilmington and the beach towns, can receive internet speeds of at least 3 megabytes per second (Mbps) and up to 25 Mbps. Availability of internet speeds greater than 25 mbps drops to 93%. More significantly, only 4.5% of New Hanover County has the availability of speeds greater than 100 Mbps. High speed broadband infrastructure is an attractive amenity for businesses and is a necessity for high tech companies.

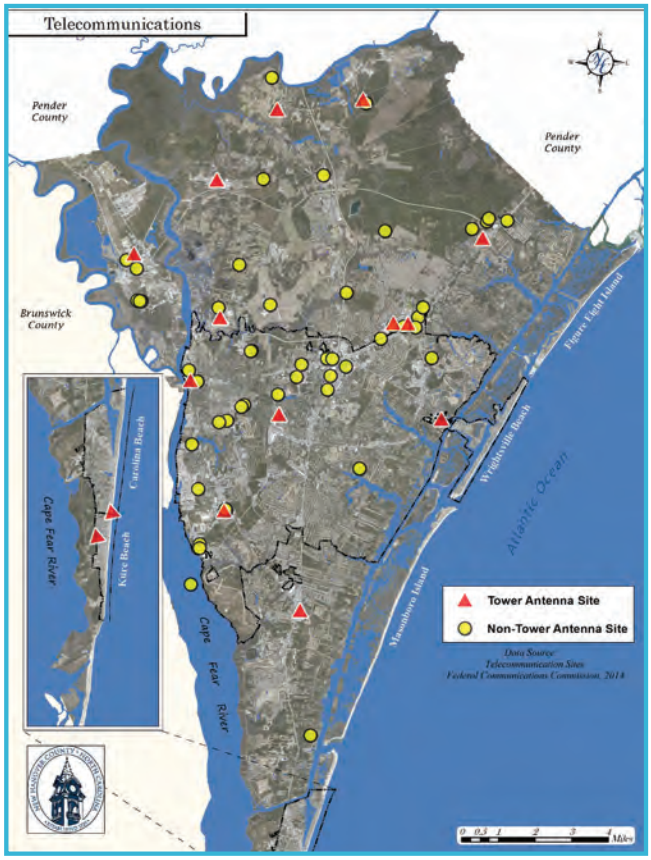
New Hanover County's medium and large scale businesses have a median download speed of 6.35 Mbps, while small businesses' median speeds are only 1.29 Mbps. The median download speeds are significantly slower than the state and national benchmarks.

New Hanover County currently has 15 cell phone towers, eight of which are located in the unincorporated county. For improved network coverage, the County also has 51 non-tower antennas; half of those are located within the unincorporated County. A majority of the antennas in the unincorporated area are located in the northern section above the Wilmington city limit. The southern areas of the unincorporated county below Wilmington city limits only have one tower and one non-tower antenna.

Availability	New Hanover County	North Carolina	Nationwide
DSL	94.40%	86.60%	89.70%
Cable	99.90%	90.50%	88.60%
Speed: Megabytes per second (Mbps)			
Medium & Large Business			
Median Download	6.35	9.44	8.83
Median Upload	1.58	6.53	4.19
Small Business			
Median Download	1.29	3.76	4.3
Median Upload	0.34	0.87	1.25

FIGURE 2.64

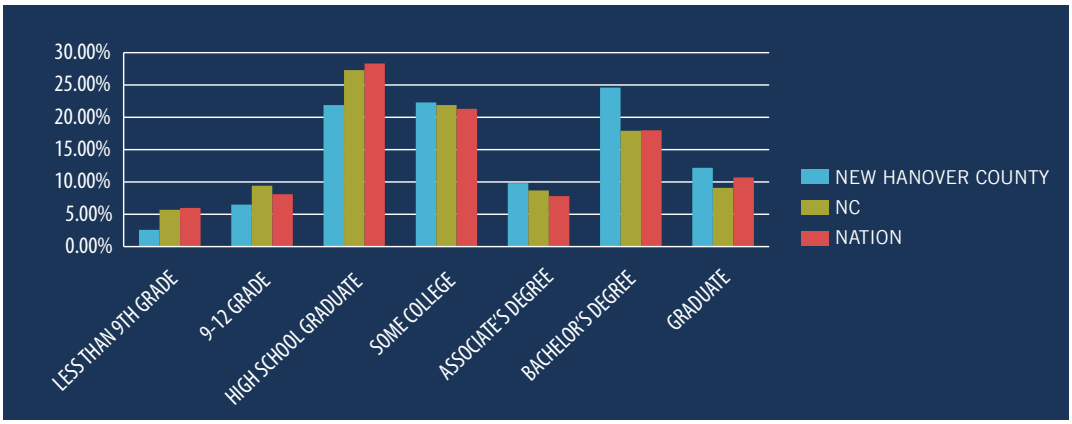
MAP 2.16



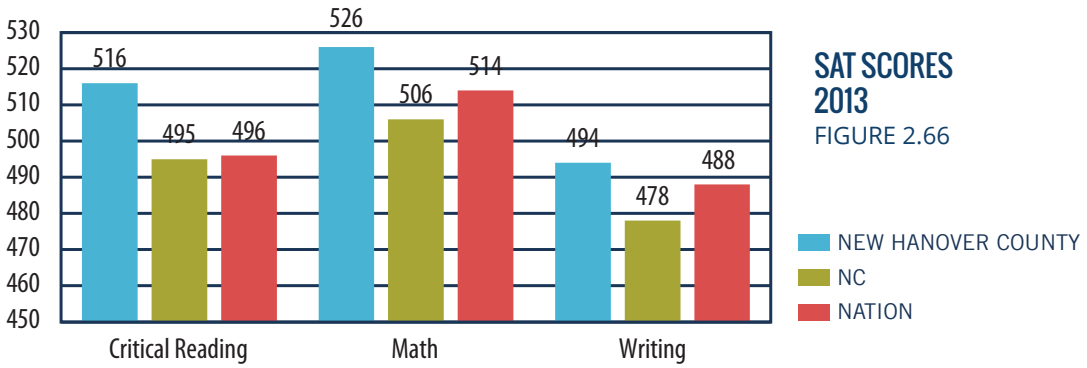
Education

Compared to the state and the nation, New Hanover County has a higher proportion of residents who have obtained an associate's, bachelor's, or graduate degree. Nearly a quarter of New Hanover County residents aged 25 or older possess a bachelor's degree and 12% possess a graduate degree. Additionally, the educational attainment of the in-migration to New Hanover County is higher than state or national levels. Educational estimates between 2010 and 2012 reveal that nearly 16% of new residents to New Hanover County possessed a graduate degree, compared to approximately 12% for the state and 13% for the nation. Having an educated population is an important economic development tool that helps attract business and industry to the community.

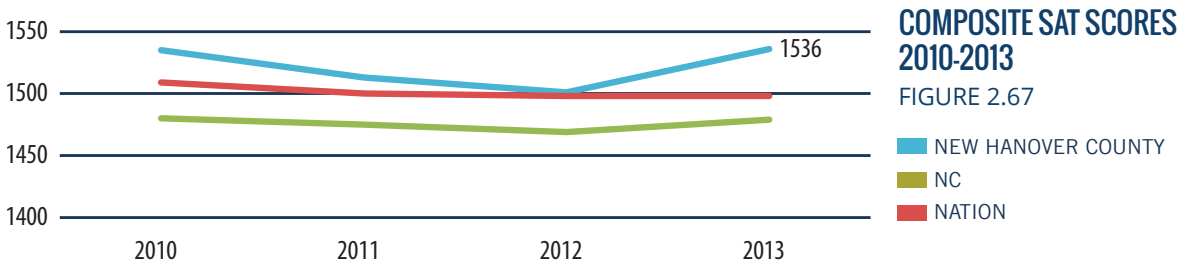
EDUCATIONAL ATTAINMENT BY PERCENT OF POPULATION AGE 25+ (2010-2012 ACS THREE-YEAR ESTIMATE)
FIGURE 2.65



New Hanover County's high school-aged students scored above the state and national averages in all three categories of math, critical reading and writing. New Hanover County's 2013 composite score of 1536 is approximately 4% greater than the state average, and two-and-a-half percent above the national average.



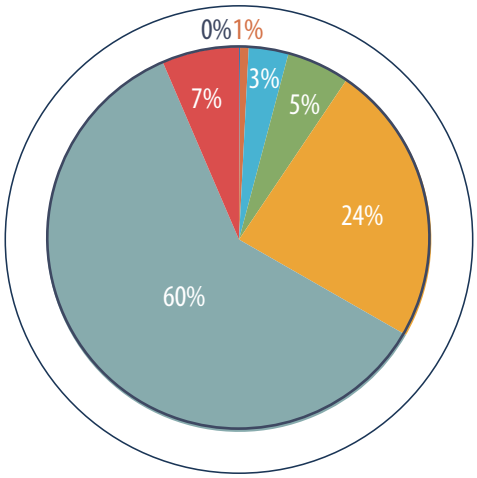
SAT SCORES 2013
FIGURE 2.66



COMPOSITE SAT SCORES 2010-2013
FIGURE 2.67

Crime

Non-violent crime, including larceny, burglary and motor vehicle theft represented 91% of the crime committed in New Hanover County between 2003-2012.



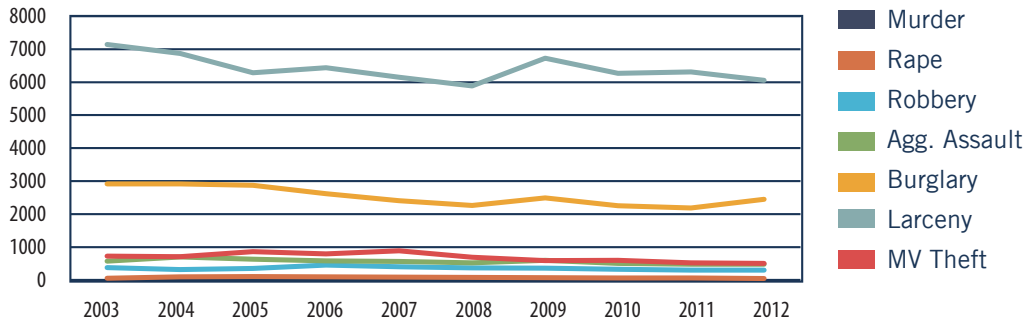
TOTAL CRIME BY TYPE 2003-3012

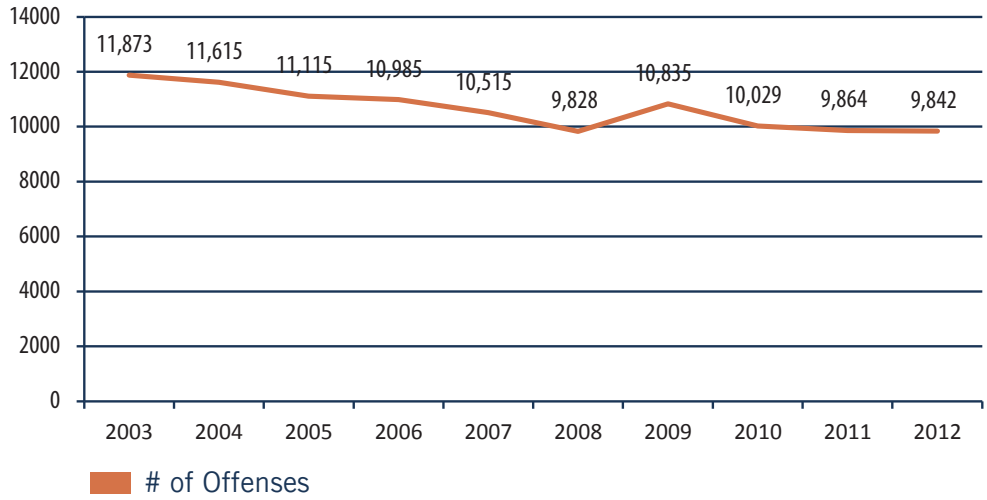
FIGURE 2.68

Larceny (60%) and burglary (24%) consistently represent the most commonly committed crimes in New Hanover County.

CRIME 2003-2012

FIGURE 2.69





TOTAL NUMBER OF OFFENSES 2003-2012

FIGURE 2.70

The crime rate in New Hanover County has been on a downward trend in the last decade with the exception of 2009, when the crime rate increased 10%. In 2009, larceny and burglary were the most prevalent types of crime.

FIGURE 2.71

Offense Category	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Murder	5	10	8	7	11	13	7	11	13	9
Rape	50	100	106	99	91	81	71	64	60	46
Robbery	377	313	347	453	398	371	362	326	299	300
Agg. Assault	573	701	631	577	566	524	593	507	480	481
Burglary	2,913	2,914	2,876	2,615	2,409	2,263	2,486	2,255	2,182	2,449
Larceny	7,142	6,868	6,288	6,441	6,150	5,887	6,730	6,265	6,311	6,057
MV Theft	723	709	859	793	890	689	586	601	519	500
Total	11,783	11,615	11,115	10,985	10,515	9,828	10,835	10,029	9,864	9,842

In 2012, there were a total of 841 law enforcement personnel combined in New Hanover County, the City of Wilmington, Wrightsville Beach, Carolina Beach, Kure Beach, and the University of North Carolina Wilmington (UNCW).

FIGURE 2.72

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Law Enforcement Employees	678	684	748	763	803	807	806	814	826	841

Per capita, UNCW and Wrightsville Beach have the most sworn officers in their jurisdictions.

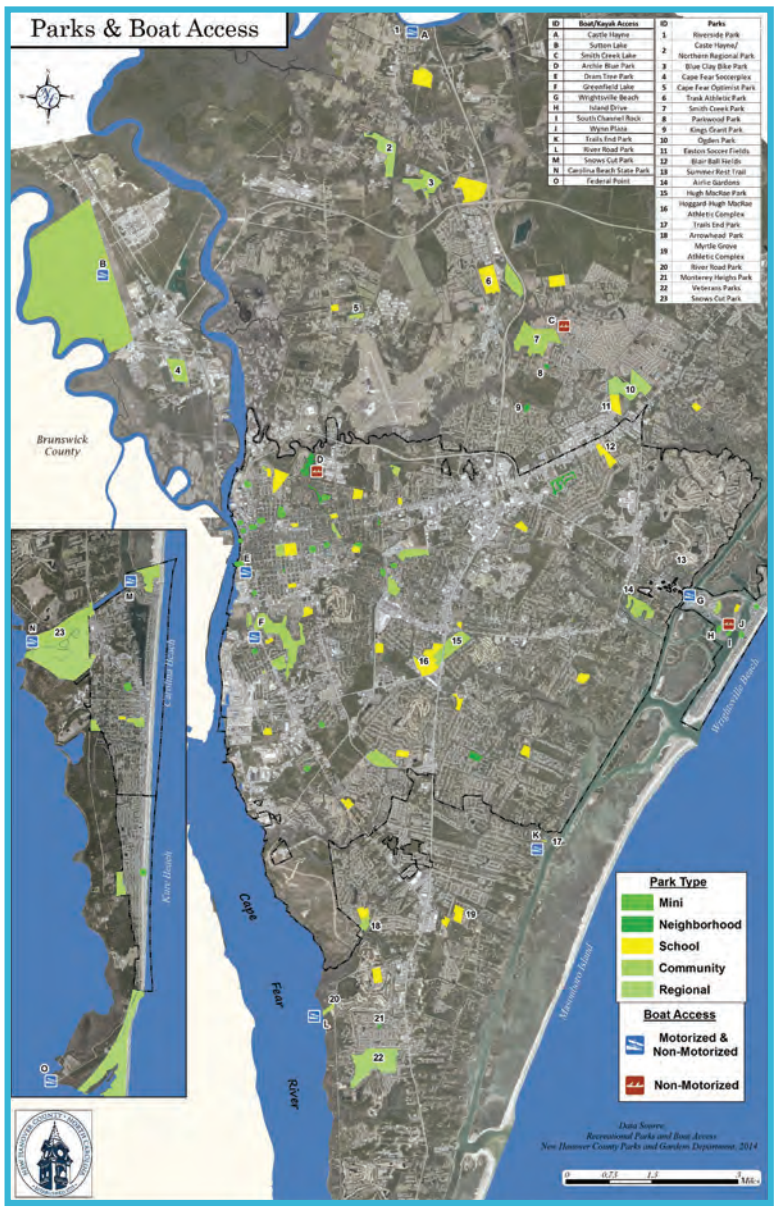
2012	Sworn Rate Per 1,000 Pop
NHC	3.7
Wilmington	2.4
CB	4.5
KB	5.4
WB	9.6
UNCW	10.7

MAP 2.17

Parks

New Hanover County contains 3,362 acres of parks and recreational areas, representing approximately 3% of the county's total land area. The National Recreation & Park Association recommends a minimum of 10 acres of park/recreational space per 1,000 residents. New Hanover County provides approximately 16½ acres per 1,000 people of park/recreational space; most of these areas are publicly owned and available to the public at no charge. Map 2.17 shows the locations of 111 parks and open space areas ranging from mini-parks to regional parks. Additionally, there are 15 public water access locations in New Hanover County that provide access to lakes, creeks, the Cape Fear River and the Intercoastal Waterway.

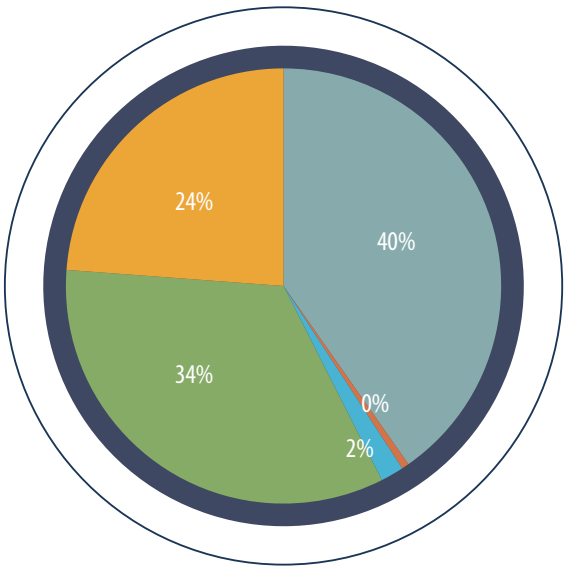
Mini-parks are the smallest of park classifications and are generally less than 2 acres. These parks are very small and easily accessible by the residents immediately surrounding the park (1/4 - 1/2 mile radius). These parks are usually within walking distance to the area served and provide a very limited variety of activities. The county contains approximately 18 acres of mini-parks.



Neighborhood parks offer local citizens a convenient source of accessible recreation opportunities. These parks are located in residential areas and usually within walking distance of the area served (1/4 – 1/2 mile radius) and provide a variety of activities. Parks are generally under 10 acres in size. The county contains approximately 58 acres of neighborhood parks.

School parks are joint-use public facilities. Facilities generally include playgrounds and athletic fields and are open to the public outside of school hours. The county contains approximately 801 acres of school parks.

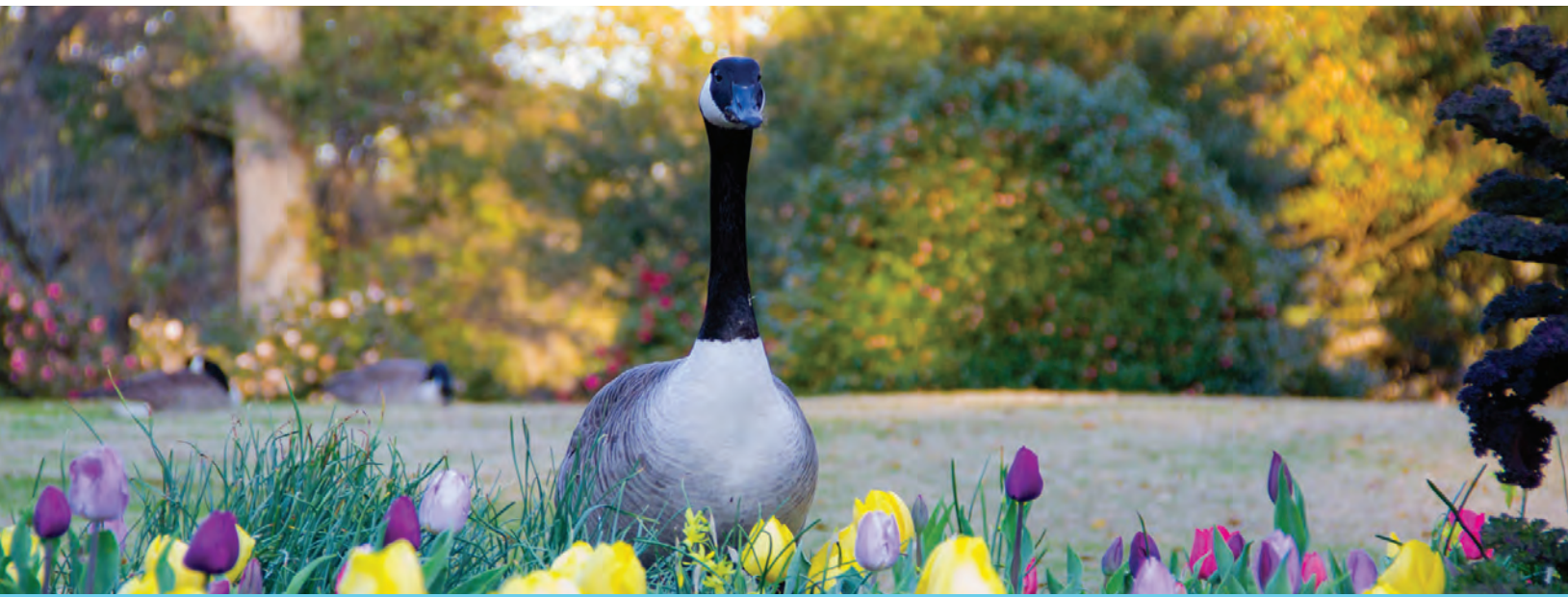
Community parks provide a varied range of activities to support passive recreation, active recreation and community activities. Adequate space, parking and support facilities are provided. Community parks generally serve residents in a ½ mile to 3-mile radius and are 10-99 acres in size. The county contains approximately 1,354 acres of community parks.



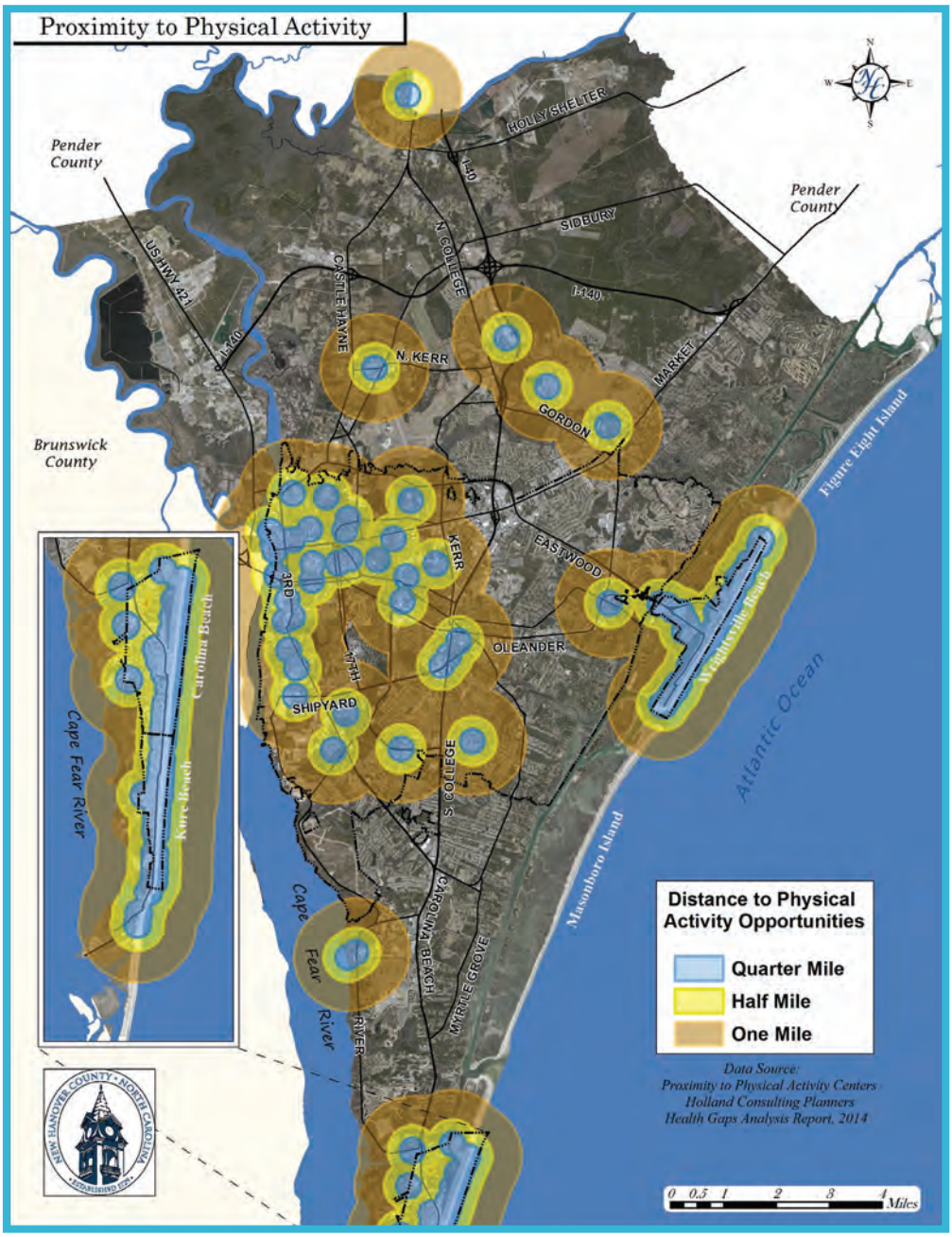
NEW HANOVER COUNTY PARK TYPES

FIGURE 2.73

Regional parks are typically large sites that provide a wide and varied range of both passive and active recreational opportunities. These parks serve a substantial number of people who are willing to spend travel time to visit sites. These parks are generally located on or near major transportation corridors and are easily accessible by a large number of citizens. Regional parks generally serve residents up to a 10-mile radius and are 100 acres or larger. The county contains approximately 1,131 acres of regional parks.



New Hanover County manages and operates neighborhood, school, community, and regional parks that offer a range of activities and amenities. These parks are generally in good condition and are heavily to moderately used. In 2006, a $35.5 million parks and greenspace bond was approved by New Hanover County residents that provided funding for the improvement and expansion of parks county-wide, including: Olsen Park, the Althea Gibson Tennis Center, Veteran's Park, Ogden Park, River Road Park, Arrowhead Park, Monterey Park, Parkwood Park, Trail's End Park, Smith Creek Park and Castle Hayne Park.



MAP 2.18

Map 2.18 shows the proximity of physical activity facilities, including public open spaces/recreation facilities, senior centers and beach/water access areas. Physical activity facilities were mapped utilizing quarter-mile, half-mile, or one-mile radii. Facilities within one-mile are generally accessible within a five-minute bike ride, and facilities within the quarter-mile radius can be accessed within a five-minute walk. Facilities beyond one-mile are generally accessed by vehicle. There are many areas of unincorporated New Hanover County that are not within walking/biking distance and require a vehicle to access.

Historic Architecture

New Hanover County's vibrant past is reflected in a wide variety of historic sites found throughout the county. In 1985, the Planning Department released an inventory of these properties which contained 143 different structures located in both the beach towns and the unincorporated county. The complete guidebook offers brief descriptions of the architectural attributes of each of these structures, as well as information about their histories.

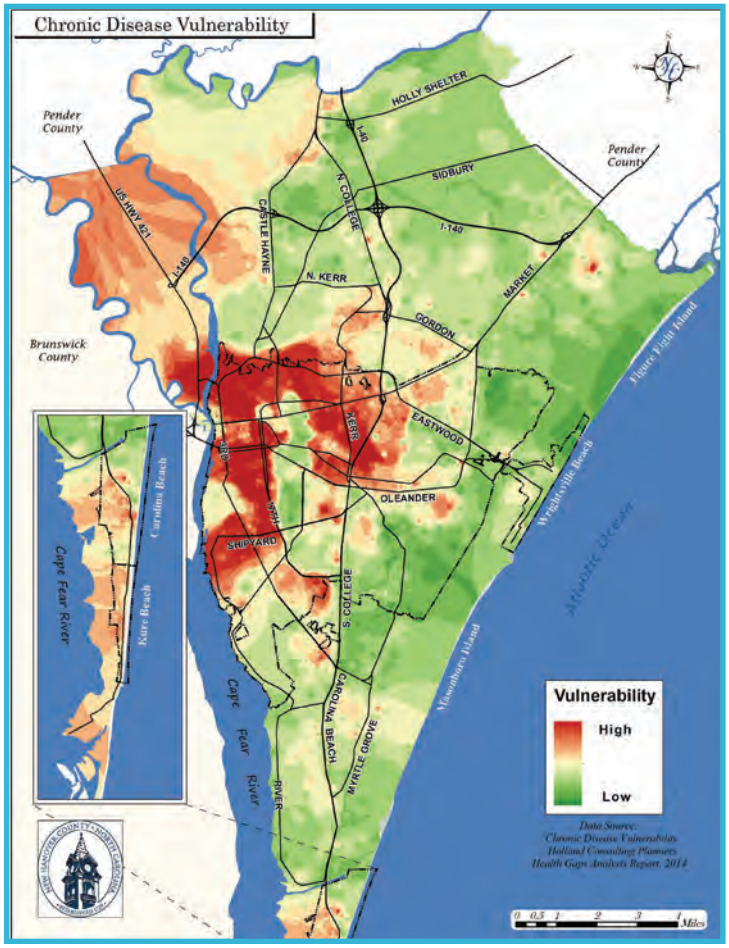
In 2014, the Planning Department undertook several site visits to locate the structures identified in the original inventory. These visits included only the properties found in the current unincorporated area of the county, spanning the districts of Ogden/Scotts Hill, Castle Hayne, Wrightsboro, Myrtle Grove/Sea Breeze and the Wilmington Vicinity. Of the 43 historic properties visited, roughly 33 percent (14/43) are no longer standing. However, over the course of these visits, staff and community volunteers identified several properties that were not included in the 1985 inventory, such as a white bungalow on Edgewater Club Road built in 1901 (Ogden/Scotts Hill Vicinity) and several residential properties on Castle Hayne Road (Wilmington Vicinity). These additions offer exciting examples of historic architecture in the unincorporated county, some of which are estimated to date back to the nineteenth century.

Staff and community volunteers identified additional historic structures in the Unincorporated County, including these two houses located at 2013 (left) and 2001(right) Castle Hayne Road in the Wilmington Vicinity.

Although several of the historic structures identified in 1985 are no longer in existence, many impressive historic structures from the original inventory remain. These include the Biddle House, a 1920s-era bungalow-style home that rests on a massive 25-acre lot along the Intracoastal Waterway (Myrtle Grove/ Sea Breeze Vicinity); the Gulf Oil Company Storage Buildings, built in 1929 and featuring original wooden trusswork in the roofing; and the Martindale House, a farmhouse dating back to around 1823, whose architecture inspired the design of several newly constructed homes in the Belle Meade Woods subdivision (Myrtle Grove/Sea Breeze Vicinity). This juxtaposition of historic and contemporary homes offers a striking example of the unique cultural heritage that characterizes New Hanover County.

The Biddle House, left, sits on a 25-acre lot along the Intracoastal Waterway and is described in the 1985 guidebook as "an unusual example of the formal, Neo-Classical Revival style used in a bungalow form." The Martindale House, right, a nineteenth-century coastal farmhouse, adds history and character to the newly constructed Belle Meade Woods subdivision.

MAP 2.19



Downtown Wilmington, Wrightsboro, Castle Hayne and a small segment in Porters Neck have populations that are vulnerable to chronic disease. These populations may face difficulty accessing healthcare, physical activity and fresh healthy foods.

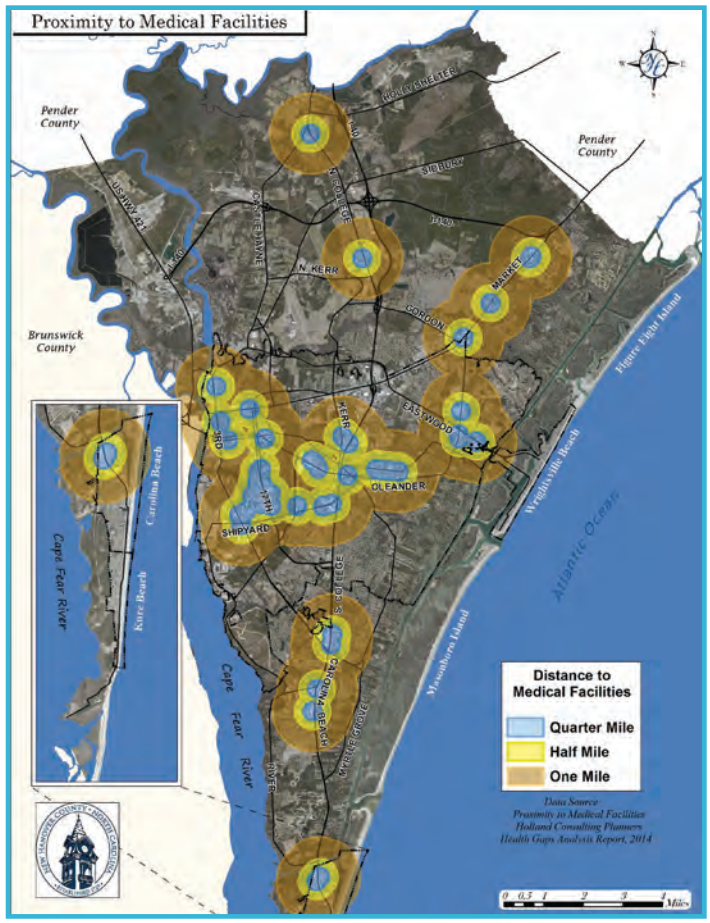
Access to health care is important because it provides preventive medical care which contributes to overall health. In New Hanover County, there are 32.4 physicians per 10,000 residents, a ratio which is 30% higher than the state average of 22.1 per 10,000 residents.

In the last century, chronic disease has replaced infectious disease as the most common disease and killer among Americans. Chronic diseases are the leading causes of death in New Hanover County and nationwide, yet they are preventable through lifestyle choices. Obesity is one of the most significant factors for increased risk of chronic disease. According to the 2010 Physical Activity, Nutrition and Obesity Quick Facts, today's youth may be the first generation to live a short and less healthy life than their parents, with a huge contributor being childhood obesity. Since 2005, North Carolina and New Hanover County continue to see more than 30% of children aged 2-18 years old who are either overweight or obese.

In 2011, the leading causes of death in New Hanover County were heart disease, cancer and cerebrovascular disease.

The map below shows areas of New Hanover County with populations vulnearable to chronic disease. Due to concentrations of the elderly and populations of low socioeconomic status,

MAP 2.20

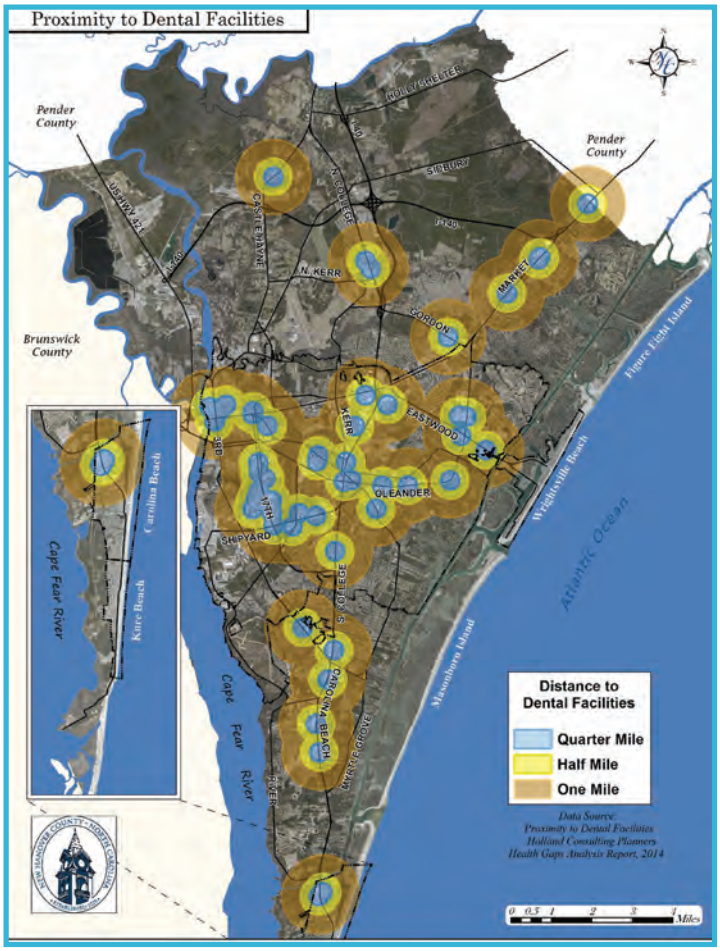


Annually, the University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation release the overall health rankings for counties nationwide based on health factors such as a county's built environment and a community's health behaviors.

In 2013, New Hanover County ranked 48th of North Carolina's 100 counties in physical environment. New Hanover County has a much higher percentage of fast food restaurants than the national benchmark. The overabundance of fast food restaurants is compounded by the lack of access to fresh healthy foods or food deserts in New Hanover County as compared to the state or national benchmark.

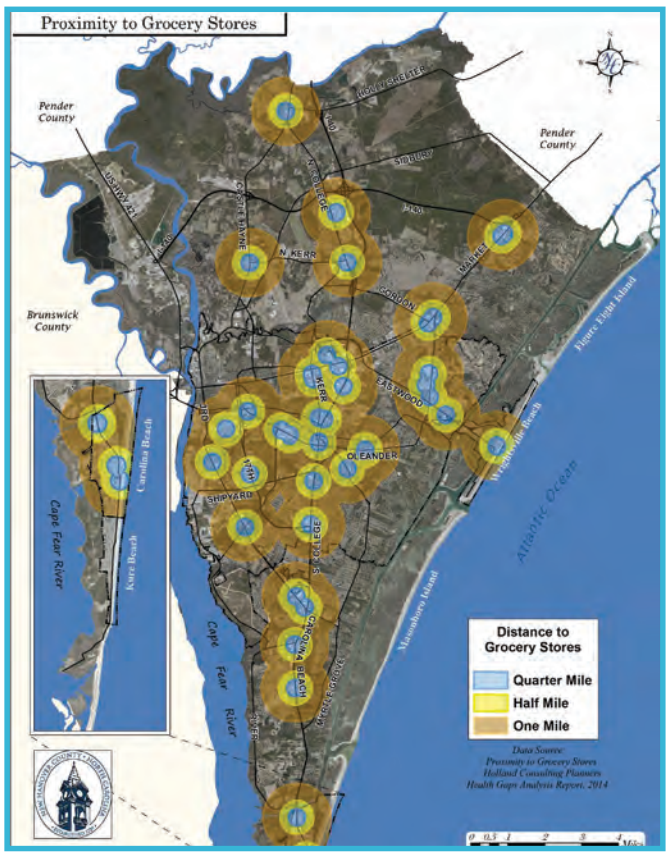
New Hanover County reported 84 children (ages 0-14) with asthma hospital discharges in 2009, with a rate increase from 175 per 100,000 in 2005 to 259 per 100,000 in 2009. Chronic Lower Respiratory Disease (CLRD) is a leading cause of death among New Hanover County residents between 40 – 85 years old. CLRD is a condition that affects the lungs and makes it hard to breathe. Chronic Obstructive Pulmonary Disease (COPD), emphysema and chronic bronchitis are grouped under CLRD. One of the main causes of CLRD is tobacco use, which can include secondhand smoke. However, asthma and asthma irritants, exposure to air pollutants, genetic factors and respiratory infections could also be risk factors.

MAP 2.21



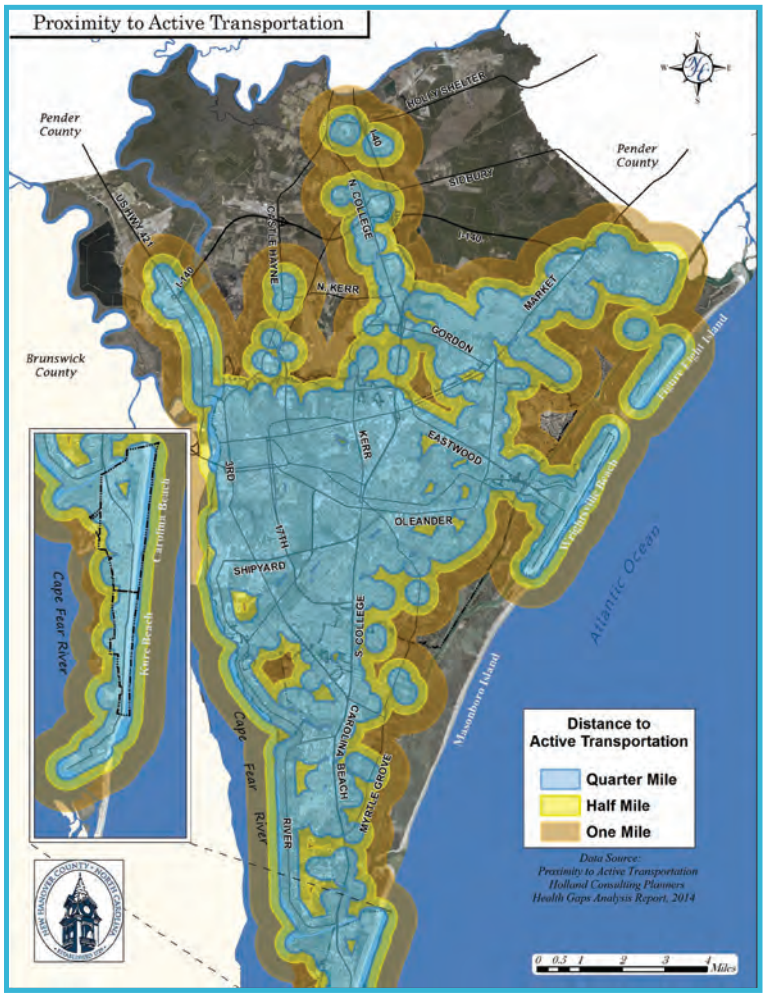
The Air Quality Index considers principal air pollutants and determines unhealthy days based on the levels of pollutants. In 2010, the number of unhealthy days for the general public was zero. However, there were 14 unhealthy days for those who have asthma or lung disease in New Hanover County for 2010.

Proximity to healthy food is a key factor in the welfare of a community. The map to the left shows the locations of full-service grocery stores that provide access to fresh fruits and vegetables, are open seven days a week, and accept the Supplemental Nutrition Assistance Program (SNAP), Electronic Benefits Transfer (EBT), and Benefits for Women, Infants, and Children (WIC). In the unincorporated area of New Hanover County, most residences are more than one mile from a full service grocer and would require a personal vehicle or transit to access.



MAP 2.22

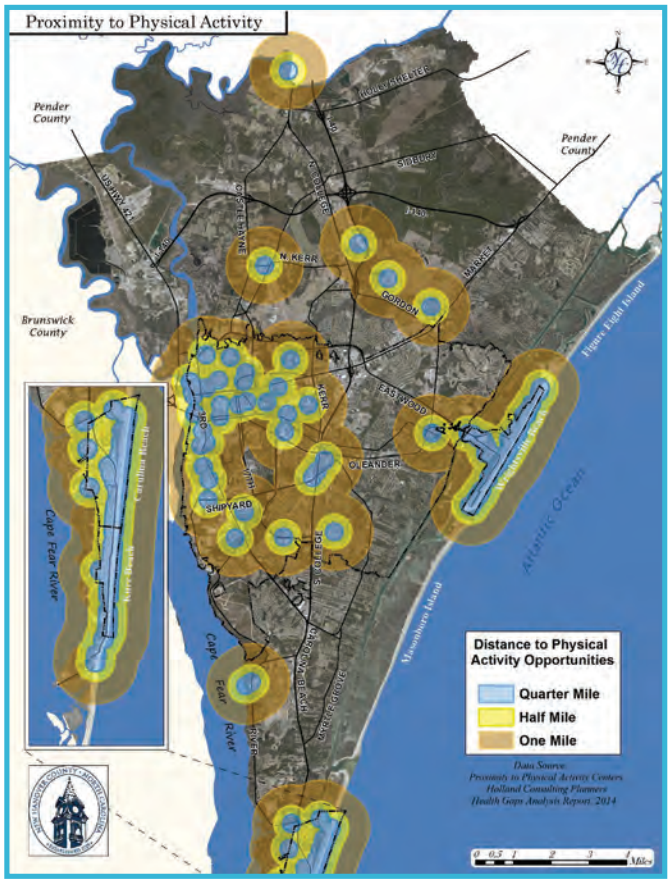
MAP 2.23



Physical activity is one of the most effective methods of fighting obesity. Bicycle and pedestrian facilities provide opportunities for active transportation and safe, accessible recreational facilities for adults and children to get the daily recommended allotment of exercise. A 2008-2009 study by the Centers for Disease Control and Prevention (CDC) found that adults who moved into denser, mixed-use communities increased their levels of walking for both recreation and transportation. These findings have begun to shape community development patterns towards more compact, walkable neighborhoods with access to goods and services.

Ecological benefits can be derived by increased non-motorized trips, which can lead to reduced pollution and emissions. There are also documented economic benefits of bicycle and pedestrian facilities, including increases in residential property value and trail and race tourism.

Outside the downtown Wilmington core, opportunities for active transportation begin to decline as distances from facilities increase. According to the University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation, New Hanover County ranked 48th of North Carolina's 100 counties for the physical built environment (2013).



MAP 2.24

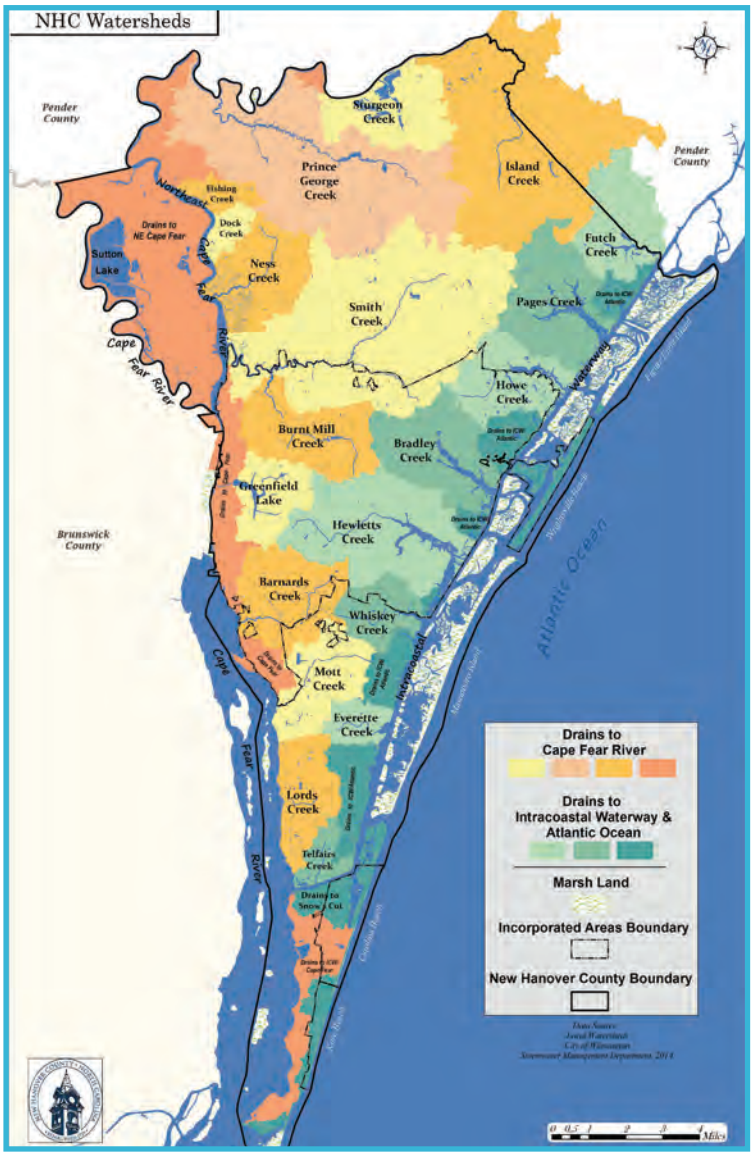
New Hanover County is surrounded on three sides by water: the Cape Fear River, Northeast Cape Fear River and the Atlantic Ocean. The county's location is susceptible to many natural hazards, including hurricanes, floods and storm surge. Its location also makes it vulnerable to pollution, especially water pollution, as it is at the end of the Cape Fear watershed. All contaminates that find their way to the Cape Fear watershed funnel into the waters that surround the county before making their way into the Atlantic. Along with numerous creeks, streams and wetland areas, New Hanover County is a diverse place with a wide range of ecosystems and habitats that are home to a variety of wildlife and plant species.

MAP 2.25

Water

Seventeen percent (24,000 acres) of New Hanover County is water. Some of the major water bodies, rivers, and creeks include the Atlantic Ocean, the Cape Fear River, the Northeast Cape Fear River, Smith Creek, Hewlett's Creek, Bradley Creek, Sutton Lake, Greenfield Lake and Silver Lake. The County is also home to many inlets, streams, ponds, lakes and tidal marshes that provide numerous recreation opportunities. The diverse water features in New Hanover County also create unique habitats and ecosystems for many plant and animal species. The proximity to coastal waters provides excellent economic opportunities for fishing, shell fishing and all services that complement the fishing economic sector.

MAP 2.26



Watersheds

New Hanover County is part of the Cape Fear River basin which spans 27 counties. Beginning at the headwaters of the Deep and Haw Rivers, the Cape Fear River begins below the B. Everett Jordan Dam in Durham County. The Cape Fear River basin is the largest in North Carolina. Meandering its way southeast, the river joins the Northeast Cape Fear River on the northwest corner of New Hanover County. Within New Hanover County, there are 20 named sub-watersheds and 10 unnamed sub-watersheds that drain to either the Cape Fear River or the Intracoastal Waterway and the Atlantic Ocean. Delineating watersheds is important when dealing with issues such as water pollution and storm water management.

Map 2.26 is a product from the City of Wilmington's Public Services Storm-water Management department. The map was created as an educational tool to spread awareness of the flow of storm water runoff and the flow of contaminants that make their way into NHC waters. The green and blue green watersheds drain in the intra-coastal and Atlantic ocean. The orange, yellow and reddish colored watersheds drain to the Cape Fear River.

Water Quality

As one of the most developed counties in North Carolina, New Hanover County works with local, state, and private contractors, including the NC Department of Environment and Natural Resources, and the University of North Carolina at Wilmington, to evaluate surface and ground water quality.

New Hanover County's annual report of water quality is produced by Coastal Planning and Engineering of North Carolina, Inc. Water quality measurements are taken monthly throughout the year at 19 monitoring stations for seven creeks. The creeks include Barnards Creek, Futch Creek, Lords Creek, Motts Creek, Pages Creek, Prince Georges Creek and Smith Creek. The rating scale is a quantitative system based on a number of parameters where levels of particulate matter are graded "Good" "Fair" or "Poor." The ratings are based on state standards, and the number of times a substance exceeds that state standard determines its final rating.

Seen in Figure 2.74, all watersheds tested "Good" for turbidity and cholorphyll-a as well as dissolved oxygen levels, with the exception of Pages creek and Prince Georges Creek. Pages and Prince Georges creeks tested "Poor" for dissolved oxygen. Five of the watersheds, Barnards, Motts, Pages, Prince Georges and Smith creeks all tested "Poor" for Enterococci, whereas Futch Creek tested "Good" and Lords Creek tested "Fair." Fecal coliform was assessed monthly for only Futch and Pages creeks. Both creeks received a rating of "Poor" and generally exceed the state shellfish standard for the bacteria.

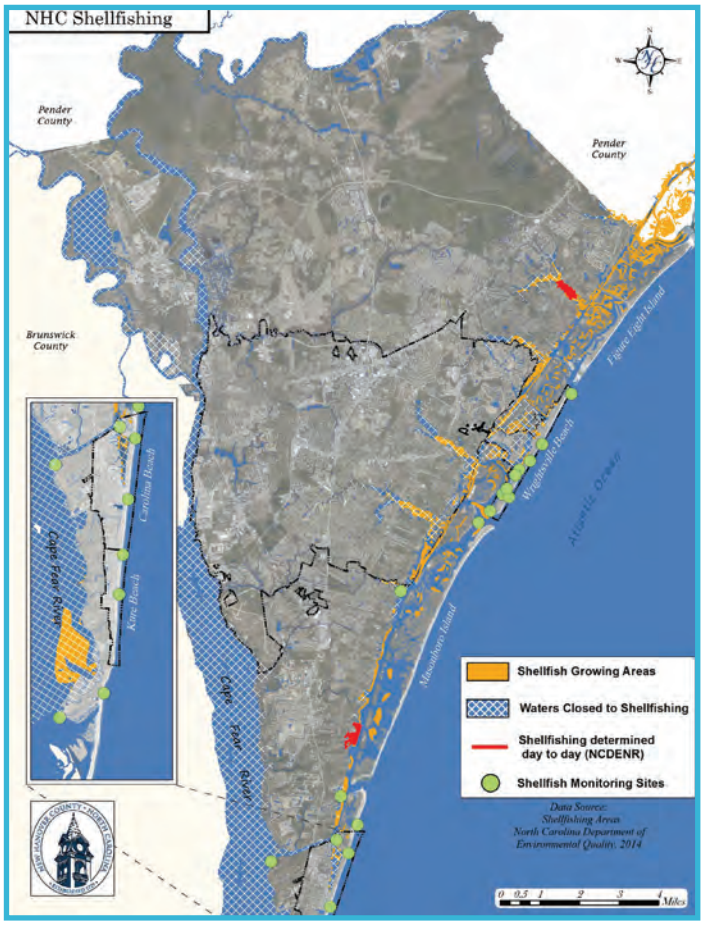
FIGURE 2.74

Parameter	Barnards Creek	Futch Creek	Lords Creek	Motts Creek	Pages Creek	Prince GeorgesCreek	SmithCreek
Turbidity	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD
Dissolved Oxygen	GOOD	GOOD	GOOD	GOOD	POOR	POOR	GOOD
Chlorophyll-a	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD
Enterococci	POOR	GOOD	FAIR	POOR	POOR	POOR	POOR
Fecal Coliform	N/A	POOR	N/A	N/A	POOR	N/A	N/A

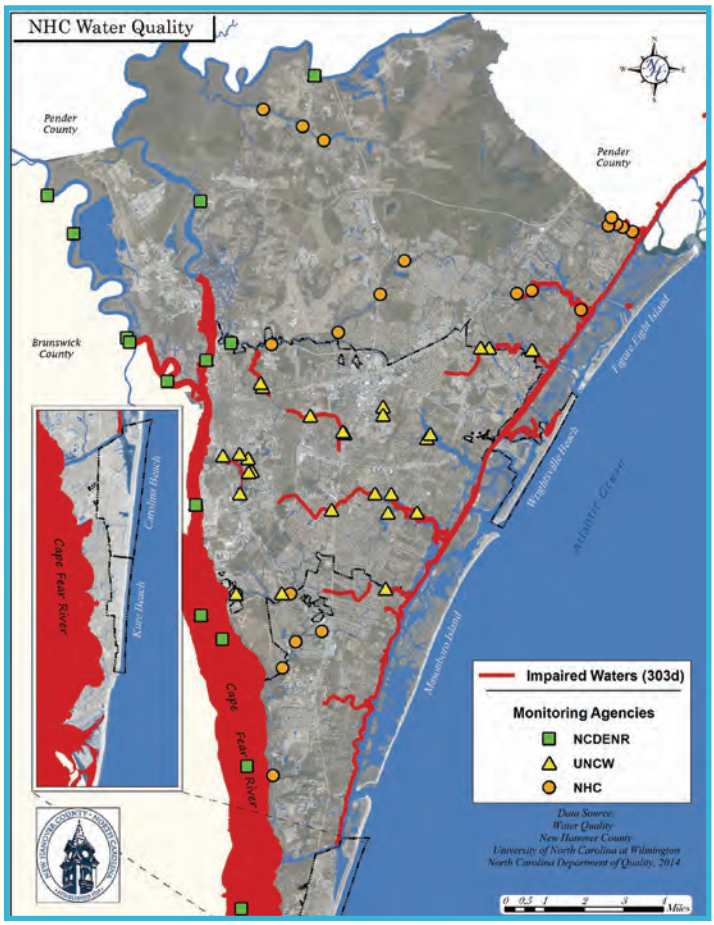
Data has been collected monthly since 2007, and long term trends show that since 2007 dissolved oxygen levels have increased within surface samples 37% of the time in Prince Georges Creek, 29% of the time in Pages Creek, 21% of the time in Futch Creek, and 10% of the time in Motts Creek. Smith Creek and Lords Creek only exceeded the dissolved oxygen standard 4% of the time, while Barnards Creek only exceeded the standard 1% of the time, respectively. Enterococci bacteria has been problematic in several creeks since 2007. Samples collected in Motts Creek, Barnards Creek and Smith Creek exceed the state standard 52%, 46% and 41% of the time. Prince Georges Creek exceeded the limit 31% of the time and Pages Creek 27% of the time. Lords Creek and Futch Creek only exceeded the standard 9% and 1% of the time, respectively. Turbidity and chlorophyll-a have not been problematic in any of the creeks, as only 16 out of 1,325 samples had exceeded the standards. Turbidity standards have only been exceeded three times since 2007; twice for Smith Creek and once for Pages Creek.

Impaired Waters (303d)

The 303d list of impaired and threatened waters is a list of all stream/river segments and lakes where pollution has exceeded the water quality standards set forth by the Clean Water Act. Waters that are too polluted and degraded to meet the water quality standards must develop a Total Maximum Daily Load (TMDL). A TMDL is a calculation of the maximum level of pollutants a body of water can receive and still meet water quality standards. The TMDLS are monitored and reported to the Environmental Protection Agency every two years. In New Hanover County, almost all of the major creeks, including the Cape Fear River, are listed as impaired. Monitoring stations have been placed throughout the county by various agencies, including New Hanover County, NC Department of Environment and Natural Resources and the University of North Carolina at Wilmington. Impaired New Hanover County waters have caused the closure of shellfishing areas and have limited recreational opportunities. It is vitally important to work on reducing the amount of pollution in NHC's waters in order to enjoy all the recreational and economic opportunities.



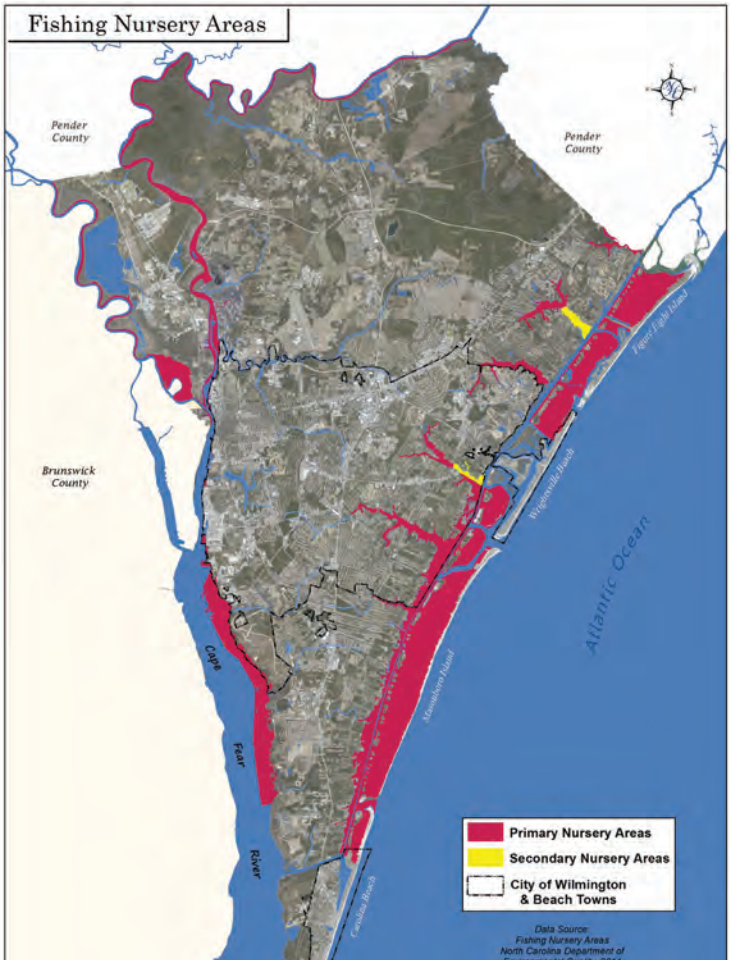
MAP 2.27



MAP 2.28

Primary Nursery Areas

MAP 2.29



Primary Nursery Areas (PNA) include primary, secondary and special secondary areas that are important for initial post-larval and juvenile development of finfish and crustaceans. They are found in the uppermost reaches of estuaries including Futch Creek, Pages Creek, Howe Creek, Hewletts Creek, Whiskey Creek, Bradley Creek, The Cape Fear River and Northeast Cape Fear River. PNAs are also found in tidal marsh areas between barrier islands and the main land.

Specifications on the use of specified fishing equipment are regulated in Primary Nursery Areas to protect not only the animal species but bottom structure (sea grasses, oyster rocks, sand and mud), and adjacent wetlands. Shoreline development is also regulated around Primary Nursery Areas which mainly include dredging operations. Primary Nursery Areas are classified as High Quality Waters which limit point source discharges and storm water runoff. The North Carolina Division of Marine Fisheries (DMF) is responsible for delineating, preserving, protecting and developing Primary Nursery Areas for commercially important finfish and shellfish.

Air Quality

New Hanover County monitors three of the major air pollutants: Ozone, Particulate Matter 2.5 (PM 2.5), and Sulfur Dioxide (SO2). Ozone is a chemical reaction of other pollutants (nitrogen dioxide and volatile organic compounds) in the presence of sunlight. In NHC and the surrounding region, motor vehicles and industrial utilities are the largest contributors to the formation of ozone. The U.S. Environmental Protection Agency (EPA) provides the air quality index which rates the level of ozone quality based on a point scale from 0-300. The index ranges from "Good" (no expected health impacts) to "Very Unhealthy" (avoid outdoor activity). Particulate Matter 2.5 is a measurement of tiny particles of solid or liquid matter in the atmosphere. High levels of PM 2.5 are exacerbated by all types of combustion from motor vehicles, residential wood burning, forest burning, agricultural burning and some industrial processes. The last air pollutant NHC monitors is sulfur dioxide. The largest sulfur dioxide emissions are from fossil fuel combustion at power plants and industrial facilities. High levels of ozone, PM 2.5 and sulfur dioxide aggravate lung diseases such as asthma, emphysema and chronic bronchitis, and can even lead to heart disease and premature death.

EPA's standard for Ozone is currently set at 75 in order to protect public health. Annual averages for the region and the county have been within that standard over the last 10 years. There has been a downward trend in annual averages, and much of this can be attributed to more stringent air quality requirements for automobiles and industrial facilities. EPA is considering lowering the current standard, which could eventually put New Hanover County in jeopardy of exceeding this standard if averages remain at the level they are now.

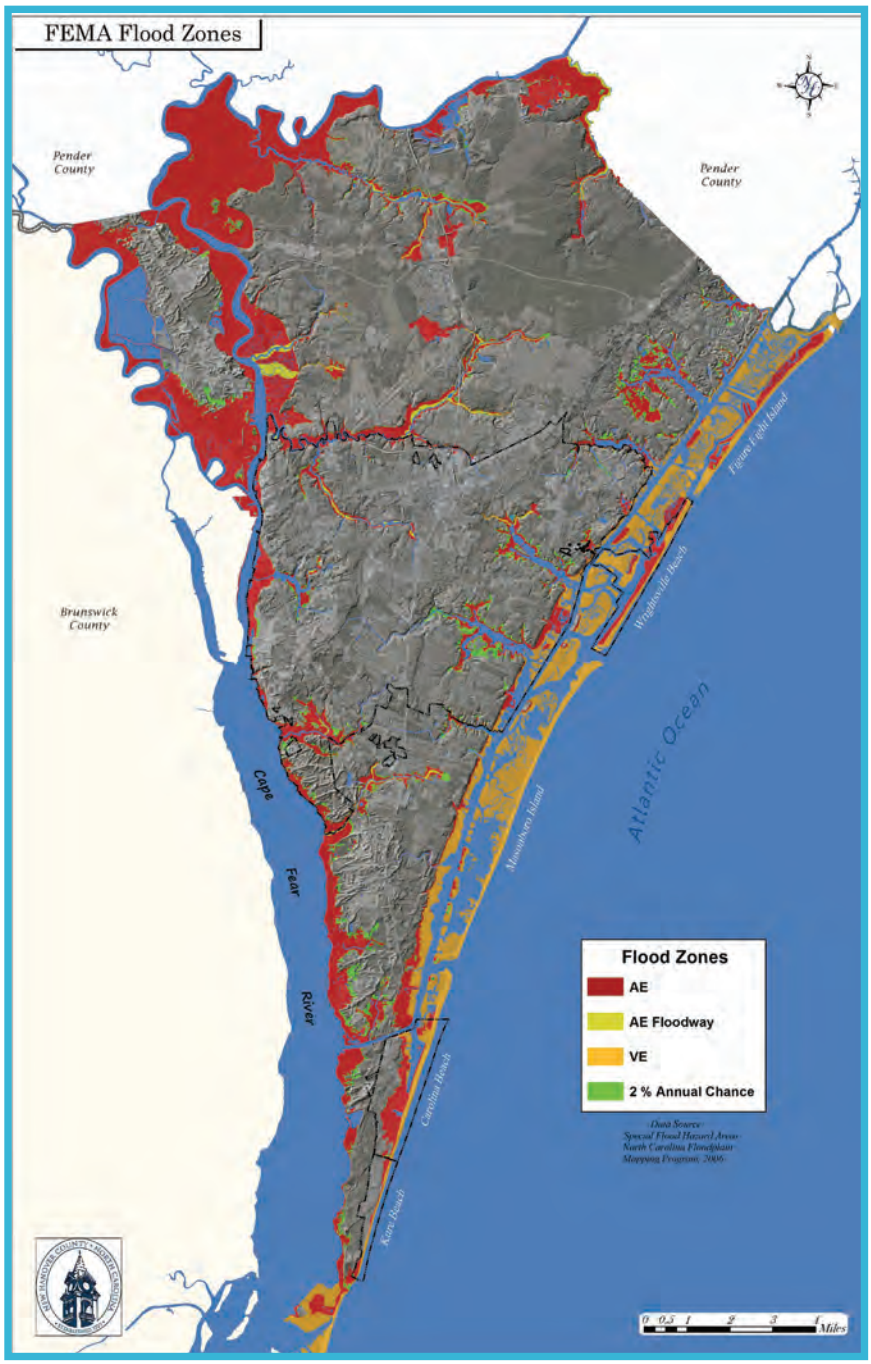
For PM 2.5, the EPA has currently set the standard for particulate matter at 35 to protect public health. All annual averages collected in our county are currently within that standard, with a noticeable spike in 2010 due to the wild fire at the Holly Ridge Game Shelter in Pender County.

EPA's standard for Sulfur Dioxide is 75, and this EPA's standard was enacted in 2011. While past years have recorded averages above the standard, averages over the past three years have been under the standard and within compliance. Much of this decrease can be attributed to more stringent air quality regulations for industries, and the closure of some older industrial facilities in the region. The conversion of the Duke-Progress Sutton Power Plant from coal to natural gas should also decrease the annual averages even further.

Hazard Areas

New Hanover County, due to its location and proximity to water, is vulnerable to flooding from severe weather, such as hurricanes and severe rain events. As required through the County's participation in the National Flood Insurance Program, Special Flood Hazard Areas (SFHA) are delineated areas that have the potential to be covered by floodwaters of the base flood, or 100 year flood event. These are managed areas, and regulations must be enforced where the mandatory purchase of flood insurance applies. The SFHA zones in New Hanover County include AE, AE floodway and VE. The flood zones range in severity and are based on a percentage chance that flooding is likely. Land in the AE flood zones has the highest chance of being inundated, and therefore has an established base flood elevation level. AE flood zone areas have a one percent annual chance of flooding, and a 26 percent chance of flooding over the life of a 30-year mortgage. Areas in the VE flood zones have the same potential chance of flooding as AE, but also have the added potential for velocity hazards or wave action. Although there are areas in the county with lower chances of flooding, such as areas in the two percent chance, all development in flood zones should take into account the potential risks associated with flooding. New Hanover County regulates development in these flood zones in accordance with FEMA, NFIP, and local regulations.

MAP 2.30



A majority of AE flood zones lie along the Cape Fear River in the northwest and northeast sections of the county, along the banks of inlet areas and the major streams, and the backsides of the barrier island beach communities (Wrightsville Beach, Figure Eight Island, Carolina Beach and Kure Beach). VE flood zones are primarily found on the front sides of the barrier islands of the beach towns and the tidal marshes of the Intracoastal Waterway.

Due to New Hanover County's proximity to the Atlantic Ocean, storm surge is a serious hazard. Defined by National Oceanic and Atmospheric Administration (NOAA), storm surge is "an abnormal rise of water generated by a storm, over and above the predicted astronomical tides." Though there are many factors to contribute to the intensity of storm surge, it is mainly produced by water being pushed towards shore by the force of wind. In general, more intense storms have the potential to produce more intense storm surges. Storm surges

have the potential to cause damage as slight as minor beach erosion or as great as the destruction of homes, businesses and major infrastructure.

The most at-risk populations from storm surge include those on the beach, including Wrightsville Beach, Carolina Beach, Kure Beach and Figure Eight Island. Though the barrier islands provide some protection from storm surge, areas in proximity to the Intracoastal Waterway, inlet areas and the Cape Fear River are vulnerable to surge.

In 2013, the City of Wilmington, New Hanover County, Cape Fear Public Utility Authority and the U.S. Environmental Protection Agency partnered to release the Community Resilience Pilot Project. The report focuses on the impacts of sea level inundation and storm surge on New Hanover County's water and wastewater treatment facilities. The report identifies the at-risk facilities and provides adaptation strategies to reduce community impacts.

Storm surge also has a great effect on the natural environment, which can include the change of the physical landscape as a result of erosion and sand migration. Effects on the physical land can cause dramatic changes and degradation to natural habitats for plant and animal species.

In New Hanover County, there are four general forms of erosion: coastal erosion, which occurs on the barrier islands by natural processes; tidal creek erosion; inland estuarine erosion; and erosion from development sites. Coastal erosion can happen both slowly and quickly by natural forces. Slower erosion occurs from the natural rise and fall of tides, as well as from other natural processes that cause sediment to migrate. Coastal erosion is a threat to New Hanover County's natural and social resources and must be managed to sustain the longevity of both. One of the biggest attractions to New Hanover County is its beautiful beaches and coastal atmosphere, convincing many to purchase coastal homes or invest in businesses on New Hanover County's coastal islands. In order to protect businesses, the tourism industry, the local, state and federal tax base, and other public and private infrastructure, New Hanover County participates in three coastal storm damage reduction projects in coordination with the US Army Corps of Engineers. The three projects aim

to reduce storm damage in Wrightsville Beach, Carolina Beach, and Kure Beach. Each project includes a periodic sand relocation process that involves pumping sand from a borrow source location onto the beaches. In Wrightsville Beach, sand is pumped from an inlet source every four years. Carolina Beach has an inlet source, and Kure Beach sand is relocated from an offshore site every three years. All projects are overseen and maintained by the Army Corps of Engineers through congressional authorizations and appropriations. Funding for the storm damage reduction projects are shared by federal and non-federal sponsors. Sixty-five percent of the cost is paid by the federal government; the remaining 35% is paid by non-federal sponsors: 50% is paid by the state of North Carolina and 50% by the local room occupancy tax. Maintaining these coastal storm damage reduction projects is important for protecting the social and natural resources that make New Hanover County a unique place.

Inland estuarine erosion, such as that seen in creeks and streams, also varies in severity. Heavy rainfall or long periods of precipitation cause erosion along stream and creek banks, and increased erosion causes increased levels of turbidity that effect overall water quality. Erosion rates are exacerbated by development and increased expanses of impervious surfaces. Impervious surfaces and stormwater systems increase the amount of water introduced into waterways. Permeable surfaces allow precipitation to infiltrate the ground, reducing the amount of water and reducing the force and speed of water received by streams and creeks. Construction sites and sites of new developments also act like impervious surfaces, as barren land does not absorb rainfall like grassy and wooded lands do. Exposed soil found on new development sites during rainfall events washes into streams and creeks, increasing sediment loads that affect the natural ecosystems found in streams and creeks.

The New Hanover County Engineering Department is responsible for managing and regulating erosion and sedimentation controls for all development sites within the unincorporated county, as well as for the City of Wilmington. Both jurisdictions are subject to the New Hanover County Erosion and Sediment Control Ordinance, as well as to state regulations. Development that disturbs more than one acre of land is required to have a land disturbing permit. The ordinance and state guidelines specify the mitigation of erosion by way of silt fencing and other practices used to prevent the overloading of sediment into streams and creeks.

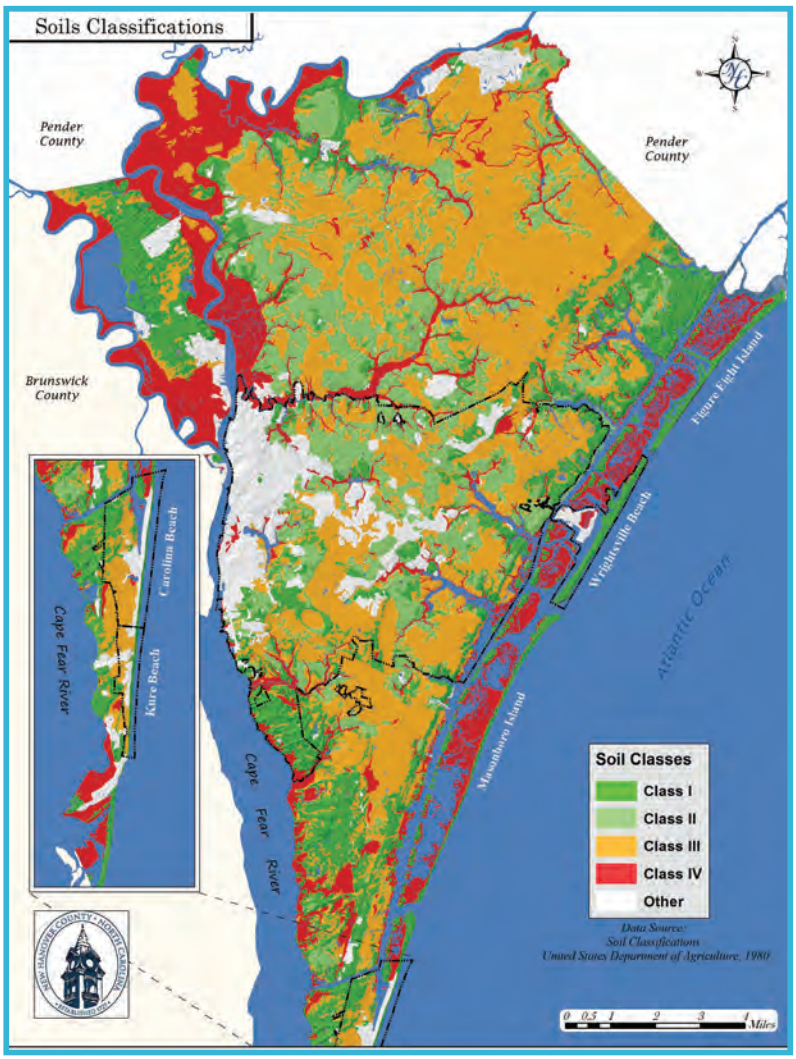
Wetlands

Wetlands are generally described as areas where water covers the soil or is present at or near the surface. Wetlands provide habitats for both aquatic and terrestrial species and can vary greatly depending on the underlying soils, topography, climate, hydrology and vegetation. Coastal wetlands, such as the ones found in New Hanover County, provide natural habitats for many unique plant and animal species. Wetlands also act as natural barriers and can mitigate the effects of storm surge, erosion and flooding during heavy rain events, tropical storms and hurricanes. They also act as natural water filtration systems that are critical to surface water quality. Additionally, wetlands are important natural resources for recreation and education, and provide economic opportunities and commodities such as fish, rice, timber and peat.

New Hanover County hosts different types of wetlands, including freshwater emergent, forested/shrub, estuarine and marine, which account for approximately 35,000 acres (24%) of the total land and water area. Wetlands are extremely sensitive and can be altered by the slightest amount of human influence and natural climate shift. National Oceanic and Atmospheric Administration (NOAA) has conducted analysis and created the Costal Change Analysis Program (C-CAP) Atlas which can be used to view change in land cover in coastal locations in the U.S. Their analysis has showed a decrease in wetlands from 1996 to 2010 by almost three percent.

Much of New Hanover County's wetlands are found in the tidal marshes between the barrier islands and the Intracoastal Waterway. Other large tracts of wetlands can be found along the Northeast Cape Fear River in the northwest section of the county and along the Cape Fear River around Sutton Lake. Due to the county's location near the ocean and its low elevation, pockets of wetlands are scattered inland throughout the county, most notably around the I-140 corridor and Greenview Ranches.

MAP 2.31



Soils

Soils in New Hanover County vary greatly, and depending on their composition, play a key role in determining development potential. The type of soil differs from location to location as some soils are location specific. For example, similar soils found in New Hanover County may be found in surrounding coastal communities but not in areas further inland. Data regarding soils and soil types is provided by the National Cooperative Soil Survey (NCSS). As a public/private partnership of federal, state, and local entities, the NCSS is responsible for all soil survey activities of the U.S. Department of Agriculture (USDA).

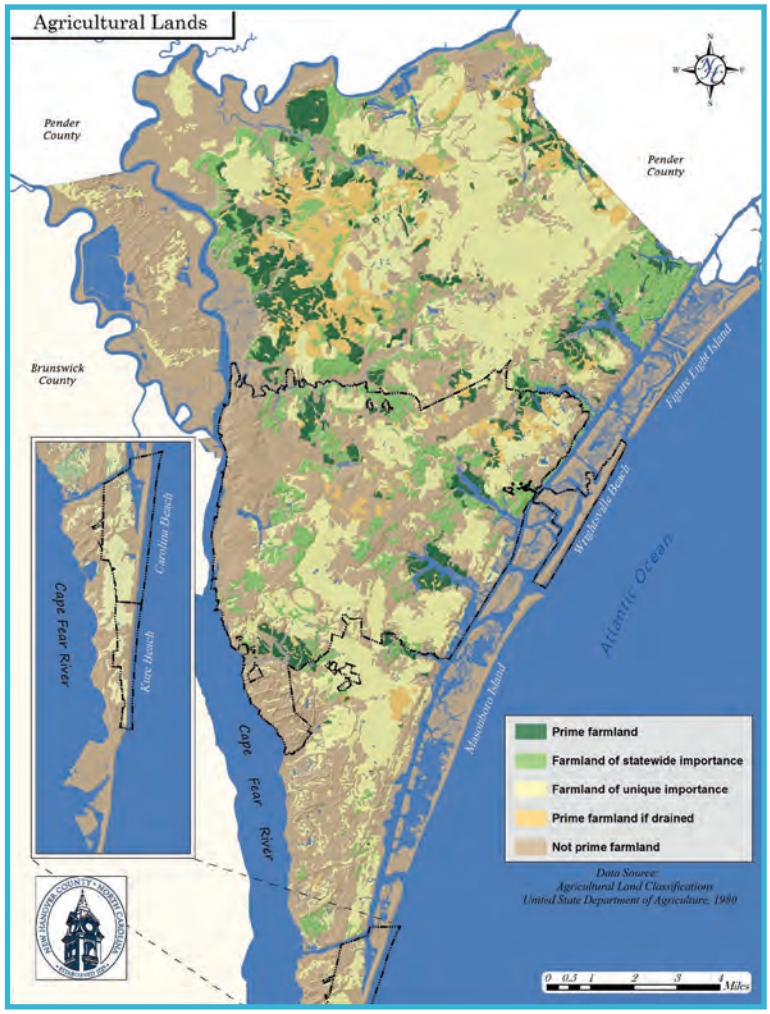
An important aspect of soil types is suitability for the use of septic tank systems. New Hanover County, in 1980, released the soil classification report. The report describes the classification system used to identify which areas have an appropriate soil composition for the use of septic tank systems. Classes range from 1 to 4, where 1 is suitable or has a slight limitation and 4 is unsuitable and generally not economically feasible or environmentally desirable. The report details the classification system and details the economic and physical limitations of each soil class.

Shown in Map 2.31, the largest unsegmented areas with the highest suitability rating can be found in the Porters Neck area located in the northeast corner of New Hanover County and adjacent to the Intracoastal Waterway, as well as along the HWY 421 Corridor and south of Sanders Road in the Beau Rivage area. The largest unsegmented areas of Class II soils are located in the central north-eastern section of the county, north of the Wilmington City limits. A majority of the soil in New Hanover County is designated as less suitable Class III. Most unsuitable Class IV soils can be found along the Northeast Cape Fear River corridor, the marsh lands in the Intracoastal Waterway and along stream and river segments.

Soil characteristics are also used to determine soil types that are considered prime for agriculture. The same data that is used to classify soil suitability for septic tank systems is also used to rate agricultural lands. The USDA and the Natural Resources Conservation Service provide the classifications of soils into five categories: prime farmland, farmland of statewide importance, farmland of unique importance, prime farmland if drained, and not prime farmland. Prime farmland is described as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Along with soil, growing season, climate, water supply, permeability, erosion and flood risk are other important factors used to delineate farmland classifications.

Areas designated as "Prime Farmland" are scattered throughout New Hanover County, but some of the larger contiguous areas include circular area in Castle Hayne east of Castle Hayne Road, and areas in Wrightsboro. A majority of the classified farmland in New Hanover County is designated as farmland of unique importance. These are areas where the land has a special combination of unique characteristics to economically produce high yields of a specific crop. In New Hanover County, those areas would be a target for blueberries; however, a majority of those areas are wetlands in their natural state and protected by law. Currently undeveloped areas that have farmland of unique importance include the northeast section of the county around Greenview Ranches, the I-140 corridor and Sidbury Road.

MAP 2.32



Conservation easements

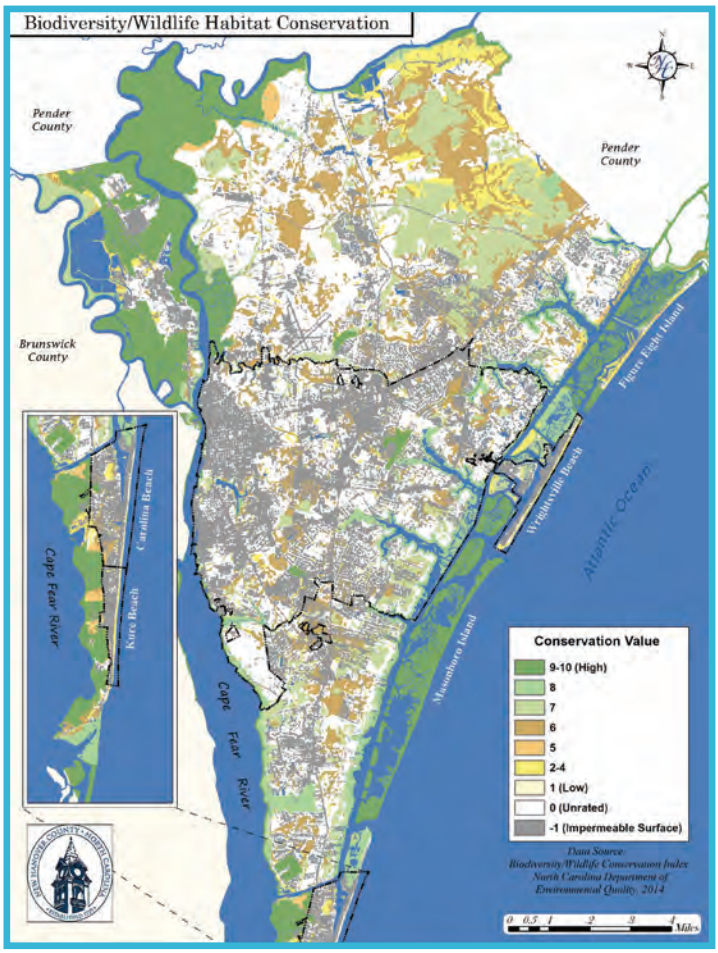
Over the years, the unincorporated county has obtained properties for the purpose of conservation. One of these properties is Airlie Gardens, a 67-acre site which New Hanover County purchased from the Corbett family to serve as an important buffer along Bradley Creek. Airlie Gardens also acts as an outdoor laboratory and educational site and includes a combination of formal gardens and walking trails. In addition, in 2001, NHC purchased a .75 acre tract off of Middle Sound Loop Road with funds granted by the Clean Water Management Trust Fund. Located on Howe Creek, the property remains one of the few undeveloped parcels along the northern shoreline. The Clean Water Trust Fund was also used to purchase four additional properties from 2001-2003, including the Dobo Property (16.5 acres) in the Hewlett's Creek watershed, the Peterson Property (17.35 acres) in the Pages Creek watershed, the Skipper Property (13.43 acres) on Foys Creek within the Futch Creek watershed, and the Duckhaven Property (10.01 acres) located south of the Duckhaven Golf Course off of Eastwood Road in the Bradley Creek watershed. The county has also received two properties by donation. In 2007, the Smith Property (14 acres) located along Smith Creek was donated in an effort to create a continuous conservation easement along the creek. Two other properties were donated in 2007 totaling 41 acres and will join the Smith Property in an effort to create a continuous conservation easement along Smith Creek.

Biodiversity

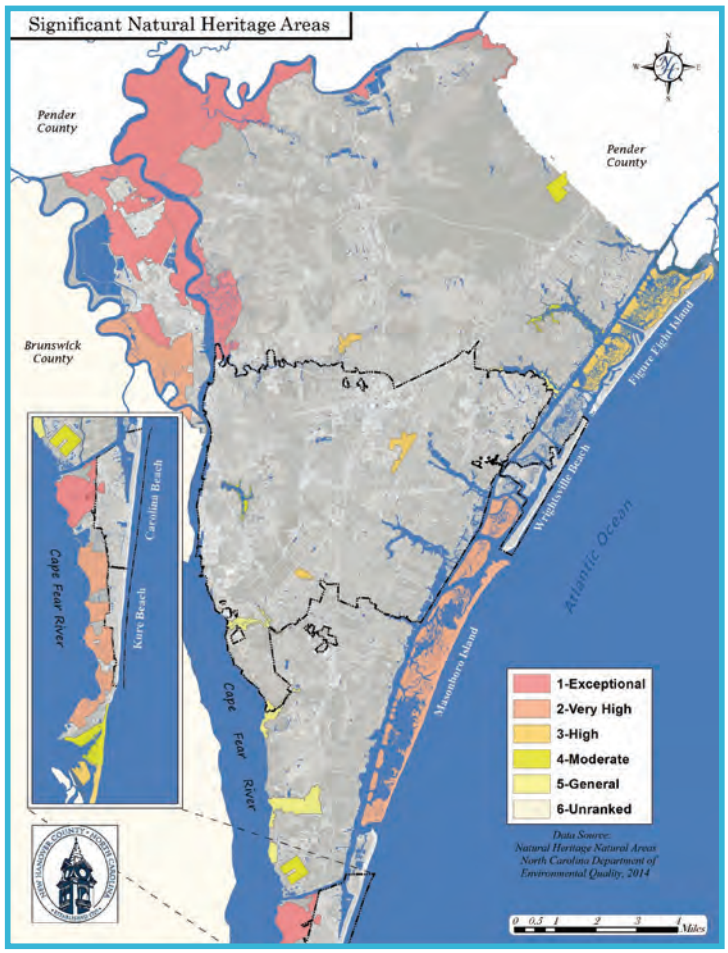
New Hanover County's diverse landscape plays a critical role in the types of plant and animal species that call New Hanover County home. New Hanover County is within the Middle Atlantic Coastal plain, where three different ecoregions weave in and out of the county. These ecoregions include the Carolinian Barrier Islands and Coastal Marshes, Carolina Flatwoods, and the Mid-Atlantic Floodplains and Low Terraces. Factors used to determine ecoregions include geology, physiography, vegetation, climate, soils, land use, wildlife and hydrology. Ecoregions are used by many federal, regional and state agencies to determine stream reference sites, development of biological criteria and water quality standards, and the establishment of management goals for nonpoint-source pollution as well as overall ecosystem management goals.

Significant Natural Heritage Areas were created as a requirement of the Nature Preserves Act adopted by the the NC General Assembly. Significant Natural Heritage Areas (SNHAs) are sites that are evaluated based on the presence of rare plant and animal species, rare or high quality natural communities, and special animal habitats. The SNHAs are the best representation of the state's locations for supporting natural diversity and are ranked by their degree of importance for conservation. New Hanover County's diverse landscape and geographic location make it home to a variety of habitats that support many different plant and animal species. The Natural Area Inventory of New Hanover County produced by Richard LeBlond and Gilbert Grant in 2003 is the latest account of biodiversity within the county. Cape Fear Arch, NC Department of Environment and Natural Resources and non-profit partners are continuously working to update and identify SNHAs and target areas for conservation. Continued research and striving for conservation and sustainability are essential to maintaining the vast array of wildlife that makes New Hanover County a destination for eco-tourists and visitors alike.

MAP 2.33

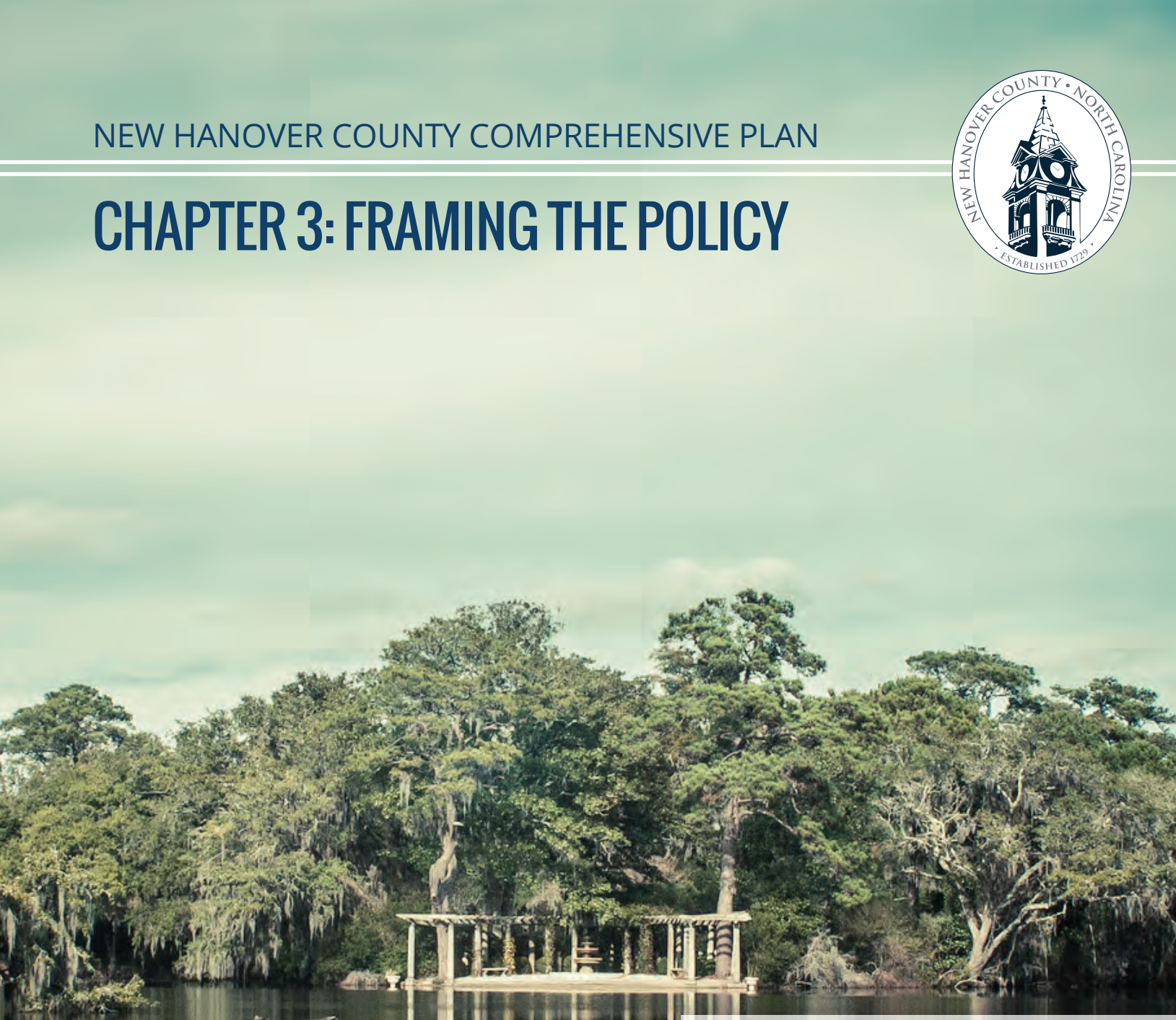


MAP 2.34



NEW HANOVER COUNTY COMPREHENSIVE PLAN

CHAPTER 3: FRAMING THE POLICY



CONTENTS:

The Livable Built Environment
Harmony with Nature
Interwoven Equity
Resilient Economy
Healthy Community
Responsible Regionalism

As New Hanover County charts the course for the future, it is critical to create aspirational goals and implementation strategies to guide future development. These goals and implementation strategies will assist in guiding development for the next twenty five years.

New Hanover County was one of ten communities selected by the American Planning Association as a pilot community to create comprehensive plan standards for sustaining places. By participating in this capacity, County Planning was able to use best management practices from across the county to create a format by which goals and implementation strategies were created. The American Planning Association created six principles that each comprehensive plan should include. These principles included topics that comprehensive plans have not always addressed, but acknowledge that the way our community responds and shapes development has a direct correlation to these planning principles. Staff created an opportunity for our community to hold conversations based on these six principles in an effort to include them in the overarching vision for the future of New Hanover County. Six theme committees were formed to explore the following areas:

- The Livable Built Environment
- Harmony with Nature
- Interwoven Equity
- Resilient Economy
- Healthy Community
- Responsible Regionalism

Each of these committees, called theme committees, were led by citizen members. Staff reached out to the community to encourage all interested citizens to participate in these conversations about the future of New Hanover County. Additionally, staff targeted groups or organizations that had specific expertise on areas that would be relevant to each theme committee. New Hanover County staff members were also encouraged to participate and aid in facilitation of each theme committee. The general intent and spirit was that everyone was welcome, no one would be turned away from a meeting, and all perspectives would be respected discussions in conversations. Each theme committee met four times to discuss the issues within the community, best management practices, and ways in which New Hanover County can appropriately address these topics. Meetings were held at the New Hanover County Government Center from the hours of 11am to 1pm. A light and healthy lunch was provided by our sponsor, Clean Eatz, during these meetings. Below is an in-depth into each of the theme committees, the purpose, the discussion, and the recommendations from our citizens.

Renewable Resources in New Hanover County, North Carolina

According to David Godschalk, FAICP, with the American Planning Association, "the Livable Built Environment seeks to ensure that all elements of the built environment, including land use, transportation, housing, energy, and infrastructure work together to provide sustainable places for living, working, and recreation, to produce a high quality of life".

The Livable Built Environment Theme committee was facilitated by New Hanover County Planning staff members Ken Vafier, Sam Burgess, and Karyn Crichton. This group discussed seven main issues at the first meeting: open space, mixed use development, industry and commerce, infrastructure, conservation of resources, building and design standards, and methods for financing infrastructure. These conversations and discussions developed further over three additional meetings into a framework for the future.

The Framework document, with supporting and detailed information, is included in the Appendix; however, the recommendations included:

- Preserve open space and agricultural land.
- Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities.
- Create a mix of housing types to promote diversity and strengthen existing residential areas.
- Encourage sustainable development.
- Invest in community infrastructure.
- Revitalize commercial corridors.

HARMONY WITH NATURE

The Harmony with Nature theme committee was facilitated by New Hanover County Parks and Gardens staff Matt Collogan and Jodi Dellinger. According to the American Planning Association, "Harmony with Nature seeks to ensure the contributions of natural resources to human well-being are explicitly recognized and valued, and maintenance of natural resources health is a primary objective".

The Harmony with Nature theme committee discussed five major areas at the first meeting. These included linking major habitats, promoting the region through natural resources, water access and quality, air quality, and solid waste and recycling. These issues were further refined through three subsequent meetings, and recommendations were formally included in the Harmony with Nature Framework located in the appendix. The recommendations for the Harmony with Nature theme committee included:

- Promote sustainable growth and green infrastructure.
- Improve solid waste management and recycling.
- Preserve open space, farmland, and natural beauty, and address critical environmental areas, such as those prone to flooding.
- Link major habitats.
- Promote the region through natural resources.
- Address concerns related to water supply, quality, and conservation issues.
- Promote air quality and renewable energy.
- Encourage sustainable growth and green infrastructure.

INTERWOVEN EQUITY

The Interwoven Equity theme committee was facilitated by New Hanover County Planning staff member, Wanda Coston, and Legal staff member, Sharon Huffman. This theme committee "sought to ensure fairness and equity in providing for the housing, services, health, safety, and livelihood needs of all its citizens and groups".

The Interwoven Equity theme committee began discussions surrounding the topics of: a range of housing types, jobs and housing balance, disadvantaged neighborhoods, services and health care for minority and low income individuals, infrastructure upgrades in older neighborhoods, work force development, protecting vulnerable neighborhoods from natural disasters, and promoting environmental justice. These conversations evolved over four meetings and were organized into an information framework. The recommendations were:

- Provide a range of housing types, opportunities and choices.
- Increase workforce housing and workforce development.
- Upgrade housing development with the installation of new infrastructure and existing infrastructure.
- Strengthen neighborhoods through redevelopment of blighted areas and ensure environmental equity.
- Create opportunities for health care and services to distribute widely throughout the community in an effort to reach all New Hanover County citizens equitably.
- Environmental justice grants and initiatives provide underserved communities with a voice in land use equity.

RESILIENT ECONOMY

The Resilient Economy theme committee was facilitated by New Hanover Chief Strategy and Budget Officer, Beth Schrader. According to the American Planning Association, a Resilient Economy "ensures the community is prepared to deal with both positive and negative changes in its economic health and to initiate sustainable urban development and redevelopment strategies that foster business growth through technology and innovation and build reliance on local assets."

Much of the discussion in the Resilient Economy theme committee was complimentary to the Pathways to Prosperity project by Jay Garner. This project identified target industries and ways in which New Hanover County can attract these industries. Additionally, the committee held conversations regarding the four recommendations outlined in the Framework:

- Encourage redevelopment and infill development for commercial corridors through a balance of uses.
- Create unique and special places that attract individuals and companies by creating a sense of place.
- Use public improvements to leverage private development and look for win-win opportunities that focus on common interests.
- Support local and small business success and workforce development.

HEALTHY COMMUNITY

The Healthy Community theme committee was facilitated by New Hanover County Parks and Garden's staff Tara Duckworth and Janine Powell, and Health Department staff Joshua Swift. The Healthy Community theme committee's conversations were about ensuring that "public health needs are recognized and addressed through provision for healthy foods, physical activity, access to recreation, health care, environmental justice and safe neighborhoods".

Creating a healthy community was the central theme of this committee's conversations. The discussion evolved into the following recommendations as outlined in the framework (located in the appendix):

- Increase physical activity and promote healthy, active lifestyles.
- Promote disease prevention and mental health awareness.
- Increase access to affordable and convenient healthy foods.

RESPONSIBLE REGIONALISM

The Responsible Regionalism theme committee was facilitated by New Hanover County Planning staff Ben Andrea, and Chris O'Keefe. This theme committee was tasked with ensuring that all local proposals account for, connect with, and support the plans of adjacent jurisdictions and the surrounding region.

The Responsible Regionalism theme committee held discussions regarding a regional approach to housing development, economic development, transportation and management and environmental management. The conversations continued over four meetings and concluded with the following draft policies:

- Utilize a regional approach to housing development.
- Create a regional approach to economic development.
- Promote a regional approach to transportation and management.

* Godshalk, David FAICP, "What Makes a Good Comprehensive Plan?" The Commissioner, Fall 2013.

INFORMAL FRAMEWORK FOR A BETTER FUTURE

The culmination of these theme committees was presented to the public on August 12, 2014. Approximately 161 individuals participated in these conversations about the future of New Hanover County and contributed more than 800 hours of volunteer time to this effort. This represents a significant amount of thought, creativity, and energy toward a better future for New Hanover County. The public meeting on August 12, 2014 was designed to demonstrate to the community the work of the theme committees, identify overarching goals and strategies, encourage feedback, and initiate the next phase of this important process. The next step, the Citizen Advisory Committee, was to refine and organize the theme committees' work into the overarching vision for New Hanover County.

PARTICIPANTS:

The Livable Built Environment:

Adrienne Garwood	Dan Dawson	Jim Herstine	Paul D'Angelo
Alison Russell	Dani McKeon	Julia Worth	Phil LaMotte
Andy Olonko	David Kellam	Karen Dunn	Sherry O'Daniell
Bob Barden	Don Harris	Kayne Darrell	Stephen Whitney
Bob Hammond	Donald Thackston	Kenny Bundy	Suraiya Rashid
Bobby Chappell	Duane Truscott	Lynn McIntyre	Tamara Murphy
Brian Chambers	Eddie Anderson	Maggie O'Conner	Thomas Congleton
Charles Elam	Gary McSmith	Meg Young	Tom Gale
Charlotte Buckley	Harry Tuchmayer	Meredith Jackson	Tom West
Chris Johnson	Jane Steigerweld	Mike McGill	Tyler Newman

A special thank you to Karen Dunn who represented the Livable Built Environment on the Citizen Advisory Committee.

PARTICIPANTS (CONTINUED):

Harmony with Nature

Angela Faison
Barbara Rowe
Bobby Chappell
Cary Paynter
Charley Winterbauer
Dani McKeon
Dave Silvia
David Kellam
David Todd
Debbie Elliott
Don Ellson
Earla Pope
Heather Caveny
Gary McSmith
Gus Simmons
Kat Pohlman
Kayne Darrell
Kenny Bundy
Jared Taylor
Jodi Dellinger Rich
Joe Suleyman
John Taggart
Julie Hurley
Julia Worth
Lara Berkley
Maggie O'Connor
Matt Collogan
Meg Young
Melanie Doyle
Nancy Jones
Phil Prete
Randall Johnson
Roger Shew
Ryan McAlister
Scott Johnson
Scott Whitham
Shane Johnson
Sherry O'Daniell
Tyler Newman
Zachary Keith

A special thank you to Earla Pope for representing the Harmony with Nature theme committee on the Citizen Advisory Committee.

Interwoven Equity

Althea Johnson
Andrea Tarantino
Angela Faison
Atiba Johnson
Chris McNamee
Dan Ferrell
Dani McKeon
Frankie Roberts
Gail Ginsberg
Gary McSmith
Gloria Garton
JC Skane
Jenny Biddle
Jessica Gray
John Edge
Joshua Swift
Karen Dunn
Katrina Knight
Laura McCabe
Kenny Bundy
Mary Canel
Mechelle Estes
Meg Young
Phil Lamotte
Phil Prete
Regina Penna
Rob Zapple
Roger Kelley
Shane Johnson
Sharon Huffman
Stan Turner
Steve Spain
Suzanne Rogers
Tanya Gurganious
Terri Burhans
Tyler Newman
Vivian S. Wilson
Wanda Coston

A special thank you to Frankie Roberts for representing the Interwoven Equity theme committee on the Citizen Advisory Committee.

PARTICIPANTS (CONTINUED):

Resilient Economy

Adrienne Cox
Al Sharp
Ashley Daniels
Bob Warwick
Bobby Chappell
Christine Hughes
Chuck Kuebler
Connie Majure-Rhett
Dave Spetrino
Gary McSmith
Jeremy Tomlinson
Jessica Gray
Jim Morton
Justin Murphy
Karen Dunn
Kellin Dougherty
Kim Hufham
Meg Young
Mike McGill
Miles Murphy
Priss Endo
Rob Zapple
Steve Kohler
Terri Burhans
Tyler Newman
Will Purvis

A special thank you to Jessica Gray who represented the Resilient Economy theme committee on the Citizen Advisory Committee.

Healthy Community

Angelia Clinton
Bob Barden
Christina Bauman
Christine Hughes
Craig Johnson
David Kellam
Dalia Nir
Dani McKeon
David Howard
Doug Carriker
Eric Blaesing
Erin Fritz
Everardo Morales
Gary McSmith
Jane Steigerwald
Janine Powell
Jean Murtagh
Jessica Gray
Joshua Swift
Karen Dunn
Kayne Darrell Kenny Bundy
Kristy Hubard
Latanya Howard
Linda Reece
Mark Briggs
Meg Young
Miles Murphy
Paige Owens
Perry Shaw
Sara Burroughs
Schorr Davis
Sharon Boyd
Shahnee Haire
Steve Kohler
Tom Lamont
Travis Greer
Wes MacLeod

A special thank you to Dani McKeon for representing the Healthy Community theme committee on the Citizen Advisory Committee.

Responsible Regionalism

Al Sharp
Albert Corbet
Ben Andrea
Bill Jayne
Brian Chambers
Brianna Grella
Bruce Holsten
Christine Hughes
Dan Dawson
Dani McKeon
David Kellam
Gary Broughton
Gary McSmith
Hal Kitchin
JC Skayne
Jessica Gray
Karen Dunn
Kenny Bundy
Karen Sagett
Kellin Dougherty
Meg Young
Miles Murphy
Mitch Lamm
Phil Prete
Selah Hebbard
Shane Johnson
Stephanie Ayers
Suraiya Rashid
Tyler Newman
Xavier Butler

A special thank you to Bruce Holsten for representing the Responsible Regionalism theme committee on the Citizen Advisory Committee.

CITIZEN ADVISORY COMMITTEE

As presented in Chapter 1, the Public Engagement Plan, the Citizen Advisory Committee was comprised of 12 individuals: six individuals appointed by the New Hanover County Board of Commissioners and one individual selected from each theme committee to represent the work of that committee.

The purpose of the Citizen Advisory Committee was to review and study the work of the theme committees and further refine the framework into attainable and actionable goals and implementation strategies for the comprehensive plan.

The committee was designed to be representative of the county's diverse community. The group proved to be an excellent representation of our community and offered great conversation and deliberation about the future of New Hanover County.

The first Citizen Advisory Committee meeting was designed to introduce everyone to each other, offer individuals the opportunity to present their goals and intentions and provide an opportunity for each theme committee representative to informally present the recommendations and conversations held in the theme committees.

The second Citizen Advisory Committee meeting was organized to gather input from members on the theme committee goals and how to implement them. Citizen Advisory Committee members first determined that decisions would be made by a majority instead of unanimously. Additionally, Citizen Advisory Committee members decided to govern themselves with the following guidelines: to start and end meetings on time, all members would participate respectfully, agendas would be sent to members one week ahead of meetings, and members would conduct research and read materials in preparation of all meetings. Citizen Advisory Committee members were then presented with 20 goals on boards and asked to indicate if they supported the goal, if the goal should be implemented by incentives or requirements, if the goal was appropriate for all of New Hanover County or a portion of New Hanover County, and suggestions for implementing the goal.

Staff compiled the Citizen Advisory Committee's feedback and worked with Renaissance Planning Group to develop implementation strategies based on the feedback. This information was sent to Citizen Advisory Committee members in a survey format for representatives to indicate if they supported, did not support, or needed additional information about implementation strategies. Additionally, Citizen Advisory Committee members were encouraged to provide comments and recommended strategies for consideration. As determined by the group, the implementation strategies that received a simple majority were moved forward and strategies that received feedback requesting additional information were presented at the following meeting.

The following goals and implementation strategies were noted as needing additional information:

- Increase recycling and reduction of solid waste in the development process.
- Conserve open space for long term agriculture and rural areas.
- Increase access to affordable and convenient healthy foods.
- Provide a range of housing types, opportunities and choices.
- Attract individuals and companies by creating a unique sense of place.
- Support local and small business success.

At the Citizen Advisory Committee's third meeting, staff presented additional information on these topics and facilitated a spirited discussion on these topics. After the meeting, staff presented the committee with an additional survey outlining changes and modifications based on the conversation at the third meeting. The Citizen Advisory Committee was then able to respond and move a number of additional goals and implementation strategies forward based on a simple majority.

The fourth and final meeting of the Citizen Advisory Committee was designed to review the final draft of goals and implementation strategies developed by staff and based on conversations and feedback from the previous meetings. The Citizen Advisory Committee discussed the goals and strategies to refine them so that every member could support the document as a whole.

It is critical to understand the intent of these goals. The following twenty goals exemplify an interwoven framework of economic, environmental, and social responsibility for New Hanover County. Each goal represents a course of action. Collectively, they steer the County towards prosperity and provide a vision for the future. These goals are not meant to be considered in order of priority.

Consistent with our process for endorsing each chapter by resolution, the goals established by the Citizens Advisory Committee were taken to theNew Hanover County Planning Board for endorsement. The Planning Board elected to endorse 17 of the 20 goals, as well as one additional goal, and make edits to three of the existing goals. The appendix outlines the work of the Citizens Advisory Committee and the recommended edits of the Planning Board.

The following sections outline the final goals and implementation strategies, as recommended by staff and approved by the New Hanover County Board of Commissioners.

PROMOTE ENVIRONMENTALLY RESPONSIBLE GROWTH

Explanation: Where and how growth occurs can have an impact on environmental resources. Responsible growth includes strategies to encourage the desired levels of new growth, while minimizing negative impacts on natural resources.

Implementation Strategies:

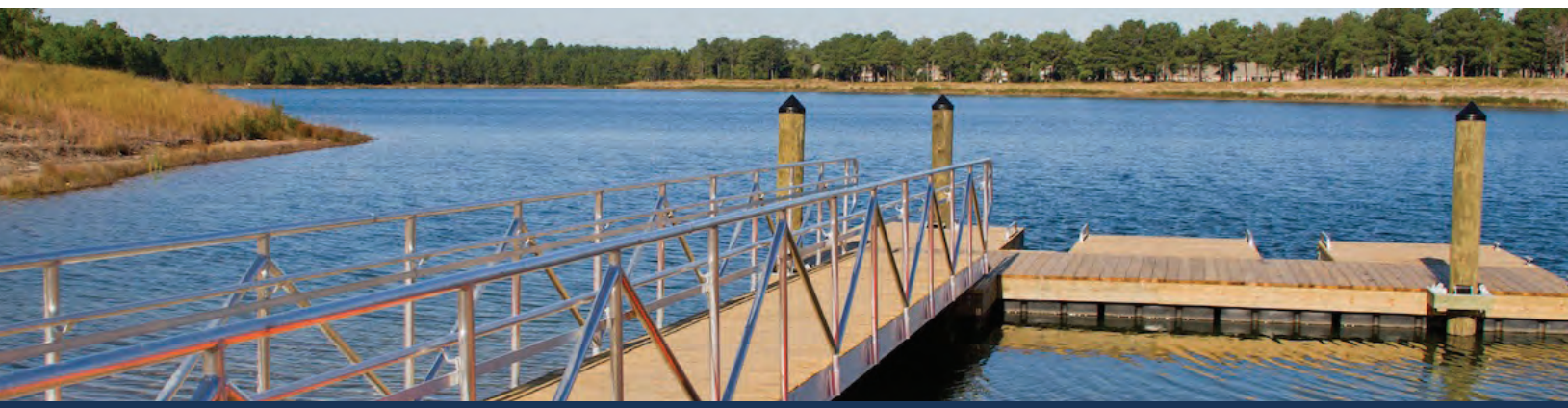
- Promote a mixture of uses, where appropriate, in an effort to cluster development and minimize impacts on natural resources.
- Adopt and implement a green infrastructure plan that identifies a network of natural lands and open spaces and provides ecosystem conservation as well as alternative transportation modes through trails and greenways.
- Partner with regional governmental agencies and nongovernmental organizations to acquire and protect environmentally sensitive land (establish a regional land bank).
- Strengthen and direct development toward existing communities through encouraging infill and redevelopment.

PROMOTE FISCALLY RESPONSIBLE GROWTH

Explanation: There is a cost to the tax payer to provide services and infrastructure for growth. Appropriate growth patterns can help to achieve efficient provisions of services and equitable distribution of costs between the public and private sectors.

Implementation Strategies:

- Coordinate infrastructure from a regional perspective, including water, sewer, and transportation.
- Regionally coordinate of educational facilities, such as community colleges and workforce training, as they support targeted industries.
- Encourage infill development on vacant or blighted pieces of existing communities by providing a variety of incentives such as grants, density bonuses, and/or a reduction of parking requirements and/or setbacks.
- Encourage the redevelopment of single-use into mixed-use developments, where appropriate.
- Encourage redevelopment of aging corridors to support and strengthen adjacent neighborhoods.
- Encourage development where existing infrastructure is available.



INCREASE RECYCLING AND REDUCTION OF SOLID WASTE

Explanation: Solid waste management and recycling are ways to positively affect our community, and a focus on diverting waste can help eliminate constraints of future development.

Implementation Strategies:

- Work with the private sector and other regional jurisdictions to implement a countywide recycling program, including construction demolition debris and consumer product packaging material.
- Work with the private sector to identify recycling and other innovative strategies to divert material from the landfill (composting, gasification, anaerobic digestion, etc.).
- Encourage adaptive reuse of buildings to limit construction and demolition waste production.
- Encourage consumer-based responsibilities for waste reduction, recycling, and reuse.

INCREASE PUBLIC SAFETY BY REDUCING CRIME THROUGH THE BUILT ENVIRONMENT

Explanation: New growth and community investments can use design features to reduce crime in areas.

Implementation Strategies:

- Encourage best practices and design strategies in the built environment to help reduce crime.
- Encourage a walkable community that creates more human interaction between neighbors, to promote eyes on the street and in social spaces.

CONSERVE OPEN SPACE FOR LONG TERM AGRICULTURAL AND RURAL USES

Explanation: Agricultural lands provide opportunities for economic development by creating locally-sourced foods. These lands can contribute to the overall rural character, where appropriate, in locations throughout the County.

Implementation Strategies:

- Allow developments to have urban farms to satisfy open space requirements.
- Encourage voluntary preservation of agriculture land.

CONSERVE ENVIRONMENTALLY CRITICAL AREAS

Explanation: Environmentally critical areas have a meaningful place in our community, providing opportunities for outdoor recreation, supporting healthy watersheds, and maintaining critical habitats.

Implementation Strategies:

- Partner with governmental and nongovernmental organizations to acquire and protect environmentally-sensitive land.
- Discourage development in wetlands, flood plains, and other flood-prone areas.
- Educate the public on the value of protecting ecosystems.

INTEGRATE MULTI-MODAL TRANSPORTATION INTO MIXED LAND USES THAT ENCOURAGE SAFE, WALKABLE COMMUNITIES

Explanation: A mixture of land uses allows for individuals to perform daily tasks without the use of an automobile. Incorporating walking, cycling, and transit into the built environment increases the accessibility and safety of these areas.

Implementation Strategies:

- Review existing design standards and apply best practices to ensure transportation infrastructure is safe for all multimodal users.
- Educate and promote all users to safely share the transportation infrastructure.
- Work with school district and DOT to allow and encourage students to walk and bike to school safely.
- Review existing parking lot design standards to determine if changes are needed to encourage safety for all users.
- Encourage provision of transit-supportive land uses and infrastructure where appropriate.

PROMOTE PLACE-BASED ECONOMIC DEVELOPMENT IN THE REGION THAT IS TIED TO OUR NATURAL RESOURCES

Explanation: The Cape Fear region is naturally bio-diverse and home to many unique species. This unique feature of our community can be used as a way to promote and encourage economic development.

Implementation Strategies:

- Create and promote a network of greenways, blueways, and trails highlighting environmental assets.
- Coordinate and partner with various agencies to develop future public water access points.
- Revitalize waterfront parks and public spaces to encourage opportunities for formal and informal social gatherings.
- Preserve, conserve, and/or maintain coastal infrastructure features including natural and man-made, which are critical to our quality of life, economy, and coastal environment.

ACTIVELY PROMOTE HIGH QUALITY EDUCATIONAL AND DIVERSE CULTURAL OPPORTUNITIES FOR NEW HANOVER COUNTY RESIDENTS AND VISITORS

Explanation: The future work-force of New Hanover County requires high quality education and diverse opportunities to sustain the economic vitality of our community and enrich the lives of current and future residents.

Implementation Strategies:

- Work with New Hanover County Public Schools, as well as community stakeholders and institutions, to support high quality pre-K, primary and secondary educational opportunities to meet current and future needs of County residents.

- Form diverse partnerships to maximize utilization to improve access of recreational and cultural opportunities and assets for New Hanover County residents and visitors.
- Partner with New Hanover County Schools, UNCW, CFCC, and economic development stakeholders to develop and promote educational programs that support the full range of skill sets employers need, and target specific economic development opportunities within New Hanover County.

PRESERVE AND PROTECT WATER QUALITY AND SUPPLY

Explanation: New Hanover County is located on the coast and, therefore, is subject to many concerns regarding water supply and quality. Accommodating more growth in our region will require more strategies to conserve water resources and preserve water quality.

Implementation Strategies:

- Continue to enhance a regional water quality program to include ocean, river, and estuarine water-quality monitoring in cooperation with the University of North Carolina Wilmington and others.
- Continue to identify watershed-specific indicators of water quality degradation, establish baseline measures, and establish watershed development practices to achieve goals.
- Consider establishing water quality improvement goals for the County in cooperation with others.
- Identify and prioritize water quality improvement projects, including wetland and stream restorations, which will improve water quality.
- Identify and pursue funding sources for priority projects.
- Explore the value and benefits of reestablishing the Watershed Management Advisory Board.
- Continue to develop drainage systems and design standards that reflect the natural carrying capacity of the watershed.
- Continue to participate in the development of state standards and advance the adoption and implementation of local best management practices; thereby ensuring the retention, acquisition, and management of natural vegetation and riparian buffers in order to preserve, maintain, and protect water quality.
- Continue to participate in the development of statewide regulations of subdivision design standards and advance the adoption and implementation of local best-management practices to protect and improve water quality in sensitive areas.
- Continue to develop and update education and other strategies to deal with point and non-point source impacts on water quality.
- Identify, evaluate, and prioritize an inventory of retrofit opportunities to reduce water quality impacts from stormwater runoff on receiving waters.

- Identify water specific sources of pollutants to help direct protection and improvement measures.
- Promote expansion of water and sewer systems to protect and enhance water quality.
- Consider establishing a groundwater and aquifer protection ordinance in conjunction with a regional drinking water study.
- Consider removing barriers in codes/ordinances that hinder and prohibit low impact development.

INCREASE PHYSICAL ACTIVITY AND PROMOTE HEALTHY, ACTIVE LIFESTYLES

Explanation: Our built environment has the ability to encourage active life-styles, which directly affects individuals health. Creating development patterns that support walking and biking encourages people to increase their level of physical activity.

Implementation Strategies:

- Encourage a mixture of uses in developments that allow individuals to walk, rather than rely upon vehicles.
- Encourage siting of schools into the community that allow for students to walk and bike, while considering traffic impacts.
- Connect walkways, parking lots, greenways, and developments to encourage pedestrian activity.

ENSURE NHC REMAINS IN ATTAINMENT FOR AIR QUALITY, IN SUPPORT OF CLEAN AIR AND IMPROVED PUBLIC HEALTH OUTCOMES TO SUPPORT CONTINUED GROWTH

Explanation: The Environmental Protection Agency places requirements on communities with regards to air quality to protect human health. The built environment has a direct relation to air quality. Protecting our air quality supports public health and enables our community to retain and attract quality development and industries.

Implementation Strategies:

- Promote compact development, mixture of uses, and infill that minimizes trips and vehicle miles traveled.
- Encourage development patterns and neighborhood street designs that are conducive to pedestrian and bicycle use.
- Discourage open burning of yard waste and trash in densely populated areas.
- Consider a program for NHC staff to work with North Carolina Department of Environment and Natural Resources to review air quality monitoring site data and stay abreast of current and proposed Clean Air Act requirements that could affect the Non-Attainment status of New Hanover County.

INCREASE ACCESS TO AFFORDABLE AND CONVENIENT HEALTHY FOODS

Explanation: Providing access to healthy foods has a direct impact on individuals' health. Ensuring the built environment encourages access to healthy foods increases the likelihood individuals will consume them and improve health outcomes.

Implementation Strategies:

- Ensure zoning and land use regulations that encourage and allow for community gardens and urban agriculture.
- Build on health gaps analysis report and target strategies to promote the locations of farmers markets, grocery stores, and other venues that have healthy food offerings.

PROVIDE FOR A RANGE OF HOUSING TYPES, OPPORTUNITIES AND CHOICES

Explanation: Understanding that New Hanover County is comprised of a diverse group of individuals with a diverse group of housing needs helps to ensure individuals do not become overburdened with the costs or availability of housing.

Implementation Strategies:

- Enhance and update incentives to reduce development costs to private developers, such as density bonuses when work-force housing is included in development proposals.
- Consider creating an affordable housing task force to define affordability and work with the private sector to provide it.
- Strategically work with developers experienced in providing affordable and subsidized housing through federal and state programs, and locate affordable housing developments in areas of highest need.

REVITALIZE COMMERCIAL CORRIDORS AND BLIGHTED AREAS THROUGH INFILL AND REDEVELOPMENT

Explanation: Areas of blight consist of underutilized properties within our community that likely have access to services such as water and sewer. Reducing regulatory barriers to redevelop underutilized property helps to provide for responsible growth, strengthen existing neighborhoods and support economic revitalization.

Implementation Strategies:

- Implement a program to identify and dispose of vacant or abandoned buildings that cannot be redeveloped.
- Facilitate programs to encourage reuse, rehabilitation, and redevelopment of existing residential, commercial, and industrial buildings and properties where appropriate.

LINK MAJOR NATURAL HABITATS

Explanation: Linking natural habitats promotes biodiversity, provides continuity for wildlife corridors, access to open spaces, and recreational opportunities.

Implementation Strategies:

- Identify and prioritize natural areas for acquisition, preservation, and conservation to promote linkage opportunities.
- Consider developing a conservation land acquisition strategy.
- Review and update incentives for development to dedicate land and/or easements to achieve habitat linkages.

CONSERVE AND ENHANCE OUR UNIQUE SENSE OF PLACE TO ATTRACT INDIVIDUALS, COMPANIES AND ORGANIZATIONS

Explanation: New Hanover County has a strong sense of place due to its history and natural environment with many unique features. Using these features to create a sense of identity and pride encourages businesses and individuals to locate to New Hanover County.

Implementation Strategies:

- Focus on public spaces and opportunities for formal and informal social gathering places.
- Increase, enhance, and manage public access to water and natural resources.
- Consider creating a strong place-based economic development strategy.
- Make a case for sustainable funding sources to improve the County's economic development infrastructure and identify opportunities to leverage the funds effectively.
- Encourage conservation and enhancement of the unique environment, character, and history of the County.

USE PUBLIC INFRASTRUCTURE IMPROVEMENTS TO LEVERAGE PRIVATE INVESTMENTS

Explanation: Infrastructure is an expensive investment for a community. Where, how and when infrastructure investments are made has a significant influence on where private investments will likely be made. Making infrastructure investments in areas where growth is desired with positive financial returns allows the community to capitalize on its public investments.

Implementation Strategies:

- Work with Cape Fear Public Utility Authority (CFPUA) on a targeted long-range plan for water and sewer infrastructure.
- Work with Wilmington Urban Area Metropolitan Planning Organization (WMPO) on a targeted long-range plan for transportation infrastructure.

- Consider revising zoning ordinances to support mixed uses and a holistic approach to development.
- Consider strategies to encourage increased private sector investment in the provision of infrastructure.

SUPPORT BUSINESS SUCCESS

Explanation: Local and small businesses are a vibrant part of New Hanover County's economy. Working together to create successful businesses can significantly benefit New Hanover County's economy. In addition to incentives for large businesses, support for local and small businesses may include strategies to ensure there are adequate locations for start-ups and programs to kick-start small businesses.

Implementation Strategies:

- Streamline the permitting process for targeted industries.
- Advocate for, and develop realistic and sustainable incentive policies for New Hanover County.
- Align County zoning ordinance to encourage targeted businesses in appropriate areas.
- Increase communications with small businesses by creating a resources link on the County webpage for new businesses, as well as a staff culture to shepherd new businesses through the development process.
- Support provisions for providing the public free, high-speed internet access throughout New Hanover County.

SUPPORT HEALTH PROMOTION AND DISEASE PREVENTION WHILE MINIMIZING DEBILITATING EFFECTS OF MENTAL AND PHYSICAL DISABILITIES

Explanation: Built environment and community policies can have a direct impact on physical and mental disabilities through location of services, integrated land uses, and sensitivity to the disabled population.

Implementation Strategies:

- Encourage public spaces and health related facilities (gyms, pharmacies, physician offices, etc.) to be smoke free.
- Promote awareness of physical and mental disabilities and disease prevention.

SUPPORT WORKFORCE DEVELOPMENT AND ECONOMIC PROSPERITY FOR ALL

Explanation: The workforce of a community is a valuable tool for economic development. Providing a place-based economic development strategy that attracts quality workforce talent and provides opportunities to train our existing workforce is a strategy to retain and attract businesses and companies to New Hanover County.

Implementation Strategies:

- Partner with educational facilities to provide opportunities for training in targeted industries.
- Continue to enhance education program, facilities, and offerings.

These goals are intended to be the overarching vision for development within New Hanover County. As development and implementation of this plan occurs, these goals will be utilized by staff and decision makers to deliberate and interpret the vision of our community.

GUIDING DOCUMENTS:

It is important to note, many additional studies have been, or are, in the process of being conducted that focus on specific areas that also help support and achieve the vision of our community. It is intended that future development will support the goals and strategies of the following studies and plans:

- Comprehensive Greenways Master Plan
- Pathways to Prosperity – The Garner Study
- Cape Fear Transportation 2040
- Focus – Cape Fear Regional Framework Plan
- Hazard Mitigation Plan
- Parks and Gardens Master Plan

SCHOOL INVOLVEMENT 2015

Because the Comprehensive Plan focuses on the next twenty-five years of New Hanover County, an important part of creating a vision for the future included meeting with students from various parts of the County. Staff met with students who were involved in their school's student council/governments. These students, along with rest of the County's younger population, will be leaders, workforce, taxpayers, and parents during the implementation of the comprehensive plan. Staff discussed the overall goal of the plan and allowed the students to come up with their own ideas and goals for the future. The students then wrote and/or illustrated their ideas.

During the months of January, February, and March, planning staff visited four elementary schools, one middle school, and one high school. The elementary schools were Castle Hayne, Walter L. Parsley, H.C. Bellamy, and Mary C. Williams. The middle school visited was Emma B. Trask. The high school visited was Isaac Bear Early College. Throughout the visits, staff observed that, at each school, the students were conscientious about issues both within their area and the outside world. The student focus groups discussed topics along the same lines as those discussed within the adult theme committees.

Staff engaged 75 elementary school children through artwork and discussion. The student's artwork ranged from cars that could instantly transport you anywhere, to more sidewalks and bike paths, to environmental concerns, and everywhere in between. Each student had certain ideas that their artwork clearly communicated:

Castle Hayne students were mostly focused on environmental protection. They wanted more trees, less waste, more parks and recreation areas, and protection for wildlife and natural resources.

Parsley students saw the need for more transportation and recreation options. Many walked to school and wanted more sidewalks in order to walk and bike to school safely.

Bellamy students wanted more options within the built environment near their homes. They drew parks, a zoo, and more mixed use options around the neighborhoods.

Mary C. Williams student's artwork focused on environmental concerns surrounding beach conservation, wildlife protection, and planting more trees.

Trask Middle School's Student Council participated in a focus group in which the students listed ideas for the future. Six locations were set up around the classroom with each location representing one of the six principle themes. Students were encouraged to write their ideas on flip charts at each location. Planning staff spoke with students throughout the process to learn more about their ideas and answer any questions they had.

Isaac Bear Early College's student government listed goals pertaining to each of the six principle themes. The students wrote their goals under each of the associated themes. During this process, the students discussed positives and negatives that stood out to them about living in New Hanover County, and they shared possible solutions. After the goals were discussed, the students then voted for the goals they believed were most important for the future.

Young people have alternative perspectives and understandings of the area that differs from adults. They see what affects their lives currently and in the future. They focused on more sidewalks and bike paths to get to school safer, closer parks to walk and bike to and from homes, additional homeless shelters, greater wildlife conservation, and more trees. Students discussed the future of the County and changes they would like to see in order to stay in the area or come back to in the future. By engaging a range of students from various areas and backgrounds, the staff was able to observe how students perceive the area. The students' input allowed staff to gather information that would not only benefit the next generations but also the current ones.

CHAPTER 4: VISUALIZING THE FUTURE

CONTENTS:

Place Type Descriptions

Natural Systems

Visualizing the Future

The fourth chapter, Visualizing the Future, helps our community focus on how we implement the goals and values of Chapter Three into the built environment through the Future Land Use Map. The Future Land Use Map was created using the following data inputs:

- Existing Conditions Analysis: population growth and environmental constraints;
- Community input on development patterns through theme committees;
- Development of alternative futures from the regional planning initiative;
- Coordination with regional partners including the City of Wilmington, and Pender County; input from stakeholders including: Cape Fear Public Utility Authority, New Hanover County School System, NC Department of Transportation, Wilmington Urban Area Metropolitan Planning Organization, owners of large land parcels, Wilmington Chamber of Commerce, the Wilmington-Cape Fear Home Builders Association, Wilmington Regional Association of Realtors®, the North Carolina Coastal Federation, and many interested and dedicated citizens.

The Future Land Use Map replaces the 2006 CAMA Land Use Map and will be used to direct development over the next 25 years. This will primarily be done by guiding development decisions through rezoning, special use permits, variance requests and other decisions on development and capital improvement projects; and utilizing the associated land-use categories, known as "place types," to create new zoning classifications and districts. It will also be used to determine areas that need further study through detailed area and corridor plans.

The predominant focus of the new Future Land Use Map is the concept of mixing land uses – including commercial, residential, recreational, educational, and others – to create a vibrant and diverse community.

Some of the benefits of mixed-use development are:

- Reduction of air pollution from vehicles.
- Reduction of impervious surfaces (parking lots and roadways) to reduce stormwater runoff;
- Increase walking proximity to shops and stores creates a healthier lifestyle.
- Increasing the number of people on the street to enhance the security of an area.
- Greater financial benefits, including increased property values, tax revenues, retail lease rates, retail sales, hotel occupancy rates.
- Reduced transportation costs and barriers for the elderly and disabled.

Moving Forward

The intent of the Future Land Use Map is not to be legally binding, but to be a general representation of the vision for New Hanover County's future land use, developed by the citizens and community leaders that participated in the Plan NHC process. The county's land-use regulations are expected to be amended to reflect this vision as a major implementation strategy of this plan.

The goals of the Future Land Use Map place types are to identify overall areas of applicability for each. However, the individual place type locations should not be interpreted as being parcel specific like a zoning classification would be. Instead, place type locations are interpretations of future development opportunities within the areas that help create a community. This map will serve as a tool for planners to help reach the goals set by the citizens through future development. This map will also be an important tool when developing the new zoning map and the county's new unified development ordinance.

PLACE TYPE DESCRIPTIONS

Place types describe the desired character and function of the different types of development that collectively make up a community: neighborhoods, employment centers, and services. By focusing on development character and function, place types set the framework for policy making and, ultimately, zoning determinations. Utilizing the 21 goals from Chapter 3: Framing the Policy and the findings from the alternative futures analysis, staff worked with Renaissance Planning Group to develop the following place types in preparation for the New Hanover County Comprehensive Land Use Plan.

Commerce Zone

This place type serves to provide areas for employment and production hubs, predominantly composed of light and heavy industrial uses, though office and complementary commercial uses are also allowed. Densities are dependent, in part, on the type of industry. Commerce Zones, unlike Employment Centers, discourage residential uses. Commerce Zones require arterial or major collector road access connecting them to areas outside their boundaries.

The areas applicable for this place type are the U.S. 421 Corridor, GE, and airport vicinity. Pedestrian amenities should include sidewalks, street and shade trees, street furniture, and bike racks.

Building height could range from one to seven stories depending on the use.

The following goals from Chapter 3: Framing the Policy will be promoted within the Commerce Zone place type:

- Promote environmentally-responsible growth.
- Promote fiscally-responsible growth.
- Increase recycling and reduction of solid waste.
- Preserve and protect water quality and supply.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes to support continued growth.
- Revitalize commercial corridors and blighted areas through infill and redevelopment.
- Use public infrastructure improvements to leverage private investments.
- Support business success.
- Support workforce development and economic prosperity for all.
- Conserve and enhance our unique sense of place to attract individuals, companies and organizations.

Employment Center

This place type identifies areas to serve as employment and production hubs, where office and light industrial uses are predominate. Densities are dependent, in part, on the type of industries located here. Employment Centers can also include residential, civic, and recreational uses, but should be clearly delineated from rural and conservation areas. Commercial uses designed to serve the needs of the employment center are appropriate. Employment Centers require arterial or major collector road access connecting them to areas outside their boundaries. Types of uses include office, industrial, single-family and multi-family residential, commercial/retail, and recreation.

The areas applicable for this place type are the airport vicinity, Dutch Square, Northchase, and Hermitage Road. Pedestrian amenities should include sidewalks, street and shade trees, street furniture, and bike racks.

Building height could range from one to seven stories. The ideal density for single-family residential is low (ranging up to approximately eight units per acre) and the ideal density for multi-family residential is moderate (around 12-15 units per acre).

The following goals from Chapter 3: Framing the Policy will be promoted within the Employment Center place type:

- Promote environmentally responsible growth.
- Promote fiscally responsible growth.
- Increase recycling and reduction of solid waste.
- Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities.
- Preserve and protect water quality and supply.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes to support continued growth.
- Provide for a range of housing types, opportunities, and choices.
- Revitalize commercial corridors and blighted areas through infill and redevelopment.
- Use public infrastructure improvements to leverage private investments.
- Support business success.
- Support workforce development and economic prosperity for all.
- Conserve and enhance our unique sense of place to attract individuals, companies and organizations.
- Increase access to affordable and convenient healthy food.
- Increase physical activity and promote healthy, active lifestyles.

General Residential

This place type focuses on lower-density housing and associated civic and commercial services. Housing for the area is typically single-family or duplexes. Commercial uses should be limited to strategically located office and retail spaces, while recreation and school facilities are encouraged throughout. Access to areas outside these residential areas are provided by arterial roadways, but still allow for interconnection between other place types. Limiting cul-de-sacs is encouraged to promote better internal circulation and minimize high-volume traffic roads within the area. Types of uses include single-family residential, low-density multi-family residential, light commercial, civic, and recreational.

The areas applicable for this place type are Middle Sound, Myrtle Grove, Castle Hayne, Piner Road, Porter's Neck, Gordon Road, Wrightsboro, and Masonboro Loop. Pedestrian amenities should include sidewalks, street and shade trees, and open space.

Building height could range from one to three stories. The ideal density for multi- and single-family residential is low (ranging up to approximately eight units per acre). Density within the General Residential place type may be limited by flood plain, wetlands, or other natural or man-made features and generally should be consistent with nearby communities.

The following goals from Chapter 3: Framing the Policy will be promoted within the General Residential place type:

- Promote environmentally responsible growth.
- Promote fiscally responsible growth.
- Increase recycling and reduction of solid waste.
- Increase public safety by reducing crime through the built environment;
- Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities.
- Preserve and protect water quality and supply.
- Increase physical activity and promote healthy, active lifestyles.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes to support of continued growth.
- Increase access to affordable and convenient healthy foods.
- Provide for a range of housing types, opportunities and choices.
- Revitalize commercial corridors and blighted areas through infill and redevelopment.
- Conserve and enhance our unique sense of place to attract individuals, companies and organizations.
- Actively promote high quality educational and diverse cultural opportunities for New Hanover County residents and visitors.

Urban Mixed Use

This place type promotes development of a mix of residential, office, and retail uses at higher densities. Multi-family residential uses are preferred, though higher-density single family developments will not be prohibited. Mixed uses are encouraged in the same parcel, but they can also be adjacent, or separated by lower traffic local and collector roads. This place type can include big box retail that has appropriate urban design features. These areas place an emphasis on multimodal transportation through the requirement of sidewalks on all non-local streets, crosswalks at all intersections, dedicated bicycle lanes or wide outside lanes, and bus access. Types of uses include office, retail, mixed use, small recreation, commercial, institutional, single-family and multi-family residential.

The areas applicable for this place type include Ogden, Kirkland, Monkey Junction, North Kerr Avenue, Cape Fear Community College North Campus area, and North College Road. Pedestrian amenities should include sidewalks, street trees, street furniture, shade trees, bike racks, lighting, crosswalks, plazas, and pedestrian malls.

Building height could range from one to seven stories depending on the use.

The following goals from Chapter 3: Framing the Policy will be promoted within the Urban Mixed Use place type:

- Promote environmentally responsible growth.
- Promote fiscally responsible growth.
- Increase recycling and reduction of solid waste.
- Increase public safety by reducing crime through the built environment.
- Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities.
- Preserve and protect water quality and supply.
- Increase physical activity and promote healthy, active lifestyles.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes to support continued growth.
- Increase access to affordable and convenient healthy foods.
- Provide for a range of housing types, opportunities and choices.
- Revitalize commercial corridors and blighted areas through infill and redevelopment.
- Conserve and enhance our unique sense of place to attract individuals, companies and organizations.
- Support business success.
- Support health promotion and disease prevention while minimizing debilitating effects of mental and physical disabilities.
- Support workforce development and economic prosperity for all.
- Use public infrastructure improvements to leverage private investments.
- Actively promote high quality educational and diverse cultural opportunities for New Hanover County residents and visitors.

Community Mixed Use

This place type focuses on small-scale, compact, mixed use development patterns that serve all modes of travel and act as an attractor for county residents and visitors. These areas share several qualities with higher-intensity mixed use place types, including first-floor retail with office and housing above, wider sidewalks, and an emphasis on streetscaping. However, these centers are generally small and no more than a few square blocks. Civic uses, particularly recreation and meeting places, are encouraged here. Typically, large-scale, lower density commercial and industrial developments are incompatible. The centers are generally smaller and encourage more housing options. Types of uses include office, retail, mixed use, recreational, commercial, institutional, and multi-family and single-family residential.

The areas applicable for this place type include Castle Hayne, Sidbury Road, Carolina Beach Road, Ogden, and Northchase. Pedestrian amenities should include sidewalks, street and shade trees, street furniture, and bike racks.

Building height could range from one to three stories depending on the use. The ideal density for multi-family and single-family residential uses are moderate (ranging up to 15 units per acre). However, lower-density single-family residential development may be acceptable when limitations to mixed-use development exists. Density within the Community Mixed Use place type may be limited by flood plain, wetlands, and other natural or man-made features. Mixed use centers should be appropriately located where infrastructure can be available to serve the needs of a mixed use community. Areas disconnected to mixed use centers may not be appropriate for increased density.

The following goals from Chapter 3: Framing the Policy will be promoted within the Community Mixed Use place type:

- Promote environmentally responsible growth.
- Promote fiscally responsible growth.
- Increase recycling and reduction of solid waste.
- Increase public safety by reducing crime through the built environment.
- Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities.
- Promote place-based economic development in the region that is tied to our natural resources.
- Preserve and protect water quality and supply.
- Increase physical activity and promote healthy, active lifestyles.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes in support of continued growth.
- Increase access to affordable and convenient healthy foods.
- Provide for a range of housing types, opportunities and choices.
- Conserve and enhance our unique sense of place to attract individuals, companies and organizations.
- Revitalize commercial corridors and blighted areas through infill and redevelopment.
- Support business success.
- Support health promotion and disease prevention while minimizing debilitating effects of mental and physical disabilities.
- Support workforce development and economic prosperity for all.
- Use public infrastructure improvements to leverage private investments.
- Actively promote high quality educational and diverse cultural opportunities for New Hanover County residents and visitors.

Rural Residential

This place type focuses on rural areas where new development occurs in a manner consistent with existing rural character, while also preserving the economic viability of the land. Residential uses are the predominant, but not exclusive, use. Agricultural and rural recreational uses are intermixed with large-lot residential areas. Clustering of homes in smaller lots can provide for conservation of other land while still providing opportunities for residential and agricultural growth. Rural areas have minimal transportation infrastructure requirements, and rural collector and arterial roads are sufficient. Types of uses include single-family residential, agriculture and forestry, recreation, and open space.

The area applicable for this place type is Castle Hayne. Pedestrian amenities should include recreational trails, open space, and shade trees. The ideal density for the single-family residential is very low with a maximum range of approximately three units per acre.

The following goals from Chapter 3: Framing the Policy will be promoted within the Rural Residential place type:

- Promote environmentally responsible growth.
- Increase recycling and reduction of solid waste.
- Conserve open space for long term agricultural and rural uses.
- Promote place-based economic development in the region that is tied to our natural resources.
- Preserve and protect water quality and supply.
- Increase physical activity and promote healthy, active lifestyles.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes to support continued growth.
- Increase access to affordable and convenient healthy foods.
- Support business success.
- Conserve and enhance our unique sense of place to attract individuals, companies and organizations.
- Link major natural habitats.
- Actively promote high quality educational and diverse cultural opportunities for New Hanover County residents and visitors.

Conservation

This place type covers areas of natural open space and is intended to protect the natural environment, water quality, and wildlife habitats. They serve the public through environmental education, low-impact recreation, and in their natural beauty. Protection may also extend to important cultural or archaeological resources and to areas where environmental hazards are known to exist. Conservation areas and tools may apply to land that also falls into another zoning category, such as single-family residential, though density is limited and conservation requirements generally take precedence. In these areas, increased density would be discouraged, and low impact development methods would be required. Such requirements place limits on development to ensure the protection of resources. Active efforts to acquire these areas should be pursued.

The areas applicable for this place type include Masonboro Island, managed lands, conservation easements, Futch Creek, Howes Creek, Lords Creek, and public land trusts. Additional areas such as Areas of Environmental Concern (AEC) and Special Flood Hazard Areas might be coded as conservation, but this does not prohibit development as long as applicable regulations can be met.

The following goals from Chapter 3: Framing the Policy will be promoted within the Conservation place type:

- Increase recycling and reduction of solid waste.
- Conserve environmentally critical areas.
- Promote place-based economic development in the region that is tied to our natural resources.
- Preserve and protect water quality and supply.
- Increase physical activity and promote healthy, active lifestyles.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes in support continued growth.
- Link major natural habitats.
- Conserve and enhance our unique sense of place to attract individuals, companies and organizations.

Growth Nodes

Growth nodes are intended to be focus areas of development, encouraging high-density developments that promote pedestrian activity and alternative transportation options. The growth nodes pertaining to the Future Land Use Map are individualized focus areas within the unincorporated county that have seen and/or are seeing exponential growth. The intent is to cluster growth in these areas so that public transportation connections can be accomplished.

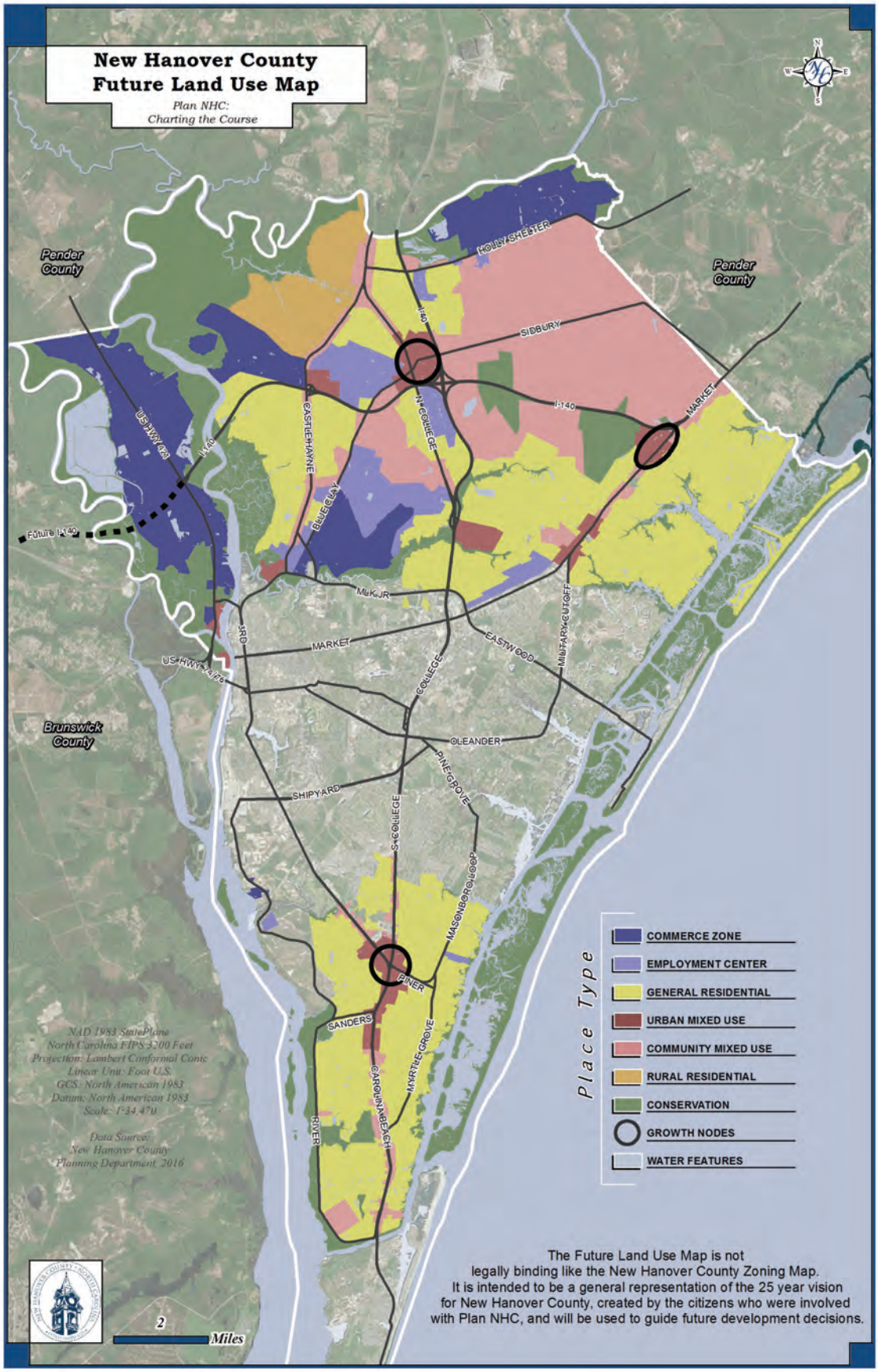
Community Input and Meetings

The Planning Department held extensive community meetings during the months of January, February, and March of 2015. These meetings were held in various locations across the county as an open house format. Large-scale maps were placed around the room at each meeting that focused on the individual place types from the Future Land Use Map, two full Future Land Use Maps, a map showing environmental features, and the 2006 CAMA Land Use Map. The community members were encouraged to view each map and add their individual comments either directly on the maps or on notecards. Planning staff was in attendance to answer questions and engage with the public. Overall, there were 236 people in attendance over the course of the public meetings.

In addition to the community meetings, staff attended neighborhood organization meetings, Chamber of Commerce meetings, and meetings with other groups and organizations.

All of these conversations, along with online input, helped staff to further refine the draft Future Land Use Map into the final version included on the following page.

NEW HANOVER COUNTY FUTURE LAND USE MAP



COMMERCE ZONE

DEFINITION

These areas serve as employment and production hubs, predominantly composed of light and heavy industrial uses, though office and complementary commercial uses are also allowed. Densities are dependent in part on the type of industry; some industrial uses will likely be one story with large setbacks and ample room for trucks and other large vehicles. Office uses can be multi-story and nearer the street, while office buildings can be two or three stories and closer to the street. Commerce Zones, unlike Employment Centers, do not allow residential uses. Commerce Zones require arterial or major collector road access connecting them to areas outside their boundaries.

EXAMPLE AREAS

U.S. 421 Corridor

DESIRED USES

Types of Uses / Projects

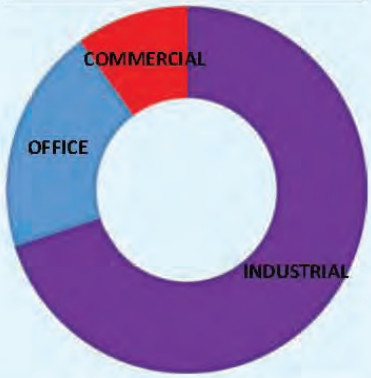
Light Industrial

Heavy Industrial

Office

Recreation

Mix of Uses



Typical Zoning Categories

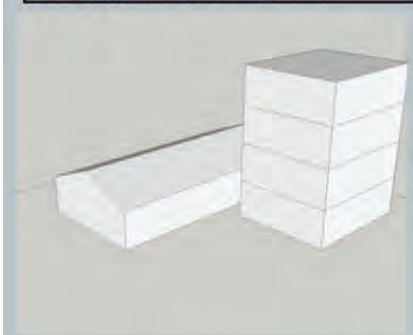
Commercial

Office & Institutional

Industrial

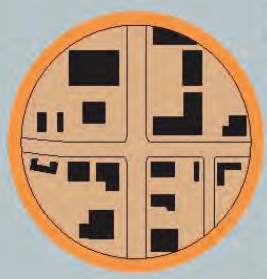
DEVELOPMENT INTENSITY

Massing / Scale Recommendations



Use	Number of Stories	Ideal Density
Office	1-7	Low-to-High
Industrial	1-3	Low/Moderate

Urban Design Recommendations



Street Pattern:
Grid or radial

Block Length:
300 ft - .5 mi

Setbacks:
Residential: not applicable
Non-residential: Away from street

Pedestrian Amenities:
Sidewalks, street & shade trees, street furniture, bike racks

MODE CHOICES

Transportation Infrastructure Recommendations

On-campus walkways
Open space

Arterial & collector roads
2-4 travel lanes
Off-street parking

Fixed-route transit

Wide shoulder
Bicycle parking on site

EMPLOYMENT CENTER

DEFINITION

These areas serve as employment and production hubs, with office and light industrial uses predominating. Densities are dependent in part on the type of industries located here; office uses can be multi-story and nearer the street, while light industrial uses will likely be one story with large setbacks and ample room for trucks and other large vehicles. Employment Centers can also include residential, civic, and recreational uses, but should be clearly delineated from rural and conservation areas. Commercial uses designed to serve the needs of the employment center are appropriate. Employment Centers require arterial or major collector road access connecting them to areas outside their boundaries.

EXAMPLE AREAS

Airport Vicinity

Dutch Square

NorthChase

Hermitage Road

DESIRED USES

Types of Uses / Projects

Office

Industrial

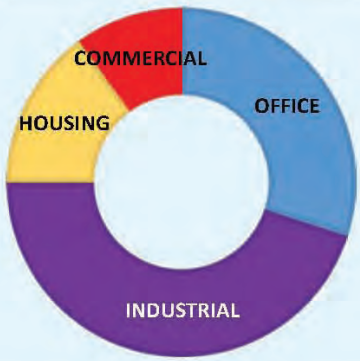
Single-Family Residential

Multi-Family Residential

Commercial / Retail

Recreational

Mix of Uses



Typical Zoning Categories

Commercial

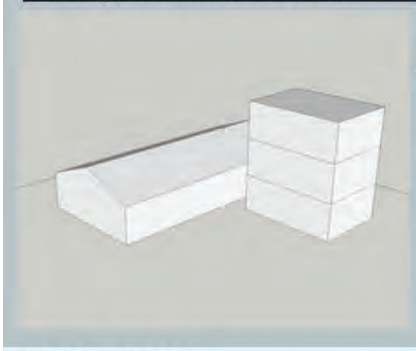
Office & Institutional

Industrial

Low & Moderate Density Residential

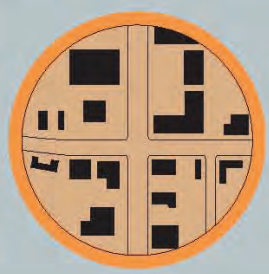
DEVELOPMENT INTENSITY

Massing / Scale Recommendations



Use	Number of Stories	Ideal Density
Office	1-7	Low-to-High
Industrial	1-3	Low/Moderate
Single-Family Residential	1-3	Low
Multi-Family Residential	2-3	Moderate (12-15 du/acre)

Urban Design Recommendations



Street Pattern:
Grid or radial

Block Length:
300 ft - .5 mi

Setbacks:
Residential: Near sidewalk
Non-residential: Far from sidewalk

Pedestrian Amenities:
Sidewalks, street & shade trees, street furniture, bike racks

MODE CHOICES

Transportation Infrastructure Recommendations

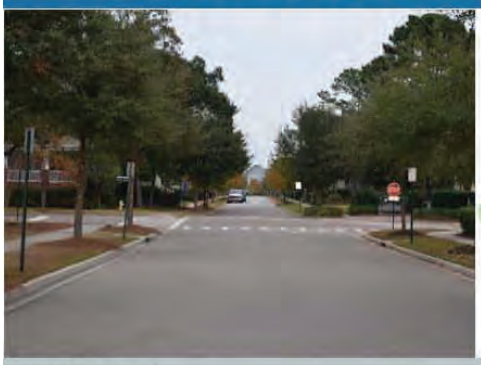
On-campus salkways
Open space
Multi-use paths

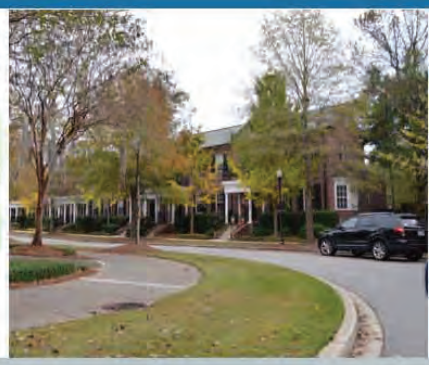
Arterial & collector roads
2-4 travel lanes
Off-street parking

Fixed-route transit

Wide shoulder
Bicycle parking on site

GENERAL RESIDENTIAL





DEFINITION

This placetype provides opportunity for lower-density housing and associated civic and commercial services. Housing is typically single-family or duplexes, with setbacks on all sides. Block sizes are large, at ¼ to ½ mile wide. Commercial uses should be limited to office and retail spaces in carefully located areas where neighborhood character will be enhanced, while recreation and school facilities are encouraged throughout. Access to areas outside these residential areas is provided by arterial roadways, but still allowing for interconnection between other placetypes. However, limiting cul-de-sacs is encouraged to promote better internal circulation and minimizing high-volume traffic roads within the area. Flooding hazard avoidance should be taken into consideration when abutting coastal areas.

EXAMPLE AREAS

Middle Sound
Myrtle Grove
Castle Hayne
Porter's Neck
Wrightsboro
Masonboro Loop

DESIRED USES

Types of Uses / Projects

Single-Family Residential

Low-Density Multi-Family Residential

Light Commercial

Civic

Recreational

Mix of Uses

Typical Zoning Categories

Low Density Residential

Medium Density Residential

Office & Institutional

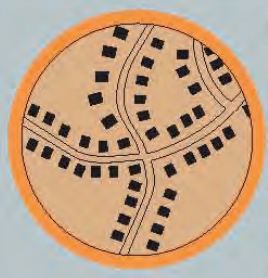
Planned Unit Development

DEVELOPMENT INTENSITY

Massing / Scale Recommendations

Use	Number of Stories	Ideal Density
Office	1-2	Low
Retail	1-2	Low
Planned Development	1-3	Medium
Low- Density Multi-Family	1-3	2-6 du/acre
Single-Family Residential	1-3	1-6 du/acre

Urban Design Recommendations



Street Pattern:
Warped Grid & Limited Cul-de-sacs

Block Length:
1000 - 2500 ft

Setbacks:
Residential: Away from street or in line with existing development

Non-residential: Away from the street

Pedestrian Amenities:
Sidewalks, Street Trees, Open Space, Shade

MODE CHOICES

Transportation Infrastructure Recommendations

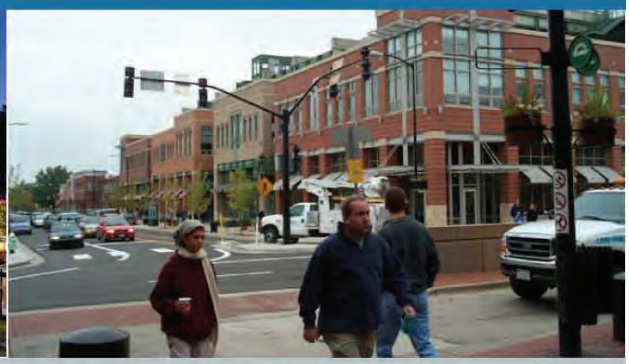
4-6 ft sidewalks (some areas)
Street lamps
Crosswalks at schools, busy intersections

Arterial, collector & local roads
2-4 travel lanes
On and off-street parking
Vanpool commuting

Limited fixed-route transit

On-road wide outside lane
Greenways & multi-use paths

URBAN MIXED USE



DEFINITION

This placetype provides access to a mix of residential, office, and retail uses at higher densities. Multi-family residential uses are preferred, though higher-density single family developments will not be prohibited. Mixed uses are encouraged in the same footprint in a vertical pattern, but they can also be adjacent, or separated by lower traffic local and collector roads in a horizontal pattern. This placetype can include big box retail that has included appropriate urban design features. These areas place an emphasis on multimodalism through the requirement of sidewalks on all non-local streets, crosswalks at all intersections, dedicated bicycle lanes or wide outside lanes, and bus access. Types of uses include office, retail, mixed use, small recreation, single-family and multi-family residential.

EXAMPLE AREAS

Ogden

Kirkland

Monkey Junction

CFCC North Campus Area

DESIRED USES

Types of Uses / Projects

Retail

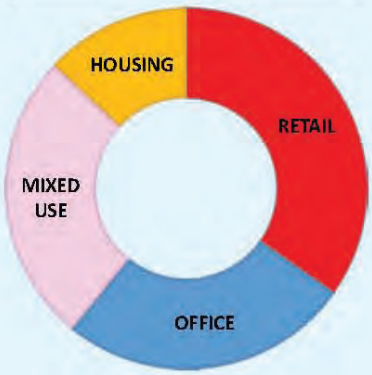
Office

Mixed Use

Single & Multi-Family Residential

Small Recreational

Mix of Uses



Typical Zoning Categories

Moderate to High-Density Residential

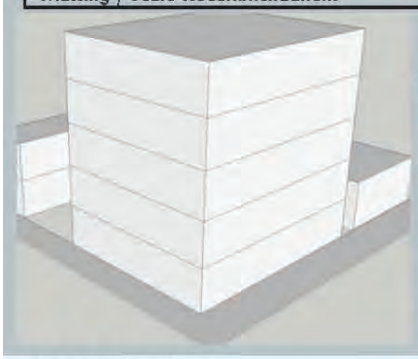
Mixed Use

Office & Institutional

Commercial

DEVELOPMENT INTENSITY

Massing / Scale Recommendations



Use	Number of Stories	Ideal Density
Office	3-7	Moderate/ High
Retail	1-3	Low/Moderate
Planned Development	2-7	Moderate/ High
Residential	2-5	Moderate/ High
Commercial/ Mixed Use	2-7	Moderate/ High

Urban Design Recommendations

Street Pattern:
Arterial & local; grid or partial grid

Block Length:
200 - 800 ft

Setbacks:
Varies

Pedestrian Amenities:
Sidewalks, street trees, street furniture, shade trees, bike racks, lighting, crosswalks, plazas, pedestrian malls

MODE CHOICES

Transportation Infrastructure Recommendations

5-12 ft Sidewalks
Pedestrian malls & paths
Crosswalks

Arterial, collector & local roads
2-4 travel lanes
On-street, off-street & garage parking

Limited fixed-route transit
Covered transit stops
Transit hubs

Bicycle lanes
Wide shoulders
Bike racks

COMMUNITY MIXED USE

DEFINITION

This placetype focuses on small-scale, compact, mixed use development patterns that serve multimodal travel and act as an attractor for county residents and visitors. These areas share several qualities with higher-intensity mixed use, including a combination of retail with office and housing above, wider sidewalks and an emphasis on streetscaping. However, these centers are generally small, no more than a few square blocks. Civic uses, particularly recreation and public gathering places are encouraged here. Lower denisity single family development may be acceptable when limitations to mixed use development exists. Ideally, large-scale, lower density commercial and industrial developments are prohibited.

EXAMPLE AREAS

Castle Hayne

Sidbury Road

Carolina Beach Road

NorthChase

DESIRED USES

Types of Uses / Projects

Office

Retail

Mixed Use

Multi-family Residential

Single-Family Residential

Recreational

Mix of Uses

Typical Zoning Categories

Moderate Density Residential

Commercial

Office & Institutional

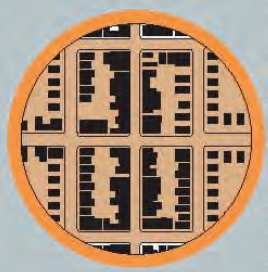
Mixed Use

DEVELOPMENT INTENSITY

Massing / Scale Recommendations

Use	Number of Stories	Ideal Density
Office	1-2	Moderate
Retail	1-2	Low/Moderate
Mixed Use	2-3	Moderate
Multi-Family Residential	2-3	Moderate (12-15 du/acre)
Single-Family Residential	1-3	Moderate (±8 du/acre)*

Urban Design Recommendations



Street Pattern:
Grid or radial

Block Length:
200 - 500 ft

Setbacks:
Residential: Near sidewalk
Non-residential: At sidewalk

Pedestrian Amenities:
Sidewalks, street & shade trees, street furniture, bike racks

MODE CHOICES

Transportation Infrastructure Recommendations

5-12 ft Sidewalks
Crosswalks

Arterial & collector roads
2-4 travel lanes
On and off street parking

Fixed-route transit

Bicycle lane / shoulder
Bicycle parking

RURAL RESIDENTIAL

DEFINITION

These are rural areas where new development occurs in a manner consistent with existing rural character while also preserving the economic viability of the land. Residential uses are the predominant, but not exclusive, use. Agricultural and rural recreational uses are intermixed with large-lot residential areas that range from 1 to 40 acres. Clustering of homes in smaller lots can provide for conservation of other land while still providing opportunities for residential and agricultural growth. Rural areas have minimal transportation infrastructure requirements; rural collector and arterial roads are sufficient.

EXAMPLE AREAS

Castle Hayne

DESIRED USES

Types of Uses / Projects

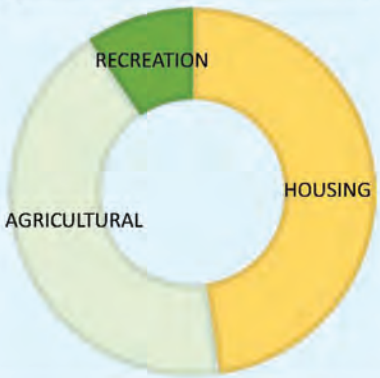
Single-Family Residential

Small-scale Agriculture & Forestry

Recreational

Open Space

Mix of Uses



Typical Zoning Categories

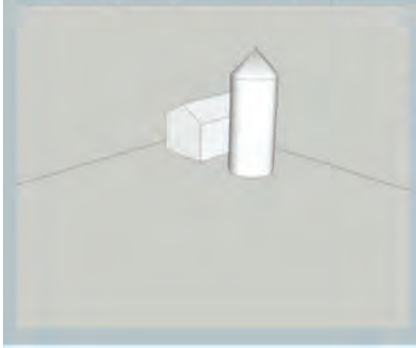
Very Low Density Residential

Agricultural

Recreational

DEVELOPMENT INTENSITY

Massing / Scale Recommendations



Use	Number of Stories	Ideal Density
Single-Family Residential	1-3	Very Low

Urban Design Recommendations

Street Pattern:
Organic and sparse

Block Length:
0.5 - 5 miles

Setbacks:
Residential: Away from street

Pedestrian Amenities:
Recreational trails, open space, shade trees

MODE CHOICES

Transportation Infrastructure Recommendations

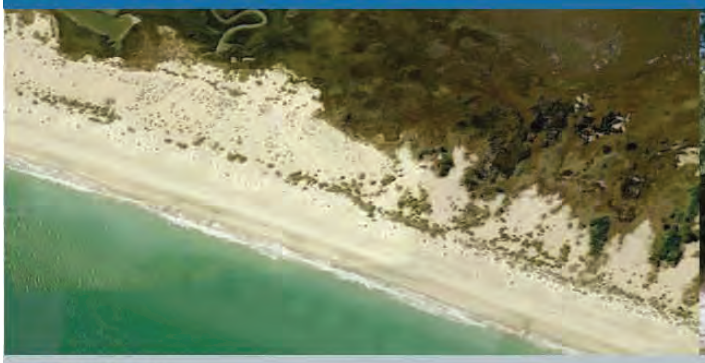
Greenways and trails

Arterial, collector, local & private roads
1-4 Travel lanes
Off-street parking

Greenways and trails
Low-traffic roads

Greenways and trails
On-road wide shoulder

CONSERVATION



DEFINITION

Conservation places cover areas of natural open space and are intended to protect the natural environment, water quality, and wildlife habitats. They serve the public through environmental education, low-impact recreation and in their natural beauty. Protection may also extend to important cultural or archaeological resources and to areas where hazards are known to exist. Conservation areas and tools may apply to land that also falls into another zoning category, such as single-family residential, though density is limited and conservation requirements generally take precedence. In such areas, increased density would be discouraged, and low impact development methods would be required. Such requirements place limits on development so as to ensure the protection of resources. Active efforts to acquire these areas should be pursued.
Low-impact additions may include walkways, trails, fences, docks and access roadways.

EXAMPLE AREAS

Masonboro Island

Managed Lands

Sunny Point Blast Zone

Public Land Trusts

In coordination with the North Carolina Division of Coastal Management and by incorporating feedback from the Future Land Use Map comment period, planning staff created additional resource maps that showcase New Hanover County's natural systems. These maps are intended to be a source of information used in conjunction with the Future Land Use Map by New Hanover County's Planning staff, Planning Board, and Board of Commissioners. They are also intended to inform citizens and developers about valuable and critical environmental areas.

Baseline data used in the creation of the natural systems maps was obtained from federal, state, and local sources and has not been modified by New Hanover County. The portrayal of natural systems data is for informative and planning purposes, and to aid in the development process by providing awareness to the possibility of hazard and critical environmental areas. Final delineation of resources must be conducted in the field by an expert.

In New Hanover County, natural systems are areas that are valued and protected to ensure the longevity of the county's natural environment and safety of its citizens. The natural landscape and geographic location of New Hanover County have combined to create a unique environment for rare plant and animal species. The location of the county, bordered by the Atlantic Ocean, possesses natural hazard threats, including flooding, wind, and wave damage during hurricanes and severe storm events. The delineation of natural features and hazard areas are critical when planning for future development and their impact on the community. The following section identifies environmental and flood-hazard areas that are governed by the state of North Carolina and the Coastal Resource Commission (CRC) through the Coastal Area Management Act (CAMA). The delineation of these areas are to be used in conjunction with the Future Land Use Map to aid in the development process by providing foresight of possible hazard and critical environmental areas.

Background

In accordance with Chapter 7 of Title 15A of the North Carolina Administrative Code (NCAC) and the North Carolina Environmental Policy Act, CAMA established a state management plan to administer valuable coastal resources. CAMA utilizes two elements to protect land and water resources: a local land use plan created by local jurisdictions, which sets forth desired land-use patterns; and the designation of areas of environmental concern or environmental sensitivity. This section of the Comprehensive Plan will outline principals within CAMA and the objectives of North Carolina's CRC.

Coastal Area Management Act (CAMA)

In 1974, North Carolina adopted CAMA as a requirement of the North Carolina Environmental Policy Act of 1971. CAMA requires that the 20 coastal counties of North Carolina establish a cooperative coastal land management program between local and state government for preparing, adopting, and enforcing local land-use plans. CAMA planning guidelines ensure the protection, preservation, and management of coastal resources as well as the promotion of orderly development along coastal regions of North Carolina.

Since 1976, New Hanover County has updated the original plan five times with the latest update in 2006. Over the past nine years, New Hanover County has grown, developed, and flourished with new businesses, homes, shopping centers and improved infrastructure. However, current trends in planning and development are changing so the tools used to plan for the future must change also. Adapted as part of a larger planning initiative, this update of New Hanover County's CAMA plan is being integrated into the Comprehensive Plan. CAMA planning guidelines have been

an essential resource over the years and an important component during this process. Building on CAMA's vision to adapt to growth while preserving the values of coastal communities, the goals established in the New Hanover County Comprehensive Plan that further support the mission and vision of CAMA and the protection of the resources therein are as follows:

- Promote environmentally responsible growth.
- Conserve open space for long-term agriculture and rural uses.
- Conserve environmentally critical areas.
- Promote place-based economic development in the region that is tied to our natural resources.
- Preserve and protect water quality and supply.
- Ensure New Hanover County remains in attainment for air quality, in support of clean air and improved public health outcomes to support continued growth.
- Link major natural habitats.
- Conserve and enhance our unique sense of place to attract individuals, companies, and organizations.

Special Flood Hazard Areas

The land area covered by the floodwaters of the base flood zone is known as the Special Flood Hazard Area (SFHA) on National Flood Insurance Program (NFIP) maps. Shown in this section, the SFHA map includes two kinds of flood areas: AE and VE. AE flood zones have a one percent chance of flooding per year. VE flood zones also have a one percent chance of flooding each year but have the risk of additional hazards due to velocity from wave action during storm events. Both are delineated by the North Carolina Floodplain Mapping Program and approved by FEMA.

New Hanover County is unique because it is bordered by the Cape Fear River and the Atlantic Ocean, making it susceptible to flooding during heavy rain and major storm events. To protect private home and business investments, North Carolina has building code requirements for structures built in the AE and VE flood zones, which include elevating the structure above the base flood elevation level. Emergency planning operations are also in place to protect life and property in flood prone areas. Additionally, banks and lending institutions require that home buyers purchase flood insurance for a home in a SFHA, which includes the AE and VE flood zones found in New Hanover County.

New Hanover County is part of the NFIP and has adopted a floodplain management ordinance in order to provide affordable flood insurance to its citizens. For this, the county has agreed to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. Flood maps are available to the public and shown on the SFHA natural systems map.

Public Trust Waters

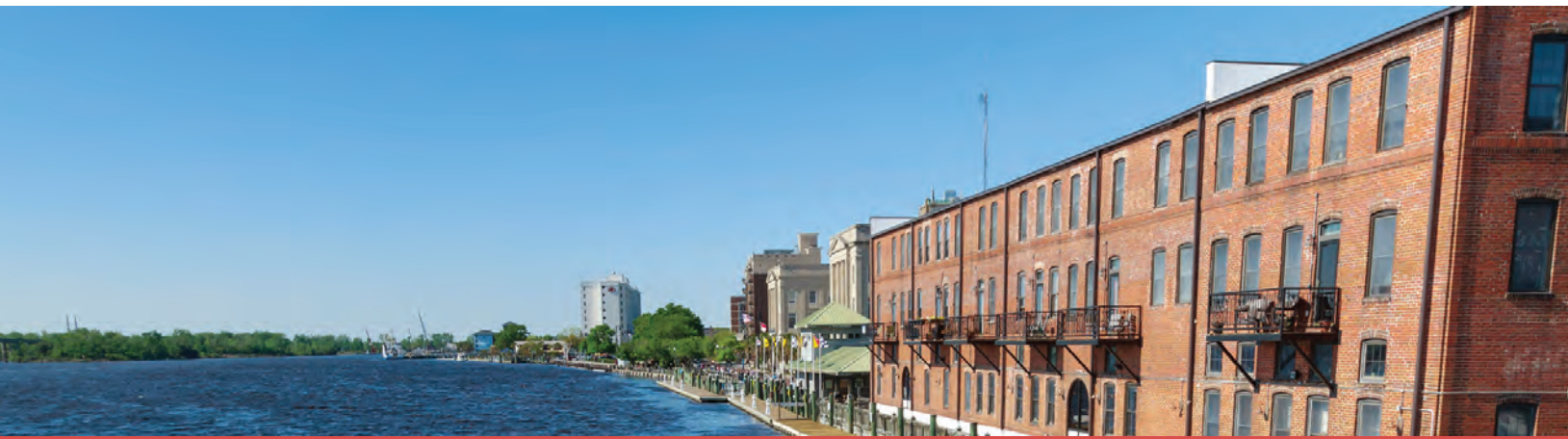
Public Trust Waters are the coastal waters and submerged lands that are open for public use and include activities such as fishing, boating or swimming. These waters often overlap with other classifications of coastal waters such as Outstanding Resource Waters, estuarine waters, tidal creeks, and inland waters such as streams and tributaries. Waters that are considered public trust waters include: the Atlantic Ocean and the land underneath from the normal high water line to the state's official boundary three miles offshore; all navigable natural water bodies and lands underneath, not including privately owned lakes; and all water in artificially created water bodies that have significant public fishing resources and are accessible to the public from other waters. The types of public trust waters described below illustrate how the different waters reflect the goals set by CAMA.

Public Coastal Waters

Public coastal waters are public trust waters that include tidal creeks, sounds, inlets, and – locally – the Intracoastal Waterway and the Atlantic Ocean. These waters provide for many recreational activities, including fishing and shell fishing, boating, and swimming. They are described as having high levels of salinity and providing a habitat for plant and animal species that thrive in salt water environments. Coastal waters are under the jurisdiction of the Division of Coastal Management (DCM) and are subject to CAMA regulations and the Coastal Resource Commission's CAMA minor permitting process.

Degradation due to pollution can affect the overall health of coastal waters, which has a direct effect on the shellfish, fishing, and tourism industries. High levels of contamination can close shellfish fishing areas and pose health risks to those consuming contaminated shellfish. The overall health of both inland and coastal waters is correlated, because they are connected and influence each other. New Hanover County's coastal waters are a main attraction for tourism, with its many recreational opportunities as well as its ability to provide locally-sourced fish and shellfish.

The North Carolina Division of Water Resources (DWR) under the Department of Environmental Quality (DEW) establishes classifications for water bodies in the state. In addition, the North Carolina DCM, under DEQ, has recently concluded a comprehensive estuarine shoreline mapping project. Partnering with East Carolina University, the mapping project is the first ever continuous digital map of more than 12,000 miles of estuarine shoreline in North Carolina.



Public Inland Waters

Public inland waters are public trust waters and tributaries, such as creeks and streams, which flow into coastal waters. Examples include tidal creeks, sounds, inlets, and – locally – the Intracoastal Waterway and the Atlantic Ocean. The headwaters of inland waters are fresh in nature but may turn brackish with levels of salinity increasing as water nears coastal waters. Jurisdiction of inland waters belongs to the Wildlife Resource Commission; however, under certain circumstances, inland waters may also fall under the jurisdiction of CAMA and be subject to the Coastal Resource Commission's CAMA permitting process.

Acting as the main natural discharge path for storm water into New Hanover County's major tidal creeks, inland water health is correlated to the health of the major tidal creeks. The county monitors water quality at various locations, including inland waters. Degradation to inland waters poses human health risks and decline of the natural environment. The deterioration and pollution of these creeks can affect the health of the major tidal creeks. High levels of contaminates can trigger the closure of shell fishing areas and impact the safety of recreational use in waters.

The North Carolina DWR, under the DEQ, establishes classifications for water bodies in the state. Inland waters are overseen by the Wildlife Resource Commission unless they exhibit indications of coastal influence. Segments of inland waters that exhibit coastal influence fall under the authority of the DCM. Determinations if an inland water is within the jurisdiction of the DCM is based on the existence of indicators such as specific types of plant and animal species or areas that are tidally influenced. The verification of the presence of indicators is conducted by the DCM field experts. Inland waters that are determined to be within the DCM's jurisdiction are subject to the CAMA permitting process.

Outstanding Resource Waters

Outstanding Resource Waters (ORW) are waters with exceptional ecological significance that are used for commercial fishing, shell fishing, and primary recreation, and are important for aquatic life propagation. ORWs are a subset of surface water classifications designated by the North Carolina DWR. Each subset has its own classification and associated rules which may be designed to protect water quality, fish, and wildlife, or other special characteristics. For ORWs, the classification is intended to protect unique and special waters. These waters must have an "excellent" rating by the Division of Water Resources and be of "exceptional state" or national ecological or recreational significance.

New Hanover County's unique location and geography is significant to ORWs. ORWs are regulated by CAMA and enforced by the DCM and by New Hanover County. When looking to buy land and/or develop areas in or near ORWs, there are additional rules regulating or restricting certain activities.

ORWs are defined by the North Carolina DWR under the North Carolina DEQ. The North Carolina DWR establishes the Surface Water Classifications for each water body in the state. Classification rules are based on the minimum protection rules of state and federal agencies. In order to be classified as an ORW, the water must be rated "excellent" by the DWR and have one of the following outstanding resource values:

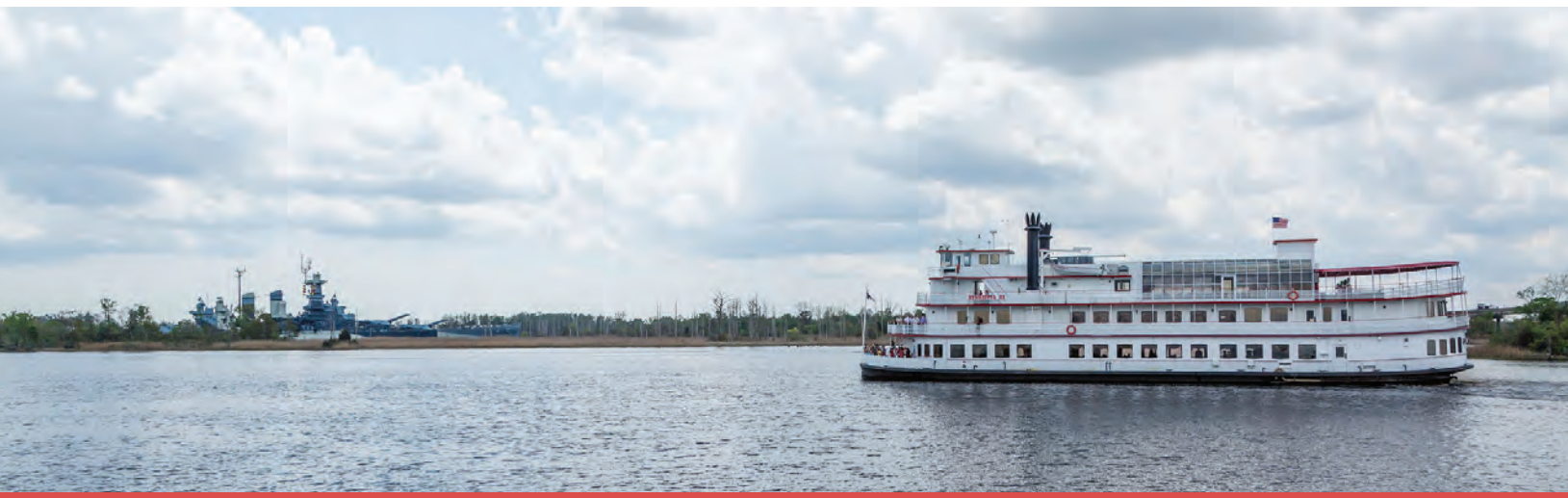
- Outstanding fish habitat and fisheries.
- Unusually high levels of water-based recreation or the potential for high levels of recreation.
- A special designation, such as North Carolina Natural and Scenic River or National Wildlife Refuge.
- Incorporate an important component of state or national park or forest.
- Have a special ecological or scientific significance (i.e., rare or endangered species habitat, or research or educational areas).

Much of New Hanover County's ORWs are also classified as SA Waters which include Class SB and Class SC waters. Class SA waters are best used for commercial shell fishing and other uses specified by SB and SC. Many of the county's SA waters are also classified as ORW. Class SB waters are best used for primary recreation and other uses specified by the SC class. Class SC waters are best used for aquatic life propagation and survival, fishing, wildlife, and secondary recreation. More information on water classifications can be found in the appendix section of this plan or on the North Carolina DEQ's website.

Potential Significant Natural Heritage Areas

Significant Natural Heritage Areas, also known as Natural Heritage Natural Areas, are identified as terrestrial and aquatic sites that have special biodiversity significance. These areas of significance may be due to the presence of rare species, exemplary natural communities, or important animal assemblages. These areas are designated by the North Carolina Natural Heritage Program (NCNHP) and are categorized as having national significance, state significance, regional significance, and local significance.

The Cape Fear Region is one of the most bio-diverse areas in the Southeastern United States. Preserving and protecting endangered and threatened species is required under the federal and state Endangered Species Act. The NCNHP is part of the Division of Land and Water Stewardship within the Department of Natural and Cultural Resources. This program has developed the most comprehensive database of natural resource information by combining on-the-ground surveys, GPS services, and GIS mapping technology. The boundaries are based on field surveys conducted by the NCNHP staff and other professional biologists. These boundaries are considered approximate. New Hanover County's Natural Area Inventory was created in May 2003 by Richard J. LeBlond and Gilbert S. Grant. Information in the Natural Heritage Natural Areas database, formally known as the Significant Natural Heritage Areas database, is included on a natural systems map.



Potential Wetland Areas

Wetlands are present throughout New Hanover County and it is important for wetlands to be identified in the development process so that they can be considered for preservation or utilization in project plans.

Wetland information and data for North Carolina comes from two main sources: the National Wetland Inventory (NWI) database (updated for North Carolina in 2011) from the U.S. Fish and Wildlife Service, and the North Carolina Division of Coastal Management (created in 1999).

The U.S. Fish and Wildlife Service manages the NWI database, which has produced wetland maps and wetland data since 1974. This effort focuses on creating maps for public reference as well as reporting on national wetland trends. The database provides the approximate extent of wetlands and classifies these wetlands under the Cowardin system of wetland classification. The NWI is advisory in nature and is not relied upon to establish the presence or boundary of wetlands subject to federal law, due primarily to the scope and scale at which it is conducted and the lack of sufficient field verification. The National Wetland Inventory can be found on the U.S. Fish and Wildlife Service's website at http://www.fws.gov/wetlands/NWI/Index.html.

The North Carolina Division of Coastal Management also maintains a wetland areas database, which utilizes NWI data, soil surveys, and satellite imagery. Wetland data is available on their website at *http://deq.nc.gov/about/divisions/coastal-management/coastal-management-estuarine-shorelines/wetlands.*

Additional information on wetlands can be found on the U.S. Environmental Protection Agency's website at *https://www.epa.gov/wetlands.*

Aquifer Sensitivity Areas

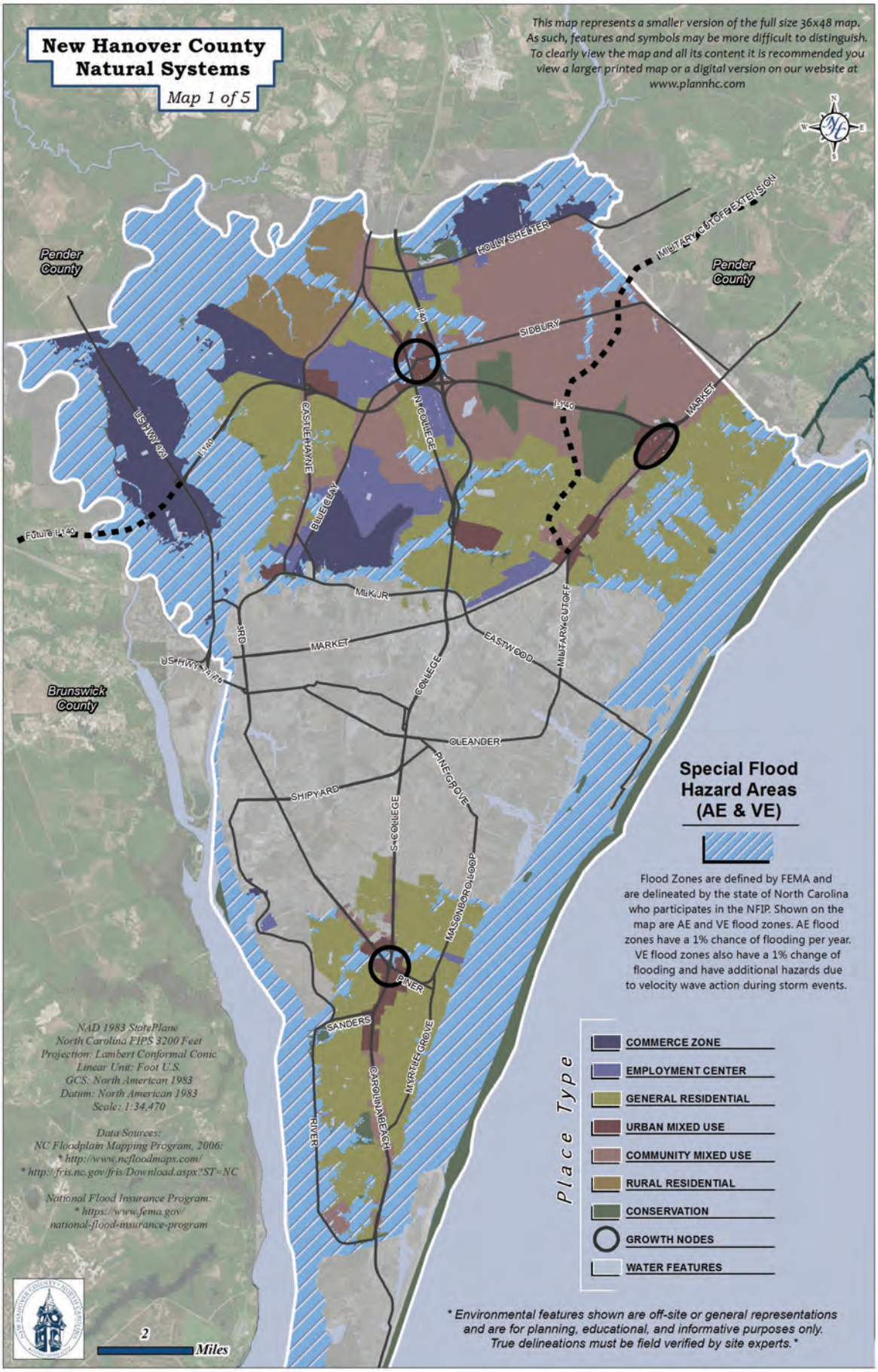
New Hanover County has two sources for clean water supply: the Cape Fear River and an aquifer system. Approximately 80% of the county's water supply comes from the river and the remaining 20% is pumped by Cape Fear Public Utility Authority (CFPUA) from the aquifer system.

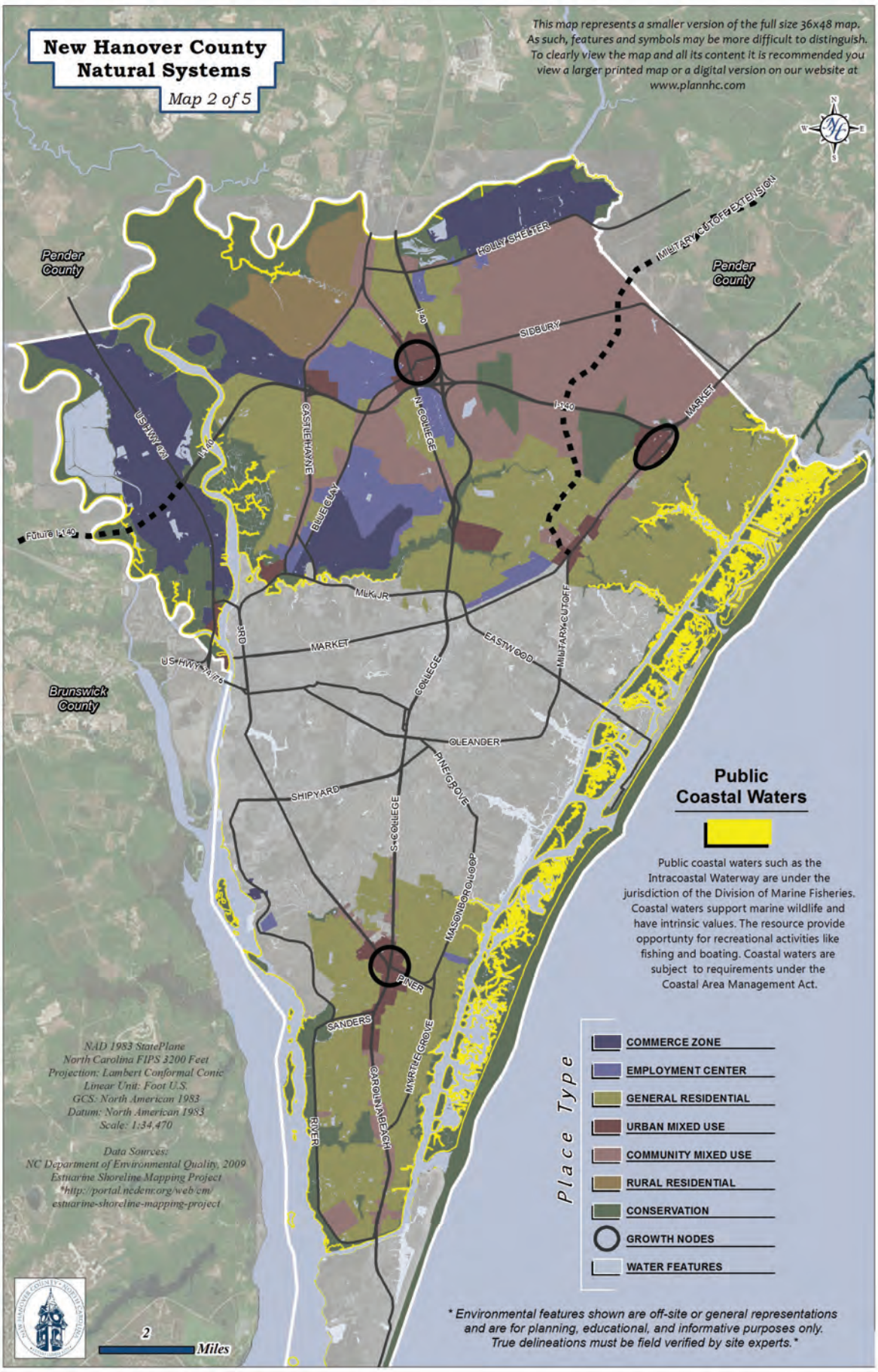
A recent US Geological Survey indicates that water flows in the lower Cape Fear River are decreasing as a result of water being drawn from the river to meet the needs of growth and development upstream. Coupled with the expected population growth and increased water demand for New Hanover County, it is reasonable to expect an increased dependence on our aquifer system over the next 25 years.

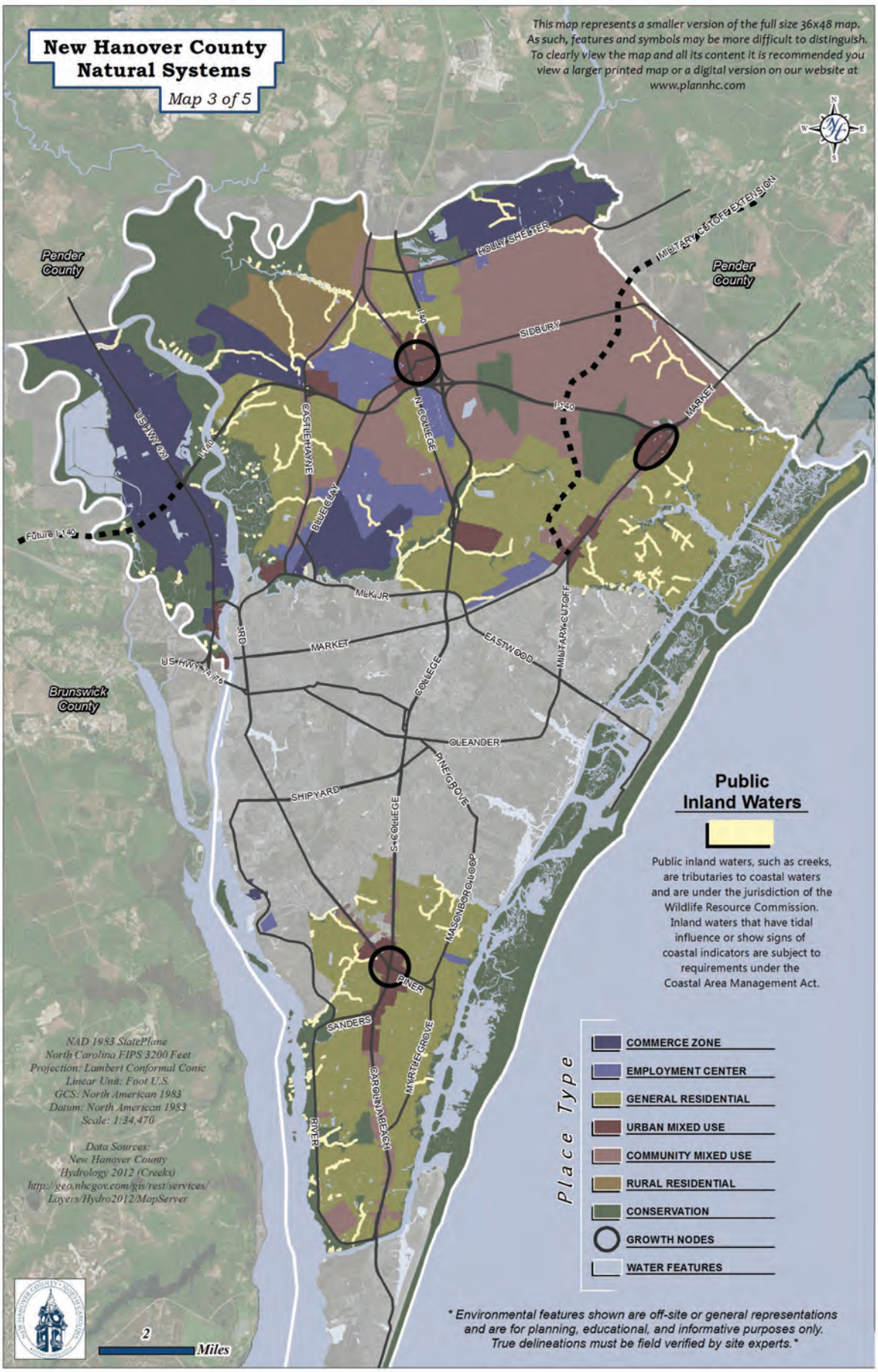
The two main areas of focus regarding the aquifer are quality, ensuring the water in the aquifer is clean, and quantity, ensuring that there is sufficient supply.

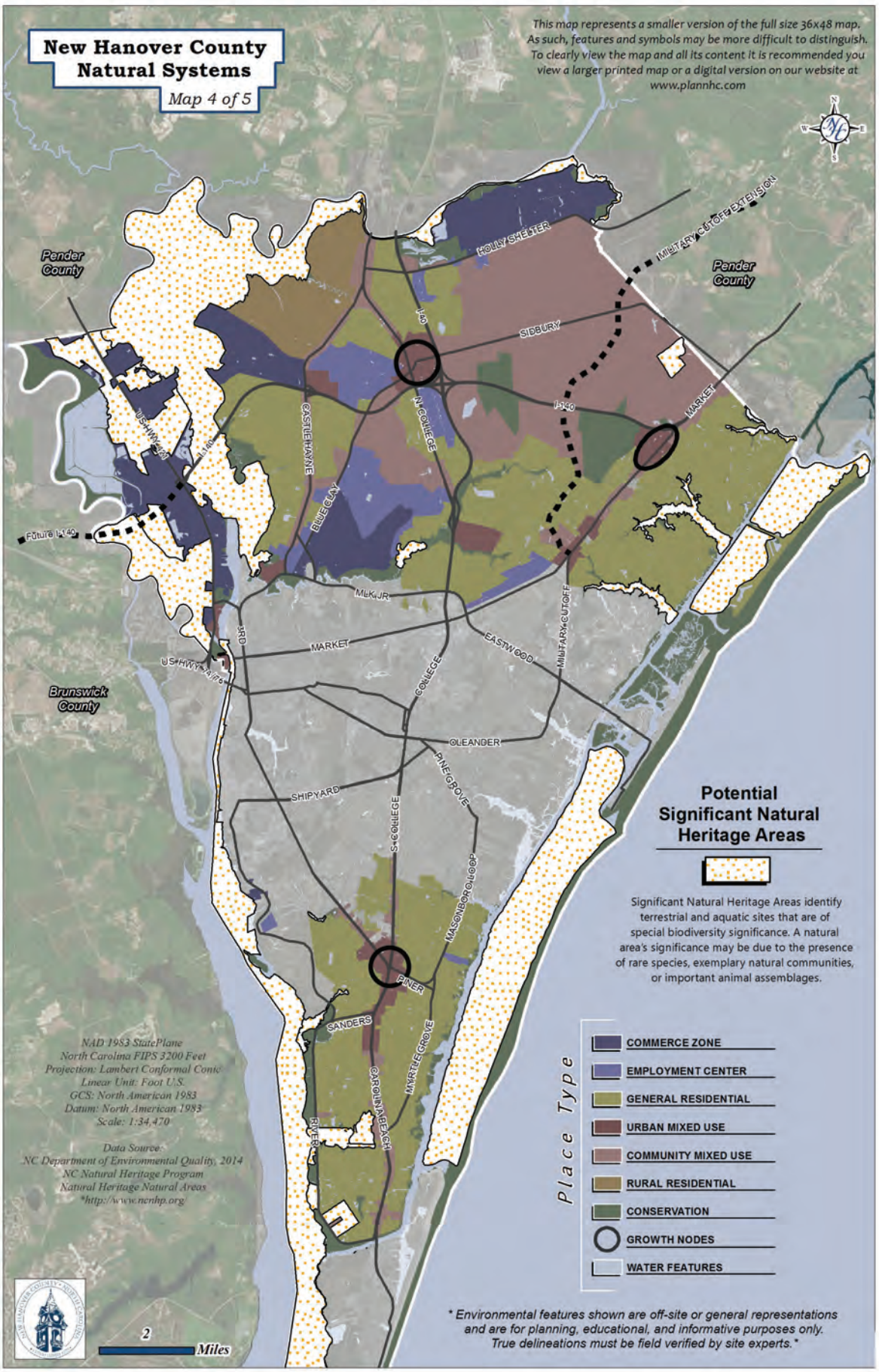
Failing septic and storage tanks and a proliferation of wells pose the biggest risk to the aquifer's water quality. Failing septic tanks may leak sewage or hazardous materials into the ground water, and the large number of wells can cause further salt water intrusion into the aquifer. The implementation strategies in Chapter Five of this report recommend the extension of public water and sewer throughout the county, and specifically in environmentally-critical areas. This eliminates the need for wells and septic tanks and it also supports the mixed-use development encouraged though out the plan. The extension of public water and sewer is further supported by eliminating the Urban Services Boundary which was part of the 2006 CAMA Land Classification Map.

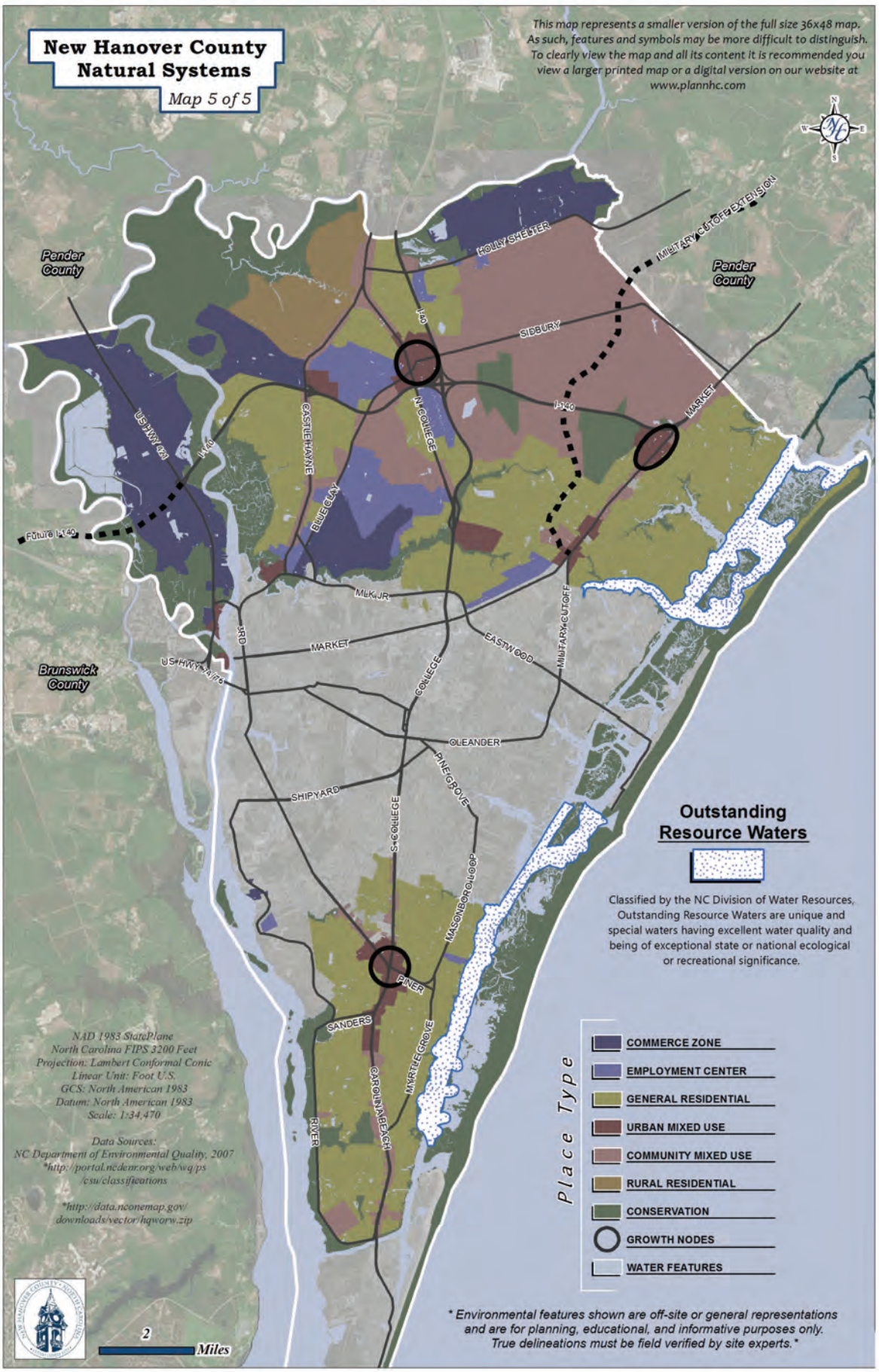
The second area of focus is related to maintaining sufficient water supply in the aquifer system to support the county's projected growth. Currently, there is not adequate information on the aquifers in New Hanover County to fully understand the water supply. A detailed study of the aquifer system would provide understanding of how the aquifer functions, the supply of water within the aquifer, and how the aquifer system can be recharged.


New Hanover County
Natural Systems
Map 1 of 5
This map represents a smaller version of the full size 36x48 map. As such, features and symbols may be more difficult to distinguish. To clearly view the map and all its content it is recommended you view a larger printed map or a digital version on our website at www.plannhc.com
Pender County
Pender County
Brunswick County
HOLLY SHELTER
MILITARY CUTOFF EXTENSION
SIDBURY
MARKET
N. COLLEGE
CASTLE HAYNE
BLUE CLAY
US HWY 421
I-140
Future I-140
MLK JR
3RD
EASTWOOD
MILITARY CUTOFF
COLLEGE
OLEANDER
PINE GROVE
SHIPYARD
MASONBORO LOOP
PINER
SANDERS
MYRTLE GROVE
CAROLINA BEACH
RIVER
Special Flood Hazard Areas (AE & VE)
Flood Zones are defined by FEMA and are delineated by the state of North Carolina who participates in the NFIP. Shown on the map are AE and VE flood zones. AE flood zones have a 1% chance of flooding per year. VE flood zones also have a 1% change of flooding and have additional hazards due to velocity wave action during storm events.
Place Type
COMMERCE ZONE
EMPLOYMENT CENTER
GENERAL RESIDENTIAL
URBAN MIXED USE
COMMUNITY MIXED USE
RURAL RESIDENTIAL
CONSERVATION
GROWTH NODES
WATER FEATURES
NAD 1983 StatePlane North Carolina FIPS 3200 Feet
Projection: Lambert Conformal Conic
Linear Unit: Foot U.S.
GCS: North American 1983
Datum: North American 1983
Scale: 1:34,470
Data Sources:
NC Floodplain Mapping Program, 2006:
* http://www.ncfloodmaps.com/
* http://fris.nc.gov/fris/Download.aspx?ST=NC
National Flood Insurance Program:
* https://www.fema.gov/national-flood-insurance-program
2
Miles
* Environmental features shown are off-site or general representations and are for planning, educational, and informative purposes only. True delineations must be field verified by site experts.*


New Hanover County
Natural Systems
Map 2 of 5
This map represents a smaller version of the full size 36x48 map. As such, features and symbols may be more difficult to distinguish. To clearly view the map and all its content it is recommended you view a larger printed map or a digital version on our website at www.plannhc.com
Pender County
Pender County
Brunswick County
HOLLY SHELTER
MILITARY CUTOFF EXTENSION
SIBBURY
I-140
MARKET
N. COLLEGE
CASTLE HAYNE
BLUE CLAY
US HWY 421
Future I-140
MLK JR
EASTWOOD
MILITARY CUTOFF
COLLEGE
GLEANDER
PINE GROVE
SHIPYARD
S. COLLEGE
MASONBORO LOOP
PINER
SANDERS
MYRTLE GROVE
CAROLINA BEACH
RIVER
Public Coastal Waters
Public coastal waters such as the Intracoastal Waterway are under the jurisdiction of the Division of Marine Fisheries. Coastal waters support marine wildlife and have intrinsic values. The resource provide opportunty for recreational activities like fishing and boating. Coastal waters are subject to requirements under the Coastal Area Management Act.
Place Type
COMMERCE ZONE
EMPLOYMENT CENTER
GENERAL RESIDENTIAL
URBAN MIXED USE
COMMUNITY MIXED USE
RURAL RESIDENTIAL
CONSERVATION
GROWTH NODES
WATER FEATURES
NAD 1983 StatePlane
North Carolina FIPS 3200 Feet
Projection: Lambert Conformal Conic
Linear Unit: Foot U.S.
GCS: North American 1983
Datum: North American 1983
Scale: 1:34,470
Data Sources:
NC Department of Environmental Quality, 2009
Estuarine Shoreline Mapping Project
*http://portal.ncdenr.org/web/cm/estuarine-shoreline-mapping-project
2
Miles
* Environmental features shown are off-site or general representations and are for planning, educational, and informative purposes only. True delineations must be field verified by site experts.*


New Hanover County
Natural Systems
Map 3 of 5
This map represents a smaller version of the full size 36x48 map. As such, features and symbols may be more difficult to distinguish. To clearly view the map and all its content it is recommended you view a larger printed map or a digital version on our website at www.plannhc.com
Pender County
Pender County
Brunswick County
HOLLY SHELTER
MILITARY CUTOFF EXTENSION
SIBBURY
I-140
MARKET
N. COLLEGE
CASTLEHAYNE
BLUE CLAY
US HWY 421
Future I-140
MLK JR
3RD
MARKET
US HWY 17/76
COLLEGE
EASTWOOD
MILITARY CUTOFF
OLEANDER
PINE GROVE
SHIPYARD
S. COLLEGE
MASONBORO LOOP
PINER
SANDERS
MYRTLE GROVE
CAROLINA BEACH
RIVER
Public
Inland Waters
Public inland waters, such as creeks, are tributaries to coastal waters and are under the jurisdiction of the Wildlife Resource Commission. Inland waters that have tidal influence or show signs of coastal indicators are subject to requirements under the Coastal Area Management Act.
Place Type
COMMERCE ZONE
EMPLOYMENT CENTER
GENERAL RESIDENTIAL
URBAN MIXED USE
COMMUNITY MIXED USE
RURAL RESIDENTIAL
CONSERVATION
GROWTH NODES
WATER FEATURES
NAD 1983 StatePlane
North Carolina FIPS 3200 Feet
Projection: Lambert Conformal Conic
Linear Unit: Foot U.S.
GCS: North American 1983
Datum: North American 1983
Scale: 1:34,470
Data Sources:
New Hanover County
Hydrology 2012 (Creeks)
http://geo.nhcgov.com/gis/rest/services/Layers/Hydro2012/MapServer
2
Miles
* Environmental features shown are off-site or general representations and are for planning, educational, and informative purposes only. True delineations must be field verified by site experts.*


New Hanover County
Natural Systems
Map 4 of 5
This map represents a smaller version of the full size 36x48 map. As such, features and symbols may be more difficult to distinguish. To clearly view the map and all its content it is recommended you view a larger printed map or a digital version on our website at www.plannhc.com
Pender County
Pender County
Brunswick County
HOLLY SHELTER
MILITARY CUTOFF EXTENSION
SIBBURY
I-140
MARKET
N. COLLEGE
CASTLE HAYNE
BLUE CLAY
US HWY 17
Future I-140
MLK JR
3RD
EASTWOOD
MILITARY CUTOFF
COLLEGE
GLEANDER
PINE GROVE
SHIPYARD
S. COLLEGE
MASONBORO LOOP
PINER
SANDERS
MYRTLE GROVE
CAROLINA BEACH
RIVER
Potential Significant Natural Heritage Areas
Significant Natural Heritage Areas identify terrestrial and aquatic sites that are of special biodiversity significance. A natural area's significance may be due to the presence of rare species, exemplary natural communities, or important animal assemblages.
Place Type
COMMERCE ZONE
EMPLOYMENT CENTER
GENERAL RESIDENTIAL
URBAN MIXED USE
COMMUNITY MIXED USE
RURAL RESIDENTIAL
CONSERVATION
GROWTH NODES
WATER FEATURES
NAD 1983 StatePlane
North Carolina FIPS 3200 Feet
Projection: Lambert Conformal Conic
Linear Unit: Foot U.S.
GCS: North American 1983
Datum: North American 1983
Scale: 1:34,470
Data Source:
NC Department of Environmental Quality, 2014
NC Natural Heritage Program
Natural Heritage Natural Areas
*http://www.ncnhp.org/
2
Miles
* Environmental features shown are off-site or general representations and are for planning, educational, and informative purposes only. True delineations must be field verified by site experts.*


New Hanover County
Natural Systems
Map 5 of 5
This map represents a smaller version of the full size 36x48 map. As such, features and symbols may be more difficult to distinguish. To clearly view the map and all its content it is recommended you view a larger printed map or a digital version on our website at www.plannhc.com
Pender County
Pender County
Brunswick County
HOLLY SHELTER
MILITARY CUTOFF EXTENSION
SIBBURY
I-140
MARKET
N. COLLEGE
CASTLE HAYNE
BLUE CLAY
US HWY 421
Future I-140
MLK JR
3RD
EASTWOOD
MILITARY CUTOFF
US HWY 17/76
COLLEGE
OLEANDER
PINE GROVE
SHIPYARD
S. COLLEGE
MASONBORO LOOP
PINER
SANDERS
MYRTLE GROVE
CAROLINA BEACH
RIVER
Outstanding Resource Waters
Classified by the NC Division of Water Resources, Outstanding Resource Waters are unique and special waters having excellent water quality and being of exceptional state or national ecological or recreational significance.
Place Type
COMMERCE ZONE
EMPLOYMENT CENTER
GENERAL RESIDENTIAL
URBAN MIXED USE
COMMUNITY MIXED USE
RURAL RESIDENTIAL
CONSERVATION
GROWTH NODES
WATER FEATURES
NAD 1983 StatePlane
North Carolina FIPS 3200 Feet
Projection: Lambert Conformal Conic
Linear Unit: Foot U.S.
GCS: North American 1983
Datum: North American 1983
Scale: 1:34,470
Data Sources:
NC Department of Environmental Quality, 2007
*http://portal.ncdenr.org/web/wq/ps/csu/classifications
*http://data.nconemap.gov/downloads/vector/hqworw.zip
2
Miles
* Environmental features shown are off-site or general representations and are for planning, educational, and informative purposes only. True delineations must be field verified by site experts.*

NEW HANOVER COUNTY COMPREHENSIVE PLAN

CHAPTER 5: BUILDING THE FUTURE

CONTENTS:

Implementation Action Plan

Implementation Guidelines

One of the most important elements of a Comprehensive Plan is the strategy developed to implement the plan. New Hanover County is committed to ensuring the work of so many citizens is implemented in order to make our community an even better place to live and work.

Throughout the planning process, much has been learned about the way in which the citizens of New Hanover County would like the community to grow over the next twenty five years. Twenty one goals and implementation strategies were established in Chapter 3: Framing the Policy. These goals will drive the development of the next generation and ultimately shape our future.

The Comprehensive Plan therefore, is not the end of the process, but rather the beginning of a long intensive series of actions to create a better community that truly represents the citizens of New Hanover County. This vision; generated through many citizen participation activities, refined by the appointed Citizens Advisory Committee, and vetted through the public hearing process at the Planning Board and Board of Commissioners level; results in specific goals, implementation strategies, Place Types of development and a new Future Land Use Map. To ensure implementation; a two-pronged approach has been created to clearly outline initiatives and guidelines for future development.

One of the major concerns staff heard from the community during this process was the desire to overhaul the 1969 Zoning Ordinance into a Unified Development Ordinance; resulting in predictability and clarity for the development community, citizens, and County staff. Many updates have occurred over the years, but a successful overhaul has not occurred. With this in mind, staff created a two-pronged approach to implementing the Comprehensive Plan. Below outlines how each established goal is broken down into Implementation Initiatives (programs or projects) and Implementation Guidelines (a framework for a new Unified Development Ordinance and a guide for development decisions).

ANNUAL ACTION PLAN

Each year, the County Manager presents to the Board of Commissioners a budget based on the Board of Commissioners' priorities and the New Hanover County's Strategic Plan. Staff has utilized the Goals and Implementation Strategies from Chapter 3 to create an annual "Plan NHC Action Plan" with Short Term, Mid Term, Long Term and Ongoing Efforts tied directly to the three overarching goals of the New Hanover County Strategic Plan; Intelligent Growth and Economic Development, Superior Education and Workforce, and Superior Public Health and Public Safety. In coordination with the adopted New Hanover County budget, staff will review the Implementation Initiatives as they relate to the overarching goals of Plan NHC and the Strategic Plan to monitor the implementation of the plan. Items that have been completed will be removed from the Plan NHC Action Plan and new items will be added based on need and available funding. This Action Plan will become an opportunity for staff to work with the Board of Commissioners and the Executive Leadership Team to ensure consistency with New Hanover County's Strategic Plan and Capital Improvement Plan.

2016 Plan NHC Action Plan

2016 Plan NHC Action Plan Strategies	Short Term Initiatives	Mid Term Initiatives	Long Term Initiatives	Ongoing Efforts
Intelligent Growth and Economic Development	• Update the Zoning Ordinance • Coordinate with CFPUA on Capital Improvement Plan and Infrastructure extensions. • Create an Housing Affordability task force. • Develop Public Private Partnerships to maximize public investment. • Parks & Gardens Master Plan	• Partnerships and funding for Land Bank (Environmentally Sensitive Areas) • Performance Criteria for connectivity. • Streamline permitting procedures for workforce housing.	• Improve freight and passenger rail service.	• Create small area plans. • Review all development proposals to assure consistency with the County's adopted plans and policies. • Support programs to encourage preservation through development.
Superior Education and Workforce	• Create a round table to support targeted industry work force. • Coordinate efforts on an incentive policy for target industries. • Partner with WRAR/ WBD/ RCA on a real estate portfolio of industrial, commercial, and office development sites.	• Develop a liaison program between the county and businesses considering investment.	• Provide free high-speed internet through NHC. • Work with Econ. Dev official to tour and familiarize site selectors with NHC. • Work with schools to align curricula with entrepreneurial skills.	• Identify partnerships, grant opportunities, and a coordinated strategy for attracting new companies and organizations.
Superior Public Health and Public Safety	• Parks and Gardens Master Plan • Develop a mobile household hazardous waste and electronics recycling program • Develop a construction debris recycling program • Add Sherriff's representative to the TRC Committee. • Explore groundwater protection and surface water issues for long term water supply planning.	• Neighborhood design incentives to create community spaces. • Identify watershed-specific indicators of water quality degradation and establish baseline measures.	• Work to ensure public water and sewer for all NHC residents. • Create an inventory and study of retrofit opportunities to reduce water quality impacts.	• Support Neighborhood watch programs. • Ensure adequate response times to emergencies. • Support programs to encourage bike/walk to school. • Partner with organizations that support healthy local foods. • Code Enforcement to emphasize housing quality and preservation. • Monitor the status of air quality to ensure attainment.

As a part of our implementation initiatives, a new Unified Development Ordinance has been recommended and funds have been approved to begin this project immediately following the completion of the Comprehensive Plan. Because the current Zoning Ordinance has many inconsistencies with the established vision of the Comprehensive Plan, a detailed set of Implementation Guidelines has been crafted based on the work of the Citizens Advisory Committee and categorized according to the adopted New Hanover County Strategic Plan. As future development occurs, it is important to provide clarity and predictability to the development community, the citizens of New Hanover County, staff, the Planning Board and the Board of Commissioners. These Implementation Guidelines are intended to provide guidance on the ways in which development can meet the goals and implementation strategies outlined in Chapter 3: Framing the Policy. It is important to note that all local and state standards must be met during the permitting of any project in New Hanover County and the purpose of these guidelines is not to supersede any local or state ordinances or regulations.

STRATEGIC PLAN FOCUS AREA: INTELLIGENT GROWTH AND ECONOMIC DEVELOPMENT

Strategic Plan Objective: Promote a strong diverse economy and high quality growth

Goal I: Support business success.

Desired Outcome: A vibrant economy for New Hanover County based on business success.

Implementation Strategies	Implementation Guidelines
A. Streamline permitting process for targeted industries.	***I.A.1*** *Encourage target industries in Employment Centers, Commerce Zones, and Growth Nodes.*
B. Advocate for and develop a realistic and sustainable incentive policy for New Hanover County.	***Guidelines are not part of this strategy.***
C. Align county zoning ordinances to encourage targeted business in appropriate areas.	***I.C.1*** *Develop performance controls to address odor, noise, lighting, and other impacts on surrounding uses.* ***I.C.2*** *Develop strategies for encouraging office, retail, and other light intensity nonresidential uses within existing residential areas to provide community level service.*
D. Increase communications with small business by creating a resource link on the county webpage for new business and an ongoing process to shepherd new businesses through the development process.	***I.D.1*** *Explore updating existing zoning regulations to assist in streamlining the commercial review process.*
E. Support provisions for providing public free, high-speed internet access throughout New Hanover County.	***Guidelines are not part of this strategy.***

Goal II: Support workforce development and economic prosperity for all.

Desired Outcome: Retain and attract businesses and companies with workforce talent that is aligned with our targeted industries.

Implementation Strategies	Implementation Guidelines
A. Partner with educational facilities to provide opportunities for training in targeted industries.	***Guidelines are not part of this strategy.***
B. Continue to enhance educational programs, facilities, and offerings.	***II.B.1*** *Encourage clustering of educational facilities and employment centers in the built environment.*

Strategic Plan Objective: Create and support a vibrant and culturally diverse community that encourages private investment

Goal III: Promote fiscally responsible growth.

Desired Outcome: Growth patterns that achieve efficient provisions of services and equitable distribution of costs between the public and private sector.

Implementation Strategies	Implementation Guidelines
A. Coordinate infrastructure from a regional perspective including water, sewer, and transportation.	***III.A.1*** *Encourage the expansion of water and sewer infrastructure to provide orderly and efficient development consistent with CFPUA's plans and policies.* ***III.A.2*** *Provide connectivity between transportation modes, in growth nodes outlined on the Future Land Use Map, and within new development where practical.* ***III.A.3*** *Ensure all traffic calming devices and gated areas accommodate emergency service delivery and interconnectivity.* ***III.A.4*** *Encourage street connections to adjoining undeveloped property and connect existing streets to improve accessibility and safety to development sites.*
B. Coordinate regional facilities such as community colleges and workforce training as they support targeted industries (as identified in County approved Economic Development strategies).	***III.B.1*** *Encourage the development of educational facilities and transportation infrastructure in Employment Centers and Commerce Zones as identified on the Future Land Use Map.*
C. Encourage infill development on vacant or blighted pieces of existing communities by providing incentives such as grants, but not limited to; density bonuses, and/or a reduction of parking requirements and/or setbacks.	***III.C.1*** *Encourage a mixture of uses that create opportunities for shared parking and setback requirements to serve the overall community.*
D. Encourage the redevelopment of single uses into mixed-use developments where appropriate.	***III.D.1*** *Encourage incremental transformation of single uses into compatible mixed use centers that are compatible with the surrounding neighborhoods.*
E. Encourage redevelopment of aging corridors to support and strengthen adjacent neighborhoods.	***III.E.1*** *Encourage revitalization and redevelopment of blighted infill sites into compatible mixed uses that enhance nearby residential areas through incentives such as density bonuses, shared parking, and/or innovative buffering.*
F. Encourage development where existing infrastructure is available.	***III.F.1*** *Encourage increased density in Urban Mixed Use areas within close proximity of City of Wilmington jurisdiction and Growth Nodes as identified on the Future Land Use Map (Porter's Neck/Kirkland, Monkey Junction, and I-40/I-140 Interchange) in an effort to create densities that can support future infrastructure.*

Goal IV: Use public infrastructure improvements to leverage private investments.	
Desired Outcome: Coordinated efforts of public and private investment to maximize improvements.	
Implementation Strategies	**Implementation Guidelines**
A. Work with CFPUA on a targeted long range plan for water and sewer infrastructure.	***Guidelines are not part of this strategy.***
B. Work with MPO on a targeted long range plan for transportation infrastructure.	***IV.B.1*** *Coordinate with NC DOT, WMPO, and property owners to complete a collector street network plan for unincorporated areas.* ***IV.B.2*** *Encourage driveway standards to promote better traffic flow in the county.* ***IV.B.3*** *Continue to require street connectivity and discourage cul-de-sacs and gated communities that impede connectivity and emergency response.*
C. Consider revising zoning ordinances to support mixed uses and holistic approach to development.	***IV.C.1*** *Encourage new development to consider allocation of space for new community services such as fire stations, schools, libraries, and museums.* ***IV.C.2*** *Encourage public investments to consider locating near existing communities.*
D. Consider strategies to encourage increased private sector investment in the provision of infrastructure.	***Guidelines are not part of this strategy.***

Goal V: Revitalize commercial corridors and blighted areas through infill and redevelopment.	
Desired Outcome: Strong existing neighborhoods and corridors where the highest and best uses are promoted in an effort to increase economic revitalization.	
Implementation Strategies	**Implementation Guidelines**
A. Implement a program to identify and dispose of vacant or abandoned buildings that cannot be redeveloped.	***Guidelines are not part of this strategy.***
B. Facilitate programs to encourage reuse, rehabilitation, and redevelopment of existing residential, commercial, industrial buildings and properties where appropriate.	***V.B.1*** *Incorporate reuse and rehabilitation of existing structures when feasible and cost effective in new developments.* ***V.B.2*** *Continue to maintain standards for landscaping and tree protection for parking lots, sidewalks, and in street rights-of-way for both public and private projects.*

Goal VI: Conserve and enhance our unique sense of place to attract individuals, companies and organizations.	
Desired Outcome: Enhance our reputation as a desirable community to live and operate a business based on New Hanover County's rich history, natural environment, and unique features.	
Implementation Strategies	**Implementation Guidelines**
A. Focus in the public spaces and opportunities for formal and informal social gathering places. Increase, enhance, and manage public access to water and natural resources.	***VI.A.1*** *Encourage the development of public shorefront access areas and boat access areas that do not adversely affect estuarine resources or public trust waters.* ***VI.A.2*** *Encourage the development of public spaces in mixed use developments through public, private partnerships.* ***VI.A.3*** *Allow uses of estuarine and public trust waters that provide benefits to the public and satisfy riparian access needs of private property owners while encouraging shared boating facilities instead of individual boating docks.* ***VI.A.4*** *Consider including Form Based Code elements in development regulations to enhance or create community focal points.*
B. Consider creating a strong place-based economic development strategy.	***Guidelines are not part of this strategy.***
C. Make a case for sustainable funding sources to improve the County's economic development infrastructure and identify opportunities to leverage the funds effectively.	***Guidelines are not part of this strategy.***
D. Encourage conservation and enhancement of the unique environment, character and history of the county.	***VI.D.1*** *Update New Hanover County inventory of historic places.* ***VI.D.2*** *Encourage preservation and conservation of historic sites identified in the county's historic sites survey.* ***VI.D.3*** *Encourage preserving the character of the area's residential neighborhoods and quality of life by supporting development that is consistent with adopted Small Area Plans and enhances existing land uses.*

Strategic Plan Objective: Support a planned environment that enhances community and preserves and protects our natural resources.

Goal VII: Promote place-based economic development in the region that is tied to our natural resources.

Desired Outcome: Coordinate economic development efforts with New Hanover County's naturally bio-diverse region and unique features.

Implementation Strategies	Implementation Guidelines
A. Create and promote a network of greenways, blueways, and trails highlighting environmental assets.	***VII.A.1*** *Identify the environmental assets and locations where greenways, blueways, public access, and trails would enhance economic development while not diminishing the resource.* ***VII.A.2*** *Provide for the protection and development of public shorefront and boat access areas.*
B. Coordinate and partner with various agencies to develop future public water access points.	***Guidelines are not part of this strategy.***
C. Revitalize waterfront parks and public spaces to encourage opportunities for formal and informal social gatherings.	***Guidelines are not part of this strategy.***
D. Preserve, conserve, and/or maintain coastal infrastructure features including natural and man-made; which are critical to our quality of life, economy, and coastal environment.	***VII.D.1*** *Development or expansion of marinas (as defined herein) in primary nursery areas, outstanding resource waters, or open shell fishing waters may occur when the following conditions exists:* • *There exists a previously permitted channel which was constructed or maintained under permits issued by the State or Federal Government. If a natural channel was in use, or if a human-made channel was constructed before permitting was necessary, there shall be clear evidence that the channel was continuously used for a specific purpose; and* • *Excavated material can be removed and placed in an approved disposal area without significantly impacting adjacent nursery areas and beds of submerged aquatic vegetation; and* • *The original depth and width of a human-made channel or natural channel will not be increased to allow a new or expanded use of the channel.* ***VII.D.2*** *Develop guidelines and standards for community boating facilities and other water dependent uses through updated ordinances.* (Marina: Any publically or privately owned dock, basin, or wet storage facility constructed to accommodate more than 10 boats and providing any of the following services: permanent or transient docking spaces, dry storage fueling facilities, haul out facilities, or repair services. Excluded from this definition are boat ramp facilities allow access only, temporary docking that includes none of the previous listed services, and community boating facilities.)

Goal VIII: Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities.	
Desired Outcome: A community with a mixture of land uses that allows for individuals to perform daily tasks without the use of an automobile. A community where individuals can safely walk, bike, and access transit.	
Implementation Strategies	**Implementation Guidelines**
A. Review existing design standards and apply best practices to ensure transportation infrastructure is safe for all multimodal users.	***VIII.A.1*** *Encourage bicycle friendly design treatments such as wide outside lanes, signage, dedicated routes, bike lanes, and shared use paths into new developments.* ***VIII.A.2*** *Encourage "complete streets" consistent with NCDOT complete streets design guidelines and adopted plans.*
B. Educate and promote all users to safely share the transportation infrastructure.	***Guidelines are not part of this strategy.***
C. Work with school district and DOT to allow and encourage students to walk to school safely.	***VIII.C.1*** *Continue to require sidewalks in new development and redevelopment in accordance with the recommended Place Type descriptions.*
D. Review existing parking lot design standards to determine if changes are needed to encourage safety for all users.	***VIII.D.1*** *Review, and if needed, consider updated performance design standards in new parking lot design to ensure driver, pedestrian and bicyclists' safety.* ***VIII.D.2*** *Encourage/permit shared parking between compatible land uses to reduce development costs, impervious surfaces, and reduce/minimize access locations on roadways.*
E. Encourage provision of transit supportive land uses and infrastructure where appropriate.	***VIII.E.1*** Encourage *pedestrian, bicycle, and public transportation circulation and infrastructure considerations (such as cross walks, bike lanes, shelters, pedestrian islands, and others that promote safe havens for alternative transportation).* ***VIII.E.2*** *Concentrate development in nodes and high growth areas depicted on the Future Land Use Map to ultimately produce densities that can support multi modal transportation and Transit Oriented Development.* ***VIII.E.3*** *Provide alternatives to automobile transportation by encouraging new development, redevelopment, and transportation improvements to include provisions for a network of bicycle and pedestrian facilities, including pedestrian causeways, bridges, and crossings on collector streets and major arterials.*

Goal IX: Promote environmentally responsible growth.	
Desired Outcome: Development that accommodates population growth while minimizing negative impacts on natural resources.	
Implementation Strategies	**Implementation Guidelines**
A. Promote a mixture of uses where appropriate in an effort to cluster development and minimize impacts on natural resources.	***IX.A.1*** *Encourage mixed use development that rewards development practices which exceed minimum standards.* ***IX.A.2*** *Establish open space criteria that encourages preservation of natural areas, buffers, trees, and wildlife habitats, while working in harmony with the built environment.* ***IX.A.3*** *As part of the development ordinance, include mixed use district guidelines that achieve the intent of the Community and Urban Mixed Use place types and are consistent with City of Wilmington districts.*
B. Adopt and implement a green infrastructure plan that identifies a network of natural lands and open spaces and provides ecosystem conservation as well as alternative transportation modes through trails and greenways.	***IX.B.1*** *Encourage best management practices that enhance development and minimize adverse environmental impacts of the built environment.* ***IX.B.2*** *Use incentives to create flexible guidelines as well as outreach and education to encourage the use of native vegetation in landscaping and discourage invasive species.* ***IX.B.3*** *Identify and promote access opportunities to existing open space and incentivize these spaces for active and passive recreation.* ***IX.B.4*** *To enhance recreation, conservation, and transportation infrastructure, consider prioritizing connections of open space, parks and greenways as identified in the Parks Master Plan.*
C. Partner with regional governmental agencies and nongovernmental organization to acquire and protect environmentally sensitive land (eg. Establish a regional land bank).	***IX.C.1*** *Provide opportunities to legally transfer density and impervious surfaces out of areas where exceptional resources may be impacted.* ***IX.C.2*** *Encourage the use of best management practices through education and incentives to protect environmentally sensitive areas.* ***IX.C.3*** *Continue promotion of New Hanover County as a "no discharge zone" and promote the Clean Marina Program.* ***IX.C.4*** *Prohibit floating home development where pump-out facilities or sewer connections are not available in order to protect public trust and estuarine areas and to minimize risk of loss to persons and property.*
D. Strengthen and direct development toward existing communities through encouraging infill and redevelopment.	***IX.D.1*** *Encourage incremental inclusion of mixed uses into areas that are single use dominated where the uses are compatible with the surrounding neighborhoods.* ***IX.D.2*** *Encourage infill development to maximize use of previously developed sites for highest and best use.*

Goal X: Conserve environmentally critical areas.	
Desired Outcome: Utilize environmentally critical areas for outdoor recreation, healthy watersheds, and maintenance of critical habitats.	
Implementation Strategies	**Implementation Guidelines**
A. Partner with governmental and nongovernmental organizations to acquire and protect environmentally sensitive areas.	***X.A.1*** *Encourage development patterns that preserve natural areas, buffers, and significant trees.* ***X.A.2*** *Ensure the protection and preservation of undeveloped barrier and estuarine system island by purchase or dedication in order to restrict development, support research, and encourage passive recreation as their primary uses.*
B. Discourage development in wetlands, flood plain, and other flood prone areas.	***X.B.1*** *Encourage connection to public water and sewer in environmentally sensitive areas to minimize potential contamination from failing septic systems.* ***X.B.2*** *Encourage lower density development and/or alternatives to development (ie. acquisition through clean water trust funds and grants) in ocean erodible areas, inlet hazard areas, high hazard flood areas, coastal and federally regulated wetlands.* ***X.B.3*** *Encourage lower density development and/or alternatives to development (ie. acquisition through clean water trust funds and grants), and minimal impervious surface coverage within the 100-year floodplain (1% annual chance floodplain). The following applies:* • *Development projects may be allowed within the floodplain where adverse impacts to the estuarine system can be shown to be negligible.* • *Low intensity uses on a site, such as open space and passive recreation, may be appropriate in the floodplain.* • *Projects should comply with hierarchical principles of impact avoidance, minimization, and mitigation for unavoidable impacts.* • *Evaluate the need to develop standards for the protection of environmentally significant areas during development and redevelopment.* ***X.B.4*** *Encourage preservation of existing natural wetlands and constructed wetlands as a stormwater mitigation technique where practical.* ***X.B.5*** *Encourage preservation of existing natural buffer areas for conservation resources to preserve their natural functions.* ***X.B.6*** *Incentivize, through the development process, the use of Best Management Practices such as Low Impact Development where possible to ensure environmentally critical areas are conserved.* ***X.B.7*** *Encourage the use of native vegetation in landscaping.*
C. Educate the public on the value of protecting ecosystems.	***Guidelines are not part of this strategy.***

Goal XI: Conserve open space for long term agricultural and rural uses.	
Desired Outcome: Provide opportunities for locally sourced food and contribute to the overall rural character of locations within the County defined on the Future Land Use Map.	
Implementation Strategies	**Implementation Guidelines**
A. Allow developments to have urban farms to satisfy open space requirements.	***XI.A.1*** *Incentivize the inclusion of urban farms and community gardens as amenities or open space in development proposals.* ***XI.A.2*** *Identify opportunities for preservation of open space in new development projects.*
B. Encourage voluntary preservation of agricultural land.	***XI.B.1*** *Support voluntary preservation of agricultural lands in the portions of the County where in demand.*

Goal XII: Link major natural habitats.	
Desired Outcome: Connected open space and recreational opportunities that promotes biodiversity and provides continuity for wildlife through corridors.	
Implementation Strategies	**Implementation Guidelines**
A. Identify and prioritize natural areas for acquisition, preservation, and conservation to promote linkage opportunities.	***XII.A.1*** *Encourage the provision of open space that protects our natural environment and wildlife habitats, and provides educational and recreational opportunities.*
B. Consider developing a conservation land acquisition strategy.	***Guidelines are not part of this strategy.***
C. Review and update incentives for development to dedicate land and or easements to achieve habitat linkages.	***XII.C.1*** *Encourage new developments to work together on connecting open spaces in a manner that creates efficient and cohesive natural areas in an effort to provide greater benefit.*

Goal XIII: Preserve and protect water quality and supply.	
Desired Outcome: Accommodating anticipated growth in a manner that is sustainable to New Hanover County's water supply and water quality.	
Implementation Strategies	**Implementation Guidelines**
A. Continue to enhance a regional water quality program to include ocean, river and estuarine water quality monitoring in cooperation with UNCW and others.	***XIII.A.1*** *Continue efforts to preserve and restore shell fishing to SA waters and restore the water quality of non-supporting surface waters to levels necessary to support their use designations.*
B. Continue to identify watershed specific indicators of water quality degradation, establish baseline measures, and establish watershed development practices to achieve goals.	***XIII.B.1*** *Dredging activities in Primary Nursery Areas (PNA), Outstanding Resource Waters (ORW), and Shell fishing Waters (SA), should be avoided except for the purpose of scientific research, projects designed for the purpose of protecting and enhancing water quality, and where supported by sound scientific and technical knowledge. Limited exceptions may be allowed for the urban waterfront and Wilmington's ports, consistent with the goals and objectives of the Cape Fear River Corridor Plan (1997), the Wilmington Vision 2020 Plan (2004), and other adopted plans and for inlet management projects as permitted by the U.S. Army Corps of Engineers. Maintenance dredging may occur when the following conditions exists:* • *There exists a previously permitted channel which was constructed or maintained under permits issued by the State or Federal Government. If a natural channel was in use, or if a human-made channel was constructed before permitting was necessary, there shall be clear evidence that the channel was continuously used for a specific purpose; and* • *Excavated material can be removed and placed in an approved disposal area without significantly impacting adjacent nursery areas and beds of submerged aquatic vegetation; and* *The original depth and width of a human-made channel or natural channel will not be increased to allow a new or expanded use of the channel.*
C. Consider establishing water quality improvement goals for the County.	***Guidelines are not part of this strategy.***
D. Identify and prioritize water quality improvement projects, including wetland and stream restorations, which will improve water quality.	***Guidelines are not part of this strategy.***
E. Identify and pursue funding sources for priority projects.	***Guidelines are not part of this strategy.***
F. Explore the value and benefits of reestablishing the Watershed Management Advisory Board.	***Guidelines are not part of this strategy.***
G. Continue to develop drainage systems and design standards that reflect the natural carrying capacity of the watershed.	***XIII.G.1*** *Encourage stormwater management systems that mimic the predevelopment hydrology of the site.* ***XIII.G.2*** *Continue to ensure drainage from land use activities has rate of flow and volume characteristics as near to predevelopment conditions as possible.*
H. Continue to participate in the development of state standards and advance the adoption and implementation of local best management practices to ensure the retention, acquisition and management of natural vegetation and riparian buffers to preserve, maintain and protect water quality.	***XIII.H.1*** *Encourage the retention, acquisition, and management of natural vegetative buffers to preserve, maintain, and protect water quality.*

I. Continue to participate in the development of statewide regulation of subdivision design standards and advance the adoption and implementation of local best management practices to protect and improve water quality in sensitive areas.	***Guidelines are not part of this strategy.***
J. Continue to develop and update educational and other strategies to deal with point and non-point source impacts on water quality.	***XIII.J.1*** *Encourage subdivision design that protects and improves water quality.*
K. Identify, evaluate, and prioritize an inventory of retrofit opportunities to reduce water quality impacts from stormwater runoff on receiving waters.	***Guidelines are not part of this strategy.***
L. Identify water specific sources of pollutants to help direct protection and improvement measures.	***XIII.L.1*** *Protect surface water quality by prohibiting new and eliminating existing collection systems that directly discharge storm water to surface waters.* ***XIII.L.2*** *Ensure that stormwater runoff from roadways does not directly discharge to surface waters.*
M. Promote expansion of water and sewer system to protect and enhance water quality.	***Guidelines are not part of this strategy.***
N. Consider establishing a groundwater and aquifer protection ordinance.	***XIII.N.1*** *Explore methods to protect groundwater aquifers.* ***XIII.N.2*** *Research and develop appropriate performance metrics for uses that may have adverse impacts on ground water aquifers.*
O. Consider removing barriers in codes/ordinances that hinder and prohibit low impact development.	***XIII.O.1*** *Encourage low impact development and other best management practices.*

STRATEGIC PLAN FOCUS AREA: SUPERIOR EDUCATION AND WORKFORCE

Strategic Plan Objective: Prepare all students to be successful in a 21st century world

Goal XIV: Actively promote high quality education and diverse cultural opportunities for New Hanover County residents and visitors.

Desired Outcome: High quality education and diverse opportunities that sustain the economic vitality of our community and enrich the lives of current and future residents.

Implementation Strategies	Implementation Guidelines
A. Work with New Hanover County Public Schools as well as community stakeholders and institutions to support high quality pre-K, primary, and secondary educational opportunities to meet current and future needs of County residents.	***XIV.A.1*** *Encourage schools to locate in areas where they provide the maximum benefit to adjoining neighborhoods.* ***XIV.A.2*** *Plan and locate schools to allow for future expansion and to ensure better and shared use of the facilities and campus.*
B. Form diverse partnerships to maximize utilization and improve access to recreational and cultural opportunities and assets for New Hanover County residents and visitors.	***XIV.B.1*** *Where development projects include protected cultural resources, encourage promotion of the resource as an asset to the development.*
C. Partner with New Hanover County Schools, UNCW, CFCC, and economic development stakeholders to develop and promote educational programs that support the full range of skill sets employers need and target specific economic development opportunities within New Hanover County.	***Guidelines are not part of this strategy.***

Strategic Plan Objective: Enhance the self-sufficiency of individuals and families

Goal XV: Provide for a range of housing types, opportunities, and choices.

Desired Outcome: Citizens are not overburdened with the costs or availability of housing, but have a diverse range of options that are affordable at different income levels.

Implementation Strategies	Implementation Guidelines
A. Enhance and update incentives to reduce development costs to private developers such as density bonuses when work force housing is included in development proposals.	***XV.A.1*** *Explore an ordinance allowing accessory dwelling units that are compatible with existing neighborhoods.* ***XV.A.2*** *Encourage a mixture of uses in an effort to provide diversity of housing choice.* ***XV.A.3*** *Review zoning regulations where appropriate to accommodate populations with special needs such as the elderly and disabled.* ***XV.A.4*** *Incentivize, through the development process, the inclusion of diverse housing choices and opportunities in urban and community mixed use areas so that safe and conveniently located communities are available regardless of age or income.*
B. Consider creating an affordable housing task force to define affordability and work with private sector to provide it.	***Guidelines are not part of this strategy.***
C. Strategically work with developers experienced in providing affordable and subsidized housing through federal and state programs and locate affordable housing developments in areas of highest need.	***XV.C.1*** *Encourage a mixture of housing types near employment centers.*

STRATEGIC PLAN FOCUS AREA: SUPERIOR PUBLIC HEALTH AND PUBLIC SAFETY

Strategic Plan Objective: Reduce and prevent crime
Strategic Plan Objective: Increase the safety and security of the community

Goal XVI: Increase public safety by reducing crime through the built environment.

Desired Outcome: New development patterns that focus on increased public safety.

Implementation Strategies	Implementation Guidelines
A. Encourage best practices and design strategies in the built environment to help reduce crime.	***XVI.A.1*** *Encourage best management practices for reducing crime such as Crime Prevention Through Environmental Design, Firewise, etc.*
B. Encourage a walkable community that creates more human interaction between neighbors (eyes on the street/ social space).	***XVI.B.1*** *Incorporate multiple points of access to the existing transportation network to ensure safe traffic operations.* ***XVI.B.2*** *Ensure transportation facilities are designed to accommodate the proposed development and are consistent with the place type in which they are located.*

Strategic Plan Objective: Reduce health risks and diseases

Goal XVII: Increase recycling and reduction of solid waste.

Desired Outcome: Divert solid waste to eliminate constraints of future development.

Implementation Strategies	Implementation Guidelines
A. Work with private sector and other regional jurisdictions to implement a countywide recycling program including construction demolition debris and consumer product packaging material.	***Guidelines are not part of this strategy.***
B. Work with private sector entities to identify recycling and other innovative strategies to divert material from the landfill. (Composting, gasification, anaerobic digestion, etc.)	***Guidelines are not part of this strategy.***
C. Encourage adaptive reuse of building to limit construction and demolition waste production.	***XVII.C.1*** *Encourage adaptive reuse for vacant or dilapidated structures and sites rather than demolition when practical or fiscally responsible.*
D. Encourage consumer based responsibilities for waste reduction, recycling, and reuse.	***Guidelines are not part of this strategy.***

Goal XVIII: Increase physical activity and promote healthy, active lifestyles.	
Desired Outcome: A built environment that encourages active life styles and increased health through walking and biking.	
Implementation Strategies	**Implementation Guidelines**
A. Encourage a mixture of uses in developments that allows individuals to walk rather than rely upon vehicles.	***XVIII.A.1*** *Provide sidewalks and/or multi-purpose paths within development projects.* ***XVIII.A.2*** *Encourage the inclusion of areas for physical activity in the design of residential open space areas.*
B. Encourage siting of schools into the community allowing for students to walk or bike to shcool, while considering traffic impacts.	***XVIII.B.1*** *Provide sidewalks or multiuse paths within close proximity of schools and other community facilities.*
C. Connect walkways, parking lots, greenways, and developments to encourage pedestrian activity.	***XVIII.C.1*** *Encourage dedication or provision of easements for multi-use paths consistent with the Greenway Master Plan and other adopted plans.* ***XVIII.C.2*** *Allow payment in lieu for recreational facilities.*

Goal XIX: Increase access to affordable and convenient healthy foods.	
Desired Outcome: Increased community health.	
Implementation Strategies	**Implementation Guidelines**
A. Ensure zoning and land use regulations encourage and allow for community gardens and urban agriculture.	***XIX.A.1*** *Allow agricultural uses in open space areas.*
B. Build on health gaps analysis report, target strategies to promote location of farmers markets, grocery stores, and other venues that have healthy food offerings.	***Guidelines are not part of this strategy.***

Goal XX: Support health promotion and disease prevention while minimizing debilitating effects of mental and physical disabilities.	
Desired Outcome: A built environment that supports citizens with mental and physical disabilities through the location of services, integration of land uses, and sensitivity to the disabled population.	
Implementation Strategies	**Implementation Guidelines**
A. Encourage public spaces and health related facilities (Gyms, pharmacies, physician offices, etc.) to be smoke free.	***Guidelines are not part of this strategy.***
B. Promote awareness of physical and mental disabilities and disease prevention.	***XX.B.1*** *Sidewalks, pedestrian amenities, and residential common areas should be designed to be inclusive of persons with limited mobility.*

Goal XXI: Ensure NHC remains in attainment for air quality, in support of clean air and improved public health outcomes in support of continued growth.	
Desired Outcome: New Hanover County to remain in attainment for air quality to protect public health and retain and attract quality development and industries.	
Implementation Strategies	**Implementation Guidelines**
A. Promote compact development, mixture of uses, and infill that minimizes trips and vehicle miles traveled.	***XXI.A.1*** *Promote compact development and infill with a mix of integrated community uses (e.g. housing, shops, workplaces, schools, parks, and civic facilities) within walking or bicycling distance that minimizes vehicle trips and vehicle miles traveled.* ***XX1.A.2*** *Encourage development be located and designed to be convenient for access to public transit, thereby bringing potential riders closer to transit facilities and increasing ridership.*
B. Encourage development patterns and neighborhood street designs that are conductive to pedestrian and bicycle use.	***XXI.B.1*** *Encourage "complete street" design to accommodate all users and encourage alternative modes of travel.* ***XXI.B.2*** *Promote street, sidewalk, and greenway designs that support and enhance access between neighborhoods and to neighborhood-based commercial developments.*
C. Discourage open burning of yard waste and trash in densely populated areas.	***XXI.C.1*** *Discourage open burning in densely populated areas.*
D. Consider a program for NHC staff to work with NCDENR to review air quality monitoring site data and stay abreast of current and proposed Clean Air Act Requirements that could affect the Non-Attainment status of New Hanover County.	***Guidelines are not part of this strategy.***

TABLE OF CONTENTS

Chapter 1 Appendix

Chapter 1 Resolution **2**

Comprehensive Plan Sustainability Standards **3**

What Makes a Good Comprehensive Plan? **10**

Six Theme Principles Definition Matrix

Harmony with Nature 17

Healthy Community 19

Interwoven Equity 20

Livable Built Environment 22

Resilient Economy 24

Responsible Regionalism 25

Chapter 2 Appendix

Chapter 2 Resolution **30**

Population

Historical Annexation: Map 2.1 31

Concentration of the Elderly (65+): Map 2.2 32

Land Cover: Developed and Undeveloped Land: Map 2.3 33

Land Cover: Map 2.4 34

Conservation Lands: Map 2.5 35

Land Development

Land Use: Map 2.6 36

Zoning Districts: Map 2.7 37

Urban Services Area: Map 2.8 38

CAMA Land Classification: Map 2.9 39

Housing

Community Development Block Grant: Map 2.10 40

Transportation

Road Classifications: Map 2.11 41
Bicycle & Pedestrian Facilities: Map 2.12 42
NHC Rail Lines: Map 2.13 43

Infrastructure & Urban Services

CFPUA Sewer Service: Map 2.14 44
CFPUA Water Service: Map 2.15 45
Telecommunications: Map 2.16....46
Parks & Boat Access: Map 2.17 47
Proximity to Physical Activity: Map 2.18 48

Health

Chronic Disease Vulnerability: Map 2.19 49
Proximity to Medical Facilities: Map 2.20 50
Proximity to Dental Facilities: Map 2.21....51
Proximity to Grocery Stores: Map 2.22....52
Proximity to Active Transportation: Map 2.23....53
Proximity to Physical Activity: Map 2.24 54

Environmental/Natural Resources

Waters of NHC: Map 2.25....55
NHC Watersheds: Map 2.26....56
NHC Shellfishing: Map 2.27 57
NHC Water Quality: Map 2.28....58
NHC Primary Nursing Areas: Map 2.29....59
FEMA Flood Zones: Map 2.30....60
Soils Classifications: Map 2.31....61
Agricultural Lands: Map 2.32....62
Biodiversity/Wildlife Habitat Conservation: Map 2.33....63
Significant Natural Heritage Areas: Map 2.34 64

Chapter 3 Appendix

Chapter 3 Resolution **66**

Informal Framework **67**

Planning Board Recommendations for Goals and Implementation Strategies **73**

Citizen Advisory Committee Signature Page **81**

School Children Involvement

Elementary School Drawings 82

Trask Middle School Input and Comments 120

Isaac Bear Early College Input 124

Chapter 4 Appendix

Chapter 4 Resolution **127**

Alternative Futures Report Summary **128**

Population and Employment Forecasting **128**

Land Use Availability and Attractiveness Assessment **130**

Alternative Futures Scenarios **131**

Community Input and Meetings **134**

Reference Documents

Acronym Reference Guide **140**

Glossary **142**

Map Sources **149**

List of Plans and Policies **151**

Surface Water Quality Classes **153**

CAMA Matrix **155**

Chapter 1 Appendix

NEW HANOVER COUNTY BOARD OF COMMISSIONERS

RESOLUTION
VALIDATING THE PUBLIC ENGAGEMENT STRATEGY
FOR THE COMPREHENSIVE PLAN

WHEREAS, New Hanover County is updating the CAMA Land Use Plan and creating a Comprehensive Plan for the unincorporated portion of the County; and

WHEREAS, Public Engagement is a critical part of creating a plan that represents the community; and

WHEREAS, staff has developed a Public Engagement Plan to provide active participation from a diverse group of citizens.

NOW, THEREFORE, BE IT RESOLVED, that the New Hanover County Board of Commissioners hereby validates the Public Engagement Plan as the first chapter within the Comprehensive Plan.

ADOPTED, this the 18th day of November, 2013.

NEW HANOVER COUNTY

Woody White, Chairman

ATTEST:

Sheila L. Schult, Clerk to the Board

Comprehensive Plan Sustainability Standards

August 6, 2013

APA Plan Standards Working Group:
David Godschalk FAICP (Chair), University of North Carolina at Chapel Hill
Uri Avin FAICP, National Center for Smart Growth
Ben Herman FAICP, Clarion Associates
Gil Kelley AICP, Gil Kelley and Associates
David Rouse AICP, Wallace, Roberts, & Todd
Emily Talen FAICP, Arizona State University
Karen Walz FAICP, Strategic Community Solutions
APA staff members:
Bill Klein AICP
Jeff Soule FAICP
Erin Musiol AICP
David Morley AICP
Stacey Williams

1.0 Purpose

Sustainability is a defining challenge of our times and local comprehensive plans are important tools for sustaining places. The purpose of this APA Plan Standards Working Group paper is to lay out a set of practice standards to be used in the preparation of comprehensive plans aimed at sustaining places. The paper describes the standards, the process used to identify and test them, and a potential approach for applying them to future plans.

2.0 Background

In 2012 APA President Mitchell Silver and Chief Executive Officer Paul Farmer suggested that a working group of members and staff explore the possibility of accrediting comprehensive plans and similar planning documents. This suggestion was similar to a recommendation in the report of APA's 2010-2011 Sustaining Places Task Force that plans should be able to be accredited as sustaining places comprehensive plans if they embody certain principles, best practices, and characteristics. The task force report was later modified and turned into a Planning Advisory Service report (Godchalk and Anderson, 2012, *Sustaining Places: The Role of the Comprehensive Plan*, APA PAS Report 567).

The Task Force defined planning for sustaining places as:

"a dynamic, democratic process through which communities plan to meet the needs of current and future generations without compromising the ecosystems upon which they depend by balancing social, economic, and environmental resources, incorporating resilience, and linking local actions to regional and global concerns."

Initiated in 2012, the APA Plan Standards Working Group with APA staff explored the possibility of using a set of best practice standards for preparing and evaluating comprehensive plans that seek to sustain places. Using posts on a Base Camp site, emails, and further tested them with students in a planning class and participants in a one-day workshop at the National Planning Conference in Chicago in April 2013.

3.0 Framework

Three types of standards are proposed:

- **Principles-** the *overall goals for comprehensive plans aimed at achieving sustainable communities*, including livable built environment, harmony with nature, resilient economy, interwoven equity, healthy community, and responsible regionalism.
- **Process-** the *standards for participation and implementation* activities in comprehensive planning for sustainable communities.
- **Attributes-** the *standards for the content and characteristics* of comprehensive plan documents for sustainable communities.

Standards for achieving these principles, processes, and attributes are met by the inclusion of best practices in comprehensive plans and planning:

- **Best Practices-** the *plan actions or elements*, such as goals, objectives, policies, priorities, implementation or action steps or tasks, and maps that demonstrate a community's commitment to pursue sustainability; these are the planning tools employed by the community to guide its planning, development, and decision-making.

Specific best practices that support the recommended principles, processes, and attributes are listed in Tables 1, 2, and 3. Working definitions of individual best practices are provided in an appendix, *Comprehensive Plan Best Practices: Definitions and Scoring Matrix*. This matrix is designed to assist a community in assessing the extent to which the best practices are addressed in the plan.

4.0 Principles

The six principles that must be recognized in the plan were derived from a review or current comprehensive plans by the APA Sustaining Places Task Force. As stated in the Task Force report, *Sustaining Places: The Role of the Comprehensive Plan* (Godschalk and Anderson 2012), the principles include:

- Livable Built Environment - Ensure that all elements of the built environment, including land use, transportation, housing, energy, and infrastructure work together to provide sustainable, green places for living, working, and recreation, to produce a high quality life.
- Harmony with Nature - Ensure the contributions of natural resources to human well-being are explicitly recognized and valued and that maintaining their health is a primary objective.
- Resilient Economy - Ensure the community is prepared to deal with both positive and negative changes in its economic health and to initiate sustainable urban development and redevelopment strategies that foster business growth through technology and innovation and build reliance on local assets.

- Interwoven Equity - Ensure fairness and equity in providing housing, services, health, safety, and livelihood needs of all citizen groups.
- Healthy Community - Ensure public health needs are recognized and addressed through provisions for healthy foods, physical activity, access to recreation, health care, environmental justice, and safe neighborhoods.
- Responsible Regionalism - Ensure all local proposals account for, connect with, and support the plans of adjacent jurisdictions and the surrounding region.

Best practices that support implementation of the sustaining places principles in the plan range across a wide spectrum of plan statements and actions. They include plan goals, objective, and policies, as well as implementation targets and measures. Best practices commonly associated with each principle are listed in Table 1.

Table 1. Sustaining Places Plan Principles and Best Practices

Principles	***Livable Built Environment (11)***	***Harmony with Nature (10)***	***Resilient Economy (7)***	***Interwoven Equity (9)***	***Healthy Community (7)***	***Responsible Regionalism (9)***
Practice	1. Multi modal Transportation choices	12. Natural habitat protection	22. Economic growth capacity	29. Range of housing types	38. Toxin exposure reduction	45. Local land use plans coordinated with regional transportation
Practice	2. Transit-oriented development	13.Green infrastructure	23. Balanced land use mix	31. Jobs/housing balance	39. Public safety increase through crime & injury reduction	46. Local & regional housing plan coordination
Practice	3. Regional transportation/ job clusters	14. Natural topography respect	24. Access to employment centers	31. Disadvantaged neighborhood improvements	40. Brownfield mitigation & redevelopment	47. Local open space plans coordinated with regional frameworks
Practice	4. Complete streets	15. Carbon footprint reduction	25. green business & jobs support	32. At-risk population health & safety	41. Physical activity & healthy lifestyles	48. Transit-served growth area designation
Practice	5. Mixed land use in walkable patterns	16. Air quality standards	26. Community based economic development	33. Services & health care for minority, low income	42. Accessible parks, recreation, open space	49. Cooperation with region on resource sharing
Practice	6. Infill	17. Climate	27.	34.	43. Healthy	50. Local

	development	change adaptation	Infrastructure capacity	Infrastructure upgrade in older neighborhood	local food access	activity center & regional destination connection
Practice	7. Urban design standards	18. Renewable energy	28. Post-disaster economic recovery plan	35. Workforce development policy	44. Equitable access to health care, schools, public safety, arts & culture	51. Linked local & regional economic & population projections
Practice	8. Accessible public facilities & spaces	19. Solid waste reduction		36. Protect vulnerable neighborhood from natural hazards		52. Regional development visions recognized in local plans
Practice	9. Historic resource conservation	20. water conservation and supply		37. Promote environmental justice		53. Consistent local CIP regional infrastructure priorities
Practice	10. Green building design	21. Stream, watershed, and floodplain protection				
Practice	11. Hazard zone avoidance					

5.0 Processes

Key features of plan-making that must be part of plan making and implementation include processes for involving the public and for carrying out plan objectives and proposals. These processes were addressed by the APA Sustaining Places Task Force, who stated them as follows (Godschalk and Anderson 2012):

- Authentic Participation- ensure that the planning process actively involves all segments of the community in analyzing issues, generating visions, developing plans, and monitoring outcomes.
- Accountable Implementation- ensure that responsibilities for carrying out the plan are clearly stated, along with metric for evaluating progress in achieving desired outcomes.

Best practices in support of comprehensive planning processes include a variety of activities, procedures, and commitments, as listed in Table 2. While some of these will be evident in the

resulting plan, it may be necessary to evaluate the use of others through knowledge about the specific local planning process and how it was carried out.

Table 2. Sustaining Places Planning Processes and Best Practices

Processes	***Authentic Participation (6)***	***Accountable Implementation (7)***
Practice	1. Include all stakeholder	1. Align plan goals with CIP
Practice	2. Seek diverse participation	2. Link plan objectives with annual budget
Practice	3. Promote leadership development	3. Coordinate implementation responsibilities
Practice	4. Provide ongoing information	4. Commit funds for priority implementation
Practice	5. Use variety of communication channels	5. Use benchmarks, indicators, targets, & other metrics to monitor implementation progress
Practice	6. Involve public in policy reviews and decisions	6. Adjust goals if targets not met
Practice		7. Regularly report implementation status following plan adoption

6.0 Attributes

To be effective, plans must articulate persuasive visions and communicate goals clearly. While these attributes apply to all comprehensive plans, not just those associated with plans for sustaining places, they are nonetheless very important for the latter. Whether or not to include them in the formal plan scoring system is discussed in the report on accreditation. However, even if they are not scored as sustainability criteria, design of the plan document should address key features of plan content and characteristics, including:

- *Consistent Content*- ensure that the plan contains a consistent set of visions, goals, policies, objectives, and sections that are based on evidence about community conditions as well as major issues and impacts.
- *Coordinated Characteristics*- ensure that the plan includes creative and innovative strategies and recommendations, and coordinates them internally with each other, vertically with federal and state requirements, and horizontally with plans of adjacent jurisdictions.

Best practices for attributes will be evident in plan language in some cases; in other cases, the intent of the plan in terms of consistency and coordination must be deduced or derived from other sources. These relationships are illustrated in the listing of best practices for attributes in Table 3.

Table 3. Sustaining Places Plan Attributes and Best Practices

Attributes	***Content (9)***	***Characteristics (8)***
Practice	1. Identify major strengths, weaknesses, opportunities, & threats	1. Comprehensive: Cover wide range of topics
Practice	2. Describe & analyze facts on community conditions	2. Integrated: Include recommendations for other plans
Practice	3. Lay out future vision	3. Innovative: Include creative & innovative strategies
Practice	4. State goals to be sought through public initiatives	4. Persuasive: Communicate clearly and persuasively
Practice	5. Specify policies to achieve goals	5. Consistent: Frame proposals in consistent systems format
Practice	6. Set measurable objectives	6. Coordinated: Coordinate vertically with federal & state plans & horizontally with plans & forecasts of adjacent jurisdictions
Practice	7. Create action agenda to implement plan	7. Compliant: Comply with mandates, standards, & laws on comp plans
Practice	8. Monitor & evaluate plan outcomes & changes	8. Transparent: Provide explicit rationales for goals, objectives, policies, actions, and plan maps
Practice	9. Maps, tables, graphics, & summaries for communication	

7.0 Application of Standards

At this time, the working group believes that the best application of the standards will be to use them in the preparation of comprehensive plans now underway or contemplated to be prepared in the near future. In this way planners can use the standards as a resource to help guide their thinking about how to incorporate sustainability into community planning. In essence they would form the basis for self-evaluation of the degree to which sustainability criteria are built into contemporary comprehensive plans. The standards are listed and defined in the appendix, *Comprehensive Plan Best Practices: Definitions and Scoring Matrix*, which can serve as a guide for self-evaluation.

The working group spent considerable time discussing how to resolve the issue of "one-size-fits-all" standards, when the localities preparing the plans vary widely from urban to rural, large to small, city to county, and progressive to conservative. To explore the ramifications of these important variances, APA might enlist several communities of varying characteristics to "test" the standards in developing comprehensive plans.

In the future, once experience has been gained in applying the standards then APA might want to consider a more formal evaluation process. Using the outcomes of plans prepared in accordance with the standards could help to answer questions about the feasibility and usefulness of a plan accreditation process carried out by APA. Another advantage of waiting for two to three years before proceeding with accreditation would be to gain evidence about the degree of implementation that could result from plan goals and policies. The working group's thought

about a future accreditation process are spelled out in our second report, *Comprehensive Plan Accreditation: Issues and Benefits*.

Thus the working group recommends that APA:

- make the information from this comprehensive plan standards report available to practitioners,
- monitor the impact of the standards on comprehensive plans prepared over the coming years,
- test the standards in a number of different type communities and governmental institutions, and
- take a future look at the desirability of formal comprehensive plan accreditation after experience has been gained with the use of the standards

References:

Berke, Philip, and David Godschalk, 2008, "Searching for the Good Plan: A Meta-Analysis of Plan Quality Studies." *Journal of Planning Literature*.

Berke, Philip, David Godschalk, and Edward Kaiser. 2006. *Urban Land use Planning*. Chicago: University of Illinois Press.

Bunnell, Gene, and Edward Jepson, Jr. 2011. "The Effect of Mandated Planning on Plan Quality: A Fresh Look at What Makes a "Good Plan." *Journal of the American Planning Association* 77:4, Autumn.

Feiden, Wayne. 2011. *Assessing Sustainability: A Guide for Local Governments*. PAS Report 565

Godschalk, David, and William Anderson. 2012. *Sustaining Places: The Role of the Comprehensive Plan*, APA Pas Report 567.

Ryan, Brent D. 2011. "Reading Through a Plan: A Visual Interpretation of What Plans Mean and How They Innovate." *Journal of the American Planning Association* 77:4, Autumn.

Rouse, David, and Ignacio Bunster-Ossa. 2013. *Green Infrastructure: A Landscape Approach*. APA PAS Report 571

Shuford, Scott, Suzanne Rynne, and Jan Muller. 2010. *Planning for a New Energy and Climate Future*. APA PAS Report 558

U.S. DOT. *Best Planning Practices: Metropolitan Transportation Plans*. March 2012. John A. Volpe National Transportation Systems Center.

What Makes a Good Comprehensive Plan?
Noteworthy Trends

David R. Godschalk FAICP

For *The Commissioner* Fall 2013

The standards for judging a comprehensive plan are changing. Instead of simply asking how well the plan meets traditional state legal requirements, the new standards assess how well the plan responds to current and projected economic trends, how well it protects the health and safety of its population, and how well it responds to the needs and desires of its citizens. Today's comprehensive plan is more multi-dimensional than traditional plans, more targeted toward community priorities, and more creative in its linkage of actions and development goals.

The Good Comprehensive Plan
A good plan today is expected to not only meet traditional requirements for comprehensive coverage, internal consistency, and compliance with state enabling acts. It must also aim for long-term community sustainability, foster economic development and public health, reach out to citizens, and effectively implement its public policies. Instead of simply recommending future land use and transportation patterns, leading plans now incorporate a wealth of specific best practices for *sustainable development*. They must shape walkable neighborhoods, encourage mass transit, and seek environmental and economic resilience.

The hallmarks of a good contemporary comprehensive plan are:

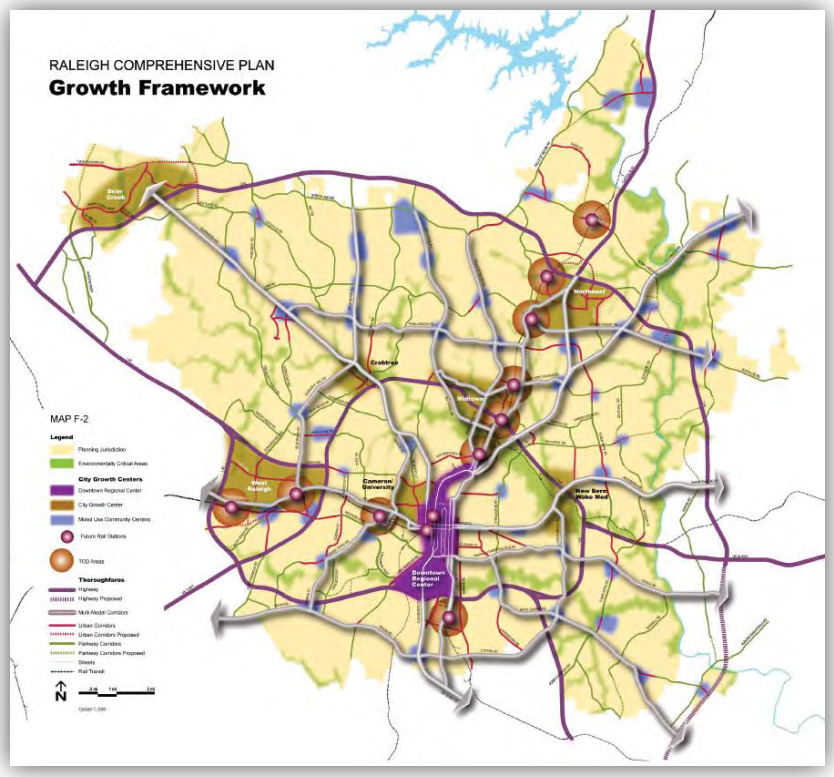
- Strategies for achieving sustainability and resilience, including recognition of the effects of climate change
- Urban design for mixed-use, walkable, and transit-friendly neighborhoods and accessible activity centers
- Economic development objectives and incentives that encourage job creation, labor force training, and green enterprises
- Public health programs that promote local agriculture and local food availability, as well as safe and healthy behavior
- Natural hazard policies that not only mitigate and adapt to hazards, but also guide future development to safe locations
- Public involvement and outreach that brings all sectors of the population into the plan-making and plan-implementation processes
- Linkages between plan proposals and public decision-making through action plans that tie into the annual budget and capital budgets
- On-line and digital plan information coupled with graphic depictions of development goals, popular writing, and accessible data.

These hallmarks are built into good plans through the use of "best practices"—planning tools and techniques that exemplify the profession's most progressive ideas and actions for guiding their planning, development, and decision-making. As employed in leading comprehensive plans, these best practices demonstrate the ongoing efforts and evolving understandings of planners and their communities as they attempt to pursue sustainability under current and future demands of urban and regional development.

APA convened a Plan Standards Working Group identify and describe current best practices as a resource for preparing and assessing comprehensive plans. (See Sidebar: APA Plan Standards Working Group.) Their report, based on a review of leading plans, defined a series of best practices according to the principles set forth in the APA Planning Advisory Report, *Sustaining Places: The Role of the Comprehensive Plan* (Godschalk and Anderson 2012). The principles and associated best practices are shown in Table 1 and described below.

The **Livable Built Environment principle** seeks to ensure that all elements of the built environment, including land use, transportation, housing, energy, and infrastructure work together to provide sustainable places for living, working, and recreation, with a high quality of life. It is supported by best practices that challenge auto-dominated urban sprawl by providing transportation choices, encouraging mixed land use in walkable patterns, making public facilities accessible, conserving historic resources, green building design, hazard zone avoidance, and other sustainable urban design approaches.

For example, the Growth Framework of the Raleigh, North Carolina, Comprehensive Plan integrates land use, transportation, and environmental areas into a vision of future urban development. Growth Centers of varying sizes are located within the Major Thoroughfares system to enhance accessibility and guide future growth into sustainable patterns. By designating areas of higher density, the plan avoids sprawl and creates opportunities for mixed use development projects. (http://www.raleighnc.gov).



The **Harmony with Nature principle** seeks to ensure that the contributions of natural resources to human well-being are explicitly recognized and valued, and maintenance of natural resources health is a primary objective. It is supported by best practices that protect natural habitat, provide green infrastructure, respect natural topography, reduce carbon footprints, meet air quality standards, adapt to climate change, encourage renewable energy, and other environmental protection measures.

For example, the Keene, New Hampshire, Comprehensive Master Plan includes a section dealing with its unique natural environment, which addresses both natural areas (green spaces, plants and animals, hillsides and waterways) within and around the city, as well as man-made areas (green infrastructure, parks, agriculture, and gardens). To be climate resilient, it incorporates an Adaptation Action Plan with strategies to reduce energy use, lower carbon footprint, create a healthier community, and foster a highly adaptable place to live (http://www.ci.keene.nh.us/).

The **Resilient Economy principle** seeks to ensure that the community is prepared to deal with both positive and negative changes in its economic health and to initiate sustainable urban development and redevelopment strategies that foster green business growth and build reliance on local assets. It is supported by best practices that provide economic growth capacity, a balanced land-use mix, access to employment centers, green business and jobs support, community based economic development, and other economic health elements.

For example, the Fort Collins, Colorado, comprehensive plan's Economic Health Vision is a healthy and resilient economy. It seeks diverse jobs allowing citizens and businesses to thrive, to reflect its unique community values in a changing world, with an innovative, creative, and entrepreneurial atmosphere, and to encourage strong partnerships and collaboration with the private sector, educational institutions, and other organizations. This is aligned with a city goal to support the growth of the innovation economy and a policy to support job creation within five targeted industry clusters (http://www.fcgov.com/planfortcollins/).

The **Interwoven Equity principle** seeks to ensure fairness and equity in providing for the housing, services, health, safety, and livelihood needs of all its citizens and groups. It is supported by best practices that provide a range of housing choices, jobs/housing balance, disadvantaged neighborhood improvement, at-risk population health and safety, services and health care for minorities and low income residents, and other equitable outcomes.

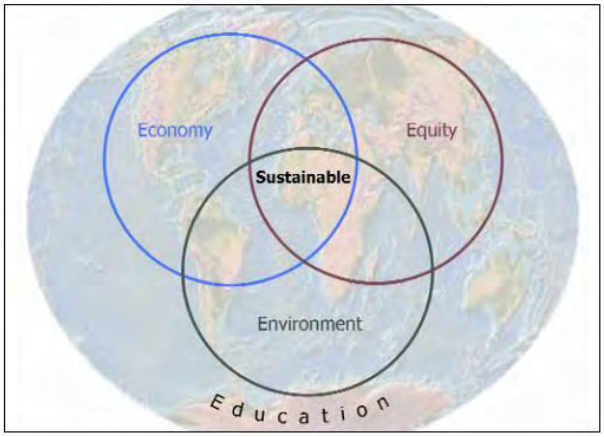
For example, the Marin California Countywide Plan (www.co.marin.ca.us) focusses on achieving sustainability, defined as the balanced intersection of economic, environmental, and equity needs. The plan evaluates all of its goals in terms of the three E's (environment, economy, and equity). For each policy, the Plan asks and answers the following questions:

- What are the desired outcomes?
- Why is it important (with a focus on addressing the three Es)?
- How will the results be achieved?
- How will success be measured?

The **Healthy Community principle** seeks to ensure that public health needs are recognized and addressed through healthy foods and physical activity, access to recreation and healthcare, and environmental justice and safe neighborhoods. It is supported by best practices that reduce toxin exposure, increase public safety through crime and injury reduction, mitigate and redevelop brownfields, encourage physical activity and healthy lifestyles, make parks, recreation and open space accessible, give access to healthy local food, and other public health actions.

For example, the Austin, Texas, *Imagine Austin* comprehensive plan's Health and humans Services policies state that the city will provide health care services and attract high-quality health service providers, encourage more active lifestyles through new and redevelopment actions, reduce homelessness, promote the availability of and educate the community about healthy food choices, and promote broad access to fresh foods, local farmers markets, co-ops, grocery stores, community gardens, and healthy restaurants in neighborhoods (http://austintexas.gov/imagineaustin).

The **Responsible Regionalism principle** seeks to ensure that all local proposals account for, connect with, and support the plans of adjacent jurisdictions and the surrounding region. It is supported by best practices that coordinate local land use plans and regional transportation, coordinate local and regional housing plans, coordinate local open space plans with regional networks, designate transit-served growth areas, cooperate with region on resource sharing, and further regional collaboration activities.



For example, the San Diego, California, *Regional Comprehensive Plan* vertically integrates the comprehensive plans of the County and its nineteen municipalities as well as their transportation and open space plans (www.sandag.org). Though lacking land use authority, San Diego's regional planning agency has implementation powers through its control of funding for regional transportation infrastructure and habitat acquisition, as well as its role in applying state environmental laws that set greenhouse gas emission reduction targets. The region's sustainable planning system is built on a combination of financing incentives, regulations, and consensus-building, plus the individual general plans of the member agencies coordinated with the regional plan. Prepared jointly by regional staff and local planning directors to identify growth opportunity areas and open space preservation areas, its "Smart Growth Concept Map" is used to prioritize transportation investments and allocate regional funding for local infrastructure improvements.

How Does Your Plan Measure Up?

Twenty-first century comprehensive plans face unique challenges. Traditional assumptions about stable growth rates, benign environmental conditions, and incremental fiscal change no longer apply. Today's planning environment is much more dynamic, projections are more difficult, and community values are more diverse. In response, comprehensive planning has been transformed into a more complex and adaptive process and the resulting comprehensive plans have grown in scope and technological sophistication.

Meeting these challenges has sparked a rash of creative new plans. These are not recognizable as the somewhat pedestrian documents of yesteryear. Instead of simply extending the trends of the past decade into the next decade, they envision genuine differences in alternative futures, determined by combinations of external circumstances and local aspirations. They take performance responsibilities seriously and give their communities regular report cards on their progress or lack of progress in implementing their goals and objectives.

Planning commissioners can play important roles in the new comprehensive planning by holding their plans to high standards. Ask whether the planning process is inclusive of all segments of your community? Is plan-making open and accessible? Does the plan represent the best thinking about community sustainability? Is it based on a strong foundation of environmental, economic, and social data and information? Does it incorporate a carefully selected range of best practices? Does it have an action plan with benchmarks to guide and monitor implementation? Is it regularly consulted by public and private decision-makers?

If you can answer yes to these questions, you can be confident that your jurisdiction is making good use of its comprehensive plan in order to sustain itself into the future.

Sidebar: **APA Plan Standards Working Group**
The APA Plan Standards Working Group was created in 2012 as part of the larger APA initiative on Sustaining Places. Made up of experienced planning consultants, educators, and APA staff, the Working Group devised and tested plan standards. The group reviewed a selection of leading contemporary plans and held a standards workshop at the 2013 APA National Planning Conference in Chicago. After revision based on these pre-tests, the standards were published in the *Comprehensive Plan Sustainability Standards* paper, available on the APA website at http://www.planning.org/sustainingplaces/compplanstandards/. This paper includes both a text describing the standards and a detailed spreadsheet checklist with definitions of the best practices intended to carry out the standards.

Three types of standards are proposed:

- **Principles** are the *overall plan goals* aimed at achieving sustainable communities, including livable built environment, harmony with nature, resilient economy, interwoven equity, health community, and responsible regionalism.
- **Processes** are the standards for *authentic public participation* and *accountable implementation* activities in comprehensive planning for sustainable communities.
- **Attributes** are the measures for assessing the *consistent content* and *coordinated characteristics* of comprehensive plan documents for sustainable communities.

For each standard, a group of best practices is identified. The principles standards are described in the text of this article. This sidebar describes the processes and attributes standards and their best practices.

The **best practices for authentic public participation** include inclusion of all stakeholders, seeking diverse participation, promoting leadership development, providing ongoing information, using a variety of communication channels, and involving the public in policy reviews and decisions.

The **best practices for accountable plan implementation** include aligning plan goals with the Capital Improvements Program (CIP), linking plan objectives with the annual budget, coordinating implementation responsibilities, and committing funds for priority implementation. They recommend using benchmarks, targets, and other metrics to monitor implementation progress, adjusting goals if targets are not met, and regularly reporting implementation status following plan adoption.

Best practices for consistent plan content include identifying major community strengths, weaknesses, opportunities, and threats, describing and analyzing facts on community conditions, laying out a future vision, and stating goals to be sought through public initiatives. The practices recommend specifying policies to achieve goals, setting measureable objectives, creating an action agenda to implement the plan, monitoring and evaluating plan outcomes and changes, and providing maps, tables, graphics, and summaries for communication.

Best practices for coordinated plan characteristics include comprehensiveness over a wide range of topics, integration of recommendations from other plans, inclusion of creative and innovative strategies, clear and persuasive communication, and framing proposals in a consistent

systems framework. They require coordinating vertically with state and federal plans and horizontally with adjacent jurisdiction plans, compliance with mandates, standards, and laws, and providing transparent and explicit rationales for goals, objectives, policies, actions, and plan maps.

The standards are intended as a resource for use by communities that are preparing or updating their comprehensive plans. Their primary advantage is that they should improve planning practice by bringing together in one consolidated publication the best current thinking and research about what should be in a good comprehensive plan for sustaining places.

APA also sees the standards as the foundation for developing an accreditation program that recognizes exemplary comprehensive plans aimed at sustaining places. Such an accreditation program would offer an opportunity to update and improve plan quality, as well as an opportunity for the planning profession to assert a leadership role in the sustainability arena.

End Sidebar.

David R. Godschalk FAICP is planning professor emeritus at the University of North Carolina at Chapel Hill, and co-author of *Sustainable Development Projects: Integrating Design, Development, and Regulation* (Planners Press, forthcoming). He chaired the Plan Standards Working Group.

Harmony with Nature	
Practice	**Concept Definition**
Restore, connect, and protect natural habitats and sensitive lands	A natural habitat is the area or environment in which a species or community of species normally lives. Sensitive lands are those areas containing natural features that are environmentally significant and easily disturbed by human activity. Examples include rare species habitat, wetlands and riparian areas, woodlands, steep slopes, and geologically unstable areas. Restoring degraded ecosystems allows them to regain their natural diversities and functions.
Plan for the provision and protection of green infrastructure	Green infrastructure is a strategically planned and managed network of green open spaces, including parks, greenways, and protected lands, that provides a range of functions such as wildlife habitat, stormwater management, and recreational opportunities. Green infrastructure may also be defined as features that use natural topography and vegetation to capture, store, and infiltrate stormwater runoff, often in urban settings, such as bioswales, rain gardens, and green roofs.
Encourage development that respects natural topography	Topography is the arrangement of the surface features of an area (i.e., terrain or land relief). Certain features, such as hillsides, ridges, steep slopes, or lowlands, can pose challenges to development, and should be carefully considered to reduce construction costs, minimize natural hazard risks from flooding or landslides, and mitigate the impacts of construction on natural resources including soils, vegetation, and water systems.
Enact policies to reduce carbon footprints	The term carbon footprint is used to describe the amount of carbon dioxide and other greenhouse gases emitted by a given entity (individual, company, city) in a certain time frame. It provides a measure of the environmental impact of a particular lifestyle or operation, and encompasses both the direct consumption of fossil fuels as well as indirect emissions associated with the manufacture and transport of all goods and services the entity consumes.
Comply with state and local air quality standards	Air quality standards are limits on the quantity of pollutants in the air during a given period in a defined area. Under the Clean Air Act, the U.S. EPA has established air quality standards enforced by state and local governments for ground-level ozone, lead, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide to protect public health and the environment. Pollutants may come from mobile sources (such as cars and trucks), area sources (such as small businesses), or point sources (such as power plants).
Encourage climate change adaptation	Climate change adaptation involves adjusting natural and human systems to the effects of sea level rise, increased frequencies of extreme weather events, and long-term shifts in precipitation levels, growing season length, and native vegetation and wildlife populations. Successful adaptation strategies reduce community vulnerability and minimize adverse effects on the environment, economy, and public health.
Provide for renewable energy use	Renewable energy sources are those that are naturally regenerated over a short time scale and do not diminish. They are derived directly or indirectly from the sun or natural movements and mechanisms of the environment, and include solar, wind, biomass, hydropower, ocean thermal, wave action, and tidal action.
Provide for solid waste reduction	Solid waste is garbage or refuse resulting from human activities. It can include food scraps, yard waste, packaging materials, broken or discarded household items, and construction and demolition debris. Many common solid waste items, such as glass, aluminum and other metals, paper and cardboard, certain plastics, and food scraps and other organic materials, can be diverted from the waste stream and recycled into new products or composted.

Encourage water conservation and activities and behaviors that support a lasting water supply	Water conservation is any reduction in water use, often fostered by programs and policies that seek to preserve water sources, control water use, and manage water demand among users. A lasting water supply is characterized by one or more sources of fresh water with long-term availability to a jurisdiction. This concept implies both access to ground or surface water sources that can withstand anticipated future water usage rates and a well-maintained supply system to deliver this water to end users.
Protect and manage streams, watersheds, and floodplains	A stream is a body of water flowing over the ground in a channel; it is often associated with ecological communities of riparian vegetation and aquatic organisms. A watershed is an area of land drained by a river, river system, or other body of water. Watershed management seeks to protect water supply, water quality, drainage, stormwater runoff and other functions at a watershed scale. A floodplain is an area of low-lying ground adjacent to a body of water that is susceptible to inundation.

Healthy Community	
Practice	**Concept Definition**
Reduce exposure to toxins and pollutants in the natural and built environment	Toxins are poisonous substances capable of causing disease in living organisms. Pollutants are waste substances or forms of energy (noise, light, heat), often resulting from industrial processes, that can contaminate air, water, and soil, causing adverse changes in the environment. Examples include carbon monoxide and other gases along with soot and particulate matter produced by fossil fuel combustion; toxic chemicals used or created in industrial processes; pesticides and excess nutrients from agricultural operations; or toxic gases released by paints or adhesives.
Plan for increased public safety through reduction of crime and injuries	Public safety involves prevention of and protection from events such as crimes or disasters that could bring danger, injury, or damage to the general public. Although It is often considered a governmental responsibility (police, fire, and emergency services), crime can also be reduced through environmental design using CPTED principles.
Plan for the mitigation and redevelopment of brownfields for productive uses	A brownfield is defined by the federal government as any abandoned, idled, or under-used real property where expansion or redevelopment is complicated by the presence or potential presence of environmental contamination. Redevelopment of these sites requires an environmental assessment to determine the extent of contamination and develop remediation strategies. The feasibility of site cleanup, market forces, and other factors may help define appropriate reuse options, which range from open space to mixed use development.
Plan for physical activity and healthy lifestyles	A healthy lifestyle is characterized by individual practices and behavioral choices that enhance health and well being. A growing body of evidence suggests that barriers in the design of the physical environment can influence rates of physical activity and benefit health.
Provide accessible parks, recreation facilities, greenways and open space near all neighborhoods	Parks are areas of land, often in a natural state or improved with facilities for rest and recreation, set aside for the enjoyment of the public. Greenways are strips of undeveloped land that provide corridors for environmental and recreational use and connect areas of open space. These facilities offer a range of benefits to residents, including opportunities for increased physical activity. Research suggests that proximity of parks to neighborhoods supports increased physical activity among residents; however, environmental impediments and disamenities such as crime, pedestrian safety, and noxious land uses may decrease accessibility and subsequent use of these facilities for nearby residents. The type, function, and design of a park should be appropriate to its locational context.
Plan for access to healthy, locally-grown foods for all neighborhoods	Healthy foods provide essential nutrients and energy to sustain growth, maintain vital processes, and promote longevity and freedom from disease, and are characterized by being fresh or minimally processed, naturally dense in nutrients, and low in fat, sodium, and cholesterol. Locally grown foods are those produced in close proximity to consumers in terms of both geographic distance and supply chain. Though there is no standard definition of a "local" geographic range, this can encompass sources from backyards and community gardens to farms within the region or state.
Plan for equitable access to health care providers, schools, public safety facilities, and arts and cultural facilities	Equitable access ensures services and facilities are reachable by all persons, regardless of social or economic background. Health care providers are those individuals, institutions, or agencies that provide health care services to consumers. Schools are institutions that provide education to children or instruction in a particular skill or business. Public safety facilities provide safety and emergency services to a community, including police and fire protection. Arts and cultural facilities provide programs and activities regarding the arts and culture, and may include performing arts centers, concert halls, museums, galleries, and other related facilities.

Interwoven Equity	
Practice	**Concept Definition**
Provide a range of housing types	A range of housing types is characterized by the presence of residential units of different sizes, configurations, tenures, and price points located in buildings of different sizes, configurations, ages, and ownership structures. In practical terms, a range of housing types makes it possible for households of different sizes and income levels to live in close proximity to one another. This concept is most applicable at the neighborhood scale rather than at the citywide, countywide, or metropolitan scale, where aggregate housing statistics may obscure neighborhood-level patterns of residential homogeneity.
Plan for jobs/housing balance	A jobs/housing balance is characterized quantitatively by a roughly equal number of jobs and housing units (households) within a commutershed and qualitatively by jobs that match the labor force skills of those living within the commutershed. A better jobs/housing balance results in a reduction in vehicle miles traveled and can improve worker productivity and quality of life.
Plan for the physical, environmental, and economic improvement of at-risk, distressed, and disadvantaged neighborhoods	At-risk neighborhoods are experiencing falling property values, high real estate foreclosure rates, rapid depopulation, or physical deterioration. Distressed neighborhoods suffer from disinvestment and physical deterioration for myriad reasons, including but not limited to the existence of cheap land on the urban fringe, the financial burdens of maintaining an aging building stock, economic restructuring, land speculation, or the dissolution or relocation of anchor institutions. A disadvantaged neighborhood is a neighborhood in which residents have reduced access to resources and capital due to factors including high levels of poverty and unemployment and low levels of educational attainment. They often exhibit high rates of both physical (abandoned buildings, graffiti, vandalism, litter, disrepair) and social disorder (crime, violence, loitering, drinking and drug use).
Plan for improved health and safety for at-risk populations	An at-risk population is characterized by vulnerability to health or safety impacts through factors such as race or ethnicity, socioeconomic status, geography, gender, age, behavior, or disability status. These populations may have additional needs before, during, and after a destabilizing event such as a natural or manmade disaster or period of extreme weather, or throughout an indefinite period of localized instability related to an economic downturn or a period of social turmoil. At-risk populations include children, the elderly, the disabled, those living in institutionalized settings, those with little or no English proficiency, and those who are transportation disadvantaged.
Provide accessible and quality public services, facilities, and health care to minority and low-income neighborhoods	A public service is a service performed for the benefit of the public. A public facility is any building or property (e.g., a library, park, or community center) owned, leased, or funded by a public entity. Accessible public services, facilities, and health care are located so that all members of the public have safe and convenient transportation options to reach all services and facilities. Quality public services, facilities, and health care means that all services and facilities meet or exceed industry standards for service provision. Minority and low-income neighborhoods are comprised of people whose races or ethnicities are underrepresented within the U.S. population and households whose annual incomes fall below federal poverty thresholds.
Upgrade infrastructure and facilities in older and substandard areas.	Infrastructure comprises the physical systems that allow societies and economies to function and includes water mains, sewers, electrical grids, telecommunications facilities, bridges, tunnels, and roadways. Upgrading is the process of raising to a higher standard through the addition or replacement of existing components with newer versions. An older area is a neighborhood, corridor, or district that has been developed and continuously occupied for multiple decades. A substandard area is a neighborhood, district, or corridor whose infrastructure fails to meet established standards.
Plan for workforce	Workforce diversity is characterized by the employment of a wide variety of people in

diversity and development.	terms of age, cultural background, physical ability, race or ethnicity, religion, and gender identity. Workforce development is an economic development strategy that focuses on people rather than businesses; it attempts to enhance a region's economic stability and prosperity by developing jobs that match existing skills within the local workforce or training workers to meet the labor needs of local industries.
Protect vulnerable populations from natural hazards	A natural hazard is a natural event that threatens lives, property, and other assets. They include floods, high wind events, landslides, earthquakes, and wildfires. Vulnerable neighborhoods are neighborhoods that face higher risks than others when disaster events occur. A population may be vulnerable for a variety of reasons including location, socioeconomic status or access to resources, lack of leadership/organization, or lack of planning.
Promote environmental justice	Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Its goal is to provide all communities and persons across the nation with the same degree of protection from environmental and health hazards and equal access to the decision-making process, resulting in healthy environments for all in which to live, learn, and work.

Livable Built Environment	
Practice	**Concept Definition**
Plan for multi-modal transportation	Multi-modal transportation choice is characterized by a transportation network that allows users to travel using a variety of transportation modes, including walking. In most cases this equates to an extensive system of pedestrian and bicycle friendly infrastructure in the form of sidewalks, on-street and off-street bike/pedestrian paths, and dedicated or shared bike lanes, in addition to a system of roads designed for private automobiles. Where feasible, this also means an extensive transit system (bus, train, light rail, commuter rail) with frequent service.
Plan for transit oriented development	Transit-oriented development is characterized by a concentration of higher density mixed-use development around transit stations and along transit lines, such that both the location and the design of the development encourage transit use and pedestrian activity. The necessary density thresholds and use mix vary based on the frequency and type of transit service, but establishment of TOD-enabling development standards is encouraged for areas located within 0.5 miles of a planned or existing transit station, with the jurisdiction's most intense development permissible within 0.25 mile of the station.
Coordinate regional transportation investments with job clusters	Regional transportation refers to the transportation network serving a multi-jurisdictional employment catchment area. A job cluster is a node of high employment density. Typically, job clusters attract workers from multiple areas within multiple jurisdictions.
Plan for the provision of complete streets serving multiple functions	Complete streets are streets that are designed and operated with all users in mind, including motorists, pedestrians, bicyclists, and public transit riders (where applicable) of all ages and abilities. Streets that serve multiple functions are characterized by design and operational features that accommodate travel, social interaction, and commerce. Complete streets serving multiple functions describes a street network that safely and conveniently accommodates all users and desired functions, yet this does not mean that all modes or functions will be equally prioritized on any given street segment.
Plan for mixed land-use patterns in walkable and bikeable configurations	A mixed land-use pattern is characterized by residential and nonresidential land uses located in close proximity to one another, and can be vertical (on different floors of a multifloor building) or horizontal (placed side-by-side on a building site). A walkable and bikeable configuration is characterized by urban design features that facilitate safe and convenient pedestrian and bicycle access among uses. Characteristics that enhance walkability and bikeability include a highly interconnected street network; buildings placed close to the street with parking lots in the back; housing in close proximity to everyday destinations such as shops, schools, civic places, and workplaces; and the presence of street furniture and facilities designed for pedestrians and bicyclists.
Plan for infill development	Infill development is characterized by development or redevelopment of undeveloped or underdeveloped parcels of land in otherwise built-up areas. Any development that does not occur on a greenfield site on the urban fringe can be considered infill development. Infill sites are usually served by or have ready access to existing infrastructure and services.
Encourage design standards appropriate to the community context.	Design standards are specific criteria and limitations pertaining to the form and appearance of development within a neighborhood, corridor, special district, or jurisdiction as a whole. These standards typically address building placement, building massing and materials, the location and appearance of elements such as landscaping, signage, and street furniture, and compatibility with established community character (e.g., center city, town, or village). The purposes of design standards are to improve or protect both the function and aesthetic appeal of a place.

Provide accessible public facilities and spaces	An accessible public facility or space is a facility or space in a location that can be reached by a variety of modes of transportation, which includes design features that accommodate access by visitors with mobility impairments. Generally speaking, an accessible public facility or space has an access route, entrance, restroom(s), drinking fountains, and fire alarms designed to accommodate persons in wheelchairs.
Conserve and reuse historic resources	A historic resource is a building, site, object, or district with exceptional value or quality for illustrating or interpreting the cultural heritage of a community. Buildings, sites, objects, or districts listed or eligible for listing on the National Register of Historic Places, a state inventory of historic resources in association with a program approved by the Secretary of the Interior, or a local inventory of historic resources in association with a program approved by an approved state program or approved directly by the Secretary of the Interior (in states without approved programs) qualify as historic resources.
Implement green building design and energy conservation.	A green building is characterized by design features that, if used as intended, will minimize the environmental impacts of the building over the course of its lifespan. The goals of green building design are energy and resource efficiency, waste reduction and pollution prevention, and occupant health and productivity. Energy conservation refers to reducing energy consumption through energy efficiency or behavioral change.
Discourage development in hazard zones	A hazard zone is an area subject to a high potential for natural events, such as floods, high winds, landslides, earthquakes, and wildfires, known to cause human casualties and damage to the built environment. Development in hazard zones includes any construction or site disturbance within an area of high risk relative to other areas within a jurisdiction.

Resilient Economy	
Practice	**Concept Definition**
Provide the physical capacity for economic growth	Economic growth is characterized by an increase in the amounts of goods and services that an economy is able to produce over time. The physical capacity for economic growth entails adequate amounts of land and appropriately built, sized, and located structures to support existing and future production of goods and services. Adequate space is needed for commercial and industrial development and redevelopment for nonresidential land uses such as offices, restaurants, retail businesses, entertainment, personal services, warehousing and distribution, and factories.
Plan for a balanced land-use mix for fiscal sustainability	A balanced land-use mix for fiscal sustainability is characterized by a pattern of land-use that includes both residential and nonresidential uses, such that the long-term cost of providing a desirable level of public services to residents, business owners, and visitors is closely matched to the tax or user-fee revenue generated by those uses.
Plan for transportation access to employment centers	An employment center is a node with a high job density. An employment center with transportation access is reachable by employees via one or more travel modes (automobile, transit, bicycling, walking); more transportation modes serving the employment center offer employees a wider range of commuting options and choices.
Promote green businesses and jobs	A green business is any business offering environmentally friendly products and services through environmentally sustainable business models and practices. Green jobs are characterized by agricultural, manufacturing, research and development, administrative, and service activities that contribute substantially to preserving or restoring environmental quality. Green businesses and jobs may include, but are not limited to, those associated with industrial processes with closed-loop systems in which the wastes of one industry are the raw materials for another.
Encourage community-based economic development	Community-based economic development involves promoting, supporting, and investing in businesses that serve local needs and are compatible with the vision, character, and cultural values of the community. It encourages using local resources in a way that enhances economic opportunities while improving social conditions, and supporting locally owned and produced goods and services, which foster connections and sense of place, reduce the need for imports, and stimulate the local economy.
Provide and maintain infrastructure capacity in line with growth or decline demands	Infrastructure comprises the physical systems that support populations and include water mains, sewers, bridges, tunnels, and roadways. Capacity is the ability to hold, store, or accommodate. Maintaining infrastructure capacity in line with demand involves ensuring that structures and networks are appropriately sized to adequately serve existing and future development. This may include decommissioning or realigning infrastructure in neighborhoods experiencing protracted population decline (e.g., to facilitate a transition from residential uses to green infrastructure, urban agriculture, or renewable energy production).
Plan for post-disaster economic recovery	Post-disaster economic recovery comprises the actions of a community in rebuilding networks, structures, and infrastructure to resume economic activities following damage or destruction by a natural or manmade disaster (e.g., hurricane, landslide, wildfire, earthquake, terrorism attack). Plans for post-disaster recovery are characterized by officially adopted polices and implementation tools put in place before or after an event to direct recovery after a disaster event has occurred.

Responsible Regionalism	
Practice	**Concept Definition**
Coordinate local land use plans with regional transportation investments	A local land-use plan is an officially adopted long-range comprehensive or sub-area (i.e., a neighborhood, corridor, or district) plan describing or depicting desirable future uses of land within a plan area. Regional transportation investments are any projects listed in a transportation improvement program (TIP) intended to improve a transportation network serving a multi-jurisdictional area, often included in Metropolitan Planning Organization (MPO) plans. These projects include investments in highways and streets, public transit, and pedestrian and bicycle systems.
Coordinate local and regional housing plan goals	A regional housing plan is any officially adopted plan assessing current housing conditions and describing or depicting desirable future housing conditions across a multi-jurisdictional area. These plans include state-mandated regional "fair share" plans establishing target affordable housing unit allocations among constituent jurisdictions.
Coordinate local open space plans with regional green infrastructure plans	A local open space plan is any officially adopted functional plan or comprehensive plan element describing or depicting desirable future locations or conditions for open space within a local jurisdiction. A regional green infrastructure plan is any officially adopted functional plan or comprehensive plan element describing or depicting desirable future locations or conditions for parks, greenways, protected lands, and other types of green infrastructure within a multi-jurisdictional area.
Delineate designated growth areas that are served by transit	A designated growth area is an area delineated in an officially adopted local or regional comprehensive plan within which higher density development is permitted and urban services, including public transportation (where feasible), are (or are scheduled to be) available. The explicit function of a designated growth area is to accommodate and focus 20 years of projected future growth within a municipality, county, or region through a compact, resource-efficient pattern of development.
Promote regional cooperation and sharing of resources	Regional cooperation and sharing of resources describes any situation where multiple jurisdictions coordinate the provision of public services and facilities. This includes instances where separate jurisdictions share equipment or facilities, instances where jurisdictions consolidate service or facility provision, and instances where jurisdictions share tax base. Tax–base sharing is a revenue-sharing scheme whereby local jurisdictions share tax proceeds from new development for the purposes of alleviating economic disparities among constituent jurisdictions and financing region-serving infrastructure and facilities.
Enhance connections between local activity centers and regional destinations.	A local activity center is a node containing a locally high concentration of employment and commerce. A regional destination is a location that is responsible for a high proportion of trip ends within a regional transportation network, such as a job cluster, a major shopping or cultural (i.e., large performance art venues or museums) center or district, or a major park or recreational facility. A connection between a local activity center and a regional destination may be one or more surface streets, grade-separated highways, off-road trails, or transit corridors.
Coordinate local and regional population and economic projections	A population projection is an estimate of the future population for a particular jurisdiction or multi-jurisdictional area. An economic projection is an estimate of future economic conditions (e.g., employment by industry or sector, personal income, public revenue, etc.) for a particular jurisdiction or multi-jurisdictional area. Common time horizons for population and economic projections are 20 to 30 years. Coordinating local and regional projections minimizes the risk of planning at cross purposes as the result of inconsistent data.
Include regional development visions and plans in local	A regional development vision or plan is a description or depiction of one or more potential future development patterns across a multi-jurisdictional area, based on a set or sets of policy, demographic, and economic assumptions. A local planning scenario is

planning scenarios	a description or depiction of a potential future development pattern for a jurisdiction, based on a set of policy, demographic, and economic assumptions. While many scenario planning efforts do present preferred scenarios, the real value of a scenario planning initiative is to give participants a chance to consider alternative ways of realizing a collective vision as well as alternative outcomes that may be likely given the difficulty of accurately predicting certain demographic and economic trends.
Encourage consistency between local capital improvement programs and regional infrastructure priorities	Regional infrastructure priorities and funding are the region-serving capital projects and designated monetary resources delineated within officially adopted plans or investment policies describing or depicting regional infrastructure facility needs throughout a multi-jurisdictional area. A local capital improvement program is an officially adopted plan describing or depicting capital projects that will be funded within a local jurisdiction during a multi-year (usually five-year) time horizon.

Process	Practice
Authentic Participation	Utilize participatory techniques designed to include stakeholders, including representatives of disadvantaged and minority communities, at all stages of the planning process.
Authentic Participation	Seek diverse participation across generations, ethnic groups, and income ranges.
Authentic Participation	Promote leadership development in disadvantaged communities.
Authentic Participation	Provide ongoing and understandable information on planning issues, events, and outcomes for all participants, including non-English speakers.
Authentic Participation	Use a variety of communications channels, including traditional media, the internet, and social media such as Facebook and Twitter to inform and involve the community.
Authentic Participation	Plan to involve the public during plan implementation, updating, and amendment.
Accountable Implementation	Set priorities for plan-related capital improvements and align plan goals with community capital improvement programs.
Accountable Implementation	Link plan objectives with community's annual budgeting process and categories.
Accountable Implementation	Coordinate plan implementation responsibilities and schedules among internal and external agencies and organizations.
Accountable Implementation	Commit necessary public and private funds for implementation of priority plan items.
Accountable Implementation	Use benchmarks, indicators, targets, and other metrics to monitor progress in implementing plan goals and objectives.
Accountable Implementation	Adjust plan goals, strategies, and priorities over time if conditions change or targets are not met.
Accountable Implementation	Regularly report plan implementation status and progress to the public and elected officials following adoption of the plan.

Attribute	Criterion
Content	Strengths, weaknesses, opportunities, and threats: identification of the major issues facing the community, the impacts of forecasted changes, and their planning implications.
Content	Fact base: evidence-based description and analysis of current and future conditions, in terms of the community's land, development environment, economy, and population.
Content	Future vision: statement of the desired future state of the community in terms of its physical, social, and economic conditions.
Content	Goals: statements of community aspirations for achievement of its vision to be sought through public programs, investments, and initiatives.
Content	Policies: specification of principles to guide public and private actions to achieve goals.
Content	Objectives: measureable targets resulting from community action in carrying out the plan.
Content	Action agenda: commitments to implement the plan, including priorities, schedules, responsibilities, and funding sources.
Content	Monitoring and evaluation: provisions for measuring, and tracking plan outcomes, and responding to changes in community conditions, issues, and needs.
Content	Maps, tables, graphics, and summaries to communicate to the reader the information, intents, and relationships in the plan.
Content	Strengths, weaknesses, opportunities, and threats: identification of the major issues facing the community, the impacts of forecasted changes, and their planning implications.
Characteristics	Comprehensive: covers a wide range of topics, such as land use, transportation, housing, natural resources, economic development, community facilities, and natural hazards.
Characteristics	Integrated: includes recommendations from other functional plans and programs that bear on the future development of the community, such as hazard mitigation, climate adaptation, housing, transportation, and the like.
Characteristics	Innovative: containing creative strategies for dealing with community change, uncertainty, and development needs.
Characteristics	Persuasive: communicating key principles and ideas in a readable and attractive manner in order to inspire, inform, and engage readers.
Characteristics	Consistent: framing proposals as sets of mutually reinforcing actions in a systems approach linking the plan with development regulations and public programs.
Characteristics	Coordinated: integrating vertically with plans of federal, state, and regional organizations and horizontally with plans and forecasts of adjacent jurisdictions.
Characteristics	Compliant: meeting requirements of planning mandates and laws concerning preparing, adopting, and implementing comprehensive plans.
Characteristics	Transparent: The rationale for all goals, objectives, policies, actions, and key plan map(s) are transparent and explicit.

Chapter 2 Appendix

NEW HANOVER COUNTY BOARD OF COMMISSIONERS

RESOLUTION

VALIDATING THE EXISTING CONDITIONS REPORT FOR THE COMPREHENSIVE PLAN

WHEREAS, New Hanover County is updating the CAMA Land Use Plan and creating a Comprehensive Plan for the unincorporated portion of the County; and

WHEREAS, the Board of Commissioners have adopted Chapter 1: Public Engagement Plan; and

WHEREAS, staff has developed Chapter 2: Evaluating the Present (a report of existing conditions).

NOW, THEREFORE, BE IT RESOLVED, that the New Hanover County Board of Commissioners hereby validates the existing conditions report as the second chapter within the Comprehensive Plan.

ADOPTED this the 3rd day of November, 2014.

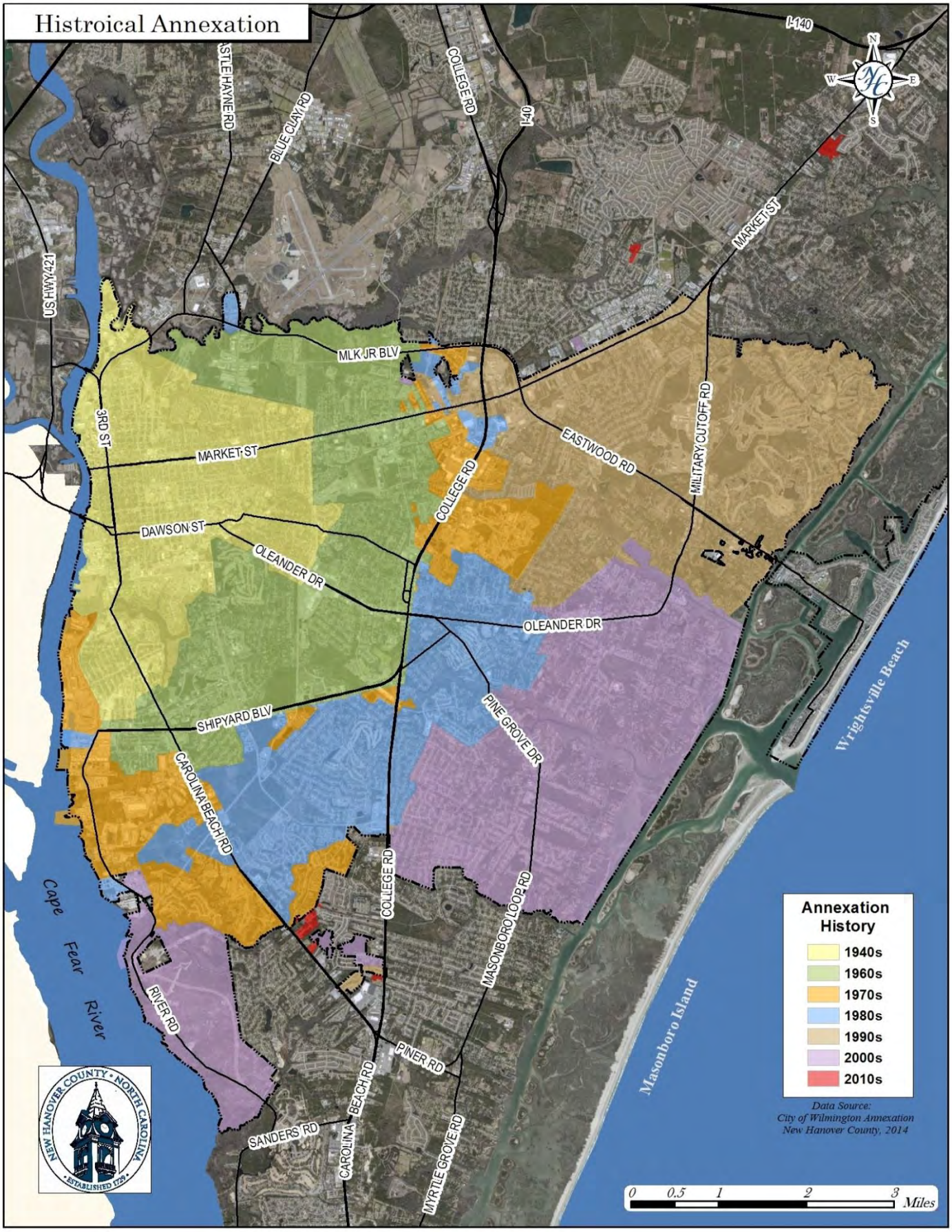
NEW HANOVER COUNTY

Woody White, Chairman

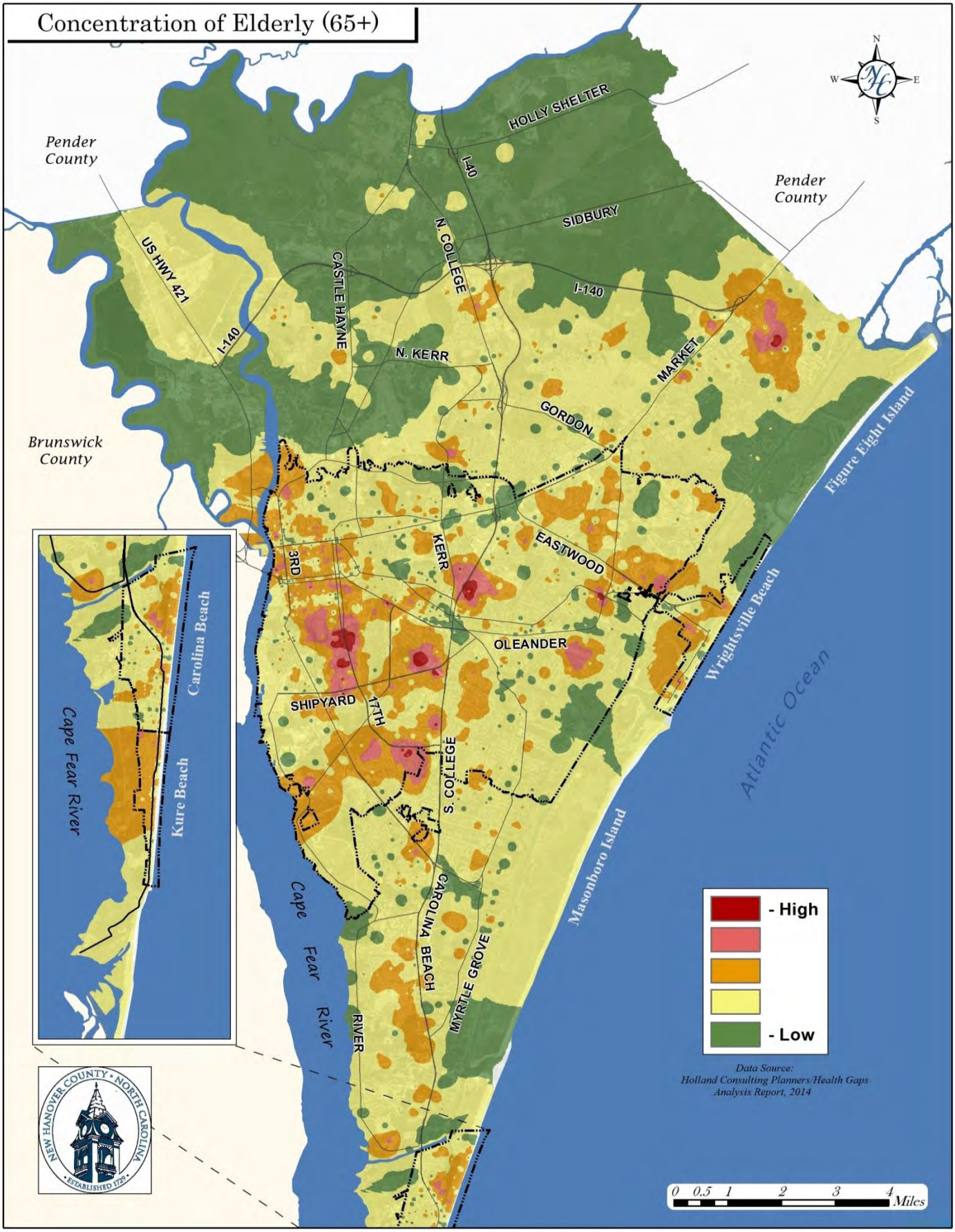
ATTEST:

Teresa P. Elmore, Interim Clerk to the Board

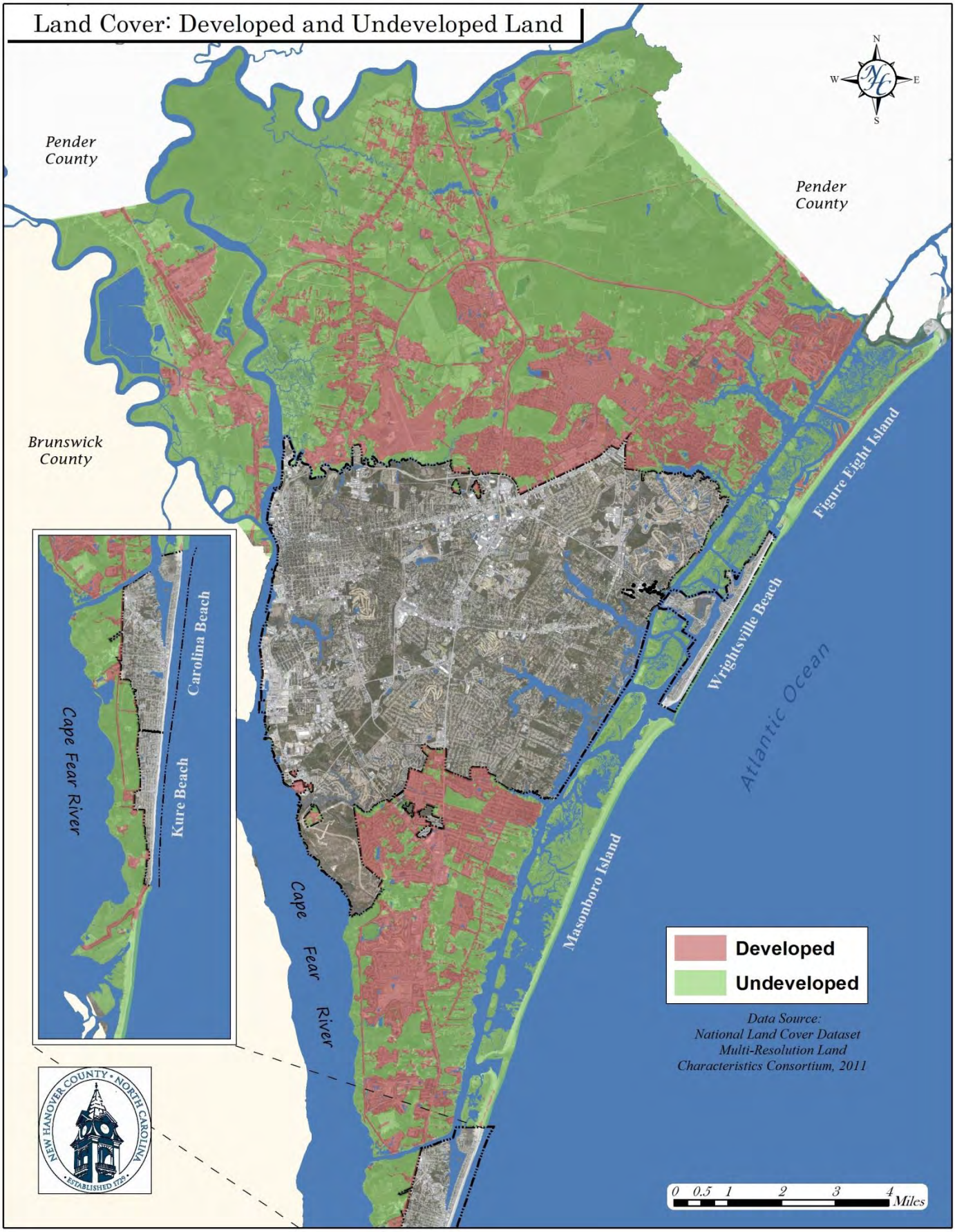
Map 2.1


Histroical Annexation
I-140
I-40
COLLEGE RD
BLUE CLAY RD
STLE HAYNE RD
US HWY 421
3RD ST
MLK JR BLV
MARKET ST
EASTWOOD RD
MILITARY CUTOFF RD
DAWSON ST
OLEANDER DR
SHIPYARD BLV
PINE GROVE DR
CAROLINA BEACH RD
MASONBORO LOOP RD
RIVER RD
PINER RD
SANDERS RD
MYRTLE GROVE RD
Cape Fear River
Wrightsville Beach
Masonboro Island
Annexation History
1940s
1960s
1970s
1980s
1990s
2000s
2010s
Data Source:
City of Wilmington Annexation
New Hanover County, 2014
0 0.5 1 2 3 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
ESTABLISHED 1729

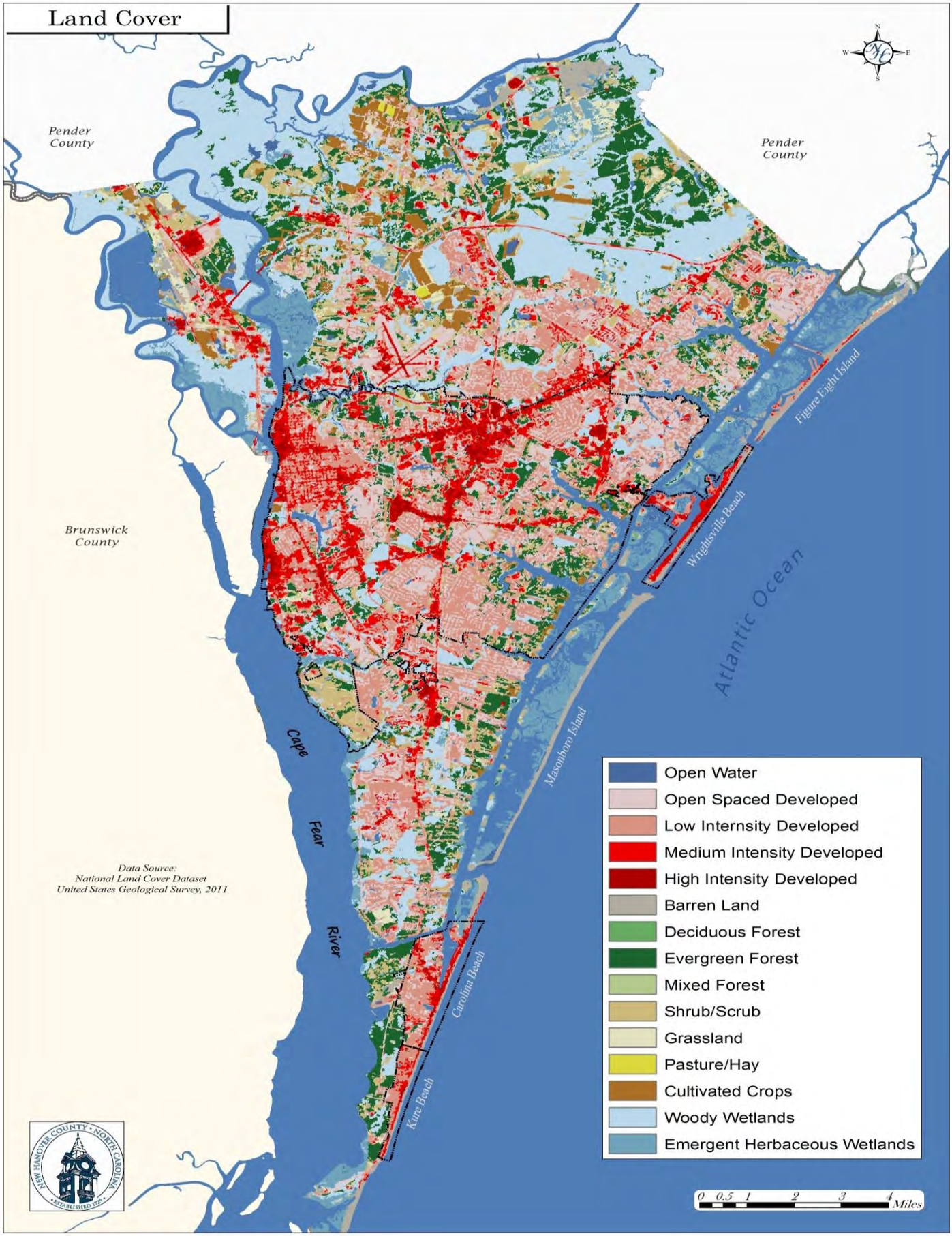
Map 2.2


Concentration of Elderly (65+)
N
W
E
S
Pender County
Pender County
Brunswick County
HOLLY SHELTER
I-40
SIDBURY
N. COLLEGE
US HWY 421
CASTLE HAYNE
I-140
I-140
N. KERR
MARKET
GORDON
3RD
KERR
EASTWOOD
OLEANDER
SHIPYARD
17TH
S. COLLEGE
CAROLINA BEACH
MYRTLE GROVE
RIVER
Cape Fear River
Cape Fear River
Carolina Beach
Kure Beach
Figure Eight Island
Wrightsville Beach
Masonboro Island
Atlantic Ocean
- High
- Low
Data Source:
Holland Consulting Planners/Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

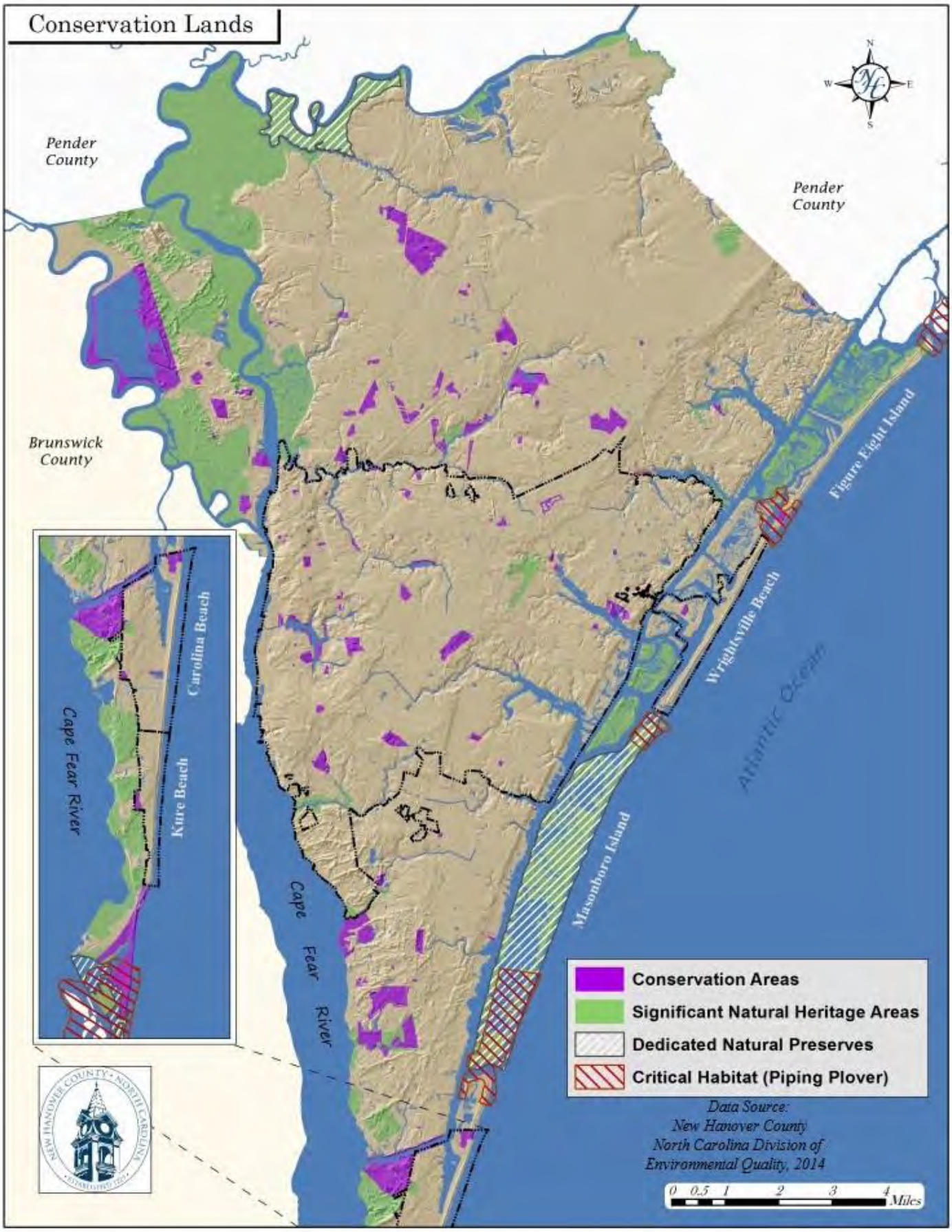
Map 2.3


Land Cover: Developed and Undeveloped Land
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
Developed
Undeveloped
Data Source:
National Land Cover Dataset
Multi-Resolution Land
Characteristics Consortium, 2011
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

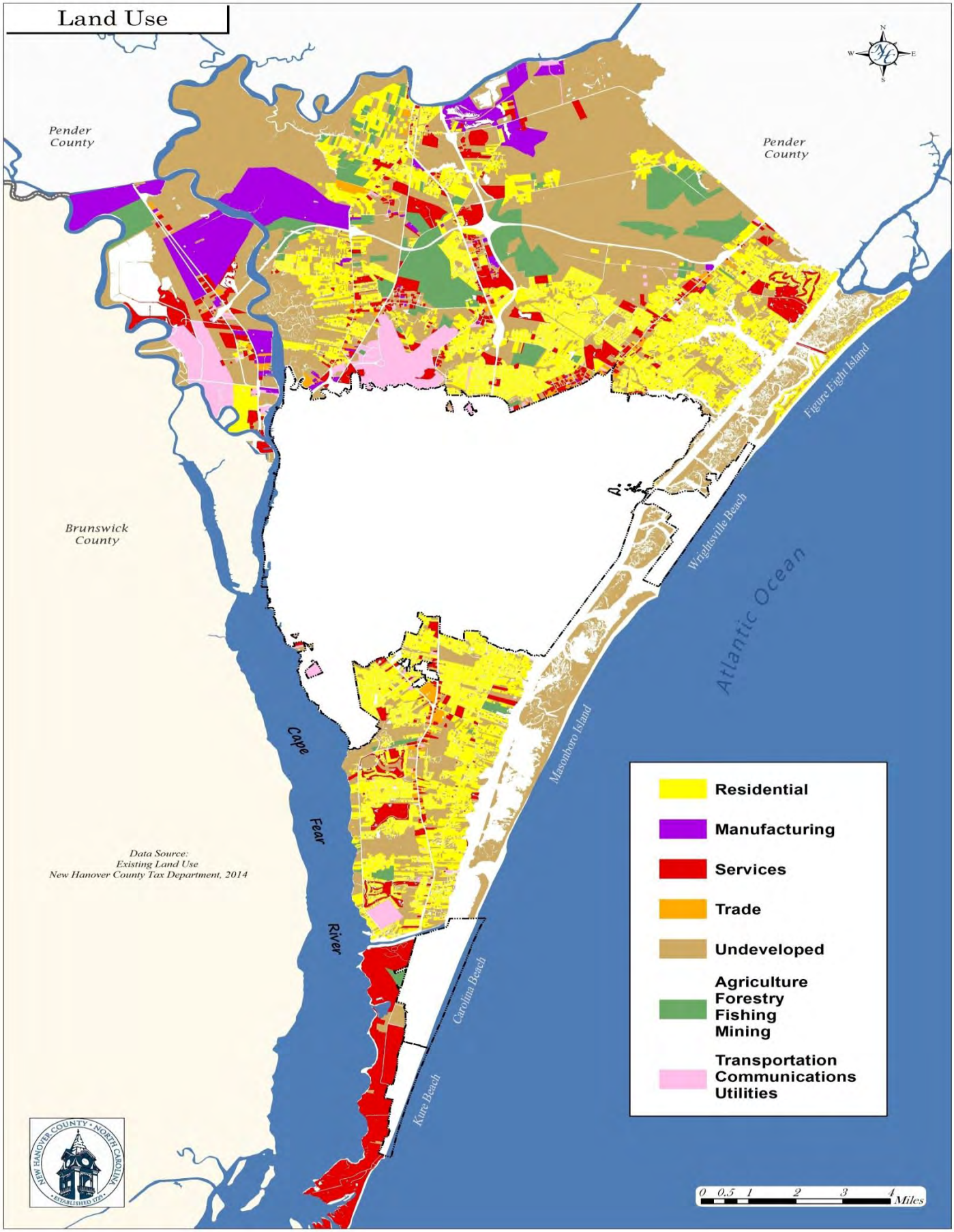
Map 2.4


Land Cover
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Cape Fear River
Carolina Beach
Kure Beach
Data Source:
National Land Cover Dataset
United States Geological Survey, 2011
Open Water
Open Spaced Developed
Low Internsity Developed
Medium Intensity Developed
High Intensity Developed
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Grassland
Pasture/Hay
Cultivated Crops
Woody Wetlands
Emergent Herbaceous Wetlands
0 0.5 1 2 3 4 Miles

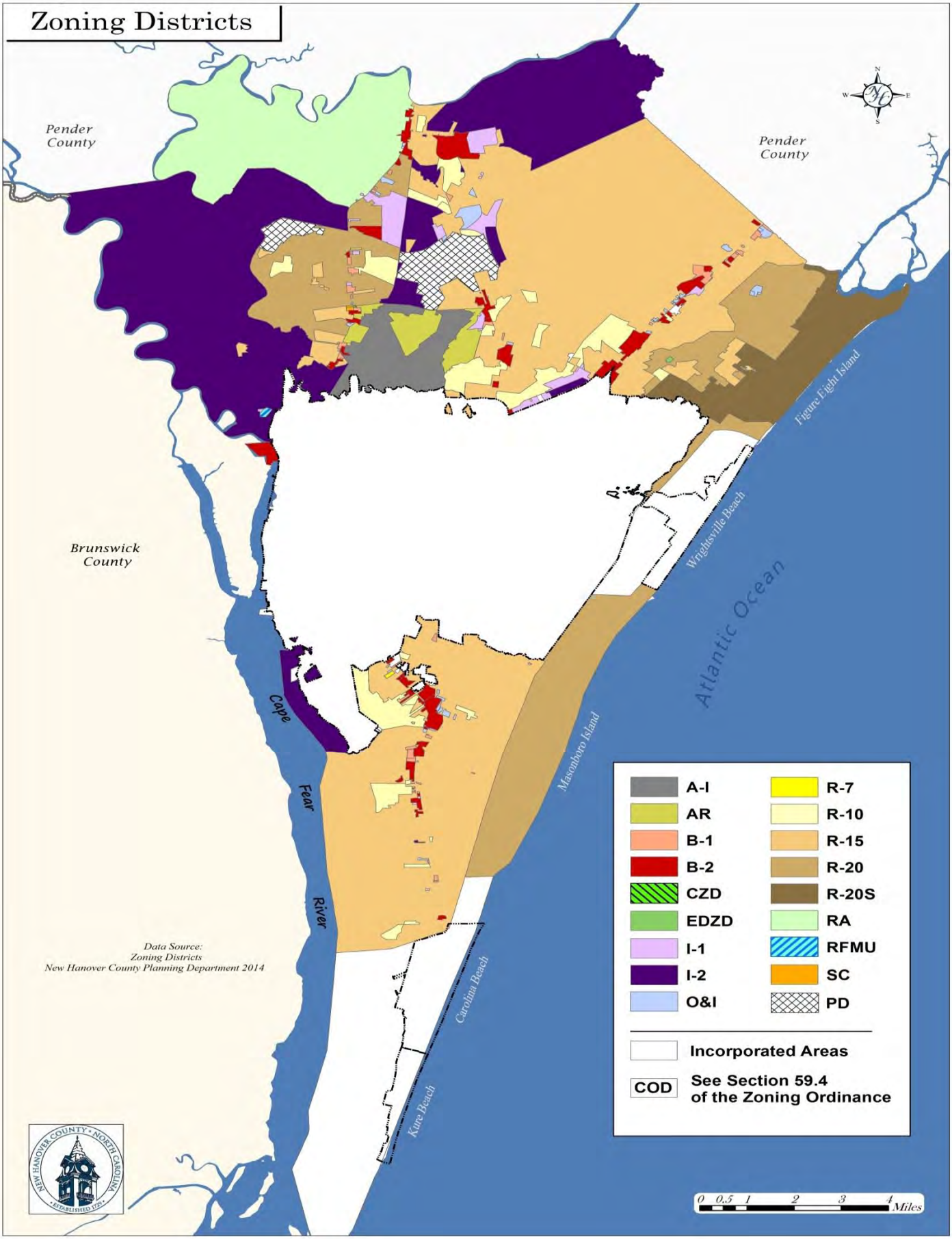
Map 2.5


Conservation Lands
Pender County
Pender County
Brunswick County
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
Masonboro Island
Wrightsville Beach
Figure Eight Island
Atlantic Ocean
Conservation Areas
Significant Natural Heritage Areas
Dedicated Natural Preserves
Critical Habitat (Piping Plover)
Data Source:
New Hanover County
North Carolina Division of
Environmental Quality, 2014
0 0.5 1 2 3 4 Miles

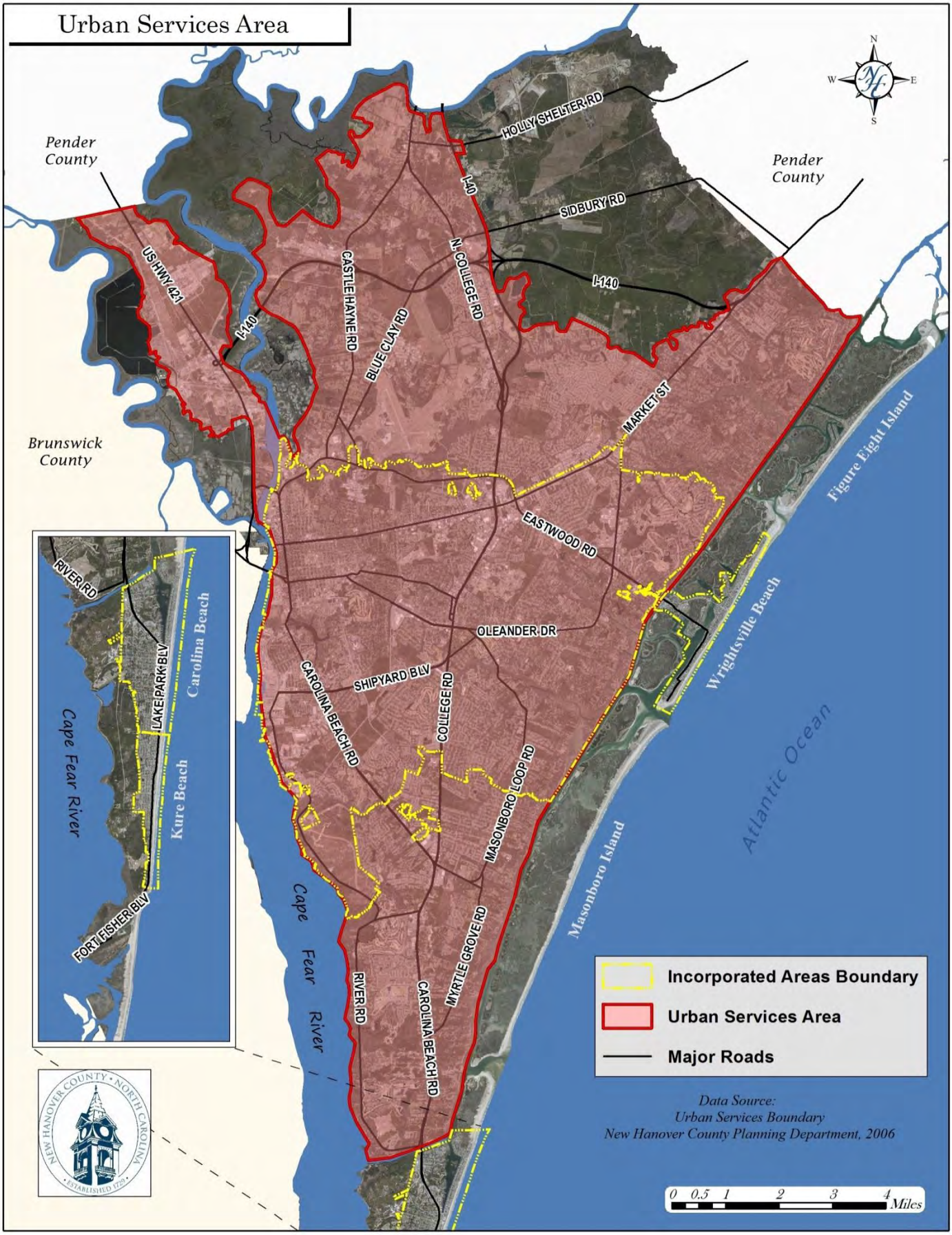
Map 2.6


Land Use
Pender County
Pender County
Brunswick County
Atlantic Ocean
Cape Fear River
Figure Eight Island
Wrightsville Beach
Masonboro Island
Carolina Beach
Kure Beach
Data Source:
Existing Land Use
New Hanover County Tax Department, 2014
Residential
Manufacturing
Services
Trade
Undeveloped
Agriculture
Forestry
Fishing
Mining
Transportation
Communications
Utilities
0 0.5 1 2 3 4 Miles

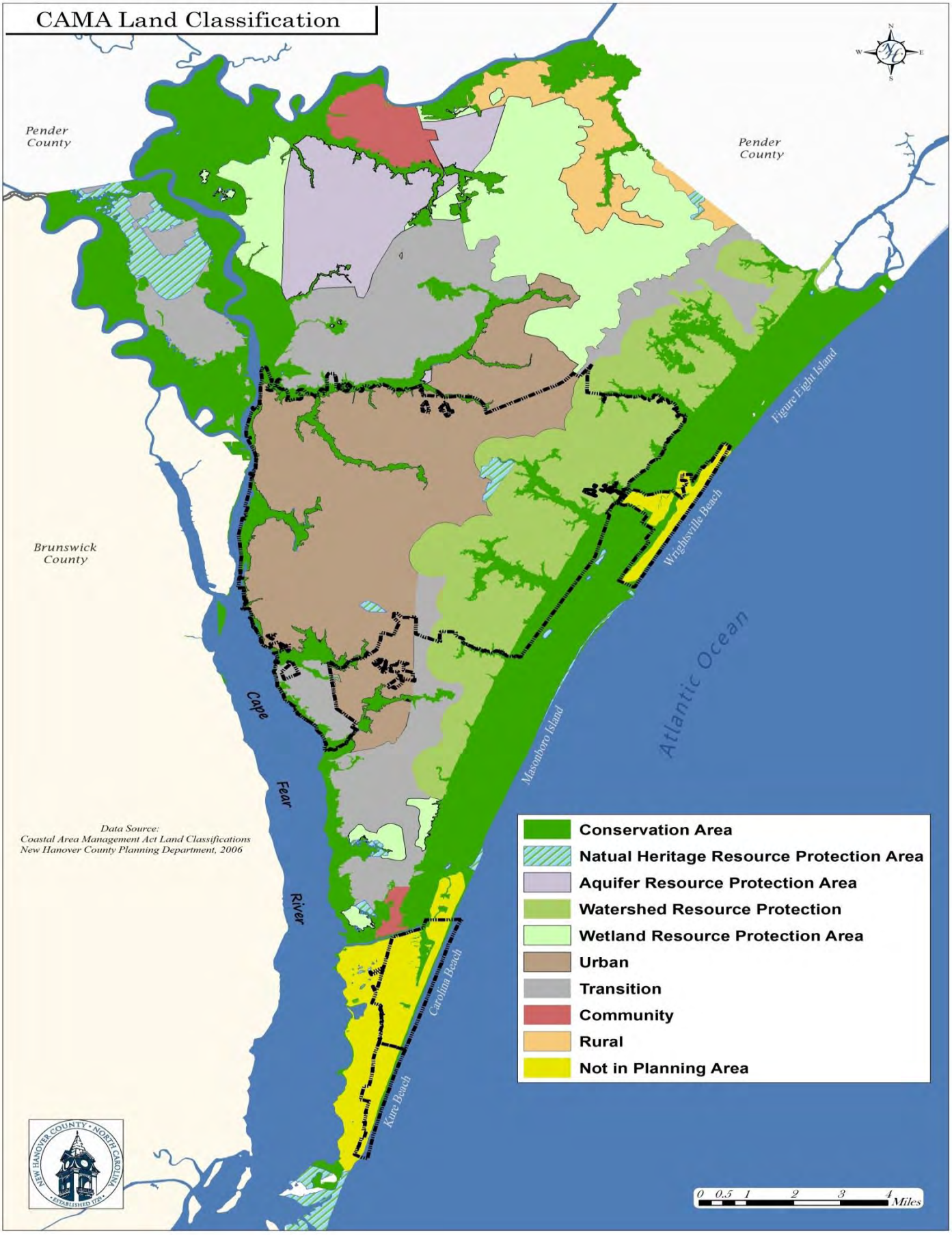
Map 2.7


Zoning Districts
Pender County
Pender County
Brunswick County
Cape Fear River
Atlantic Ocean
Figure Eight Island
Wrightsville Beach
Masonboro Island
Carolina Beach
Kure Beach
A-I
AR
B-1
B-2
CZD
EDZD
I-1
I-2
O&I
R-7
R-10
R-15
R-20
R-20S
RA
RFMU
SC
PD
Incorporated Areas
COD
See Section 59.4 of the Zoning Ordinance
Data Source:
Zoning Districts
New Hanover County Planning Department 2014
0 0.5 1 2 3 4 Miles

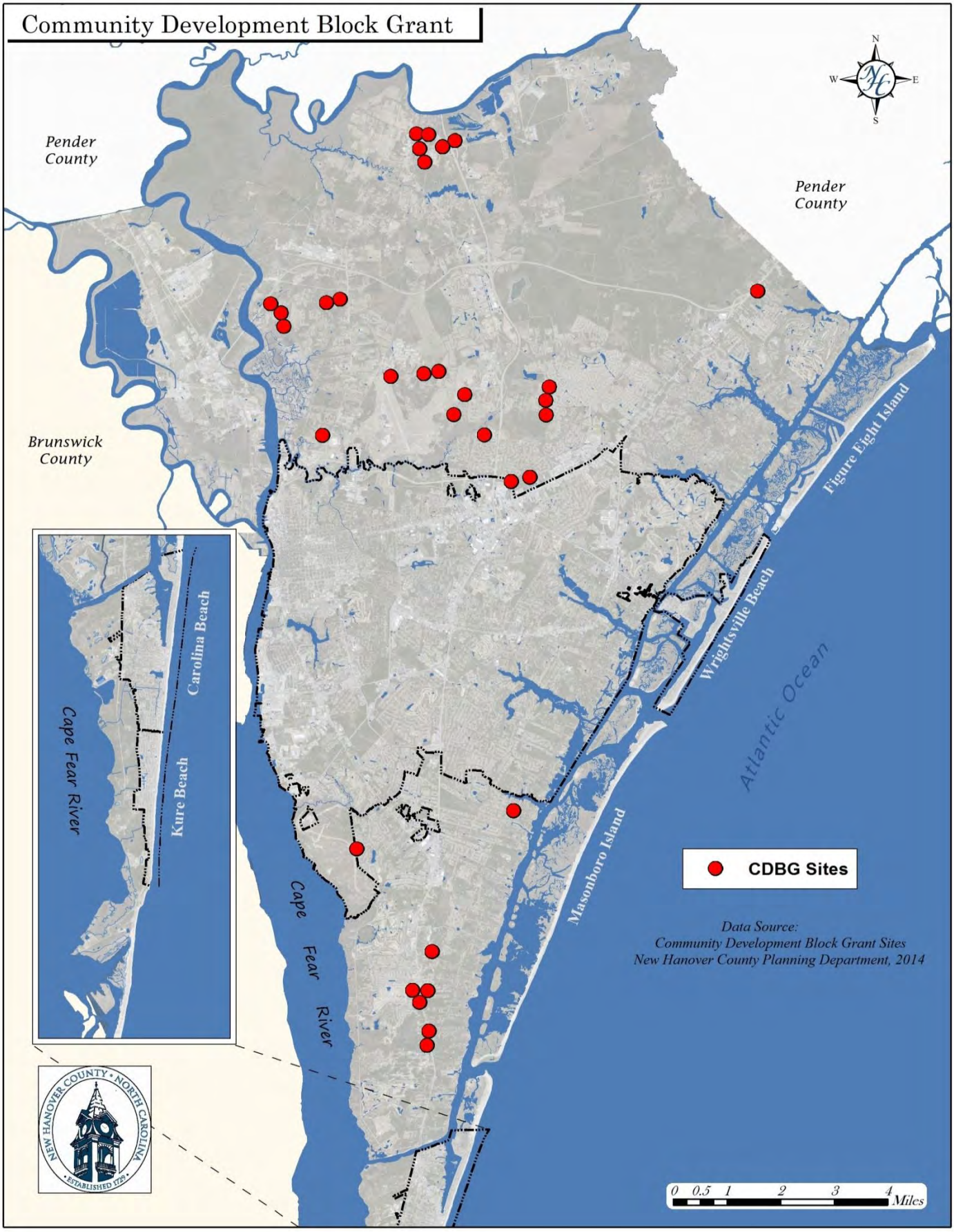
Map 2.8


Urban Services Area
Pender County
Pender County
Brunswick County
HOLLY SHELTER RD
SIDBURY RD
I-140
US HWY 421
CASTLE HAYNE RD
BLUE CLAY RD
N. COLLEGE RD
MARKET ST
EASTWOOD RD
OLEANDER DR
SHIPYARD BLV
CAROLINA BEACH RD
COLLEGE RD
MASONBORO LOOP RD
MYRTLE GROVE RD
RIVER RD
Cape Fear River
Figure Eight Island
Wrightsville Beach
Masonboro Island
Atlantic Ocean
Carolina Beach
Kure Beach
LAKE PARK BLV
FORT FISHER BLV
Incorporated Areas Boundary
Urban Services Area
Major Roads
Data Source:
Urban Services Boundary
New Hanover County Planning Department, 2006
0 0.5 1 2 3 4 Miles

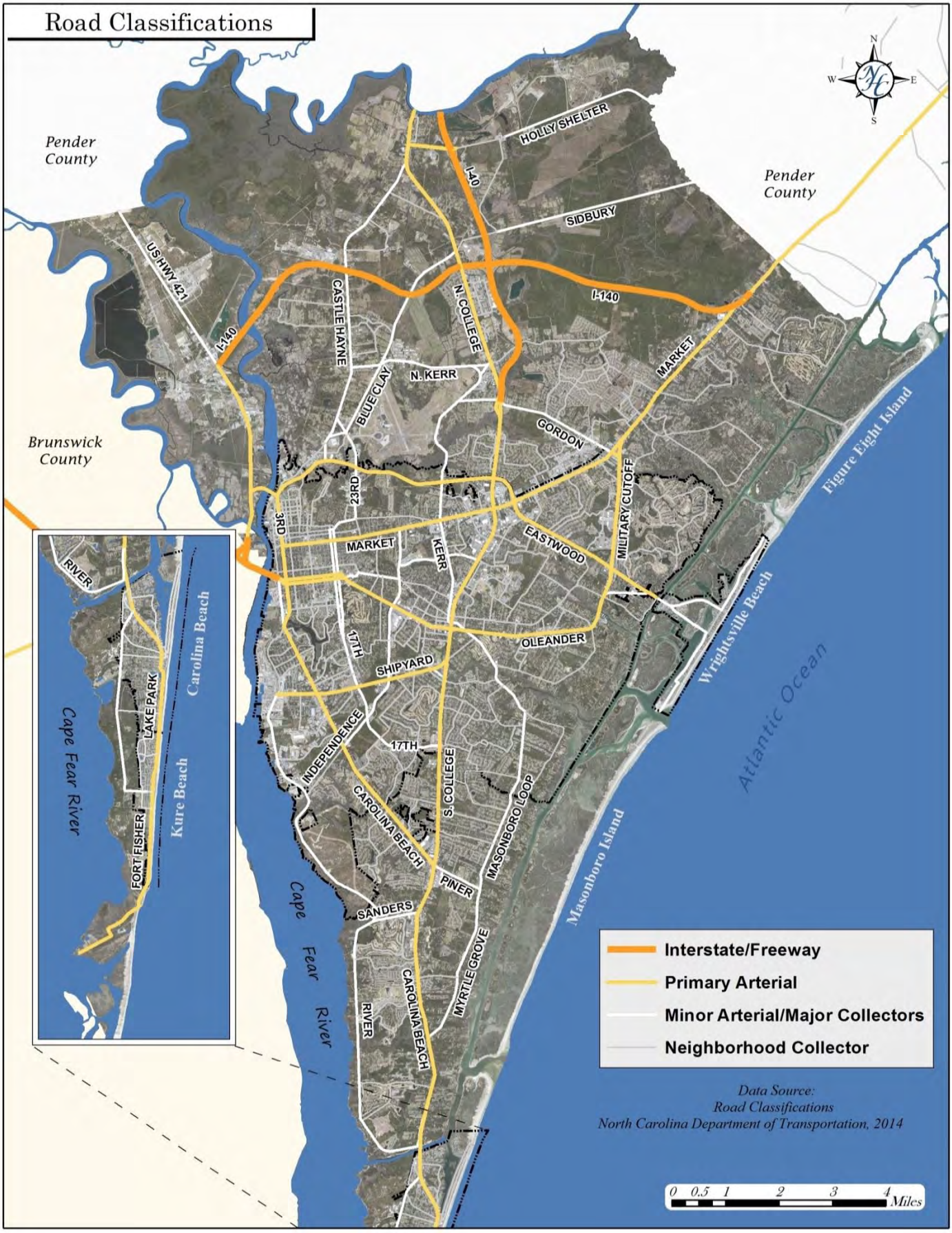
Map 2.9


CAMA Land Classification
Pender County
Pender County
Brunswick County
Cape Fear River
Atlantic Ocean
Figure Eight Island
Wrightsville Beach
Masonboro Island
Carolina Beach
Kure Beach
Data Source:
Coastal Area Management Act Land Classifications
New Hanover County Planning Department, 2006
Conservation Area
Natual Heritage Resource Protection Area
Aquifer Resource Protection Area
Watershed Resource Protection
Wetland Resource Protection Area
Urban
Transition
Community
Rural
Not in Planning Area
0 0.5 1 2 3 4 Miles

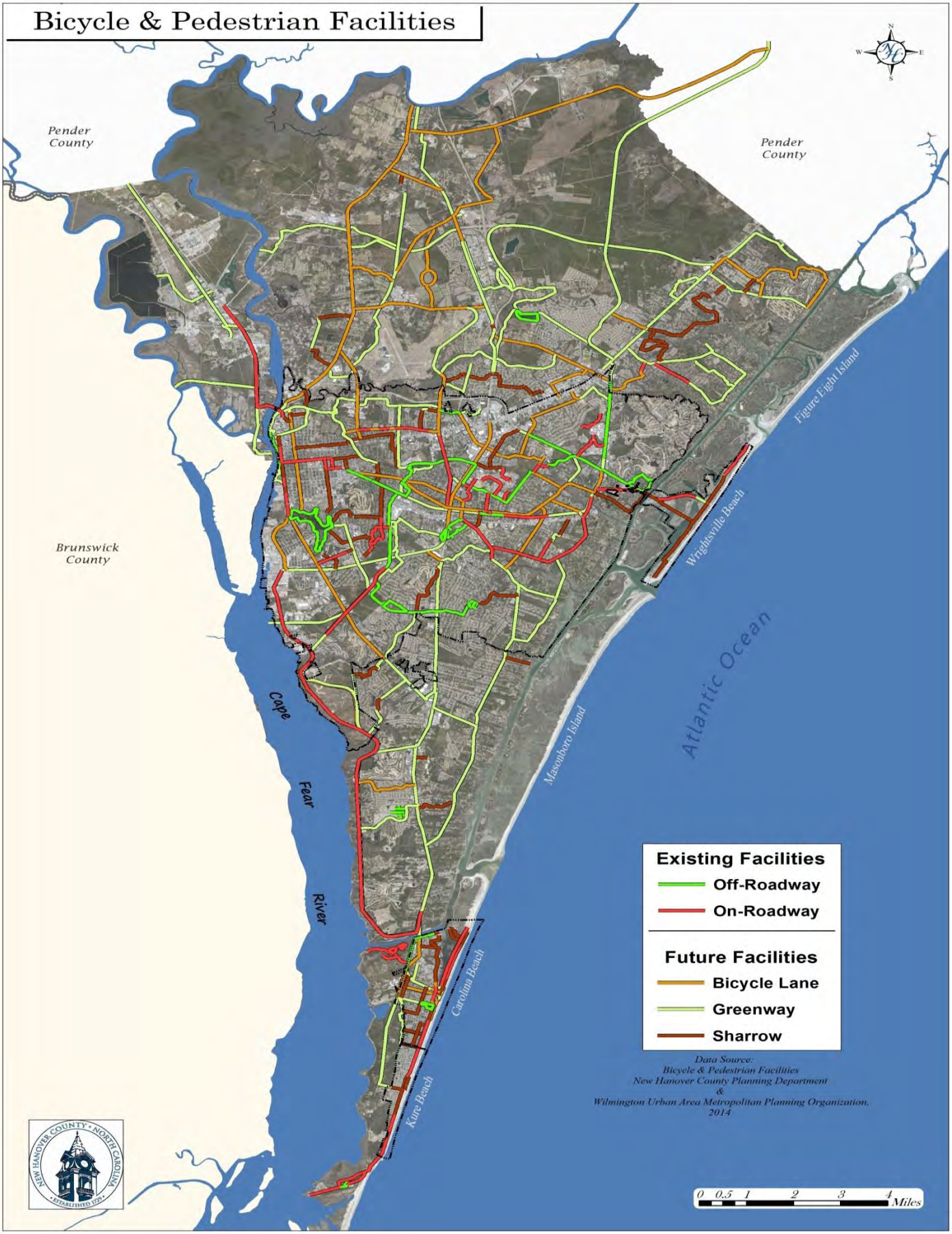
Map 2.10


Community Development Block Grant
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
CDBG Sites
Data Source:
Community Development Block Grant Sites
New Hanover County Planning Department, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

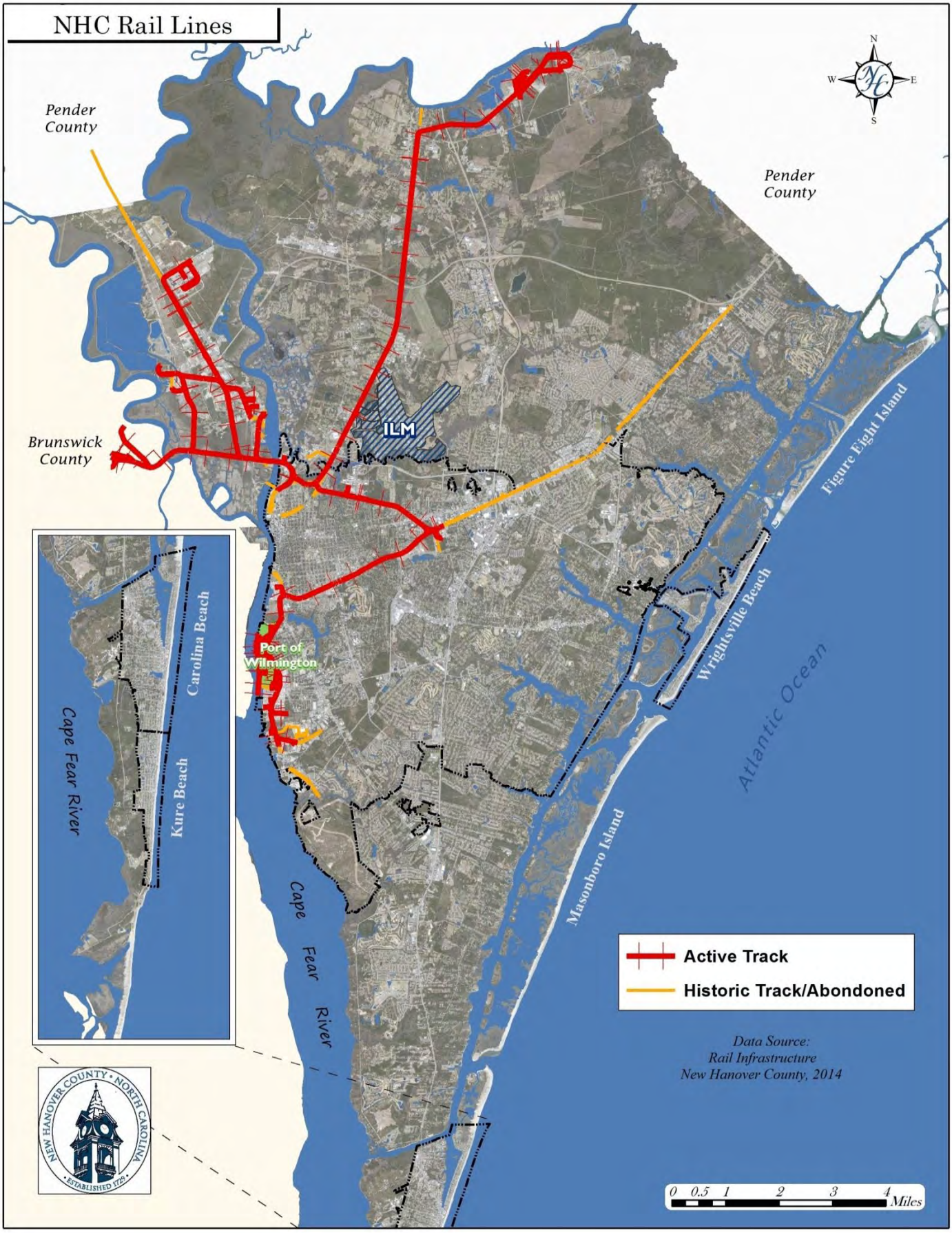
Map 2.11


Road Classifications
Pender County
Pender County
Brunswick County
HOLLY SHELTER
SIDBURY
I-40
I-140
US HWY 421
CASTLE HAYNE
N. COLLEGE
BLUE CLAY
N. KERR
GORDON
MARKET
MILITARY CUTOFF
EASTWOOD
OLEANDER
SHIPYARD
17TH
INDEPENDENCE
CAROLINA BEACH
S. COLLEGE
MASONBORO LOOP
PINER
SANDERS
MYRTLE GROVE
RIVER
23RD
3RD
KERR
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Cape Fear River
Carolina Beach
Kure Beach
LAKE PARK
FORT FISHER
Interstate/Freeway
Primary Arterial
Minor Arterial/Major Collectors
Neighborhood Collector
Data Source:
Road Classifications
North Carolina Department of Transportation, 2014
0 0.5 1 2 3 4 Miles

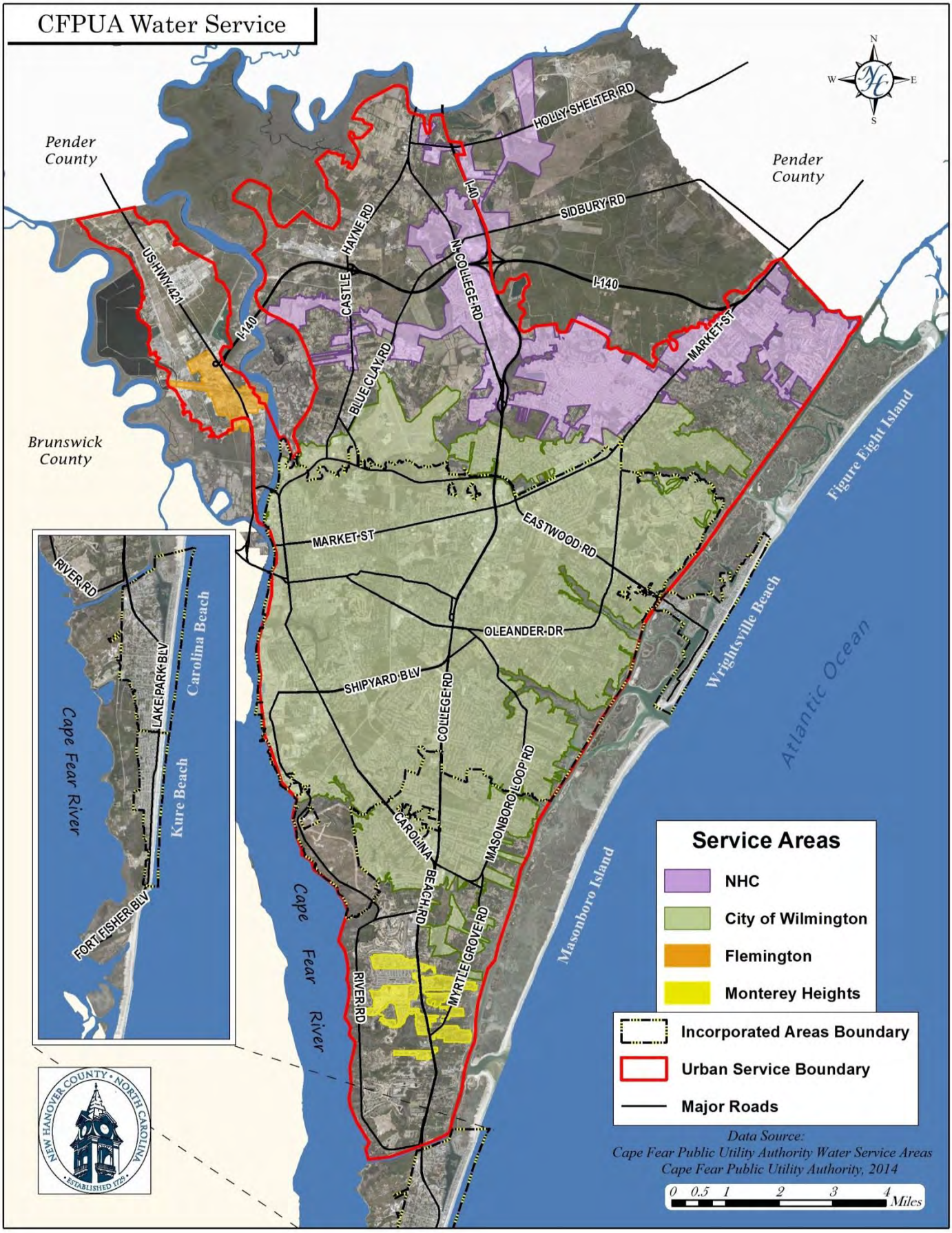
Map 2.12


Bicycle & Pedestrian Facilities
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Masonboro Island
Atlantic Ocean
Cape Fear River
Carolina Beach
Kure Beach
Existing Facilities
Off-Roadway
On-Roadway
Future Facilities
Bicycle Lane
Greenway
Sharrow
Data Source:
Bicycle & Pedestrian Facilities
New Hanover County Planning Department
&
Wilmington Urban Area Metropolitan Planning Organization,
2014
0 0.5 1 2 3 4 Miles

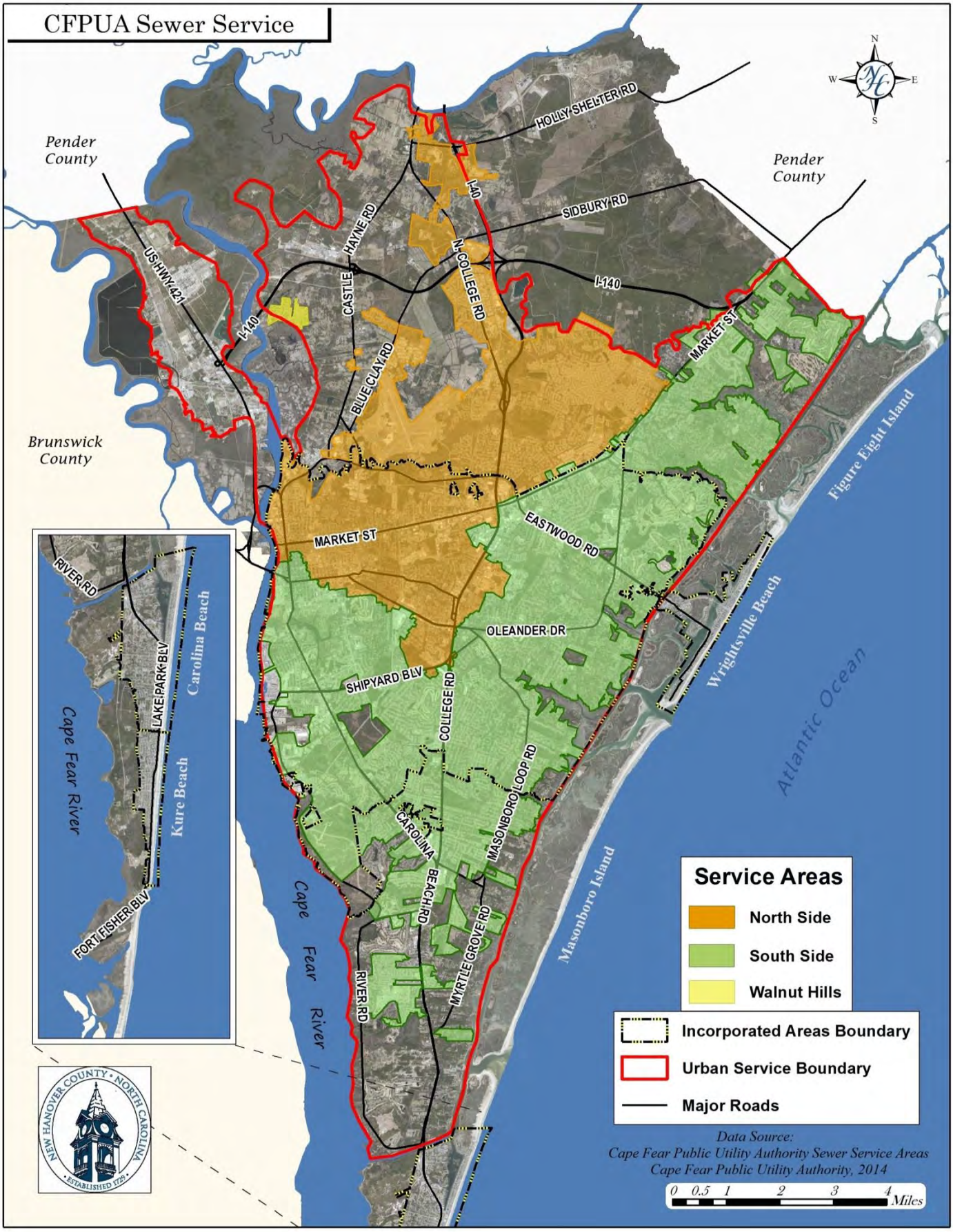
Map 2.13


NHC Rail Lines
Pender County
Pender County
Brunswick County
ILM
Port of Wilmington
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Active Track
Historic Track/Abondoned
Data Source:
Rail Infrastructure
New Hanover County, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

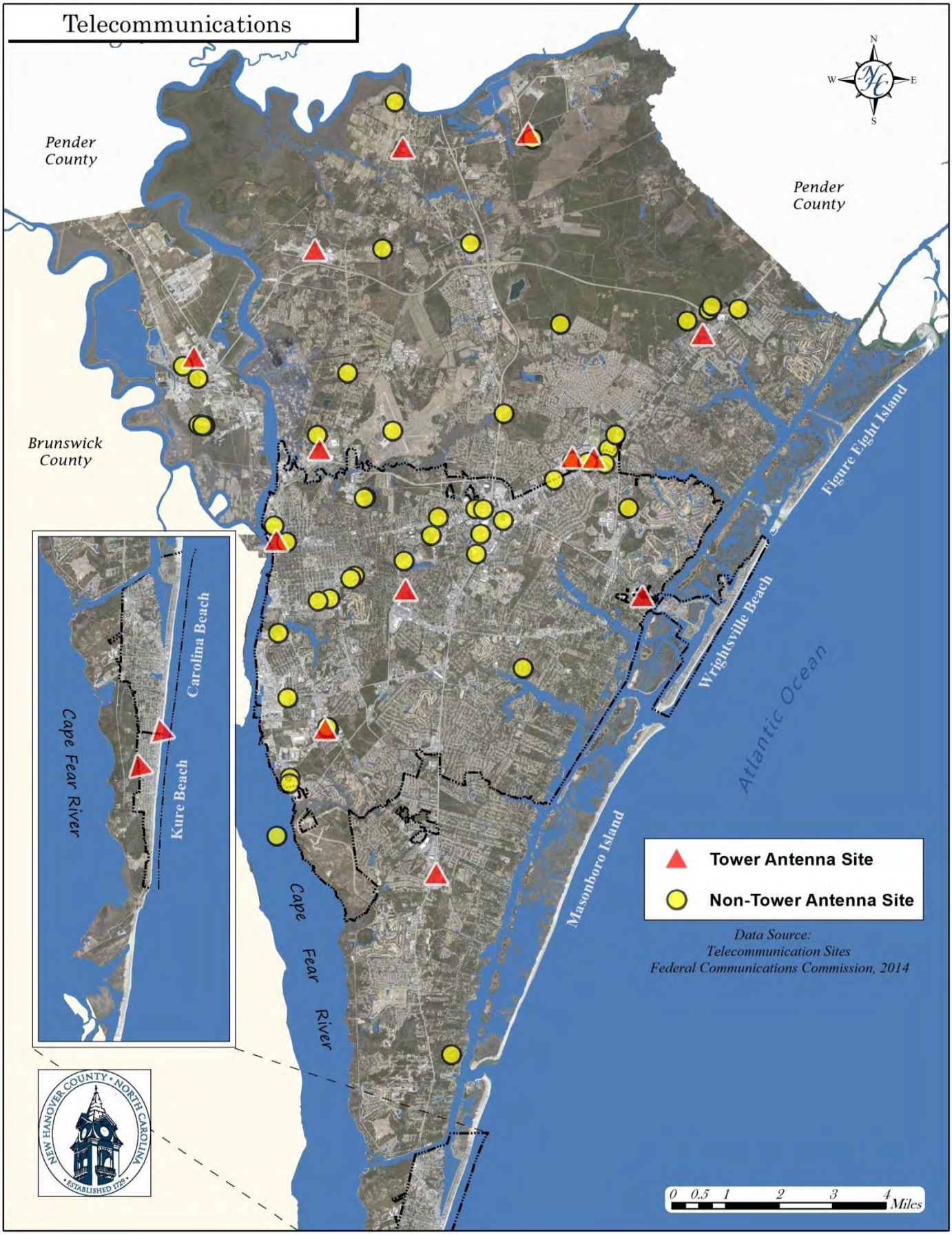
Map 2.14


CFPUA Water Service
Pender County
Pender County
Brunswick County
HOLLY SHELTER RD
SIDBURY RD
I-140
HAYNE RD
CASTLE
N. COLLEGE RD
US HWY 421
I-140
BLUE CLAY RD
MARKET ST
MARKET ST
EASTWOOD RD
OLEANDER DR
SHIPYARD BLV
COLLEGE RD
MASONBORO LOOP RD
CAROLINA BEACH RD
MYRTLE GROVE RD
RIVER RD
Cape Fear River
Cape Fear River
Masonboro Island
Wrightsville Beach
Figure Eight Island
Atlantic Ocean
RIVER RD
LAKE PARK BLV
Carolina Beach
Kure Beach
FORT FISHER BLV
NEW HANOVER COUNTY • NORTH CAROLINA • ESTABLISHED 1729 •
Service Areas
NHC
City of Wilmington
Flemington
Monterey Heights
Incorporated Areas Boundary
Urban Service Boundary
Major Roads
Data Source:
Cape Fear Public Utility Authority Water Service Areas
Cape Fear Public Utility Authority, 2014
0 0.5 1 2 3 4 Miles

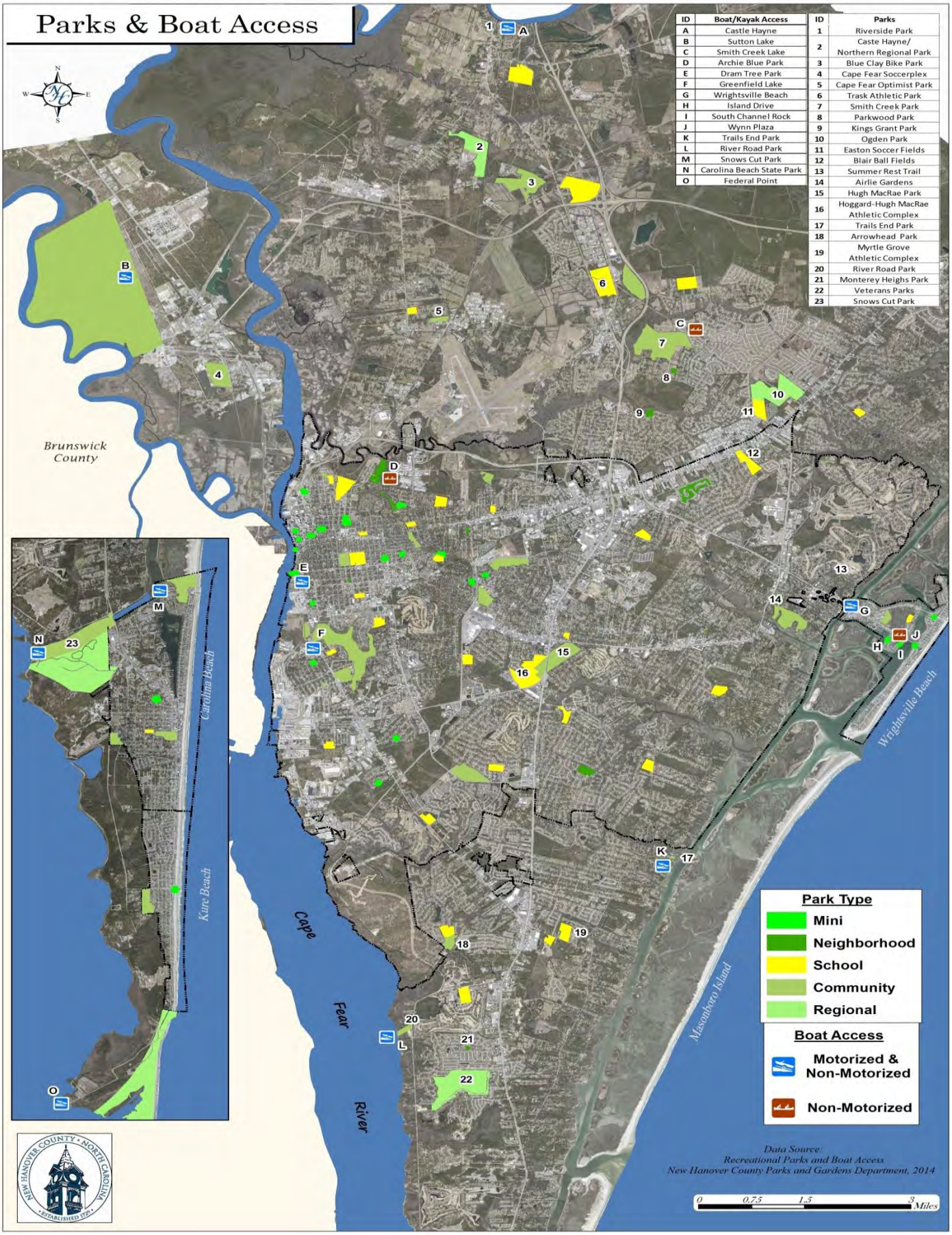
Map 2.15


CFPUA Sewer Service
Pender County
Pender County
Brunswick County
HOLLY SHELTER RD
SIDBURY RD
I-140
I-140
I-140
US HWY 421
HAYNE RD
CASTLE
BLUE CLAY RD
N. COLLEGE RD
MARKET ST
MARKET ST
EASTWOOD RD
OLEANDER DR
SHIPYARD BLV
COLLEGE RD
MASONBORO LOOP RD
CAROLINA BEACH RD
MYRTLE GROVE RD
RIVER RD
RIVER RD
LAKE PARK BLV
FORT FISHER BLV
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
Masonboro Island
Wrightsville Beach
Figure Eight Island
Atlantic Ocean
Service Areas
North Side
South Side
Walnut Hills
Incorporated Areas Boundary
Urban Service Boundary
Major Roads
Data Source:
Cape Fear Public Utility Authority Sewer Service Areas
Cape Fear Public Utility Authority, 2014
0 0.5 1 2 3 4 Miles
N
S
E
W
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

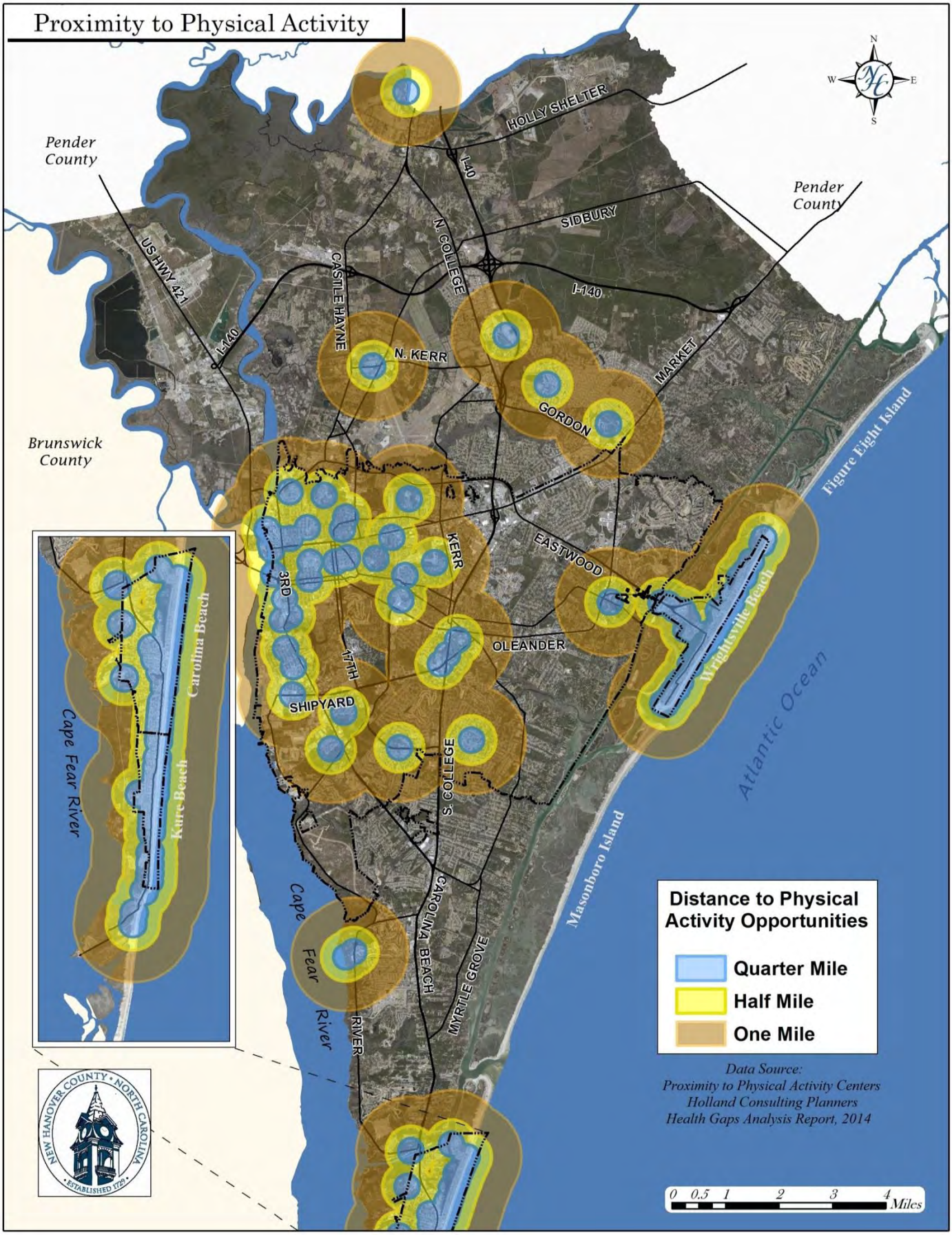
Map 2.16


Telecommunications
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Cape Fear River
Carolina Beach
Kure Beach
Cape Fear River
Tower Antenna Site
Non-Tower Antenna Site
Data Source:
Telecommunication Sites
Federal Communications Commission, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

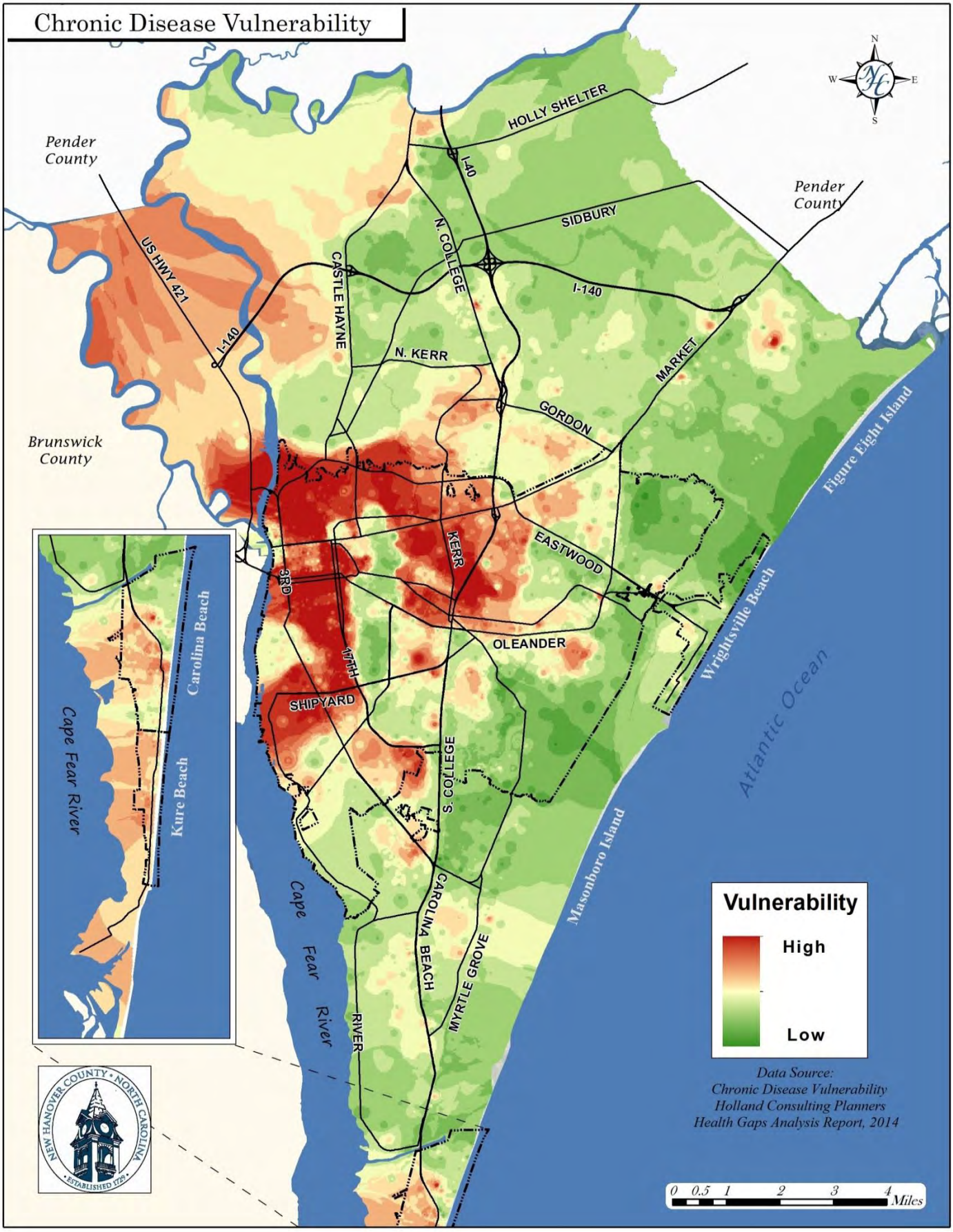
Map 2.17


Parks & Boat Access
Brunswick County
Carolina Beach
Kure Beach
Cape Fear River
Wrightsville Beach
Masonboro Island
Boat/Kayak Access
A Castle Hayne
B Sutton Lake
C Smith Creek Lake
D Archie Blue Park
E Dram Tree Park
F Greenfield Lake
G Wrightsville Beach
H Island Drive
I South Channel Rock
J Wynn Plaza
K Trails End Park
L River Road Park
M Snows Cut Park
N Carolina Beach State Park
O Federal Point
Parks
1 Riverside Park
2 Caste Hayne/ Northern Regional Park
3 Blue Clay Bike Park
4 Cape Fear Soccerplex
5 Cape Fear Optimist Park
6 Trask Athletic Park
7 Smith Creek Park
8 Parkwood Park
9 Kings Grant Park
10 Ogden Park
11 Easton Soccer Fields
12 Blair Ball Fields
13 Summer Rest Trail
14 Airlie Gardens
15 Hugh MacRae Park
16 Hoggard-Hugh MacRae Athletic Complex
17 Trails End Park
18 Arrowhead Park
19 Myrtle Grove Athletic Complex
20 River Road Park
21 Monterey Heighs Park
22 Veterans Parks
23 Snows Cut Park
Park Type
Mini
Neighborhood
School
Community
Regional
Boat Access
Motorized & Non-Motorized
Non-Motorized
Data Source:
Recreational Parks and Boat Access
New Hanover County Parks and Gardens Department, 2014
0 0.75 1.5 3 Miles

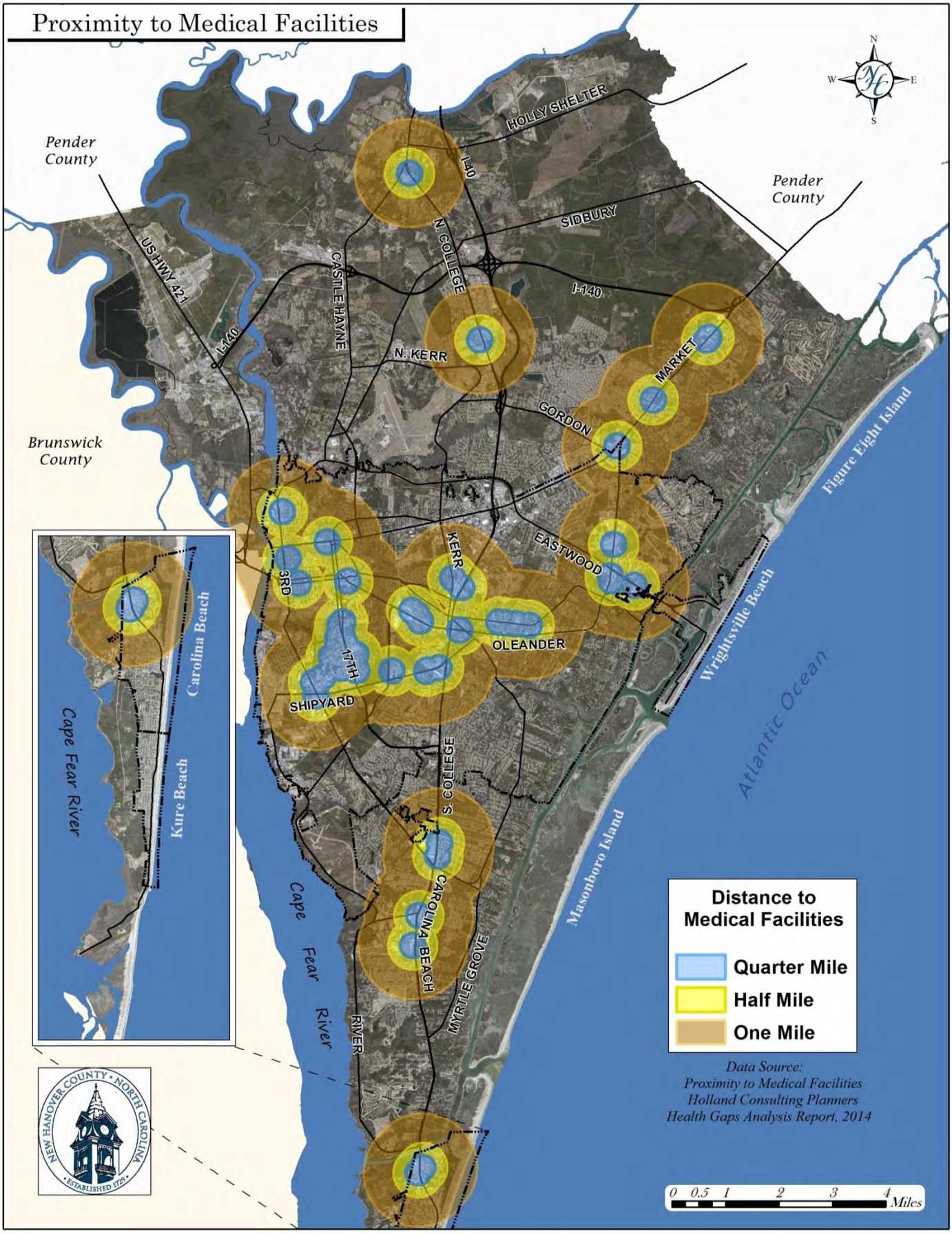
Map 2.18


Proximity to Physical Activity
Pender County
Pender County
Brunswick County
HOLLY SHELTER
I-140
SIDBURY
N. COLLEGE
US HWY 421
CASTLE HAYNE
I-140
I-140
N. KERR
GORDON
MARKET
Figure Eight Island
KERR
3RD
EASTWOOD
OLEANDER
17TH
SHIPYARD
S. COLLEGE
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
CAROLINA BEACH
MYRTLE GROVE
Distance to Physical Activity Opportunities
Quarter Mile
Half Mile
One Mile
Data Source:
Proximity to Physical Activity Centers
Holland Consulting Planners
Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

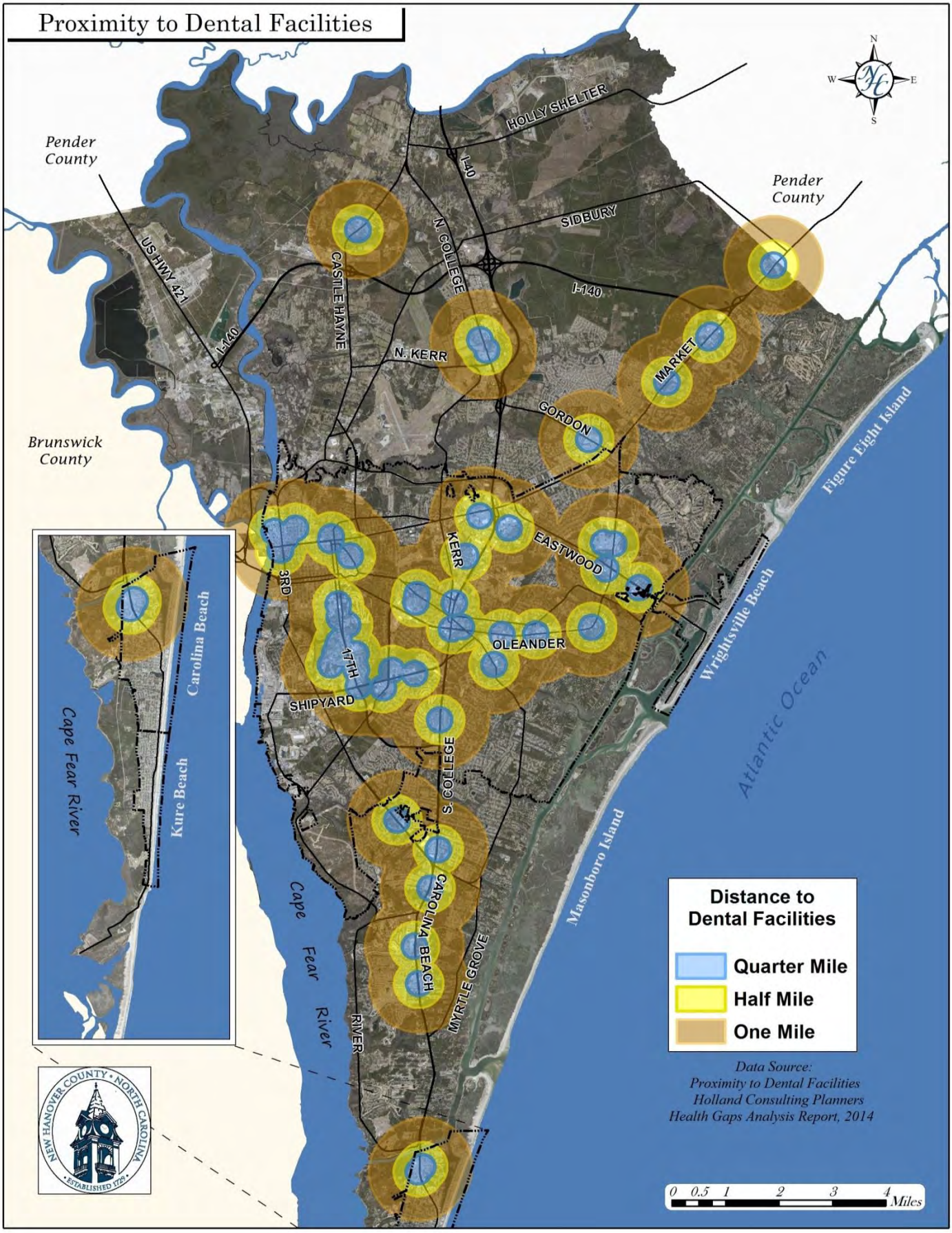
Map 2.19


Chronic Disease Vulnerability
Pender County
Pender County
Brunswick County
HOLLY SHELTER
I-40
SIDBURY
N. COLLEGE
CASTLE HAYNE
US HWY 421
I-140
I-140
N. KERR
MARKET
GORDON
EASTWOOD
KERR
3RD
17TH
OLEANDER
SHIPYARD
S. COLLEGE
CAROLINA BEACH
MYRTLE GROVE
RIVER
Cape Fear River
Cape Fear River
Carolina Beach
Kure Beach
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
N
W
E
S
Vulnerability
High
Low
Data Source:
Chronic Disease Vulnerability
Holland Consulting Planners
Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

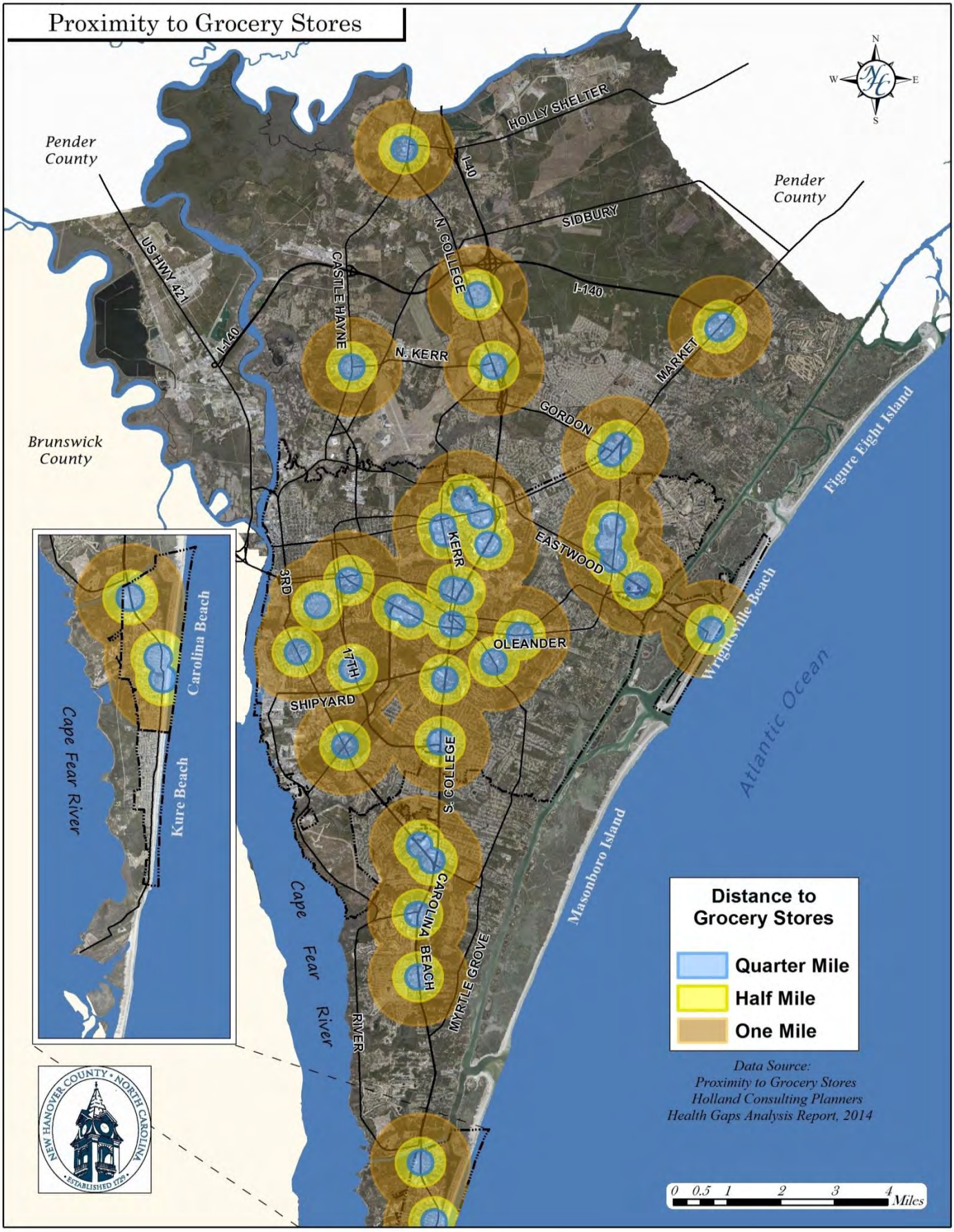
Map 2.20


Proximity to Medical Facilities
Pender County
Pender County
Brunswick County
HOLLY SHELTER
SIDBURY
I-140
N. COLLEGE
US HWY 421
CASTLE HAYNE
I-140
I-140
N. KERR
MARKET
GORDON
3RD
KERR
EASTWOOD
OLEANDER
17TH
SHIPYARD
S. COLLEGE
CAROLINA BEACH
MYRTLE GROVE
Cape Fear River
Cape Fear River
Carolina Beach
Kure Beach
Figure Eight Island
Wrightsville Beach
Masonboro Island
Atlantic Ocean
Distance to Medical Facilities
Quarter Mile
Half Mile
One Mile
Data Source:
Proximity to Medical Facilities
Holland Consulting Planners
Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

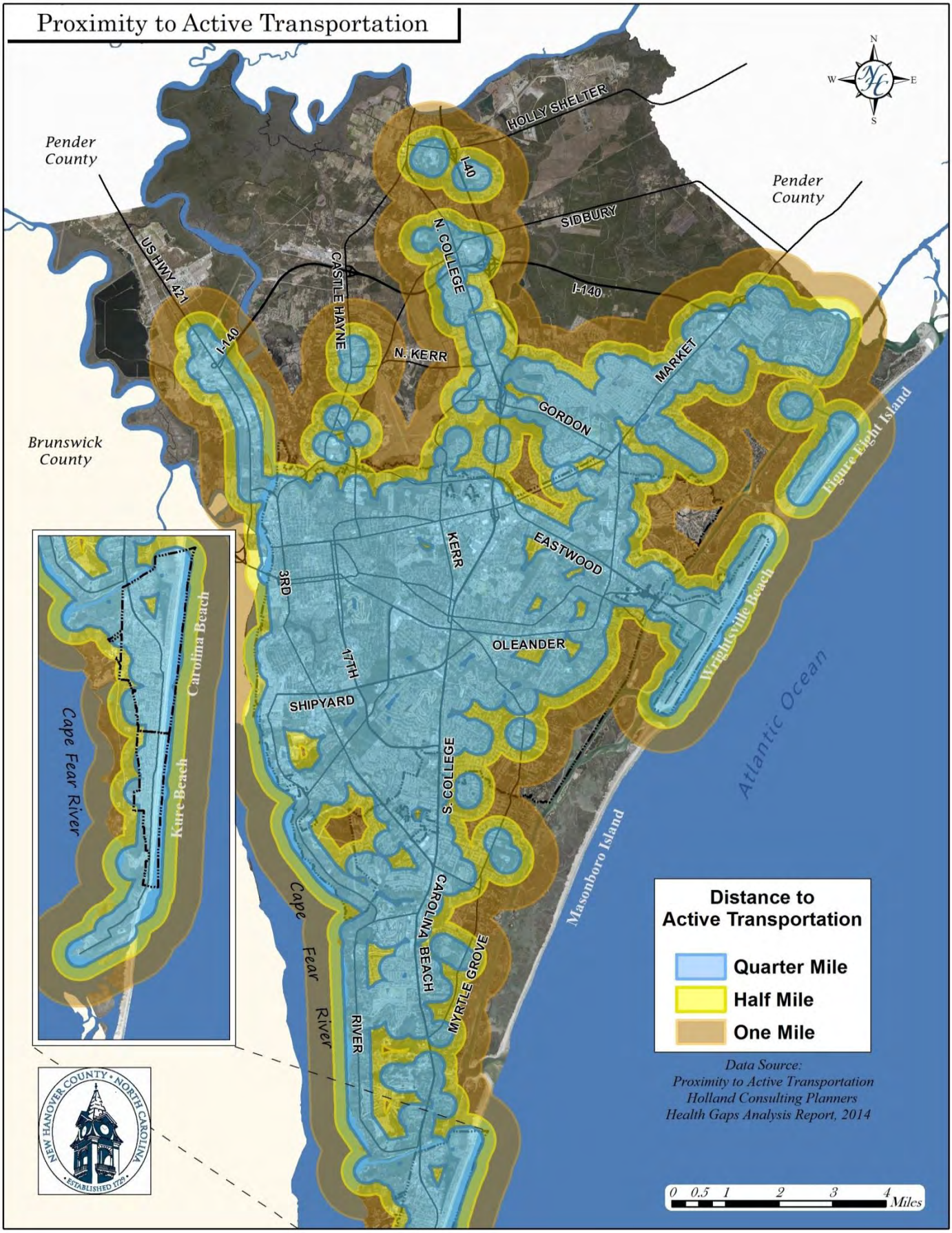
Map 2.21


Proximity to Dental Facilities
Pender County
Pender County
Brunswick County
HOLLY SHELTER
I-40
SIDBURY
N. COLLEGE
US HWY 421
CASTLE HAYNE
I-140
I-140
N. KERR
MARKET
GORDON
Figure Eight Island
KERR
EASTWOOD
3RD
17TH
OLEANDER
SHIPYARD
Wrightsville Beach
Atlantic Ocean
S. COLLEGE
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
CAROLINA BEACH
MYRTLE GROVE
Masonboro Island
Distance to Dental Facilities
Quarter Mile
Half Mile
One Mile
Data Source:
Proximity to Dental Facilities
Holland Consulting Planners
Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
ESTABLISHED 1729

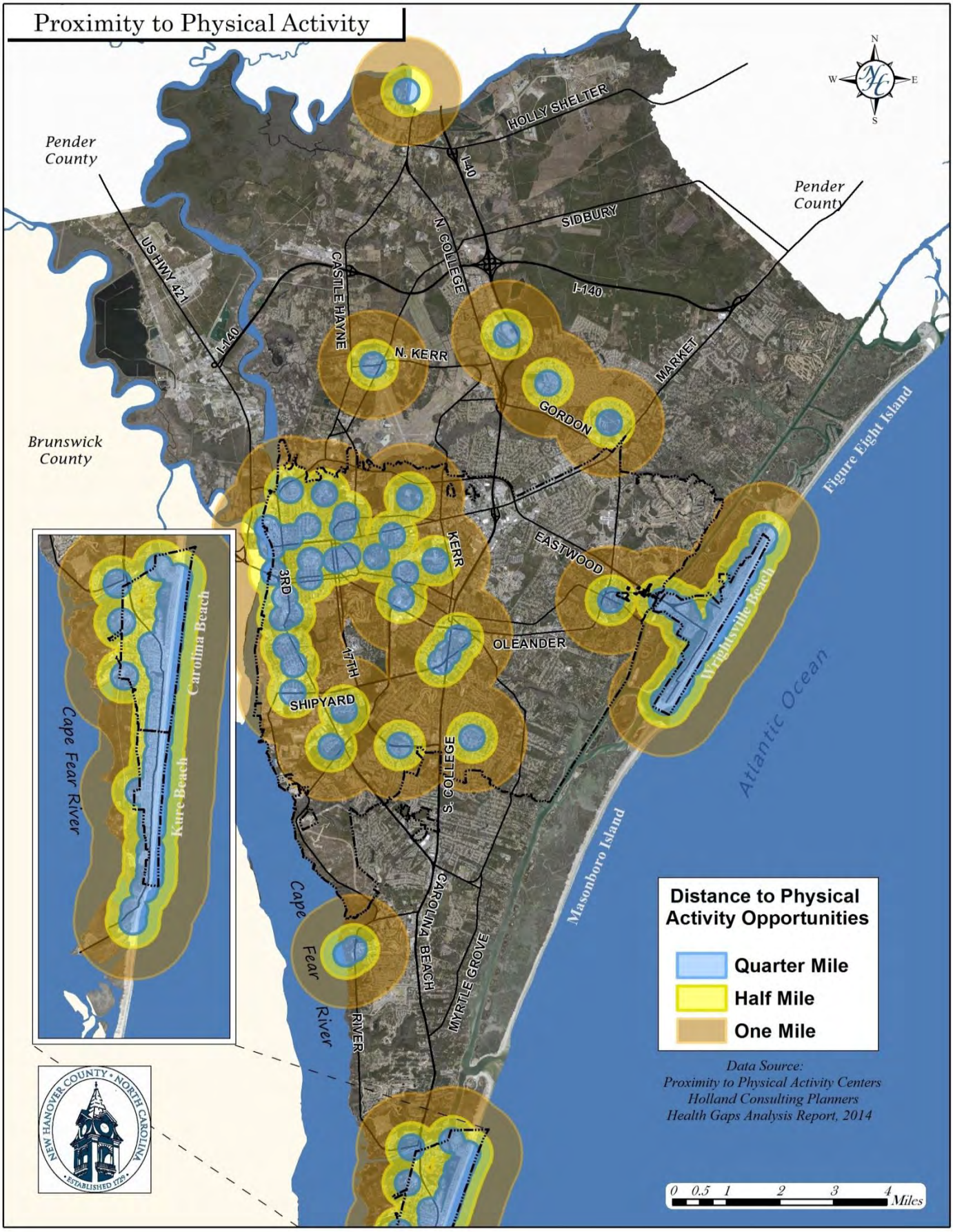
Map 2.22


Proximity to Grocery Stores
Pender County
Pender County
Brunswick County
HOLLY SHELTER
I-40
SIDBURY
N. COLLEGE
US HWY 421
CASTLE HAYNE
I-140
I-140
N. KERR
MARKET
GORDON
KERR
EASTWOOD
3RD
17TH
OLEANDER
SHIPYARD
S. COLLEGE
CAROLINA BEACH
MYRTLE GROVE
RIVER
Cape Fear River
Cape Fear River
Carolina Beach
Kure Beach
Masonboro Island
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Distance to Grocery Stores
Quarter Mile
Half Mile
One Mile
Data Source:
Proximity to Grocery Stores
Holland Consulting Planners
Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
ESTABLISHED 1729

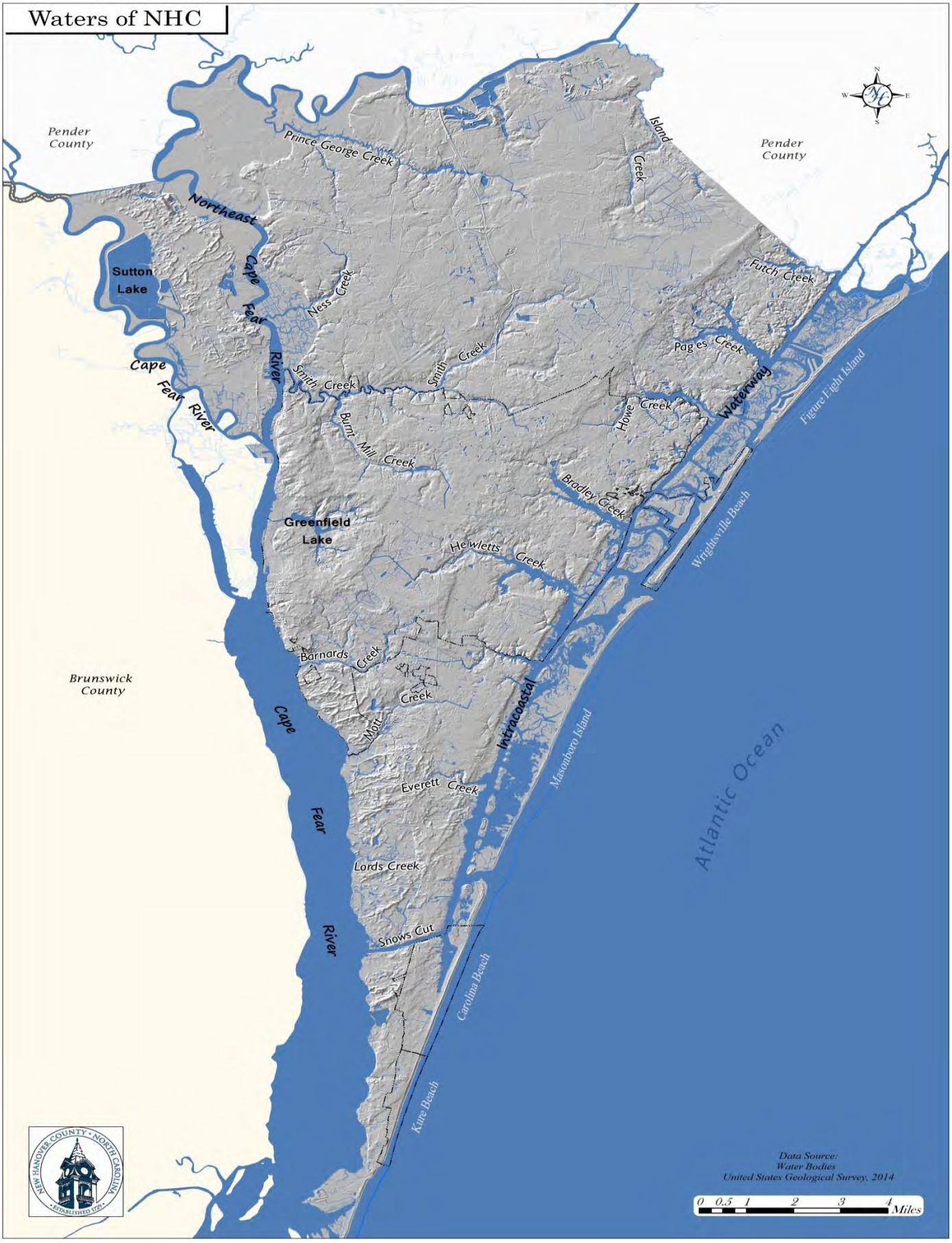
Map 2.23


Proximity to Active Transportation
Pender County
Pender County
Brunswick County
HOLLY SHELTER
SIDBURY
I-40
N. COLLEGE
I-140
US HWY 421
CASTLE HAYNE
I-140
N. KERR
MARKET
GORDON
Figure Eight Island
KERR
EASTWOOD
3RD
17TH
OLEANDER
SHIPYARD
Wrightsville Beach
Atlantic Ocean
S. COLLEGE
Masonboro Island
Cape Fear River
Carolina Beach
Kure Beach
Cape Fear River
CAROLINA BEACH
MYRTLE GROVE
RIVER
Distance to Active Transportation
Quarter Mile
Half Mile
One Mile
Data Source:
Proximity to Active Transportation
Holland Consulting Planners
Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

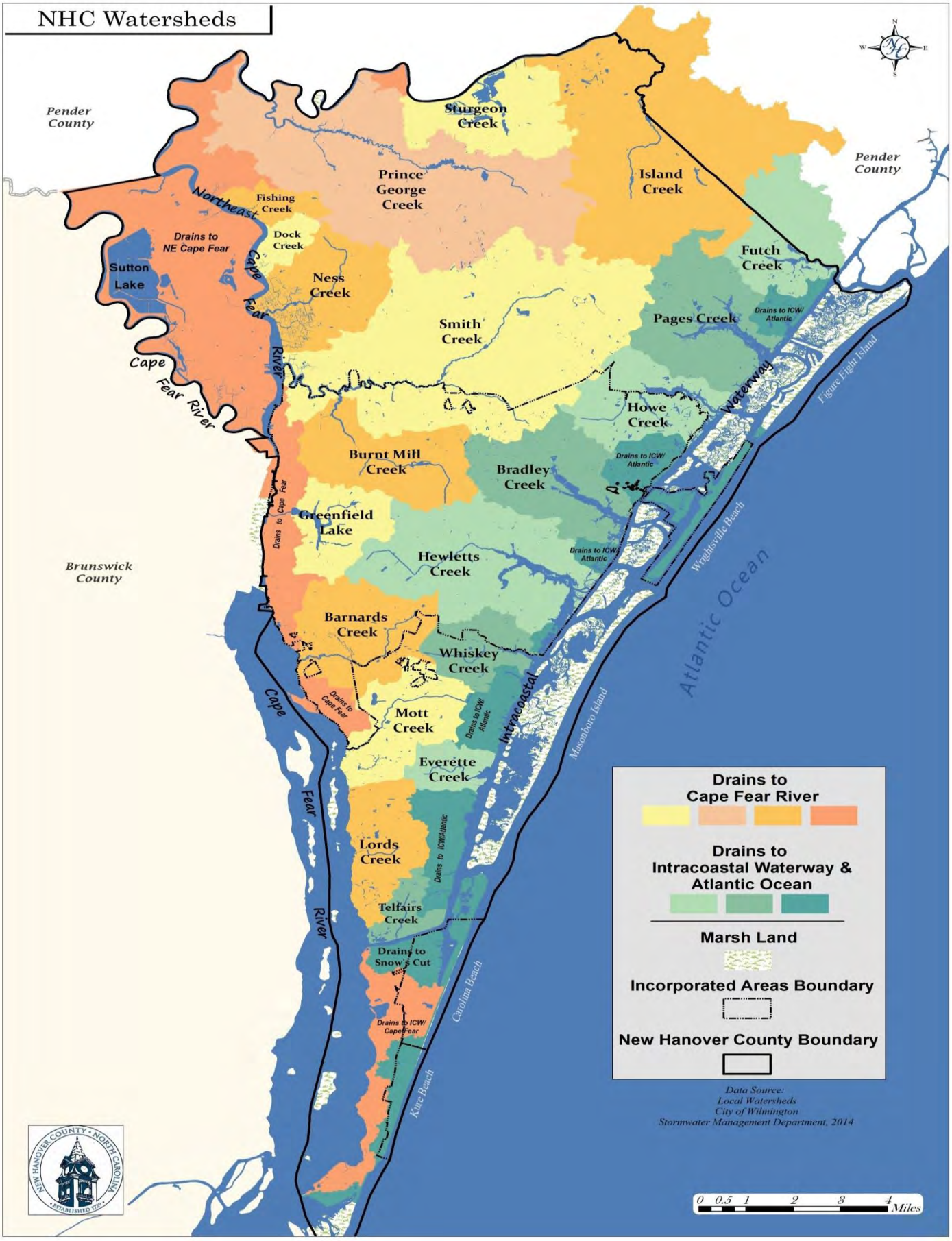
Map 2.24


Proximity to Physical Activity
Pender County
Pender County
Brunswick County
HOLLY SHELTER
I-40
SIDBURY
N. COLLEGE
US HWY 421
CASTLE HAYNE
I-140
I-140
N. KERR
GORDON
MARKET
Figure Eight Island
KERR
EASTWOOD
3RD
17TH
OLEANDER
SHIPYARD
Wrightsville Beach
Atlantic Ocean
S. COLLEGE
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
CAROLINA BEACH
MYRTLE GROVE
Distance to Physical Activity Opportunities
Quarter Mile
Half Mile
One Mile
Data Source:
Proximity to Physical Activity Centers
Holland Consulting Planners
Health Gaps Analysis Report, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

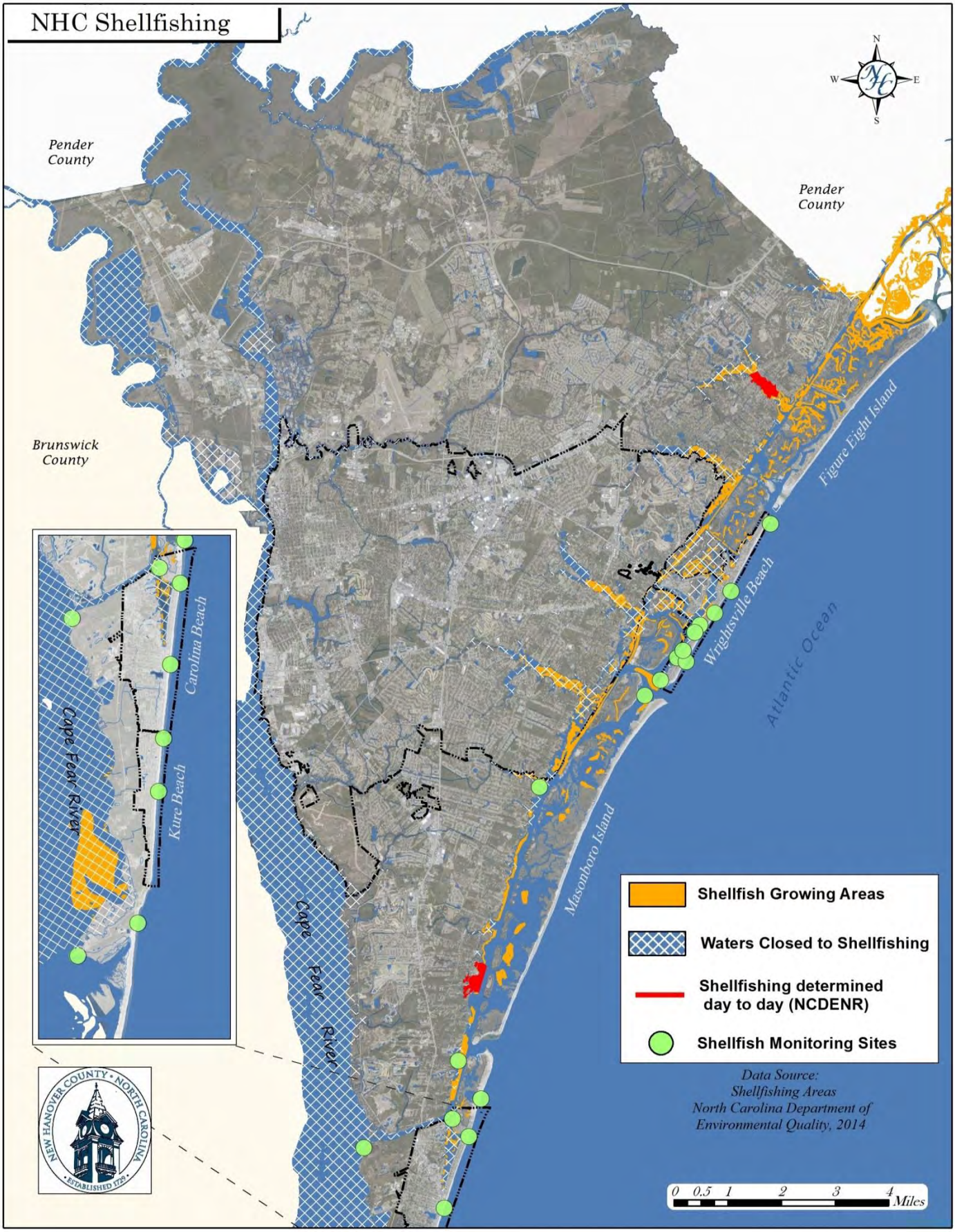
Map 2.25


Waters of NHC
Pender County
Pender County
Brunswick County
Prince George Creek
Island Creek
Northeast Cape Fear River
Sutton Lake
Ness Creek
Futch Creek
Pages Creek
Cape Fear River
Smith Creek
Smith Creek
Howe Creek
Waterway
Figure Eight Island
Burnt Mill Creek
Bradley Creek
Greenfield Lake
Hewletts Creek
Wrightsville Beach
Barnards Creek
Creek
Mott Creek
Intracoastal
Masonboro Island
Atlantic Ocean
Cape Fear River
Everett Creek
Lords Creek
Snows Cut
Carolina Beach
Kure Beach
Data Source:
Water Bodies
United States Geological Survey, 2014
0 0.5 1 2 3 4 Miles

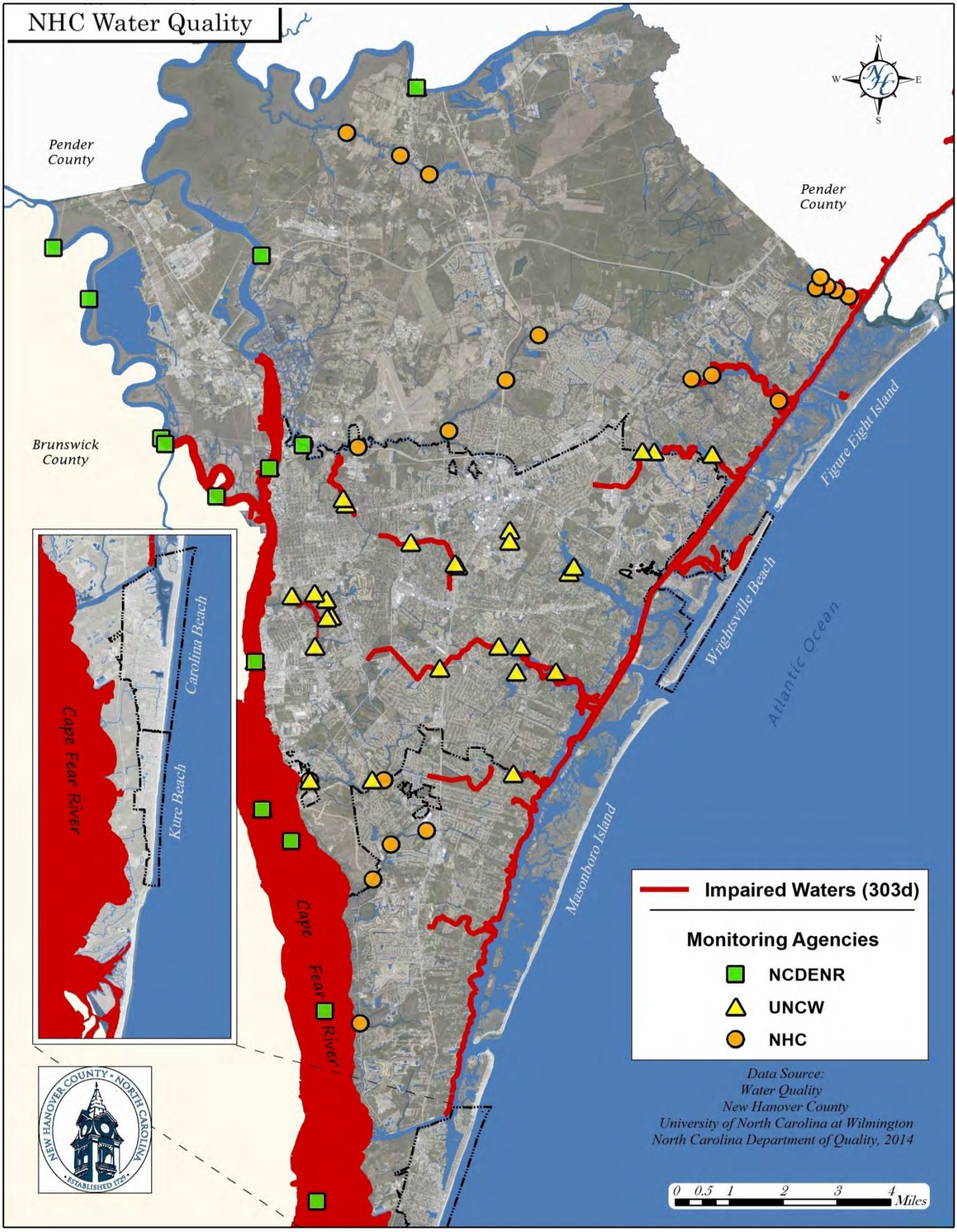
Map 2.26


NHC Watersheds
Pender County
Brunswick County
Sturgeon Creek
Prince George Creek
Island Creek
Fishing Creek
Northeast Cape Fear River
Drains to NE Cape Fear
Dock Creek
Sutton Lake
Ness Creek
Smith Creek
Futch Creek
Pages Creek
Drains to ICW/ Atlantic
Howe Creek
Waterway
Figure Eight Island
Cape Fear River
Burnt Mill Creek
Bradley Creek
Drains to Cape Fear
Greenfield Lake
Hewletts Creek
Wrightsville Beach
Atlantic Ocean
Barnards Creek
Whiskey Creek
Intracoastal
Mott Creek
Masonboro Island
Everette Creek
Lords Creek
Telfairs Creek
Drains to Snow's Cut
Carolina Beach
Kure Beach
Drains to ICW/ Cape Fear
Drains to Cape Fear River
Drains to Intracoastal Waterway & Atlantic Ocean
Marsh Land
Incorporated Areas Boundary
New Hanover County Boundary
Data Source:
Local Watersheds
City of Wilmington
Stormwater Management Department, 2014
0 0.5 1 2 3 4 Miles

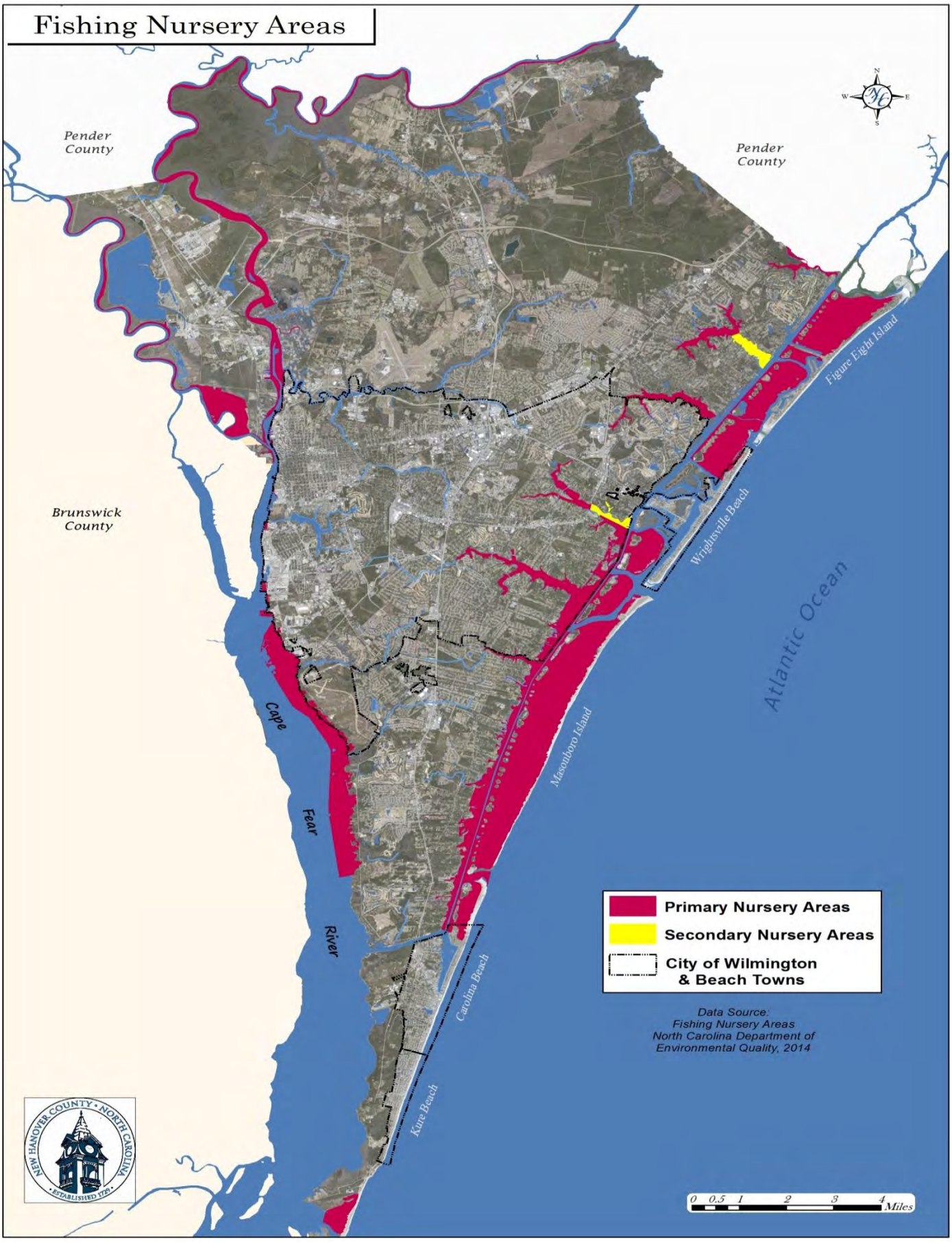
Map 2.27


NHC Shellfishing
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Cape Fear River
Kure Beach
Cape Fear River
Shellfish Growing Areas
Waters Closed to Shellfishing
Shellfishing determined day to day (NCDENR)
Shellfish Monitoring Sites
Data Source:
Shellfishing Areas
North Carolina Department of Environmental Quality, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

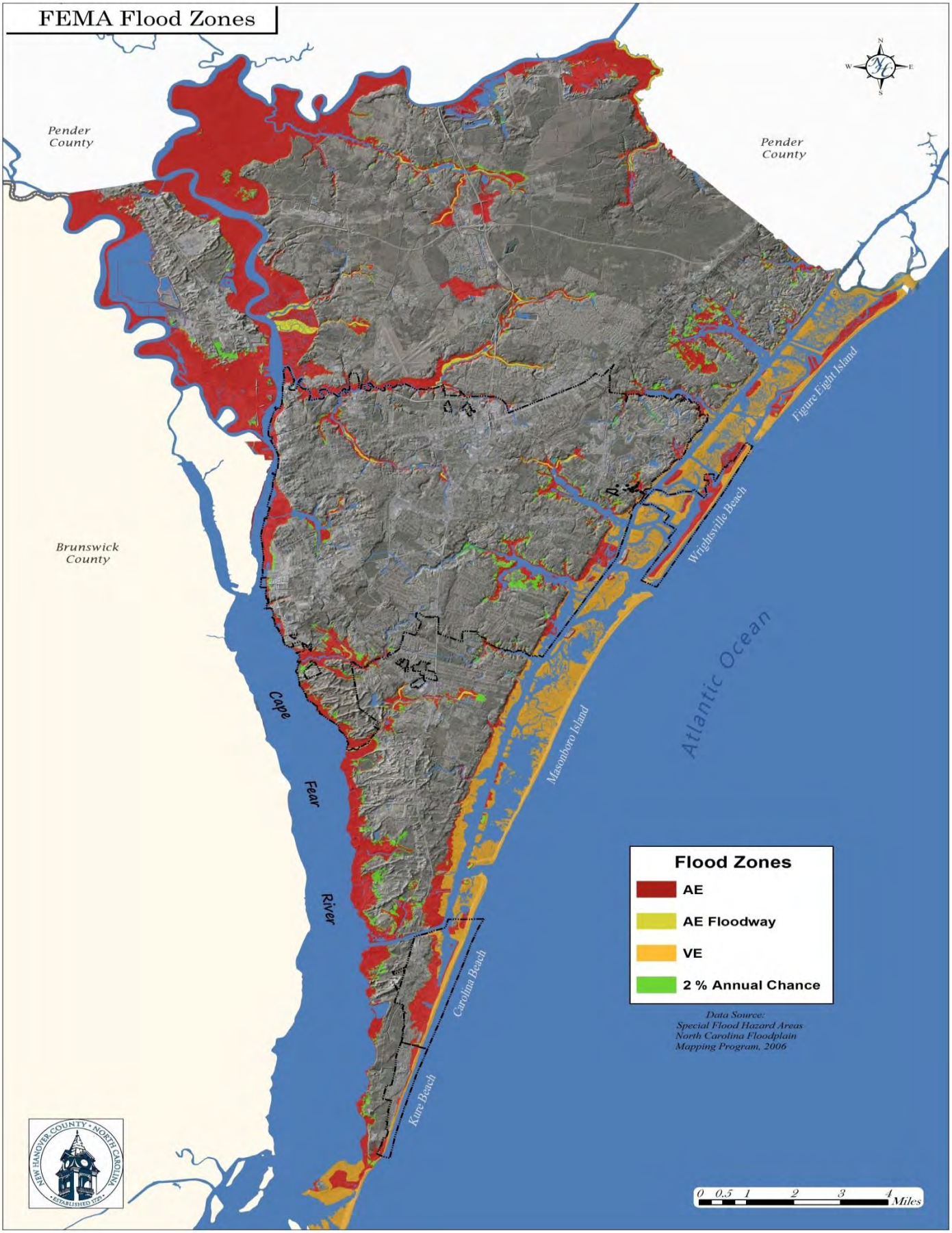
Map 2.28


NHC Water Quality
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
Impaired Waters (303d)
Monitoring Agencies
NCDENR
UNCW
NHC
Data Source:
Water Quality
New Hanover County
University of North Carolina at Wilmington
North Carolina Department of Quality, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

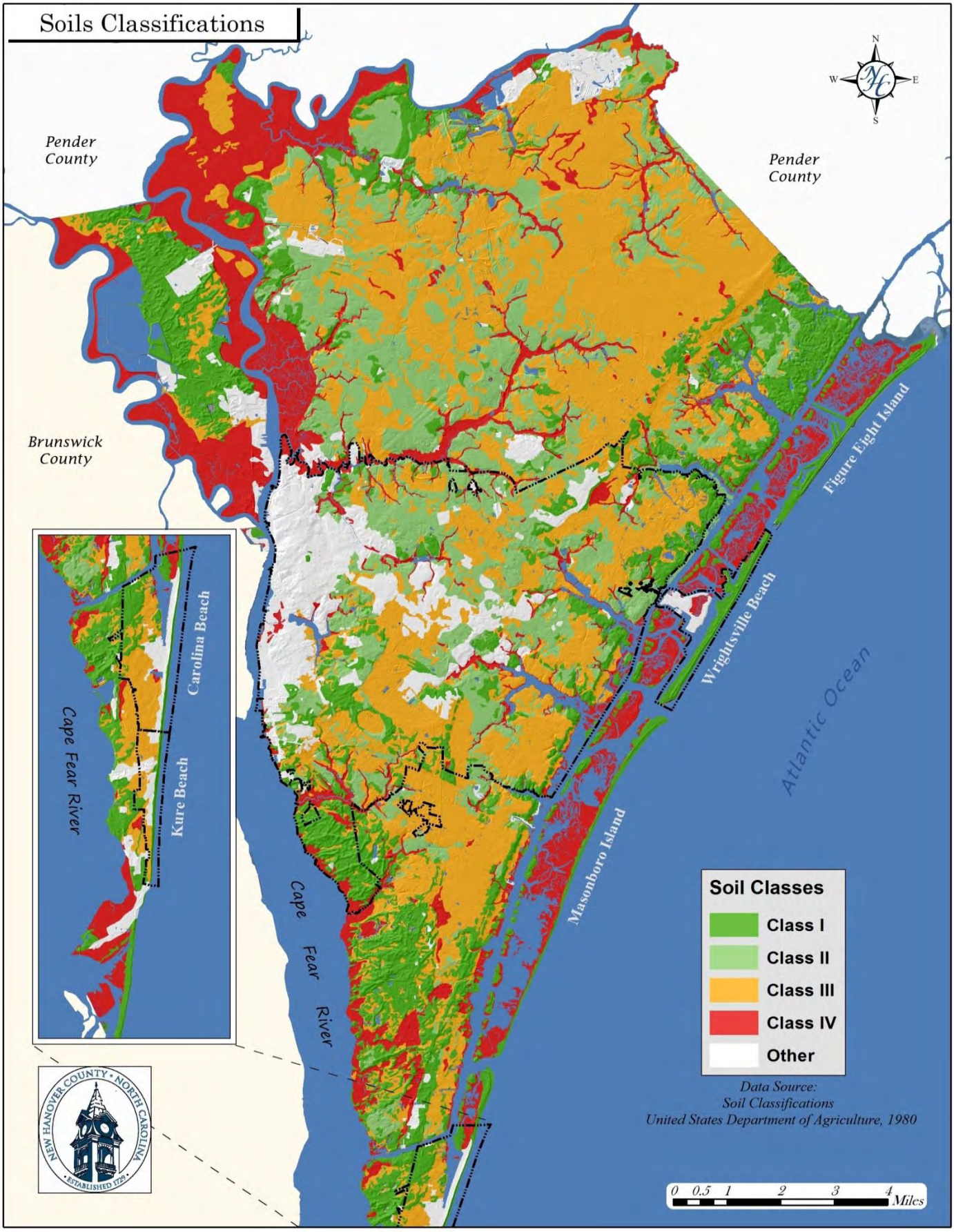
Map 2.29


Fishing Nursery Areas
Pender County
Pender County
Brunswick County
Cape Fear River
Atlantic Ocean
Figure Eight Island
Wrightsville Beach
Masonboro Island
Carolina Beach
Kure Beach
Primary Nursery Areas
Secondary Nursery Areas
City of Wilmington & Beach Towns
Data Source:
Fishing Nursery Areas
North Carolina Department of Environmental Quality, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA • ESTABLISHED 1729 •

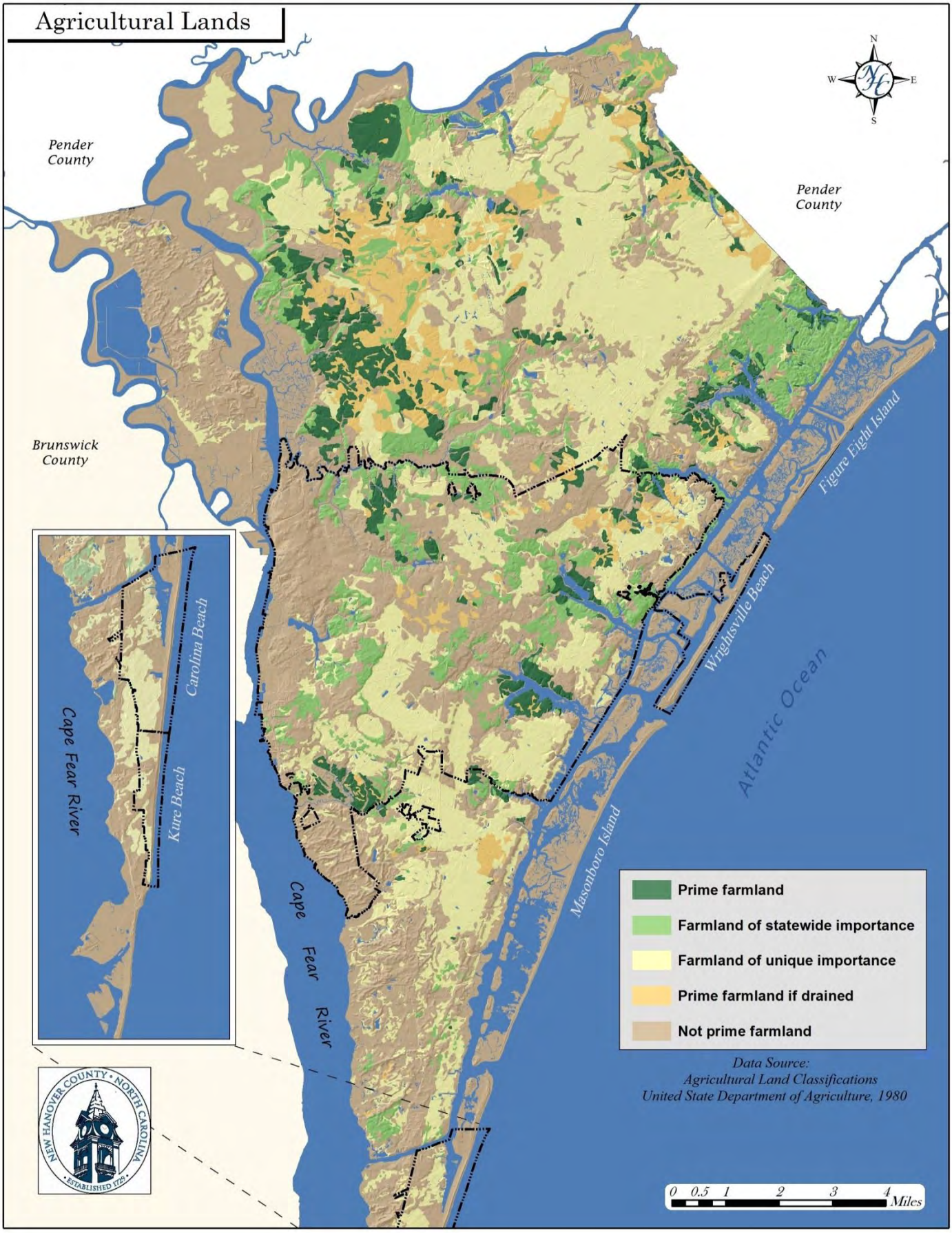
Map 2.30


FEMA Flood Zones
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Masonboro Island
Atlantic Ocean
Cape Fear River
Carolina Beach
Kure Beach
Flood Zones
AE
AE Floodway
VE
2 % Annual Chance
Data Source:
Special Flood Hazard Areas
North Carolina Floodplain
Mapping Program, 2006
0 0.5 1 2 3 4 Miles

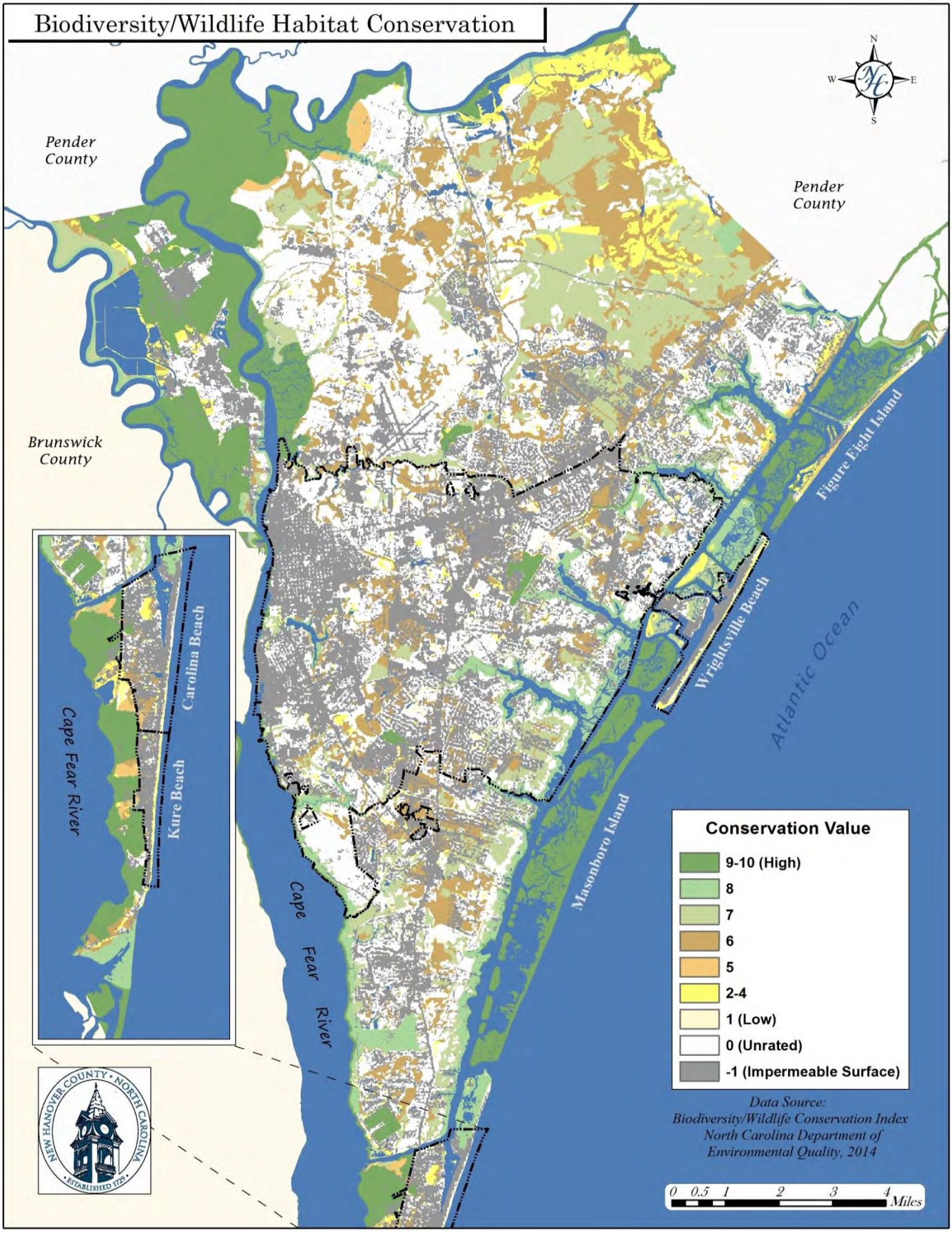
Map 2.31


Soils Classifications
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
Soil Classes
Class I
Class II
Class III
Class IV
Other
Data Source:
Soil Classifications
United States Department of Agriculture, 1980
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

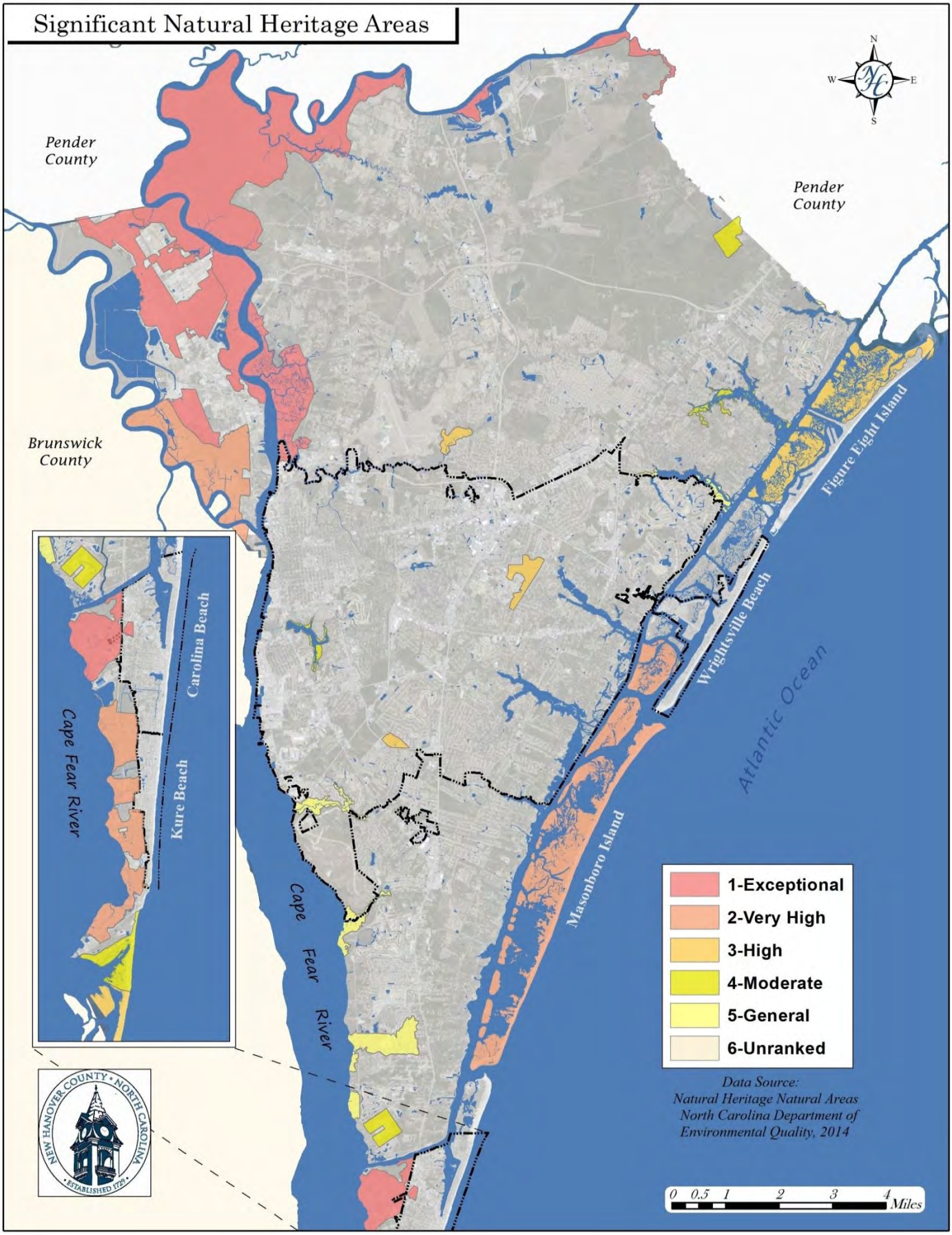
Map 2.32


Agricultural Lands
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
Prime farmland
Farmland of statewide importance
Farmland of unique importance
Prime farmland if drained
Not prime farmland
Data Source:
Agricultural Land Classifications
United State Department of Agriculture, 1980
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

Map 2.33


Biodiversity/Wildlife Habitat Conservation
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Carolina Beach
Kure Beach
Cape Fear River
Cape Fear River
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •
Conservation Value
9-10 (High)
8
7
6
5
2-4
1 (Low)
0 (Unrated)
-1 (Impermeable Surface)
Data Source:
Biodiversity/Wildlife Conservation Index
North Carolina Department of
Environmental Quality, 2014
0 0.5 1 2 3 4 Miles

Map 2.34


Significant Natural Heritage Areas
N
W
E
S
Pender County
Pender County
Brunswick County
Figure Eight Island
Wrightsville Beach
Atlantic Ocean
Masonboro Island
Cape Fear River
Carolina Beach
Kure Beach
Cape Fear River
1-Exceptional
2-Very High
3-High
4-Moderate
5-General
6-Unranked
Data Source:
Natural Heritage Natural Areas
North Carolina Department of
Environmental Quality, 2014
0 0.5 1 2 3 4 Miles
NEW HANOVER COUNTY • NORTH CAROLINA
• ESTABLISHED 1729 •

Chapter 3 Appendix

NEW HANOVER COUNTY BOARD OF COMMISSIONERS

RESOLUTION

VALIDATING THE THIRD CHAPTER OF *PLAN NHC*: FRAMING THE POLICY

WHEREAS, New Hanover County is updating the CAMA Land Use Plan and creating a Comprehensive Plan for the unincorporated portion of the County; and

WHEREAS, the Board of Commissioners have adopted Chapter 1: Public Engagement Plan; and

WHEREAS, the Board of Commissioners have adopted Chapter 2: Evaluating the Present (a report of existing conditions); and

WHEREAS, staff has worked with the community at large to develop Chapter 3: Framing the Policy.

NOW, THEREFORE, BE IT RESOLVED, that the New Hanover County Board of Commissioners hereby validates "Framing the Policy" as the third chapter within the Comprehensive Plan.

ADOPTED this the 14th day of September, 2015.

NEW HANOVER COUNTY

Jonathan Barfield, Jr., Chairman

ATTEST:

Teresa P. Elmore, Clerk to the Board

Harmony with Nature

Policy Recommendation #1:

Promote sustainable growth and green infrastructure

- **Outcome:** Optimize efficiency and energy use by taking a holistic approach to designing our built environment.

- **Short term recommendations**:
  - Conduct a traffic study
  - Create a Greenhouse gas inventory
  - Plan for alternative transportation and fuels
  - Allow golf carts, mopeds, and alternative transportation where possible
  - Transition the government vehicle fleet from petroleum to hybrid and/or electric vehicles
  - Encourage more electric vehicle fueling stations with premier parking
  - Expand pipelines for natural gas, vehicles fuel stations
  - Expand natural gas resource by using methane instead of fracking
  - Review subdivision ordinance and revise as necessary
  - Use county public spaces as natural and/or food production sites
  - Provide homeowner and small business resources

  Establish sustainable development funding for projects
  - Promote resilient design through incentivizing rain gardens, LID, and other best management practices of resilient design
  - Coordinate with business community on problem solving

- **Long term recommendations:**
  - Use all short-term actions such as the traffic study, greenhouse gas inventory, etc. to influence long term strategy
  - Develop a Climate Change Adaption Plan
  - Increase hurricane resilience by placing power lines underground and implementing other green infrastructure that promotes this resiliency

Policy Recommendation #2:

Improve solid waste management and recycling

- **Outcome:** Reduce/eliminate the county's waste stream through diversion and recycling

- **Short term recommendations:**
  - Work towards having co-mingled recycling to be available to all residential properties (single or multifamily),businesses, county parks, and county facilities
  - Provide Twin Bins where applicable in order to promote recycling
  - Keep our trash and recycling in county and do not send it out to another destination (does not solve an issues; need to invest in a proper sorting facility in NHC)
  - Establish a county-wide Anti-Litter Campaign with cooperation from city/town governments, schools, churches, businesses, local event coordinators, and any other stakeholders.
  - Develop a county-wide composting service and collection system

- **Long term recommendations:**
  - Build a recycling facility in NHC that will allow for sorting as well as other processes, such as composting, gasification, anaerobic digestion, and incineration.
  - Develop an on-going educational program for residents and visitors to explain the need for recycling programs
  - Require a fee or tax on plastic and glass bottles ("Bottle Bill")

Policy Recommendation #3:

Preserve open space, farmland, and natural beauty, and address critical environmental areas, such as those prone to flooding

- **Outcome:** Encourage redevelopment of brownfield sites to preserve open space and county's natural heritage, prevent environmental pollution, and protect our natural heritage and recreational resources for future generations

- **Short term recommendations:**
  - Develop a brownfield sites inventory
  - Provide support to brownfield sites landowners' seeking to mitigate or redevelop property.
  - Develop best practices for eliminating, reducing, or mitigating environmental pollution
  - Review and update the Natural Heritage Inventory
  - Earmark farmland based on soils
  - Require/Encourage new development projects to preserve significant natural areas
  - Link soil and water conservation soil types with zoning conservation easements
  - Strengthen partnership and focus with Soil and Water Conservation District

- **Long term recommendations:**
  - Require new industries to have an environmental Mitigation Action Plan
  - Use the natural topography of New Hanover County as a guide to direct land use decisions

Policy Recommendation #4:

Link major habitats

- **Outcome:** Enhance biodiversity within the county and region by maintaining habitats and habitat corridors

- **Short term recommendations:**
  - Create an inventory of natural systems in NHC, with the inclusion of endangered species for purpose of protection
  - Form a County Natural Resources Commission or Advisory
  - Review zoning ordinances to encourage Low Impact Development
  - Improve and enforce County Tree Ordinance for New Hanover County
  - Encourage the installation of pollinator gardens/habitat
  - Develop a non-native species management plan
  - Prohibit/Discourage the use of non-native or invasive species
  - Continue to improve public access to greenways and blueways
  - Long term recommendations:
  - Encourage Smart Growth development
  - Improve communication between county staff, NGO groups, and residents
  - Augment and preserve existing urban and suburban forest cover/ canopy
  - Form a County Environmental Affairs Department
  - Improve stream buffers

Policy Recommendation #5:

Promote region through natural resources

- **Outcome:** Increase awareness and respect for NHC's natural resources.
  - Improve public access to water
  - Increase public environmental education initiatives
  - Develop ecotourism program in New Hanover County
  - Revitalize current structures

- **Short term recommendations:**
  - Develop partnerships within the business community for Branding New Hanover
  - Create an inventory of existing county-owned, water-accessible properties and the condition of each site
  - Assess which sites from the inventory are the most economically viable
  - Partner with local tourism boards and promoters
  - Partner with CFPUA for creation of bike/walking paths along easements
  - Partner with UNCW, CFCC, and local nonprofits that focus on environmental education to increase public education and awareness for our waterways and natural resources.
  - Work with the above listed organizations to leverage funding for educational projects/programs.
  - Reduce paved areas and improve green infrastructure at big box stores and other highly paved areas
  - Continue to grow multi-modal system with improved bike paths, sidewalks, and safe crosswalks
  - Use environmentally friendly, cost-effective materials for bike paths
  - Create program for public education and awareness of biking and walking options
  - Provide ADA facilities for water access for inclusion of all citizens
  - Implement countywide Greenway Master Plan

- **Long term recommendations:**
  - Develop diverse long term funding mechanism
  - Partner with neighboring counties
  - Provide stand-up paddle board tours and rentals through county at select water access point(s).
  - Host events that promote our waterways and natural resources
  - Consider adding public access points to waterways on public lands such as Airlie Gardens

Policy Recommendation #6:

Address concerns related to water supply, quality and conservation issues

- **Outcome:** Maintain our pride of place by protecting our waterways

- **Short term recommendations:**
  - Obtain accurate knowledge of NHC's water source demands in the near term and future and plan for those demands.
  - This should account for potential droughts, inter-basin transfers, increase of usage, increase in population, etc.
  - Provide water quality protections
  - Encourage conservation of the water supply by incentivizing Low Impact Development, rain barrels, rain gardens, etc.
  - Make Water Focus a part of Pride of Place public activities
  - Provide a broad category of incentives for improved bodies of water and habitats
  - Incentivize redevelopment and maintenance of green space
  - Long term recommendations:
  - Partner with CFPUA and other institutions to conduct a groundwater survey to provide education on aquifer storage and recovery, health of ecological flow, salt water intrusion, and effects of sea level rise
  - Increase water reuse of graywater

Policy Recommendation #7:

Promote air quality and renewable energy

- **Outcome:** Reduce emissions and improve air quality so that we maintain the county's attainment now, and account for projected growth so that New Hanover County will maintain attainment in the future.

- **Short term recommendations:**
  - **AIR QUALITY:**
    - Extend Wave transit services in to Wrightsville Beach, NC
    - Reduce emissions from motor vehicles by creating low emissions zones – drive wise
    - Encourage clean emissions and reductions in existing industries (New Hanover County is top emitter of toxins in to the air in North Carolina)
    - Steer away from coal fired industries
    - Capitalize on landfill captured methane as a source of energy
    - Encourage biking/scooter culture(Bike and Scooter friendly path)
    - Educate bicyclists on rules of the road
    - Reduce speed-limit on roadways to make cycling safer
    - Require bikeways to be a certain color (green is recommended) to make visible to drivers (and look attractive- pride of place)
    - Develop separate bike lanes or parallel facilities on roadways when unable to reduce speeds on those roadways.
    - Give priority to streets and sidewalks that connect residents to parks and schools to allow for access by multiple types of modes of transportation (other than motor/vehicle)
    - Create narrower vehicle travel lanes (short and long term recommendation)
    - Encourage food growth in yards rather than grass (reduce lawn mower emissions)
    - Encourage bike/golf cart/UEV rentals, especially in the beach towns
  - **RENEWABLE ENERGY:**
    - Make it easier to change to renewable energy (cost, the degree)
    - Lead the way in renewable energy at the County level

- **Long term recommendations:**
  - Partner with Solid Waste and Recycling to upscale Anaerobic Digestion
  - Invest in Community Shared Solar
  - Develop light rail/trolley lines to street to serve City and County

Policy Recommendation #8:

Encourage sustainable growth and green infrastructure

- **Outcome:** Optimize efficiency and energy use by taking a holistic approach to designing our built environment.

- **Short term recommendations:**
  - Conduct a traffic study
  - Create a greenhouse gas inventory
  - Plan for alternative transportation and fuels
  - Allow golf carts, mopeds, and alternative transportation where possible
  - Transition the government vehicle fleet from petroleum to hybrid and/or electric vehicles
  - Encourage more electric vehicle fueling stations with premier parking
  - Expand pipelines for natural gas, vehicles fuel stations
  - Natural Gas expansion using Methane NOT Fracking
  - Review Subdivision ordinance and revise as necessary
  - Use county public spaces as natural and/or food production sites
  - Provide homeowner and small business resources
  - Establish Sustainable Development funding for projects

- **Long term recommendations:**
  - Use all short-term actions such as the traffic study, greenhouse gas inventory, etc. to influence long term strategy
  - Develop a Climate Change Adaption Plan

PLAN NHC
CHARTING THE COURSE

Healthy Communities

Policy Recommendation #1:
Increase physical activity and promote healthy, active lifestyles

- **Outcome:**

- **Short/ Long term recommendations:**
  - Implement consumption taxes/user fees
  - Encourage state legislature to support a tax on plastic bags
  - Incorporate planted medians/ pedestrian friendly through policies and incentives encouraging the incorporation of sidewalks/ trails in neighborhoods and wherever else necessary
  - Promote ease of access
    - Ex. Market Commons in Myrtle Beach, Mayfaire (incidental physical activity in mixed use developments)
  - Improve connectivity to pedestrian trails from residential areas (safe street crossings)
  - Use Universal Design as a guide to create a safe and user friendly county where all citizens from youth to senior may move about the county safely and efficiently
  - Make public transportation safe and easy for users of all ages
  - Provide proper lighting for facilities, such as walking trails, athletic fields, etc. for early morning and evening use
  - Create policies or incentives for builders to incorporate sidewalks/trails in neighborhoods
  - Balance active and passive park amenities
  - Include programming in the Parks Master Plan
  - Ensure aesthetically pleasing spaces
  - Encourage infill "pods" of all inclusive community
  - Incorporate recycling and general education in public spaces

Policy Recommendation #3:
Promote disease prevention and mental health awareness

- **Outcome:** Recognize mental health as a health condition just like any other medical condition

- **Short/long term recommendations:**
  - Train County jail staff to support and recognize mental health
  - Improve community education (employers, community, schools, etc.) about signs and symptoms of mental health conditions, as well as access to resources
  - Coordinate resources in terms of the following:
    - Access (referral networks)
    - Full spectrum of care / diversification of services
    - Affordability
    - Interoperability (data exchange)
    - Advocacy at the state level to encourage funding, development and accountability for care of community-based resources for mental health service offerings

- **Outcome:** Ensure that all individuals have a primary care provider (inclusive of pediatricians) with mental health screening as part of their assessments

- **Outcome:** Create community-based resources to assist patients in behavioral crisis to reduce the utilization of local emergency departments

- **Short/long term recommendations:**
  - Research on non-pharmaceutical treatments for mental health conditions, origin of disease (e.g., awareness & understanding of neurotoxins, environmental factors)

- **Outcome:** Reduce smoking, thereby leading to a reduction in smoking related conditions

- **Short/long term recommendations:**
  - Ban smoking in all public spaces
  - Ban purchase of tobacco products to limited locations/vendors (i.e., individuals would not be able to purchase tobacco products at a drug store)

- **Outcome:** Reduce rate of obesity

- **Short/long term recommendations:**
  - Require Physical Education classes and fitness assessments in all schools
  - Expand Food Corp program in New Hanover County
  - Improve access to Free Play

- **Outcome:** Reduce rate of diabetes

- **Outcome:** Continue/enhance local review process for industry to assess environmental impact on health.

- **Outcome:** Increase public safety by reducing crime and developing gang prevention programs for youth.
  - Create policies to encourage activities in parks and recreational areas
    - "Use deters crime"
  - Install surveillance cameras
  - Prevent crime through environmental design
    - Create more open areas with sight lines
    - Plant shrubbery that is aesthetically pleasing but also prohibits hiding (sharp points)
  - Encourage neighborhood watch programs or other similar programs which promote
  - Encourage more mentor/volunteer programs with youth
    - Organized activities to encourage positive socialization
    - Sports-related (basketball/tennis/golf)
    - Interest-related (robotics/computers/reading)
  - Ensure that youth activities are easily accessible by public transportation/sidewalks/etc.
  - Look to religious organizations who often have facilities and volunteers
  - Match retirement population for volunteering with children
  - Provide a central place for community events to be posted through the county (A Master Community Calendar)

Policy Recommendation #2:
Increase access to affordable and convenient healthy foods

- Outcome:

- Short term recommendations:
  - Educate consumers so that they "want to eat it"
  - Create inexpensive cookbooks
  - Promote School/Community Gardens
  - Offer Home Economics classes
  - Create a voluntary recognition program/award for restaurants who display calorie counts, ingredients, highlight healthy choices
  - Use mobile trucks to deliver local produce around the County
  - Work with Feast Down East
  - Connect local farmers
  - Develop a Local Food Economy Plan

- Long term strategies
  - Incentivize/Require new convenience stores to have a prominently displayed "healthy section"
  - Adopt Healthy Corner Stores concept to connect small stores to wholesalers, allowing them access to more goods at a better price
  - Partner with organizations such as Feast Down East providing access for citizens to local produce and allowing for small farms to be part of County facilities
  - Zone areas for Fast Food locations to limit the number of fast food restaurants in a specific area
  - Incentivize local grocery stores in Food Deserts
  - Maintain land for small farms/community gardens through zoning and have new developments require a certain percentage of the land be set aside for either farming or conservation.
    - The HOA could lease the land to a small farmer
  - Improve EBT process to make it affordable and easy for people (both seller and buyer) to use to buy fresh produce
  - Promote Permaculture (everything edible)

PLAN NHC
CHARTING THE COURSE

Interwoven Equity

Policy Recommendation #1:

Provide a range of housing types, opportunities and choices.

- Outcome: Encourage the development of a range of housing types and opportunities so that all county residents may afford to live

- Short term recommendations:
  - Educate the public on the need for and benefit of Affordable Housing and subsidized housing
  - Create a consolidated housing task force
  - Have the housing task force join city/county/nonprofits- WRAR, BASE, CFHC, Neighborhoods Association to create a marketing campaign for Affordable Housing that serves all citizens
  - Consider inclusionary zoning as a way to assist in addressing the need for affordable housing
  - Permit accessory dwelling units in single-family districts to promote affordable housing

- Long term recommendations:
  - Consolidate the City and County together
  - Partner with banks to acquire foreclosed homes and offer them as affordable housing

Policy Recommendation #2:

Upgrade housing development with infrastructure.

- Outcome: Encourage infrastructure improvements in areas of need in order to upgrade affordable housing developments

- Short term recommendations:
  - Coordinate permit fees with Affordable Housing projects and commercial development
  - Develop an inventory of homes built in the 1950's and 1960s.
    - The older homes are needed for affordable housing
  - Clearly define what infrastructure is to include schools, enforcement, safe streets, community resources, etc.
  - Support communities in need

Seek financial advisory support from banking institutions early in development process

Policy Recommendation #3:

Strengthen neighborhoods through redevelopment of blighted areas/environmental equity

- Outcome: Provide blighted areas with the opportunity to improve their circumstances, maintain environmental equity, and have a sense of pride about their community.

- Short term recommendations:
  - Educate public on minimum housing standards
  - Address buildings that are abandoned and dilapidated
    - NC Statues provide means for New Hanover County to demolish abandoned structures legally
    - NHC should adopt minimum housing code and code enforcement
  - Encourage neighborhood ownership/pride and sense of community
  - Address Flemington neighborhood, a blighted area near Sutton Lake, to provide environmental equity
  - The water in Sutton Lake is polluted with mercury and other toxic chemicals
  - No entity has taken responsibility to post warning signs
  - People in the neighborhood are fishing in the lake and eating toxic fish
  - Provide incentives for redevelopment near transportation hubs/empowerment zones (Detroit, MI case study) without reducing taxes but rather with incentives such as:
    - Offering express permitting for targeted businesses
    - Providing workforce recruiting services for new businesses
    - Offering workforce incentives-County/City/nonprofits train workforce and pay a portion of worker's salary

- Long term recommendations:
  - Create minimum housing standards
  - Discourage slum lords through code enforcement
  - Enact a county-wide voluntary program for landlords to rehab housing units using matching funds from CDBG, HUD, non-profits
  - Employ the following strategy: Landlords shall not raise rent for a specified number of years after rehab.

Policy Recommendation #4:

Create opportunities for health care and services to disperse through the community in an effort to reach all NHC citizens equitably

- Outcome: Increase access to health services for all citizens within the county, and promote health and wellness through prevention of disease rather than focusing on only treatment.

- Short term recommendations:
  - Prioritize health and well-being and make healthy decisions the default
  - Upgrade school technology
  - Provide additional access to health clinics through nonprofit/for-profit partnerships, mobile health clinics (e.g. dental care and breast examinations), and addition of health clinics where able
  - Integrate community schools
  - Address childhood obesity early on in child development by offering programs and education on health and wellness
  - Improve reading comprehension at the elementary level
  - Make NHC tobacco free by providing more tobacco free environments where necessary
  - Consolidate policies on tobacco free NHC within the city and county

- Long term recommendations:
  - Improve public transportation stops by making them more convenient, safe, and appealing through "Adopt-a-Stop" program where local businesses, organizations, institutions, etc. may adopt a stop and provide awning/coverage, benches, art, design, and so on.
  - Incentivize Wave Transit
    - Example strategies: Adopt-a-Stop, free wifi, coupons attached to bus ticket, etc.

Policy Recommendation #5:

Increase workforce housing and workforce development

- Outcome: Work to build wealth in the community

- Short term recommendation:
  - Create incentives to hire people to perform community projects
  - Utilize back to work and Hometown hires programs
  - Provide internships/apprenticeships for neighborhood projects to partner with technical schools
  - Start a "Ban the Box" campaign to remove the question that asks applicants whether they have been convicted of a crime on initial applications
    - Use the Habitat for Humanity policy in their process for evaluating those applicants with a criminal history
  - Provide density bonuses for affordable housing
  - Encourage public/private partnerships for workforce development
  - Provide tax incentives for Industry Created Workforce Housing
  - Recruit and grow businesses that provide higher wages with a focus in knowledge-based jobs
  - Target businesses and industries that match the technical programs and degrees that are provided by community colleges, and the University
  - Facilitate regional efforts to grow the Talent Pipeline (Garner Report)

- Long term recommendations:
  - Create a housing trust fund that sets aside money to develop workforce housing

PLAN NHC
CHARTING THE COURSE

Livable Built Environment

Policy Recommendation #1:
Preserve open space and agricultural land

- **Outcome:** Be a community that supports local growers, respects its historical agrarian culture, and preserves open space for recreation and environmental purposes

- **Short term recommendations**:
  - Make intentional effort to bring farmers to the table for discussion of agricultural lands and services
  - Survey existing farms and offer protections of these spaces from sprawling development patterns
  - Incentivize smaller farms in an effort to create jobs
  - Update zoning regulations for farms after Comprehensive Plan
  - Partner with CFPUA to determine areas of growth with extension of water services/ USB/focused growth around water and sewer
  - Partner with coastal land trust and major land owners
  - Encourage density and clustered development in appropriate areas
  - Promote mixed-use development
  - Promote community gardens
  - Establish a natural resources inventory for suitable soils
  - Explore efficacy conservation subdivisions for NHC
  - Promote permaculture
  - Promote Community Supported Agriculture (CSA)
  - Address limits to livestock

- **Long term recommendations**:
  - Educate consumers on local farms in NHC
  - Promote partnerships between parks, schools, farm to school programs, chefs, farmers, consumers, etc.

Policy Recommendation #2:
Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities

- **Outcome:** Reduce dependence on gasoline powered vehicles to encourage safe, walkable communities

- **Short term recommendations:**
  - Conduct a ridership study for Wave transit
  - Promote car- and van-pooling based on ridership study
  - Strengthen bus system by using larger buses for population centers and by purchasing smaller buses for county wide routes
    - Check economics of natural gas-fueled, electric, hydrogen-fueled, and any other alternative fuel source for transit vehicles
  - Conduct a rail system study to include passenger rail and light rail
  - Promote the use of electric powered cars through incentives for electric charging locations and partnerships with Duke Energy that support electric car infrastructure.
  - Construct multi-use lanes for walking, jogging, biking and golf carts.
  - Increase walker and bike safety through improved traffic signals, more visible crosswalks, better driver and biker education, police enforcement, and traffic safety classes.
  - Appropriate funds for transit service to provide bus signs and shelters
  - Adopt a Complete Street policy

- **Long term recommendations:**
  - Construct a high-speed rail system to connect with other cities
  - Integrate commercial developments into residential areas to promote mixed-use and decentralize commercial developments

Policy Recommendation #3:
Create a mix of housing types to promote diversity and strengthen existing residential areas

- **Outcome:** Preserve historic resources and sites to maintain the character of the community through common history and identity.

- Short term recommendations:
  - Promote preservation through a public awareness campaign
  - Update historic record by completing a comprehensive architectural survey
  - Get applicable existing structures into the National Register of Historic Places and incorporate them into local historic districts
  - Secure grant funding for preservation projects

- **Long term recommendations:**
  - Designate historic districts
  - Continue preservation projects and efforts
  - Create a joint city/county Board of Historical Structures
  - Outcome: Create policy that encourages mixed-use, mixed-income development with a variety of housing types.

- **Short term recommendations**:
  - Establish policies/regulations that provide for work force housing units
    - Example: Use a quota system (15% of new units must be designated low income, etc.) that increases over time
  - Encourage mixed-use development

- **Long term recommendations:**
  - Connect new developments to public transit
  - Research regulations and enforcement for accessory dwelling units

Policy Recommendation #4:
Encourage sustainable development

- **Outcome:** Promote infill development

- **Short term recommendations:**
  - Promote infill development by offering density bonuses for infill projects
  - Provide variances for road widths and other infrastructure as an encouragement for infill development
  - Fast track permitting and inspections for infill development projects
- Long term recommendations:
  - Address the disconnects/conflicts among governmental agencies in regard to infill development
    - Examples:
      - Address legal requirements for demolition of substandard structures
      - Address and improve the process for obtaining a clear title for abandoned buildings

- **Outcome:** Promote low Impact Development (LID Techniques)

- **Short term recommendations:**
  - Continue to incentivize LID within the county for developers
  - Clearly define and outline the meaning of "Sustainable Development":
    - Minimal impact on land (grading and filling)
    - Minimal storm water runoff (pre and post development the same)
      - Retention of trees
      - Provision of open space
      - Access to alternative transportation
  - Address disconnects and conflicts among governmental agencies with regard to LID
    - NCDENR soil and erosion control requirements of grading of individual lots
  - Coordinate the efforts of NCDOT, EMS, Trucking Industry, etc. to unify local street design
  - Partner with local organizations to work on development projects providing workshops and training for the public, engineers, architects, planners, developers, etc. in order to promote education and implementation of sustainable development in the County
    - "LID ACADEMY"
  - Require developers and contractors to complete workshop on LID practices before they are allowed to apply for and receive building permits (Mecklenburg County already does this)
  - Provide incentives to developers to include restrictive covenants/deed restrictions requiring tree save on individual lots, water capture for irrigation, and native species for all landscaping
  - Require street trees in all developments
  - Fast track applications, approvals, and inspections
  - Allow flexibility in design approved by staff rather than appointed/elected boards
  - Encourage permaculture in landscaping
  - Provide/Encourage community gardens

- **Long term recommendations:**
  - Promote native species for all landscaping
  - Develop a Low Impact Development Ordinance as the norm rather than the exception
  - Maintain LID best management practices by implementing a stormwater fee to assure proper maintenance
  - Develop an incentive point system promoting LID practices. The more a developer implements, the more incentives they get.
  - Protect trees on private property by broadening the county tree ordinance enforcement to include private property
  - County should develop a long-term plan to connect all public/semi-public open spaces

Policy Recommendation #5:
Invest in community infrastructure

- **Outcome:** Create a plan to improve existing infrastructure and develop future infrastructure

- **Short term recommendations:**
  - Identify priority areas, such as the 421 Corridor
  - Bring stakeholders together to determine a "vision" for our community
  - Examine existing CAMA land use regulations, wetlands, individual property rights, and other issues that will impact infrastructure development
  - Create a short-term plan for development that preserves natural beauty while supporting a vibrant economy

- **Long term recommendations:**
  - Coordinate with CFPUA and other utilities on specific master plans
  - Prioritize public spaces needed by the community, such as libraries, schools, fire stations, free public WiFi access
  - Explore feasibility of fiber optic installation for the county
  - Identify funding sources
  - Redevelop existing areas, with a focus on priority areas identified in short term

Policy Recommendation #6:
Revitalize commercial corridors

- **Outcome:** Identify desired commercial nodes (at appropriate scale) and coordinate with adequate infrastructure.

- **Short term recommendations:**
  - Remove minimum parking requirements and further study maximums to encourage shared parking and distribution.
  - Encourage the use of permeable surfaces for parking lots

- **Long term recommendations:**
  - Ensure that road networks support multi-modal transit (coinciding with intensifying land use)
  - Develop diversified road network to support connectivity

- **Outcome:** Improve business environment by providing certainty through clear development regulations and target investment areas.

- **Short term recommendations:**
  - Develop commercial standards
  - Promote LID into commercial development
  - Identify areas where commercial activity is not the most appropriate use (appropriate commercial clustering)
  - Establish Aesthetic Standards for Beautification of existing commercial corridors
  - Adopt a Sign Ordinance

- **Long term recommendations:**
  - Develop better land use strategies
  - Increase multi/mixed-use development
  - Improve safety and aesthetics

PLAN NHC
CHARTING THE COURSE

Resilient Economy

Policy Recommendation #1:

Encourage redevelopment and infill development for commercial corridors through a balance of uses

- **Outcome:** Encourage development in underdeveloped areas

- **Short term recommendations:**
  - Conduct an assessment (throughout NHC and the municipalities) of where we are today and project what would be needed based on future growth and identify areas that should remain undeveloped
  - Examine the mix of commercial and residential development, water and sewer infrastructure, etc.
  - Redevelop Brownfield Sites
  - Identify the non-mixed use areas of the county and carve out those areas
  - Assess different development scenario options for the 421 Corridor
  - Identify existing nodes and likely locations of future nodes
  - Create visual design standards (how the new development should look in an area rather than solely use-based) with a practical view on return on investment

- **Long term recommendations:**
  - Promote mixed/multi-use development
  - Invest in infrastructure in identified future node areas
  - Increase transportation connectivity (residential to residential, residential to commercial, and between commercial developments), including sidewalks and pedestrian access
  - Ensure transportation accessibility/service between commercial development and the residential development it serves
  - Plan for complete streets where appropriate and desired by the community

- **Outcome:** Create a spirit of partnership/community culture by working with CoW

Policy Recommendation #2:

Create unique and special places that attract individuals and companies by creating a sense of place

- **Outcome**: Support and preserve current places

- **Short term recommendations**:
  - Identify existing places, such as parks, beaches, trails bike paths, river walk, historical sites, modern/advanced/specialized amenities (UNCW's coastal research center, CFCC, UNCW's entrepreneurship center)
  - Develop a Sign Ordinance establishing continuity throughout county by implementing Wayfinding Signage

- **Long term recommendations:**
  - Lower regulatory barriers for environmentally responsible industries
  - Develop marketing strategies to publicize these places
  - Protect identity of current places, especially in the case of historic sites

- **Outcome:** Create "special places" in the unincorporated county by giving places with names an identity (such as Monkey Junction)

- **Long term recommendations**:
  - Beautify existing places to make them more aesthetically pleasing and encourage people to use them
  - Utilize business parks, retail spaces, church parking lots, etc. for multi-purpose uses that bring the community there during evenings and weekends ("off hours"), such as outdoor concerts, events, etc.
    - Example: Business park with amphitheater in center in Raleigh

- **Outcome:** Develop places in the unincorporated county that have an identity but no name

- **Short term recommendations:**
  - Identify these places
    - Examples: land on the water, vacant or underutilized land, crossroads, blueways, etc.

- **Long term recommendations**:
  - Develop these places for community use

Policy Recommendation #3:

Use public improvements to leverage private development and look for win-win opportunities that focus on common interests

Policy Recommendation #4:

Support local and small business success and workforce development

- **Outcome:** Encourage new businesses and industries by expediting the regulatory process for incoming businesses

- **Short term recommendations:**
  - Provide them with an advocate to help them through the process

- **Long term recommendations:**
  - Seed Capital: Provide financing and incubator space/money for startup businesses/entrepreneurs
  - Create a national advertising campaign to attract workers that can work anywhere—become a magnet for startups
  - Encourage cleaner industries in the area (GE, Corning, PPD, Enviva, AAI, etc.)

- **Outcome:** Attract a diverse, competent workforce

- Short term recommendations:
  - Develop technical training programs in local high schools and remove the stigma that those industries are not respectable trades
  - Develop opportunities for graduates of UNCW and Cape Fear to find jobs and make a living wage in Wilmington

- Long term recommendations:
  - Focus on attracting local, modern companies/industries that students are interested in working for

- Outcome: Establish Premiere Education system in NHC

- Short term recommendations:
  - Prioritize k-12 education as a key economic development strategy
  - Improve early childhood education throughout entire county
  - Establish a Head Start Program in the county
  - Improve teacher's pay for county teachers
  - Provide adequate funding for education

- Outcome: Support and improve existing businesses/industries

- Short term recommendations:
  - Work to retain film industry
  - Facilitate relationships between New Hanover County and existing business community

- Long term recommendations:
  - Improve port via specialization and turnaround time
  - Support businesses by providing public WiFi

PLAN NHC
CHARTING THE COURSE

Responsible Regionalism

Policy Recommendation #1:
Utilize a regional approach to housing development

- **Outcome:** Facilitate the development of diverse housing choices within neighborhoods

- **Short term recommendations:**
  - Partner with Cape Fear Housing Coalition to assess current and future needs
  - Identify barriers to housing diversification in current policies/regulations
  - Review current zoning
  - Ensure any new housing development addresses need for higher density resources and efficiencies of scale
  - Identify underused/vacant/abandoned buildings for infill purposes
  - Incorporate 'age-in-place' features in new housing developments
  - Look at Habitat for Humanity model
  - Partner with homebuilders and realtors to assist in Comprehensive Plan
  - Address and identify rural housing issues and opportunities
  - Reduce the permit fees for non-profit/affordable housing developments

- **Long term recommendations:**
  - Amend housing/land use/development policies if necessary
  - Conduct/contract out economic analysis of regional real estate markets
  - Diversify housing types, such as small houses on smaller lots, duplexes and tandem housing, condos and townhouses, multi-family conversions, etc.
  - Develop affordable retirement community housing
  - Create a housing bond or housing trust fund to accomplish things the market is not accomplishing on its own
  - Promote safe neighborhoods
  - Adhere to historic preservation guidelines

- **Outcome:** Achieve easier access to quality low-income/workforce housing

- **Short term recommendations:**
  - Partner with Cape Fear Housing Coalition to assess current and future needs
  - Assess current public, subsidized, mixed and low-income housing availability region-wide

- **Long term recommendations:**
  - Create region-wide minimum housing standards
  - Establish inclusionary zoning policies in areas zoned for future residential development
  - Incentivize development of mixed and low-income housing units; give incentives to builders committed to providing subsidized housing
  - Expand bus routes to incorporate newly constructed low-income/workforce housing areas
  - Improve access to multimodal transportation

Policy Recommendation #2:
Create a regional approach to economic development

- **Outcome**: Facilitate retention and expansion of existing businesses

- **Short term recommendations:**
  - Establish support centers/incubators offering small businesses, startups, and entrepreneurs low-cost space, technical services (legal, financial), software support, sharing common area maintenance such as electric, water, and sewer
  - Coordinate with Chamber of Commerce on opportunities for local businesses to connect and network through breakfasts/lunches, workshops, outreach, and interactive websites
  - Increase performance-based grants to worthy businesses to spur investment (e.g., half-million dollars over 5 years to Fortron Industries)
  - Identify and assess existing incentives (tax credits, grants, mentoring services, etc.)
  - Establish criteria for existing incentives and future incentives
    - Distinguish between incentives used to attract versus incentives used to retain businesses
  - Promote all incentives to businesses

- **Long term recommendations:**
  - Provide information, technical assistance, solution-based advice, mentoring, and job training on business issues and operating concerns through CFCC, UNCW/CIE, Chamber of Commerce, Wilmington Downtown, Inc., etc.
  - Identify innovative incentives (naming rights, other)
  - Develop marketing campaign to position region as desirable place to do business
  - Designate a consultant position to assist businesses with applications for tax credits, grants, etc., and to support existing local businesses in other critical ways (i.e., a county employee who is an ambassador for businesses and a liaison between county and businesses)

Policy Recommendation #2: *(continued)*

- **Outcome:** Attraction and support of new businesses

- **Short term recommendations:**
  - Create a County Department of Economic and Community Development and hire a director.
  - Coordinate efforts of various economic development organizations to recruit new businesses
  - Hold publically funded organizations accountable for demonstrating measurable results (identify how public funds are being used- TRANSPARENCY)
  - Promote coastal lifestyle and uniqueness of place as major reasons to locate in region focusing on mild weather, beach, historic downtown and the river walk, higher education facilities, art/culture, gardens/parks, restaurants, port, and other amenities
  - Attend national trade shows to market the region to identify and attract new businesses to region

- **Long-term recommendations:**
  - Develop improved strategies for short and long term economic development
    - Implement specific strategies that maximize our county and regional potential for sustainable growth and development

- **Outcome:** Regional economy diversity and resiliency across all sectors

- **Short term recommendations:**
  - Evaluate barriers to entry resulting from existing regulations or policy
  - Encourage greater coordination/communication among public agencies and nonprofit organizations having vested interest in economic development (CFEDC, DBA, FOCUS, CofC,WBD,WDI,MPO,etc.)
  - Explore options for balancing needs for minimum regulations with reasonable protections (business vs. environmental interests)
  - Take advantage of benefits associated with Foreign Trade Zone (defer duty taxes and ad valorem taxes)
  - Upgrade aging infrastructure

- **Long term recommendations:**
  - Perform regional shift-share analysis every 5 years
  - Survey open land around existing transportation routes (421, 17, 50, I-40, I-140) for locating possible business parks, industrial/flex centers, warehouses, incubators as well as domestic cottage/artisan industries and startups (e.g., craft breweries)
  - Expand capabilities/assets of port and airport to accommodate needs of new industry
  - Extend water and sewer to industrial corridors
  - Encourage major existing companies to reach out to other professional, scientific, and technical services to help "sell" the region.
    - At same time, devise ways to attract light manufacturing

- **Outcome:** Strengthen the connection between goods and services produced and consumed

- **Short term recommendations:**
  - Identify existing links and gaps between goods and services produced and consumed in the region
  - Strengthen the existing links between production and consumption
  - Close the existing gaps between production and consumption
  - Explore opportunities for export of agriculture, forestry, and manufactured products
  - Leverage relationships with Wilmington's sister cities and other overseas entities to promote trade and tourism (both inbound and outbound) and support international business development
  - Start a "Buy Local" campaign

- **Long term recommendations:**
  - Maximize interface of all regional transportation infrastructure/facilities/logistics port, railroad, airport, highway, bridges
  - Increase cold-storage capacity at Port as well as facilities to handle wood pellet exports and other niche products
  - Support State Legislation to restore railroad from Wallace to Castle Hayne (27 miles) and then on to Port

- **Outcome:** Support and promote local/regional agriculture (also coincides with previous outcome)

- **Short term recommendations:**
  - Partner with Feast Down East and other farm-to-table initiatives to develop long-term strategies (such as NC Farm to School program)
  - Work to create a fully integrated local food system and educate consumers on benefits of good nutrition, healthy eating, and environmentally sound practices
  - Expand number of farmers' markets, pick-your-own farms, and roadside farm outlets as well as access to community-supported agriculture allowing consumers to buy local, seasonal food directly from farmers
  - Encourage more high-end restaurants and institutions to incorporate locally sourced food into their menus
  - Encourage production of sustainably raised organic fruit, vegetables, and meat
  - Research new/expanded uses of existing agricultural and forestry products that have gone unrecognized or require modern plant breeding support (e.g., re-engineering tobacco for other purposes)
  - Cultivate interest in urban agriculture and micro-farming
  - Promote agri-tourism
    - Actively market Poplar Grove Historic Plantation attractions, events, and tours

- **Long term recommendations:**
  - Increase export of NC-grown agricultural products

- **Outcome:** Expansion of knowledge-based regional exports

- **Short term recommendations:**
  - Work with local educational institutions to strengthen programs in STEM disciplines
  - Build awareness of existing high tech industry in region to increase its innovation presence
  - Promote existence of flexible research labs (e.g., CREST Research Park) to attract knowledge-based industry
  - Seek out support fields such as lab testing, biostatistics, medical writing to grow/complement technology base
  - Focus on strategic industry and seek them out while maintaining transparency
  - Tie branding initiative into the process when seeking out new businesses and industry

- **Long term recommendations:**
  - Market region as digital hub to attract biotechnology, marine/environmental sciences, pharmaceutical R&D, cyber security, and related businesses

Policy Recommendation #3:
Promote a regional approach to transportation planning and management

- Outcome: Decrease traffic congestion throughout the region

- Short term recommendations
  - Create a county transportation fund to partner on projects that would increase the likelihood of receiving desire/necessary transportation improvements
  - Increase the diversity of transportation options and incentivize the use of those options
  - Encourage users to choose the appropriate mode of transportation for their needs
  - Focus investment on freight corridors to minimize freight impacts to local communities and infrastructure
  - Adjust stoplight intervals at major intersections
  - Encourage housing and commerce options in close proximity to employment centers
  - Improve current bus service through the addition of express service and better efficiency, especially in high-use areas
  - Expand bike lane system within more densely populated regional centers
  - Provide education for drivers, bikers, and pedestrians
    - Example of current NHC bike awareness program is "Watch for me NC"
  - Continue with programs like "Bike to Work Week"
  - Encourage ride sharing programs with development of park and rides served by bus routes, especially to facilitate commuting into Wilmington from surrounding areas
  - Consider one-way streets at certain times of day (morning/afternoon rush hours)

- Long term recommendations
  - Continue efforts to develop passenger rail service to Wilmington
  - Explore merits of bike and car sharing and the creation of HOV lanes
  - Develop additional river crossing between New Hanover and Brunswick Counties
  - Implement roadway improvements
    - Examples: Adjust stoplight intervals at major intersections, add turn lanes at busy intersections, explore efficacy of traffic circles at key choke nodes, etc.

- Outcome: Improve local and regional congestion through roadway improvements

- Short term recommendations:
  - Adjust stoplight intervals at major intersections

- Long term recommendations:
  - Add turn lanes at busy intersections
  - Explore efficacy of traffic circles at key choke points
  - Develop additional river crossing between New Hanover and Brunswick Counties

- Outcome: Increase cooperation in prioritizing transportation projects

- Short term recommendations:
  - Utilize citizen committees/focus groups (such as this one)
  - Get NCDOT more involved at city and county level
  - Prioritize and complete projects through innovative uses of funding opportunities and legislative work
  - Coordinate with MPO's 2040 Plan

- Long term recommendations:
  - Conduct a regional needs assessment
    - Example: The *Blueprint for Impact*, conducted by UNCW MPA students in 2005 on behalf of United Way of Cape Fear Region
  - Make use of the new Community Platform for improved regional data sharing and GIS technology (http://uncw.edu/chhs/engagesenc.html)

- Outcome: Enhance safety across all transportation modes

- Short term recommendations:
  - Work with local law enforcement to identify common causes of accidents
  - Reduce collisions, injuries, and fatalities through better enforcement

- Long term recommendations:
  - Design construction projects that make bike, pedestrian, and vehicle travel safer
  - Increase education and outreach programs
  - Reinforce safe driving practices, such as no texting and no drinking while driving

PLAN NHC
CHARTING THE COURSE

PLAN NHC GOALS AND IMPLEMENTATION STRATEGIES

- Text in **Black** represents Citizen Advisory Committee language
- Text in **Red** represents Planning Board language

Promote environmentally responsible growth.

Explanation: Where and how growth occurs can have an impact on environmental resources. Responsible growth includes strategies to encourage the desired levels of new growth, while minimizing negative impacts on natural resources.

Implementation Strategies:

- Promote a mixture of uses where appropriate in an effort to cluster development and minimize impacts on natural resources.
- Adopt and implement a green infrastructure plan that identifies a network of natural lands and open spaces and provides ecosystem conservation as well as alternative transportation modes through trails and greenways.
- Partner with regional governmental agencies and nongovernmental organizations to acquire and protect environmentally sensitive land (e.g. Establish a regional land bank.)
- Strengthen and direct development toward existing communities through encouraging infill and redevelopment.

Promote fiscally responsible growth.

Explanation: There is a cost to the tax payer to provide services and infrastructure for growth. Appropriate growth patterns can help to achieve efficient provisions of services and equitable distribution of costs between the public and private sector.

Implementation Strategies:

- Coordinate infrastructure from a regional perspective including water, sewer, and transportation.
- Regional coordination of educational facilities such as community colleges and workforce training as they support targeted industries.
- Encourage infill development on vacant or blighted pieces of existing communities by providing incentives such as grants, but not limited to; density bonuses, and/or a reduction of parking requirements and/or setbacks.
- Encourage the redevelopment of single uses into mixed-use developments where appropriate.
- Encourage redevelopment of aging corridors to support and strengthen adjacent neighborhoods.
- Encourage development where existing infrastructure is available.

Increase recycling and reduction of solid waste.

Explanation: Solid waste management and recycling are ways to positively affect our community and a focus on diverting waste can help eliminate constraints of future development.

Implementation Strategies:

- Work with private sector and other regional jurisdictions to implement a countywide recycling program including construction demolition debris and consumer product packaging material.
- Work with private sector entities to identify recycling and other innovative strategies to divert material from the landfill. (Composting, gasification, anaerobic digestion, etc.)
- Encourage adaptive reuse of buildings to limit construction and demolition waste production.
- Encourage consumer based responsibilities for waste reduction, recycling, and reuse.

Increase public safety by reducing crime through the built environment.

Explanation: New growth and community investments can use design features to reduce crime in areas.

Implementation Strategies:

- Encourage best practices and design strategies in the built environment to help reduce crime.
- Encourage a walkable community that creates more human interaction between neighbors (eyes on the street/ social space).

Conserve open space for long term agricultural and rural uses

Explanation: Agricultural lands provide opportunities for economic development by creating locally sourced foods. These lands can contribute to the overall rural character, where appropriate, in locations throughout the county.

Implementation Strategies:

- Allow developments to have urban farms to satisfy open space requirements.
- Encourage voluntary preservation of agriculture land.

Conserve environmentally critical areas

Explanation: Environmentally critical areas have a meaningful place in our community providing opportunities for outdoor recreation, supporting healthy watersheds and maintaining critical habitats.

Implementation Strategies:

- Partner with governmental and nongovernmental organizations to acquire and protect environmentally sensitive land.

- Discourage development in wetlands, flood plain, and other flood prone areas.
- Educate the public on the value of protecting ecosystems.

Integrate multi-modal transportation into mixed land uses that encourage safe, walkable communities

Explanation: A mixture of land uses allows for individuals to perform daily tasks without the use of an automobile. Incorporating walking, cycling, and transit into the built environment increases the accessibility and safety of these areas.

Implementation Strategies:

- Review existing design standards and apply best practices to ensure transportation infrastructure is safe for all multimodal users.
- Educate and promote all users to safely share the transportation infrastructure.
- Work with school district and DOT to allow and encourage students to walk to school safely.
- Review existing parking lot design standards to determine if changes are needed to encourage safety for all users.
- Encourage provision of transit supportive land uses and infrastructure where appropriate.

Increase physical activity and promote healthy, active lifestyles

Explanation: Our built environment has the ability to encourage active life styles, which directly affects individuals' health. Creating development patterns that support walking and biking encourages people to increase their level of physical activity.

Implementation Strategies:

- Encourage a mixture of uses in developments that allows individuals to walk rather than rely upon vehicles.
- Encourage siting of schools into the community allowing for students to walk, while considering traffic impacts.
- Connect walkways, parking lots, greenways, and developments to encourage pedestrian activity.

Increase access to affordable and convenient healthy foods.

Explanation: Providing access to healthy foods has a direct impact on individuals' health. Ensuring the built environment encourages access to healthy foods increases the likelihood individuals will consume them and improve health outcomes.

Implementation Strategies:

- Ensure zoning and land use regulations encourage and allow for community gardens and urban agriculture.
- Build on health gaps analysis report, target strategies to promote location of farmers markets, grocery stores, and other venues that have healthy food offerings.

Provide for a range of housing types, opportunities and choices.

Explanation: Understanding New Hanover County is comprised of a diverse group of individuals with a diverse group of needs in housing helps to ensure individuals do not become overburdened with the costs or availability of housing.

Implementation Strategies:

- Enhance and update incentives to reduce development costs to private developers such as density bonuses when work force housing is included in development proposals.
- Consider creating an affordable housing task force (like the City of Wilmington) to define affordability and work with private sector to provide it.
- Strategically work with developers experienced in providing affordable and subsidized housing through federal and state programs and locate affordable housing developments in areas of highest need.

Revitalize commercial corridors and blighted areas through infill and redevelopment

Explanation: Areas of blight consist of underutilized properties within our community that likely have access to services such as water and sewer. Reducing regulatory barriers to redevelop underutilized property helps to provide for responsible growth strengthening existing neighborhoods and supporting economic revitalization.

Implementation Strategies:

- Implement a program to identify and dispose of vacant or abandoned buildings that cannot be redeveloped
- Facilitate programs to encourage reuse, rehabilitation, and redevelopment of existing residential, commercial, industrial buildings and properties where appropriate.

Link major natural habitats

Explanation: Linking natural habitats promotes biodiversity, provides continuity for wildlife corridors, access to open spaces and recreational opportunities.

Implementation Strategies:

- Identify and prioritize natural areas for acquisition, preservation, and conservation to promote linkage opportunities.
- Consider developing a conservation land acquisition strategy.
- Review and update incentives for development to dedicate land and or easements to achieve habitat linkages.

Conserve and enhance our unique sense of place to attract individuals, companies and organizations.

Explanation: New Hanover County has a strong sense of place due to its history and natural environment with many unique features. Using these features to create a sense of identity and pride encourages businesses and individuals to locate in New Hanover County.

Implementation Strategies:

- Focus on public spaces and opportunities for formal and informal social gathering places.
- Increase, enhance, and manage public access to water and natural resources.
- Consider creating a strong place-based economic development strategy.
- Make a case for sustainable funding sources to improve the County's economic development infrastructure and identify opportunities to leverage the funds effectively.
- Encourage conservation and enhancement of the unique environment, character and history of the county.

Use public infrastructure improvements to leverage private investments

Explanation: Infrastructure is an expensive investment for a community. Where, how and when infrastructure investments are made has a significant influence on where private investments will likely be made. Making infrastructure investments in areas where growth is desired and positive financial returns allow the community to capitalize on its public investments.

Implementation Strategies:

- Work with CFPUA on a targeted long range plan for water and sewer infrastructure.
- Work with MPO on a targeted long range plan for transportation infrastructure.
- Consider revising zoning ordinances to support mixed uses and holistic approach to development.
- Consider strategies to encourage increased private sector investment in the provision of infrastructure.

Support business success.

Explanation: Local and small businesses are a vibrant part of New Hanover County's economy. Working together to create successful businesses can significantly benefit New Hanover County's economy. In addition to incentives for large businesses, support for local and small businesses may include strategies to ensure there are adequate locations for start-ups and programs to kick-start small businesses.

Implementation Strategies:

- Streamline permitting process for targeted industries.
- Advocate for and develop a realistic and sustainable incentive policies for New Hanover County.
- Align county zoning ordinance to encourage targeted businesses in appropriate areas.

- Increase communications with small businesses by creating a resources link on the county webpage for new businesses and a staff culture to shepherd new businesses through the development process.
- Support provisions for providing public free, high-speed internet access throughout New Hanover County.

Support health promotion and disease prevention while minimizing debilitating effects of mental and physical disabilities.

Explanation: Understanding the built environment and community policies can have a direct impact on physical and mental disabilities through location of services, integrated land uses, and sensitivity to the disabled population.

Implementation Strategies:

- Encourage public spaces and health related facilities (Gyms, pharmacies, physician offices, etc.) to be smoke free.
- Promote awareness of physical and mental disabilities and disease prevention.

Support workforce development and economic prosperity for all.

Explanation: The workforce of a community is a valuable tool for economic development. Providing a place-based economic development strategy that attracts quality workforce talent and provides opportunities to train our existing workforce is a strategy to retain and attract businesses and companies to New Hanover County.

Implementation Strategies:

- Partner with educational facilities to provide opportunities for training in targeted industries.
- Continue to enhance education program, facilities, and offerings.

Suggested Additions and Changes:

Promote place-based economic development in the region that is tied to our natural resources

Explanation: The Cape Fear region is naturally bio diverse and home to many unique species. This unique feature of our community can be used as a way to promote and encourage economic development.

Implementation Strategies:

- Create and promote a network of greenways, blueways, and trails highlighting environmental assets.
- Coordinate and partner with various agencies to develop future public water access points.
- Revitalize waterfront parks and public spaces to encourage opportunities for formal and informal social gatherings.
- Preserve and conserve beaches, inlets, and waterways which are critical to our quality of life, tourism economy, and coastal environment.

Actively promote diverse, high quality, educational and cultural opportunities for New Hanover County residents and visitors.

Explanation: A multitude of educational and cultural institutions thrive within New Hanover County that directly reinforces the quality of life of residents and visitors alike.

- Work with New Hanover County Public Schools as well as community stakeholders and institutions to provide high quality pre-K, primary and secondary educational opportunities and facilities to meet current and future needs of County residents.
- Partner with UNCW, CFCC and other community institutions to provide a diversity of educational, recreational, and cultural opportunities for New Hanover County citizens and visitors.
- Partner with UNCW, CFCC and economic development stakeholders to develop and promote educational programs that target specific economic development opportunities within New Hanover County.

Preserve and Protect water quality and supply.

Explanation: NHC is located on the coast and therefore, is subject to many concerns regarding water supply and quality. Accommodating more growth in our region will require more strategies to conserve water resources and preserve water quality.

Implementation Strategies:

- Continue to enhance a regional water quality program to include ocean, river and estuarine water quality monitoring in cooperation with UNCW and others.
- Continue to identify watershed specific indicators of water quality degradation, establish baseline measures, and establish watershed development practices to achieve goals.

- Consider establishing water quality improvement goals for the County in cooperation with others.
- Identify and prioritize water quality improvement projects, including wetland and stream restorations, which will improve water quality
- Identify and pursue funding sources for priority projects
- Explore the value and benefits of reestablishing the Watershed Management Advisory Board.
- Continue to develop drainage systems and design standards that reflect the natural carrying capacity of the watershed.
- Continue to participate in the development of state ~~develop~~ standards to ensure the retention, acquisition and management of natural vegetation and riparian buffers to preserve, maintain and protect water quality.
- Continue to participate in the development of statewide regulation of ~~and update~~ subdivision design standards to protect and improve water quality in sensitive areas.
- Continue to develop and update educational and other strategies to deal with point and non-point source impacts on water quality consistent with the latest state and coastal rules and regulations.
- Continue Identifying, evaluate~~e~~ing, and prioritize~~e~~ing an inventory of retrofit opportunities to reduce ~~water quality impacts from~~ stormwater runoff on receiving waters.
- Identify water specific sources of pollutants to help direct protection and improvement measures.
- Promote expansion of water and sewer system to protect and enhance water quality.
- Consider establishing a groundwater and aquifer protection ordinance.
- Consider removing barriers in codes/ordinances that hinder and prohibit low impact development.

Ensure NHC remains in attainment for air quality, in support of clean air and improved public health outcomes in support of continued growth.

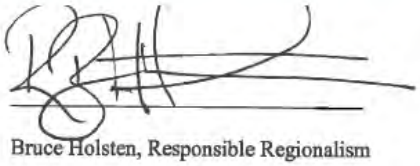
Explanation: The EPA places requirements on communities with regards to air quality to protect human health. The built environment has a direct relation to air quality. Protecting our air quality supports public health and enables our community to retain and attract quality development and industries.

Implementation Strategies:

- Promote compact development, mixture of uses, and infill that minimizes trips and vehicle miles traveled.
- Encourage development patterns and neighborhood street designs that are conductive to pedestrian and bicycle use.
- Discourage open burning of yard waste and trash in densely populated areas.
- ~~Consider a program to monitor and assess cumulative impacts of toxins and pollutants on air quality and attainment.~~

These goals and implementation strategies are the collective work of New Hanover County Planning Staff, the consultant, Renaissance Planning Group and the Citizen Advisory Committee. The Citizen Advisory Committee was composed of 12 members – six members at-large appointed by the County Commission and six members elected by 6 theme groups, which developed the theme goals prior to the initial meetings of the Citizen Advisory Committee. While total agreement was not reached on all goals and strategies, overall consensus was achieved and the diversity of the committee provided broad county-wide representation and input to the staff and the consultant. The committee encourages New Hanover County to use the goals and implementation strategies offered in this report in the development of the 2015 Comprehensive Land Use Plan for New Hanover County.

Hank Adams, Appointee

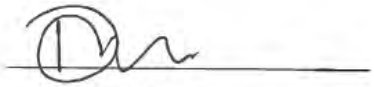


Bruce Holsten, Responsible Regionalism

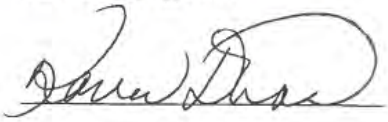
Jeff Bellows, Appointee

David Kellam, Appointee

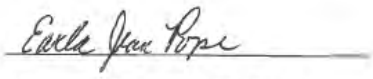
Dan Dawson, Appointee



Dani McKeon, Healthy Community

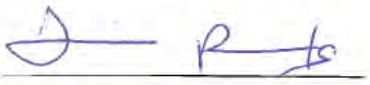


Karen Dunn, Livable Built Environment

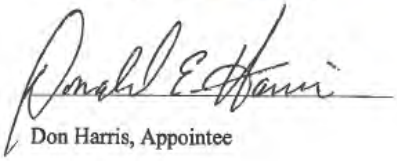


Earla Pope, Harmony with Nature

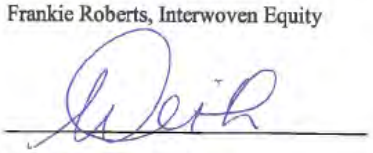
Jessica Gray, Resilient Economy



Frankie Roberts, Interwoven Equity



Don Harris, Appointee



Stephanie Smith, Appointee

Less
Trash
on
Ground!
Push
Trash
Can

MORE TREES
Recycle

We need more trees
We have lots of parks

MORE TREES!
"Boom"

Clean Air
More trees
recycling
More self driven education
More ecofriendley community
ecofriendly
Littering
Less trash

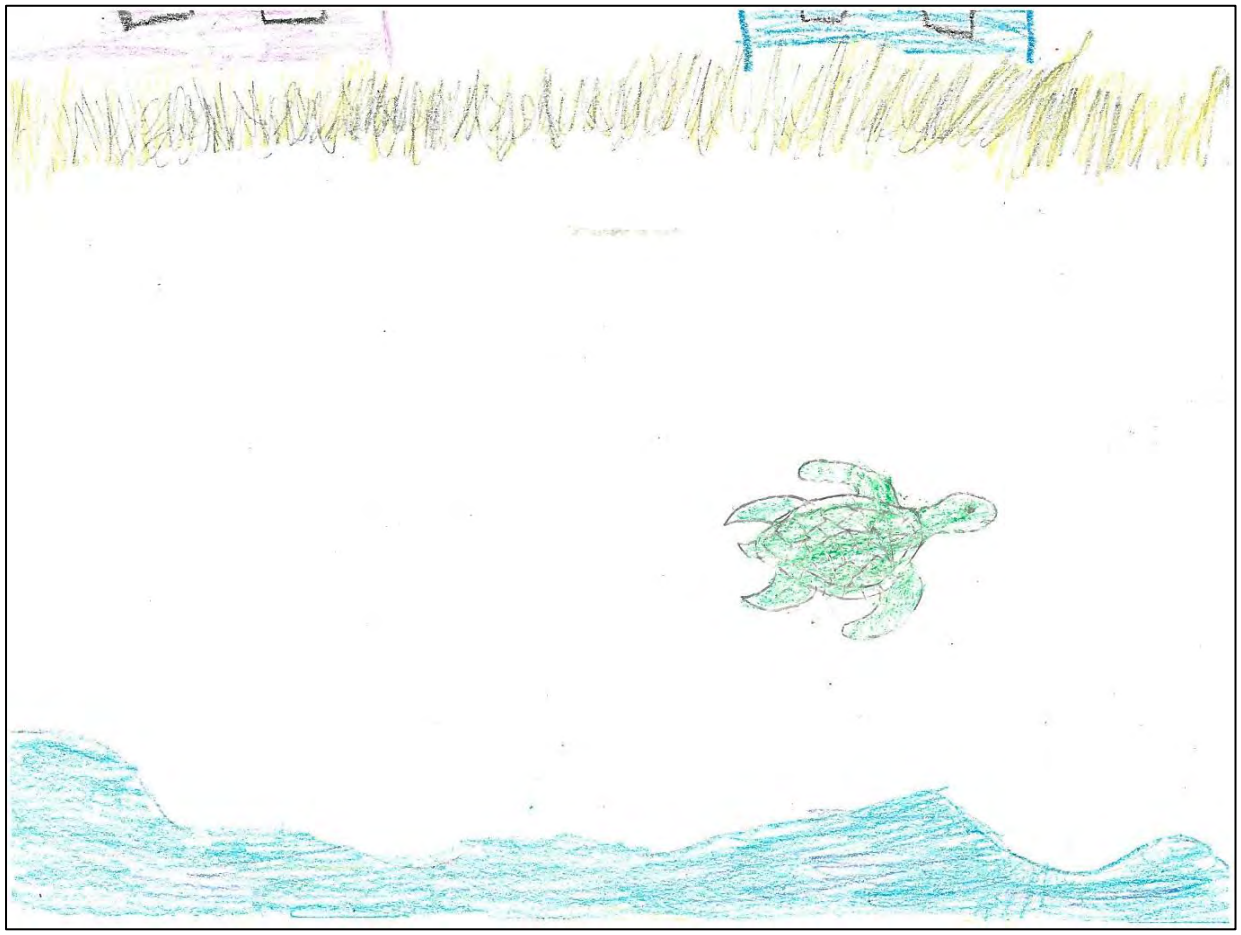
Landfills
I want a more ecofriendly environment!
No Littering
X
Spam

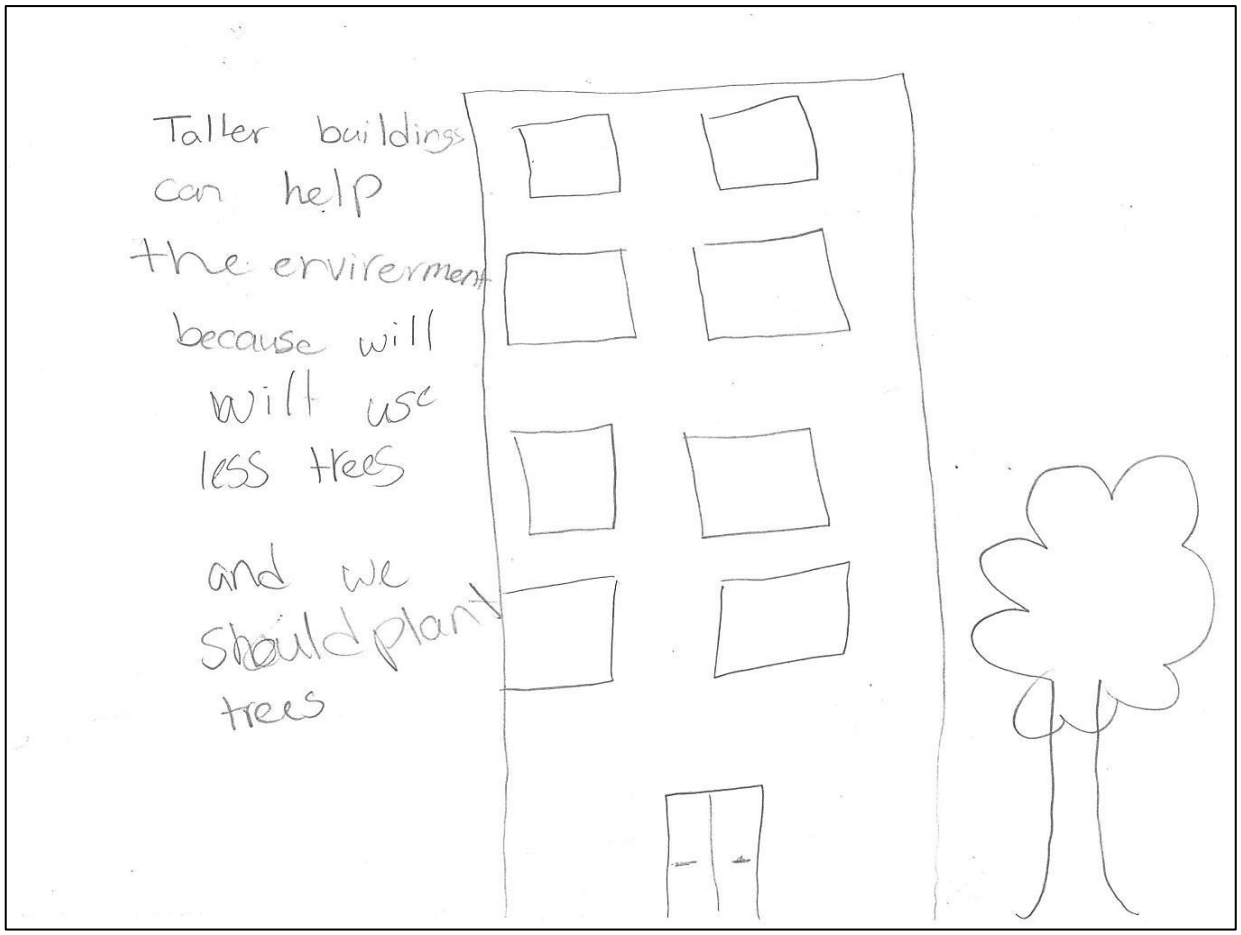
littering is not good for our ecosystem and enviroment!
Do not litter!!
Save our trees!
Animals eat the trash and die!
TRASH
Save our animals! Plz!!
Littering

No trash.
recycle

After
Befor

PARK
CANS
BOTTLES
TRASH




Taller buildings
can help
the envirerment
because will
will use
less trees
and we
should plant
trees

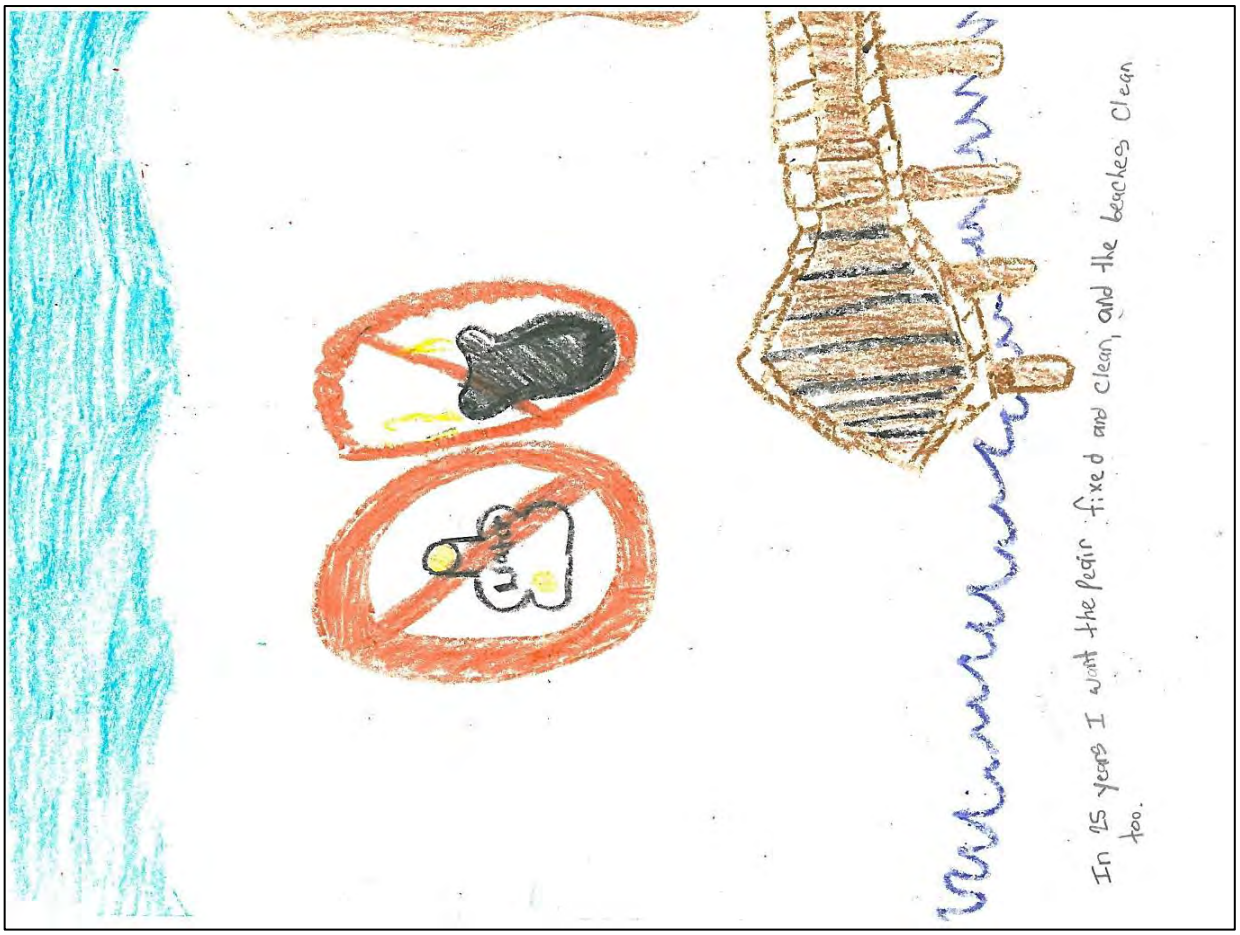
end
Pollution

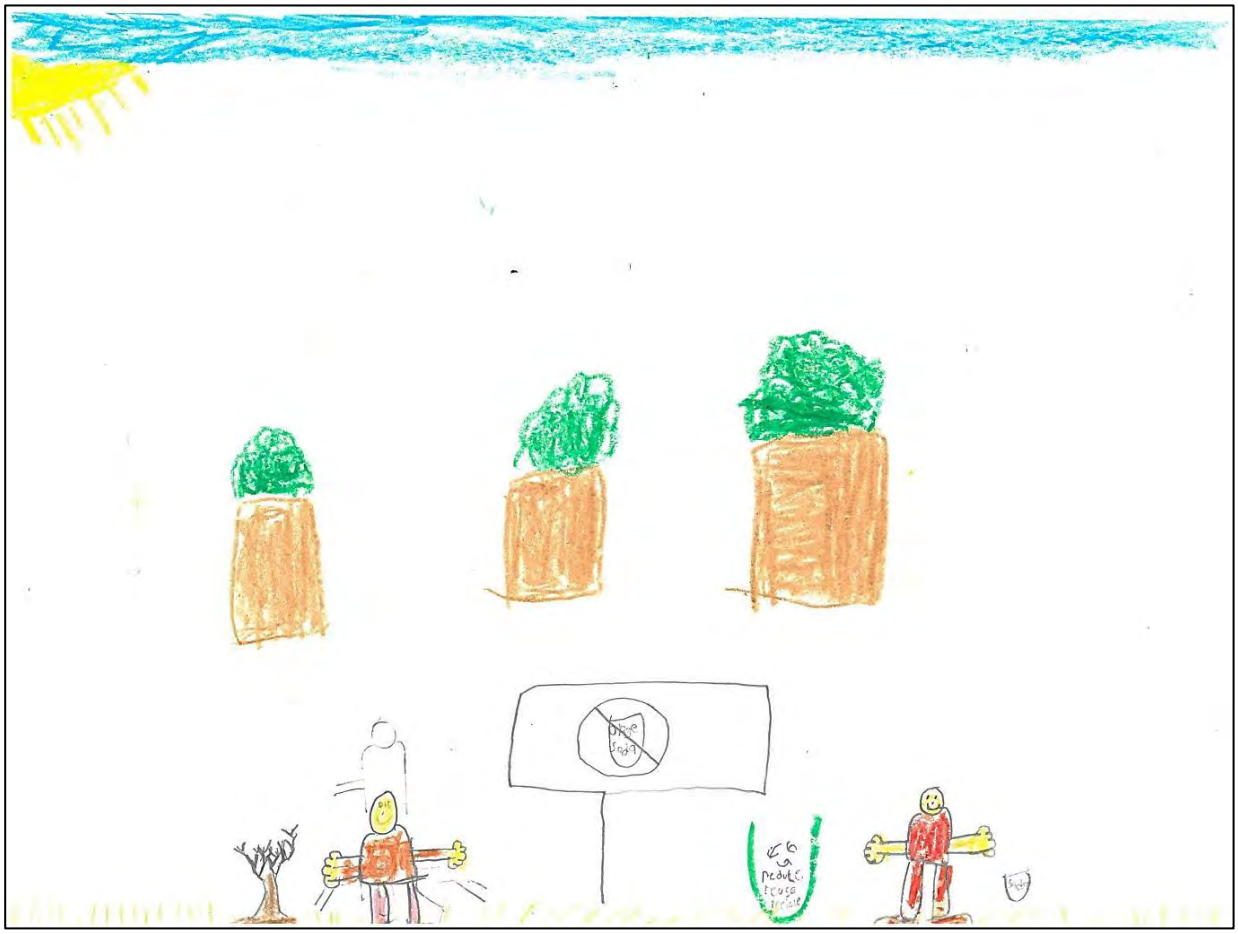
Fossil

Forest
Fires

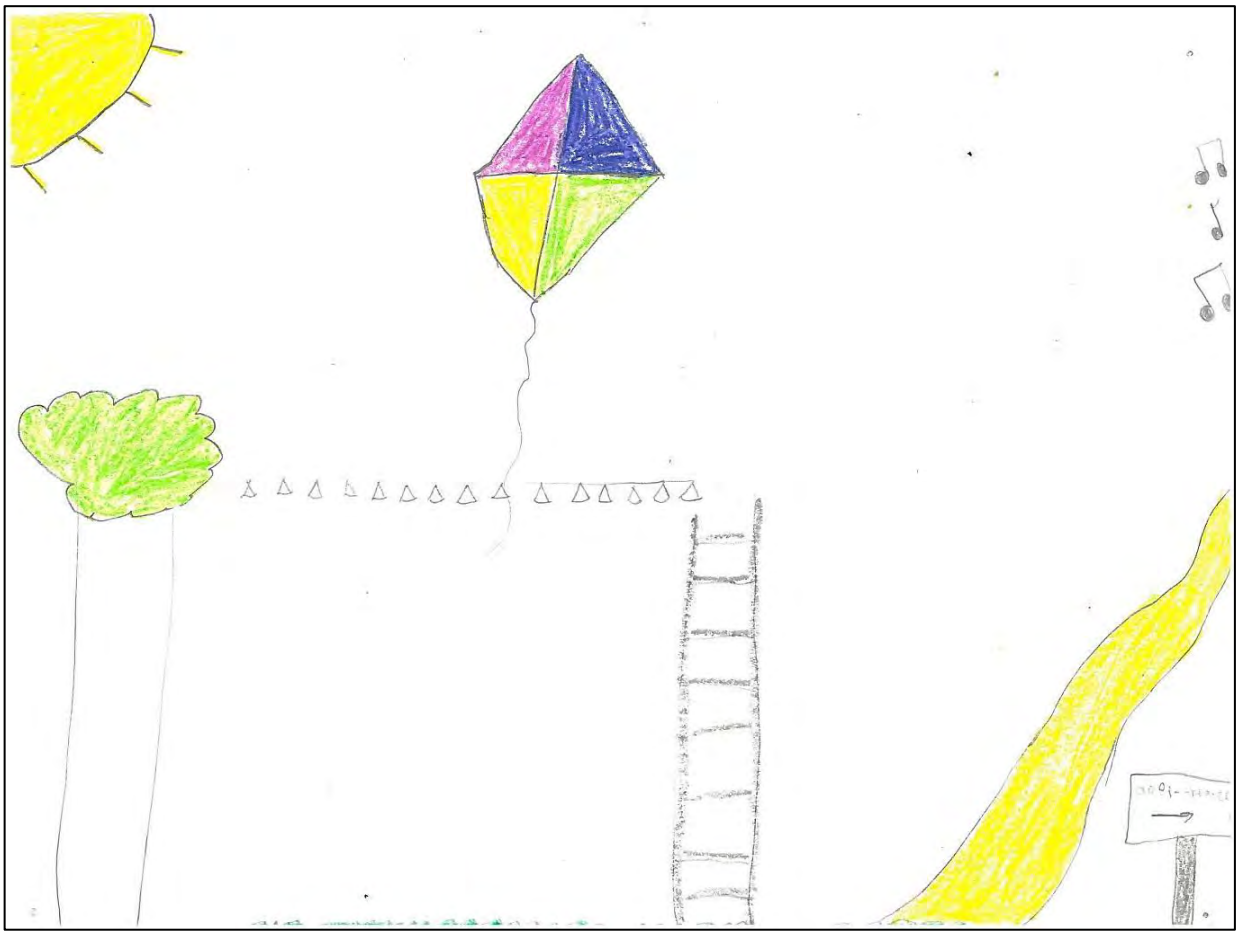
end World hunger
for 2 apples
Save the animals
Save endangered animals
recyle
recycle

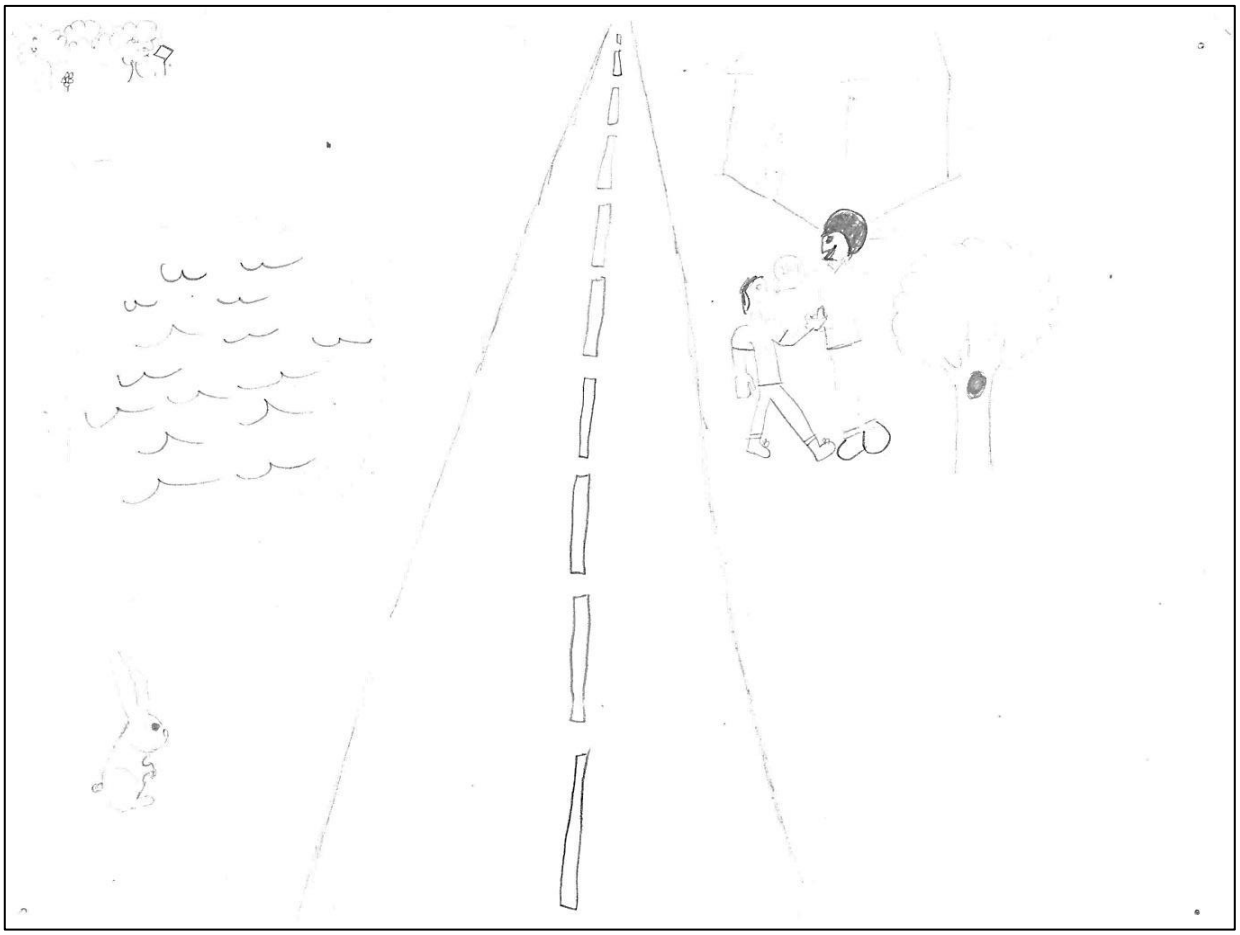
soda


In 15 years I want the pegin fixed and clean, and the beaches clean too.

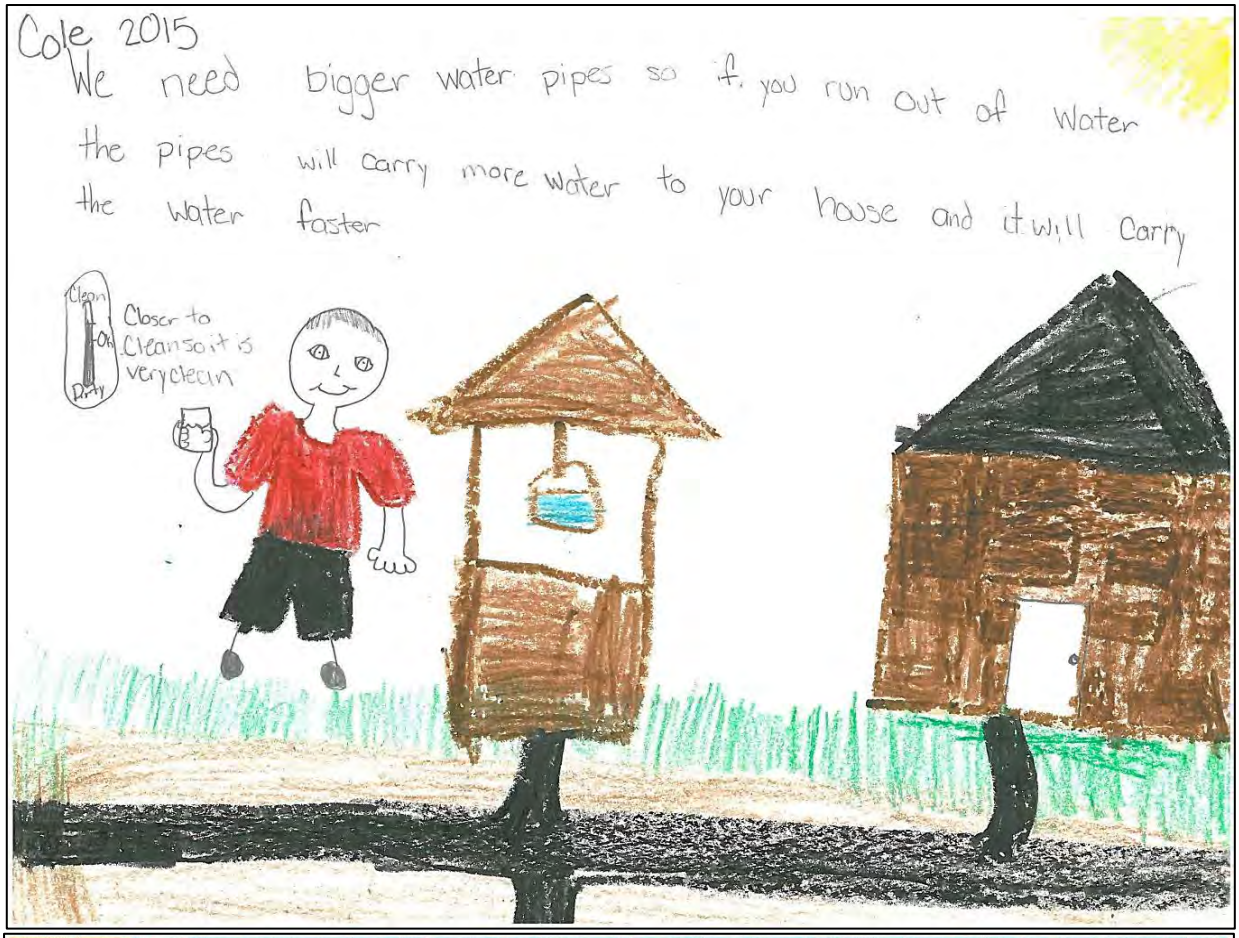


Snacks
menu
11.50 - Chips/of all sorts
12.00 any candy
12.75 - Drincks



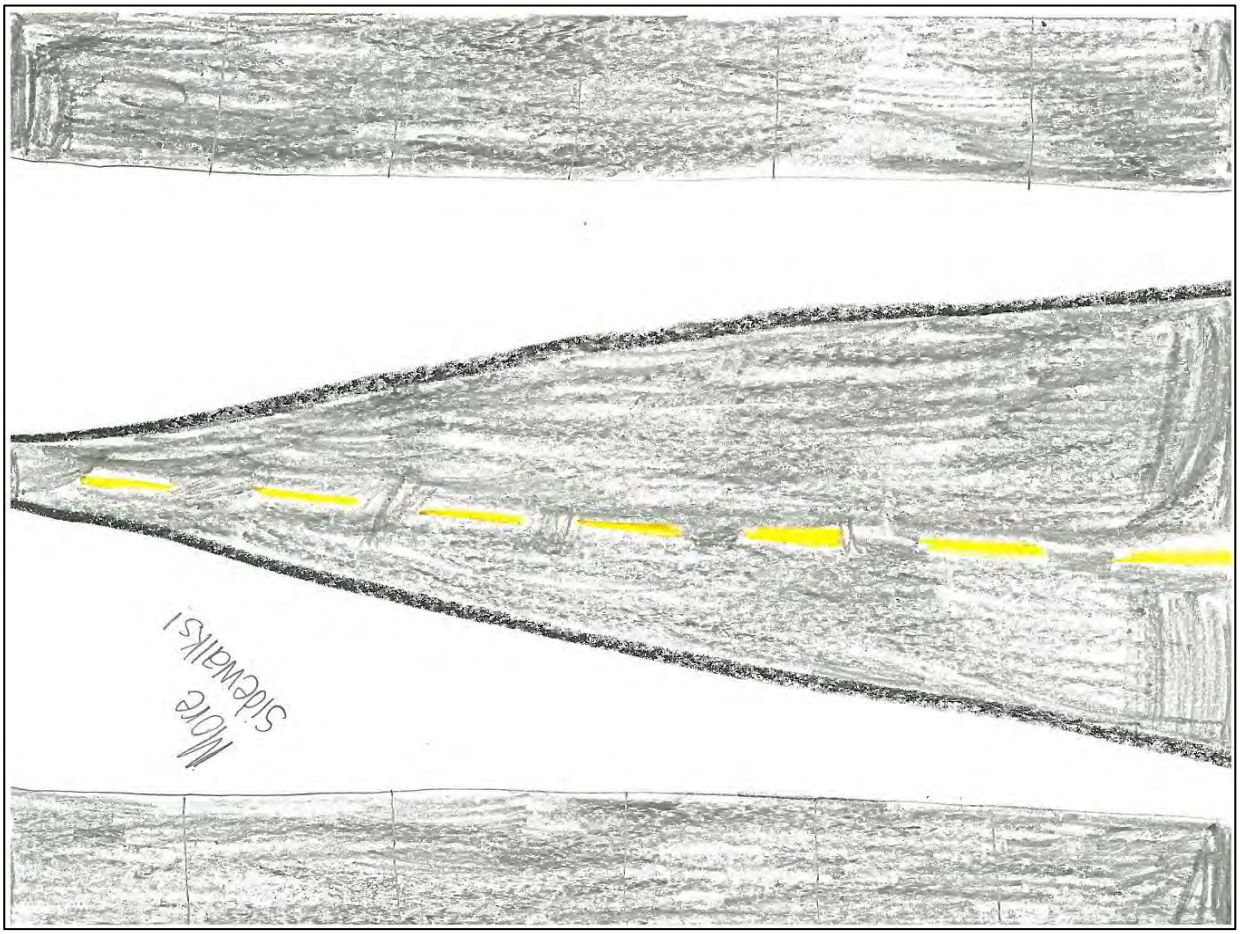


KECP
Masonboro
Island
More Community
More big parks
Less Mcdonald's
Bike Lane

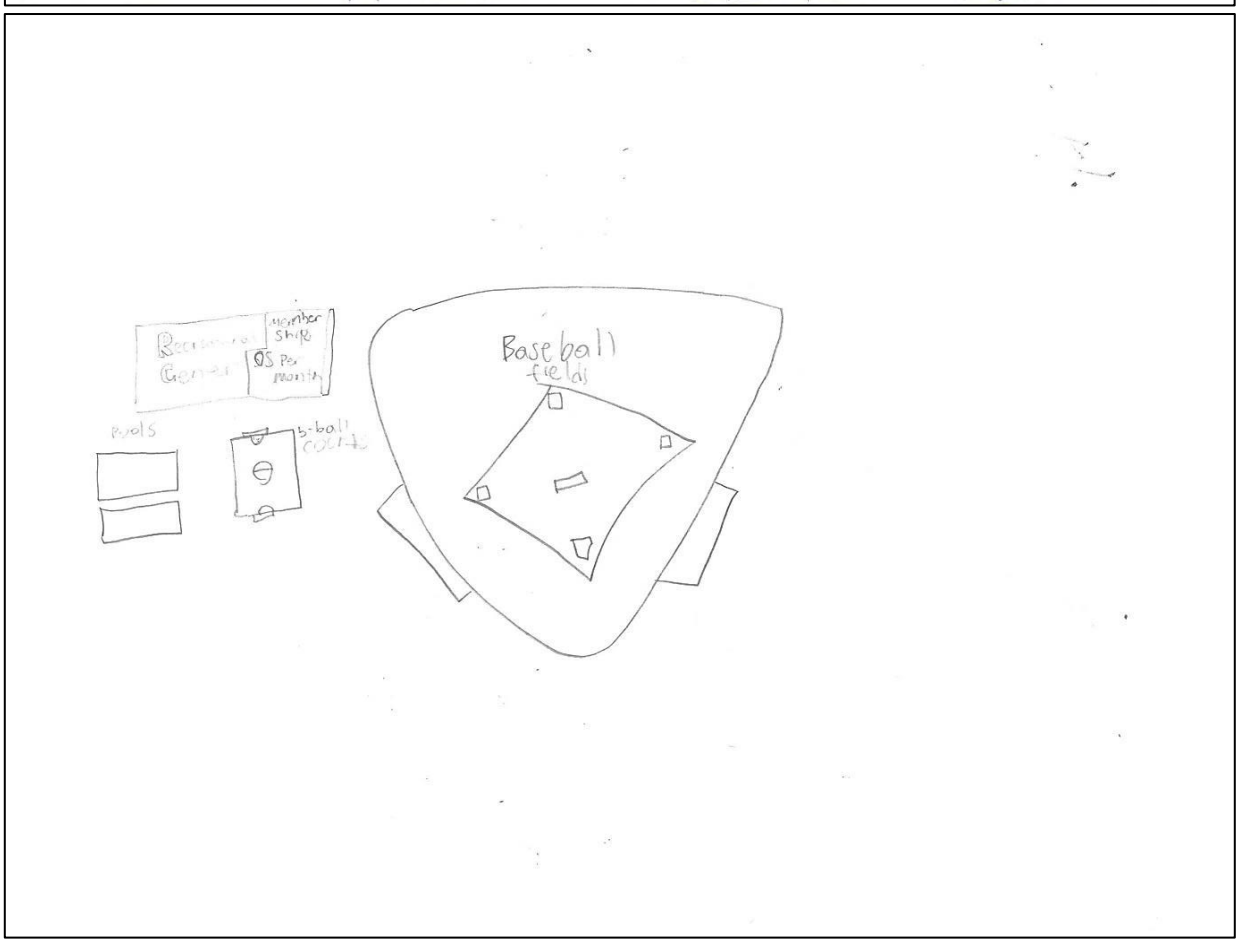

Cole 2015
We need bigger water pipes so if you run out of water
the pipes will carry more water to your house and it will carry
the water faster
Clean
Dirty
Closer to
Clean so it is
very clean

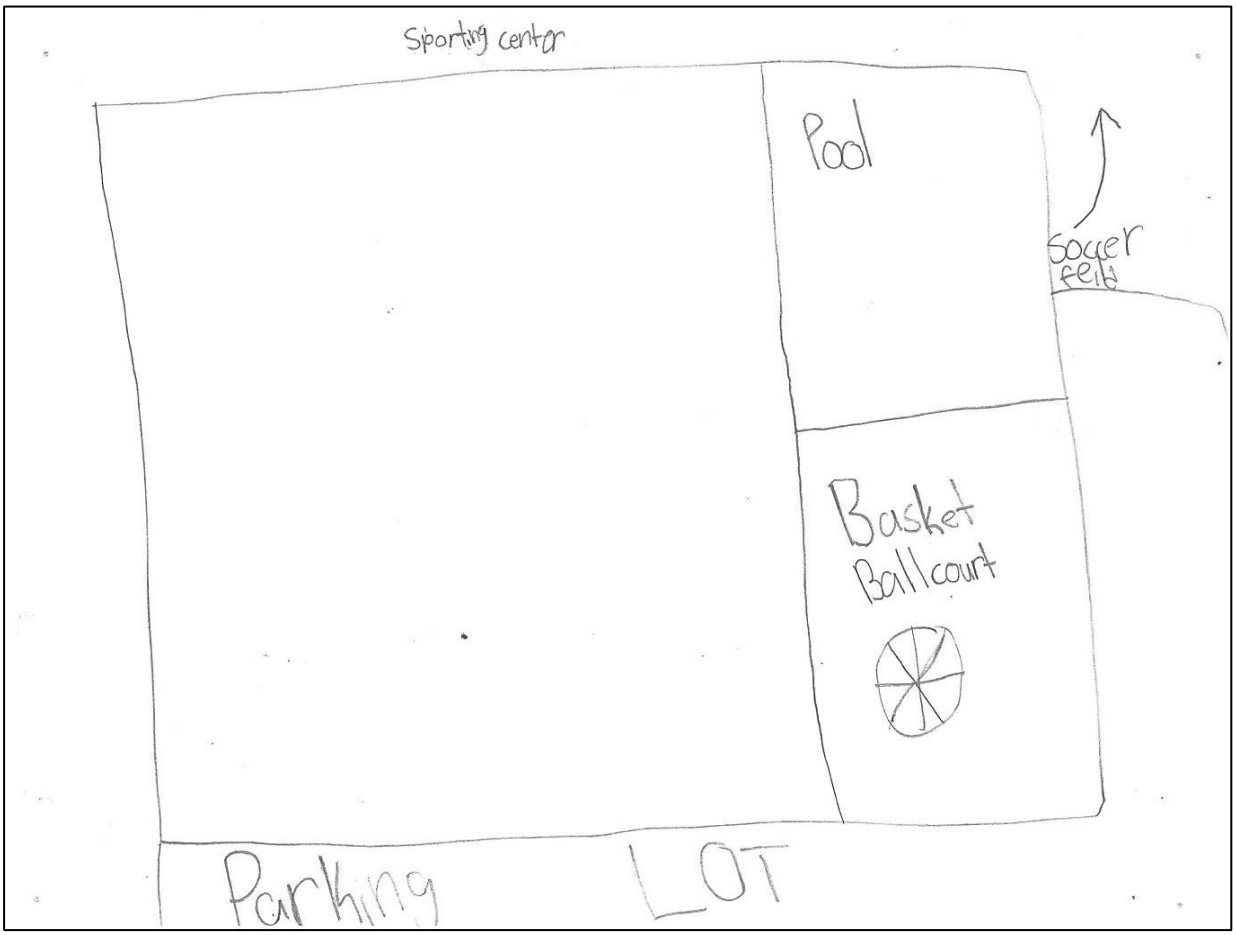
END CANCER

more lightpost
more older kid parks
more feilds for any sport
bike lanes/sidewalk in neighborhoods

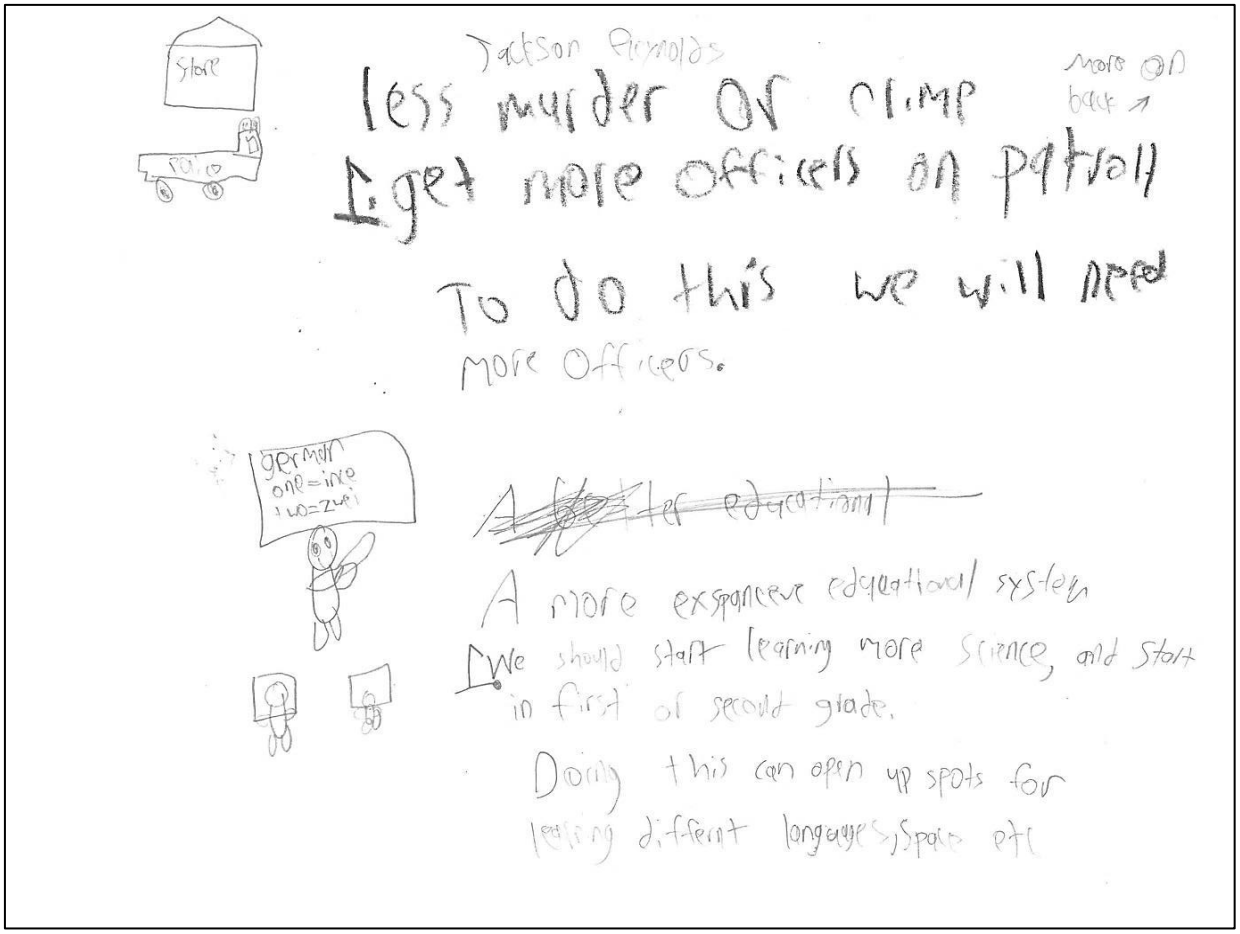

More sidewalks!

I think that in some intersections we have wires, I think we should have metal holding the street lights
wire could do this
fallen wire
I think that alot of our average food in our fridge is not organic & we need locoly grown food that is 100% organic
No Cases Food on my
No Legalization of recreational drugs
Teacher income become higher
more events
more homless sheters
littering by cirgirates


Recreational Center
member ship
05 per month
pools
b-ball courts
Baseball fields


Sporting center
Pool
Soccer field
Basket Ball court
Parking LOT

Extra security
5489


Jackson Reynolds
store
police
less murder or crime
more on back
I get more officers on patroll
To do this we will need more officers.
german
one=ince
two=zwei
~~A better educational~~
A more exspanceve educational system
I We should start learning more science, and start in first or second grade.
Doing this can open up spots for learing differnt languages, space etc

Grace

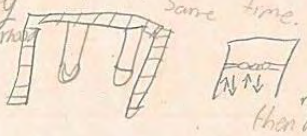
New Hanover County 2015

☆ More soccer feilds with good drainage and with lights.

☆ due to popularity in the sport and lack of quality fields

☆ Parks should add more equipment so more kids can have fun and excercise

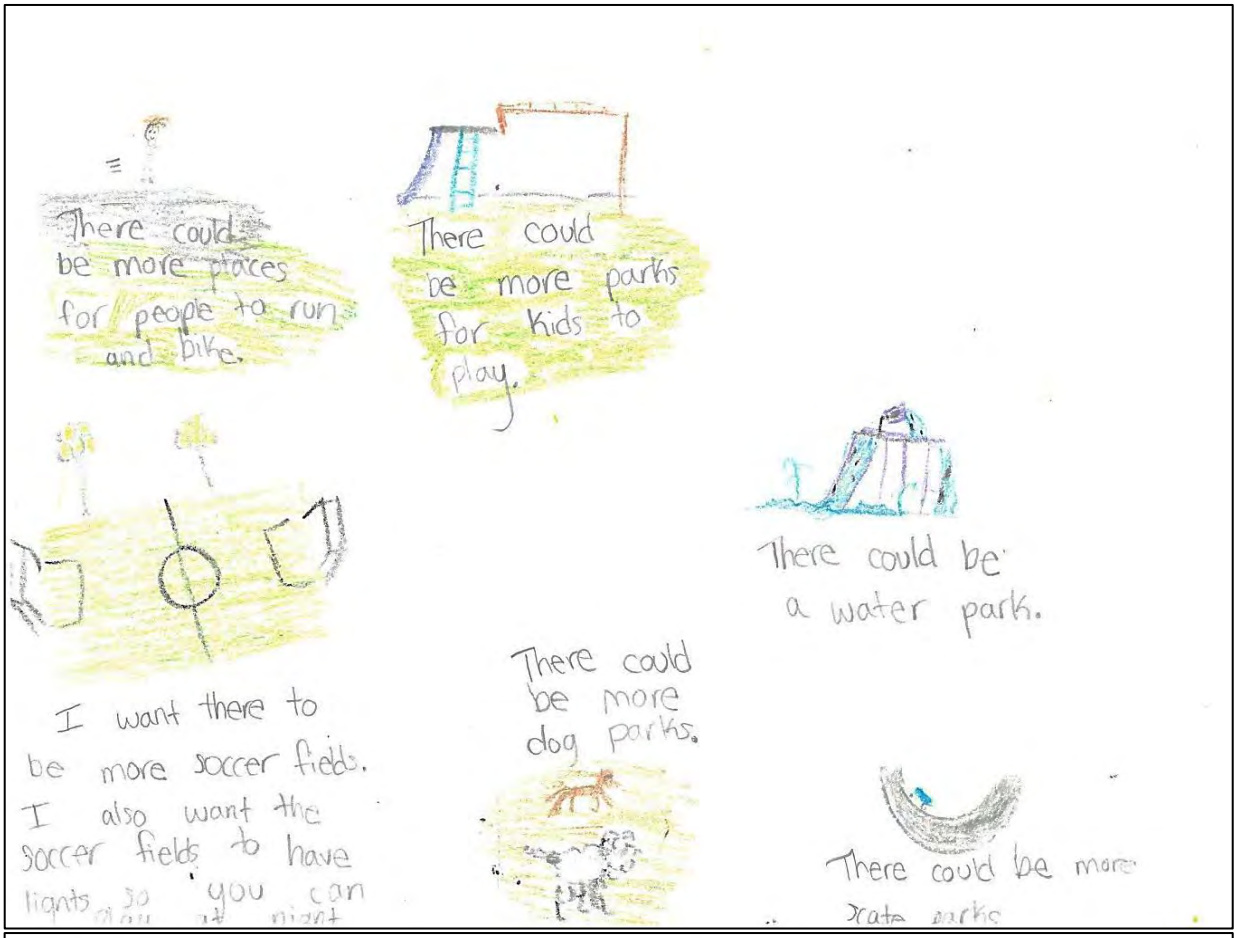
☆ add Swings at the same time. to my neighborhood park

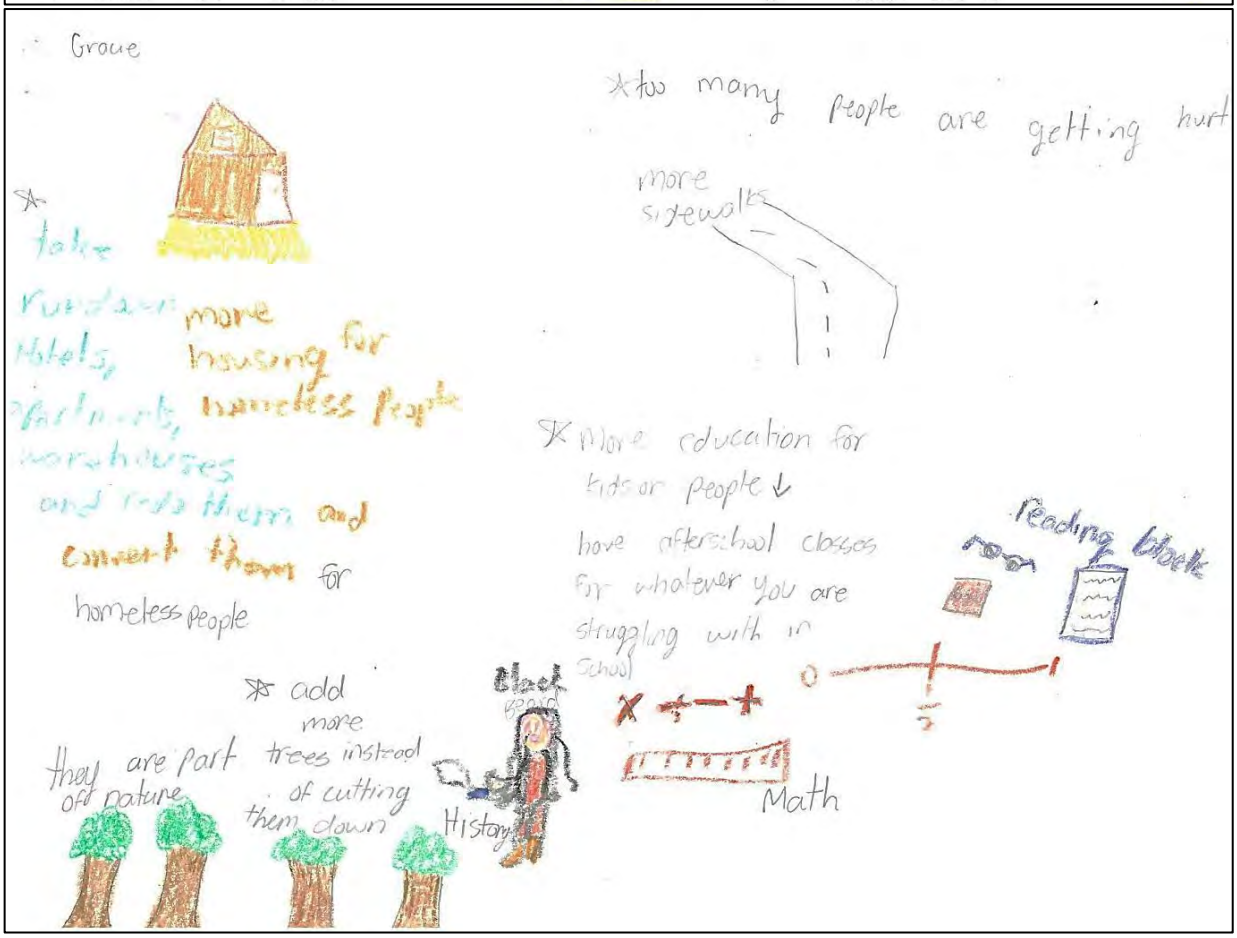


☆ due to the lack of not Putting swings in our park.

* more housing for homeless people or shelters

* they Could take rundown (County) warehouses or hotels or apartments and convert and redo them.


There could be more places for people to run and bike.
There could be more parks for kids to play.
There could be a water park.
I want there to be more soccer fields. I also want the soccer fields to have lights so you can
There could be more dog parks.
There could be more


Grade
take
more housing for homeless people
and turn them and convert them for homeless people
too many people are getting hurt
more sidewalks
More education for kids or people
have afterschool classes for whatever you are struggling with in school
Reading Work
Math
add more trees instead of cutting them down
they are part of nature
History

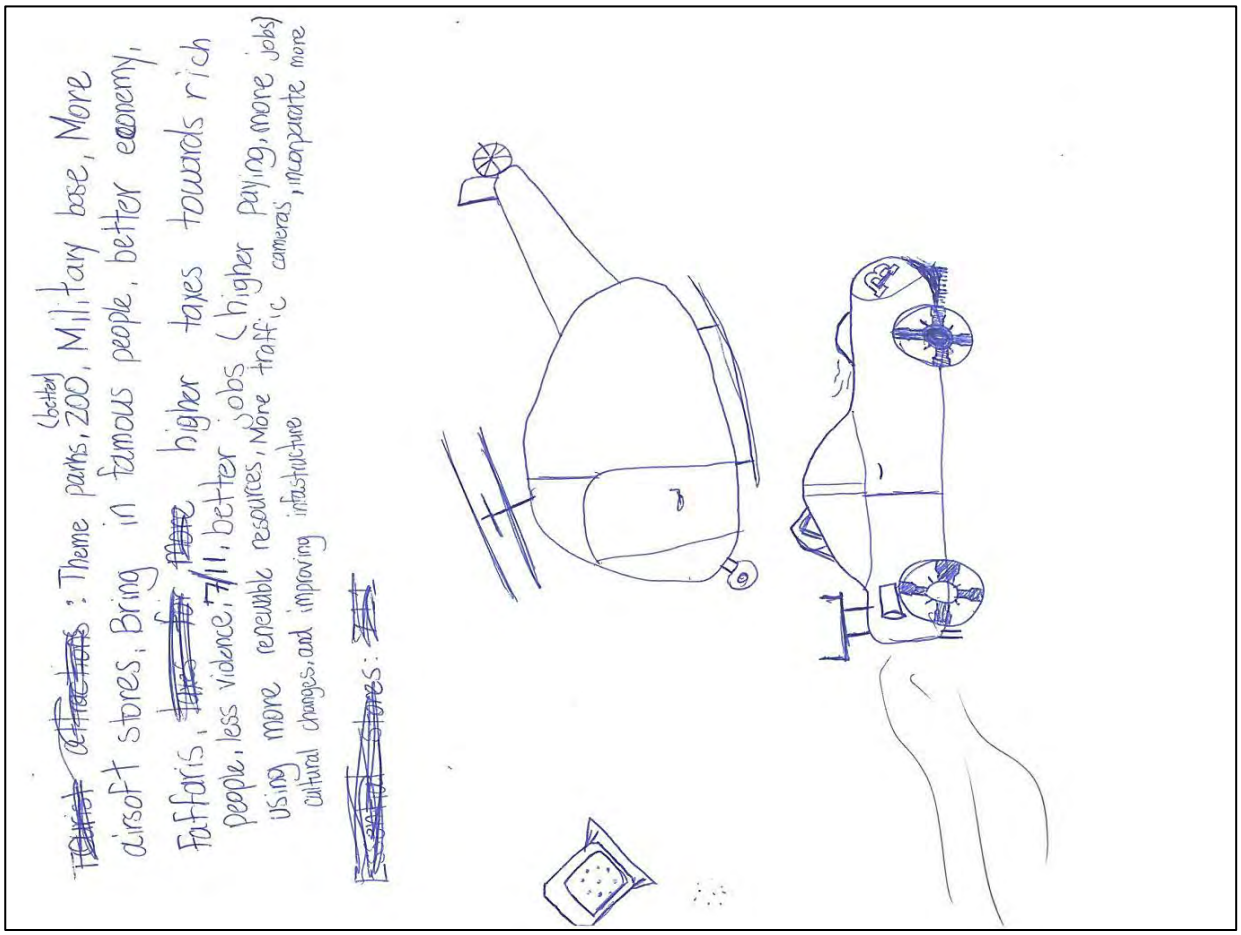
My House
Reese's Bistro
Speaker
Speaker

Reading Room
Cafeteria

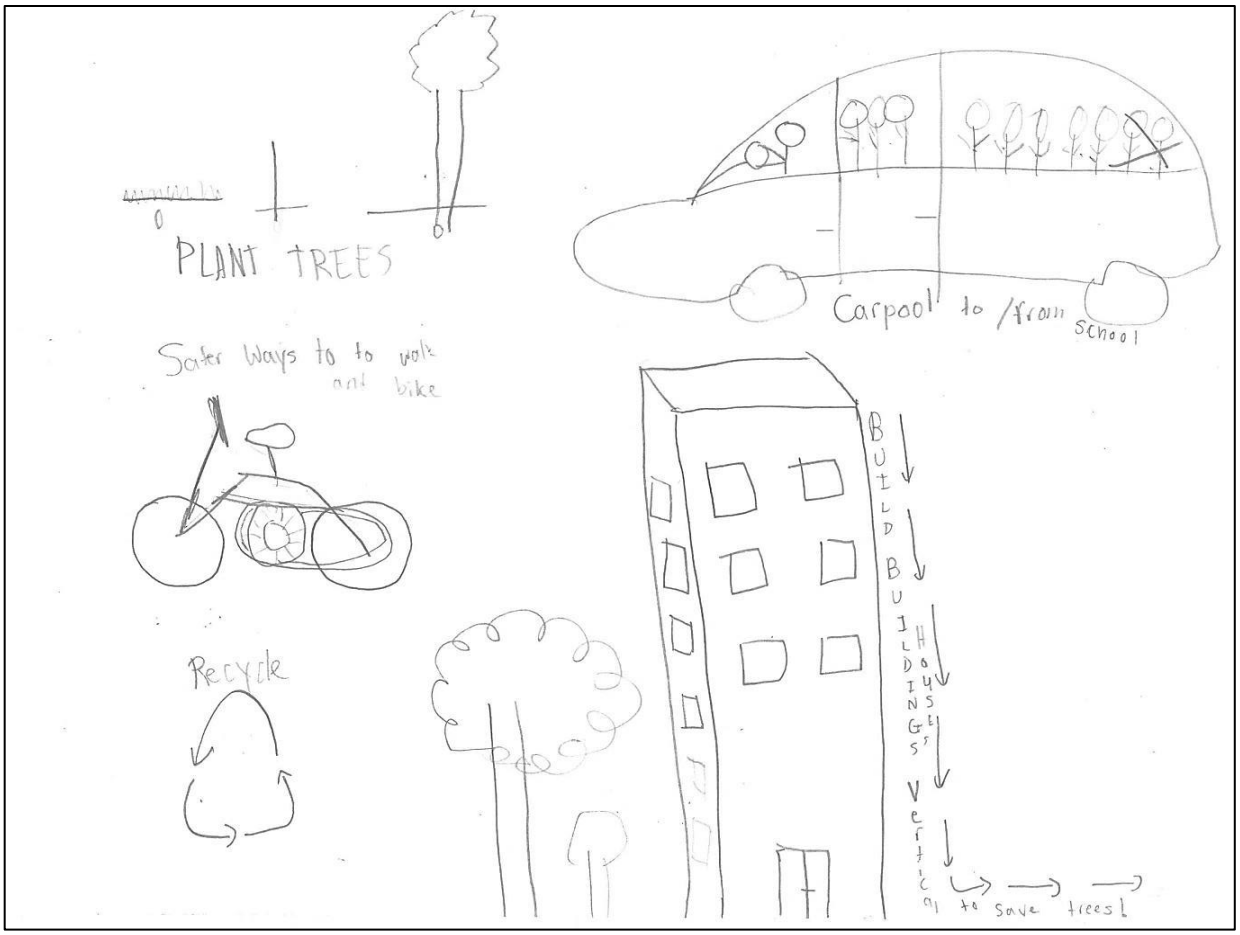
House
Slide
Pool

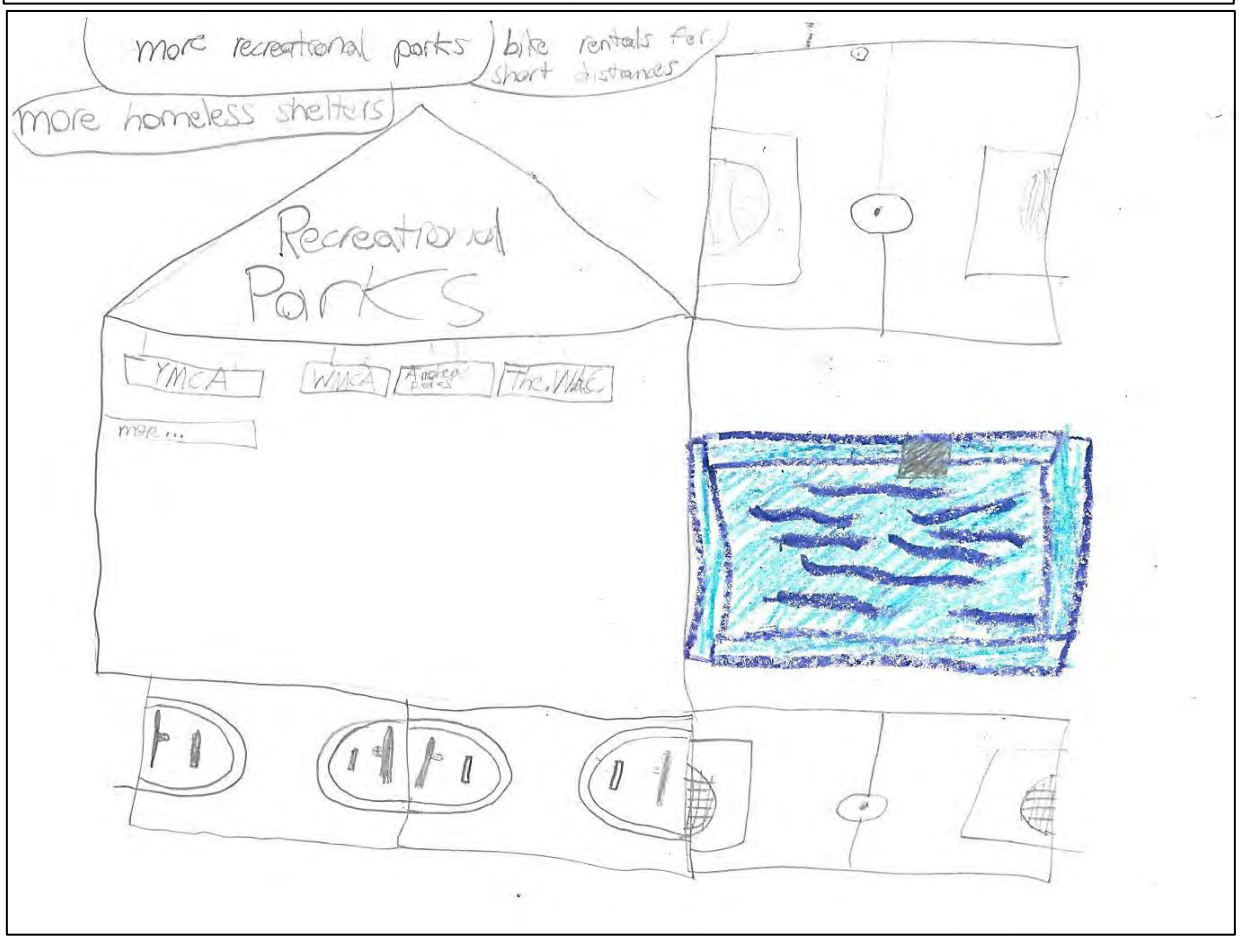
No Electronics
Learning exciting fun
More More
No Electronics learning is fun
More exciting teachers

Less Accidents
Less Fires

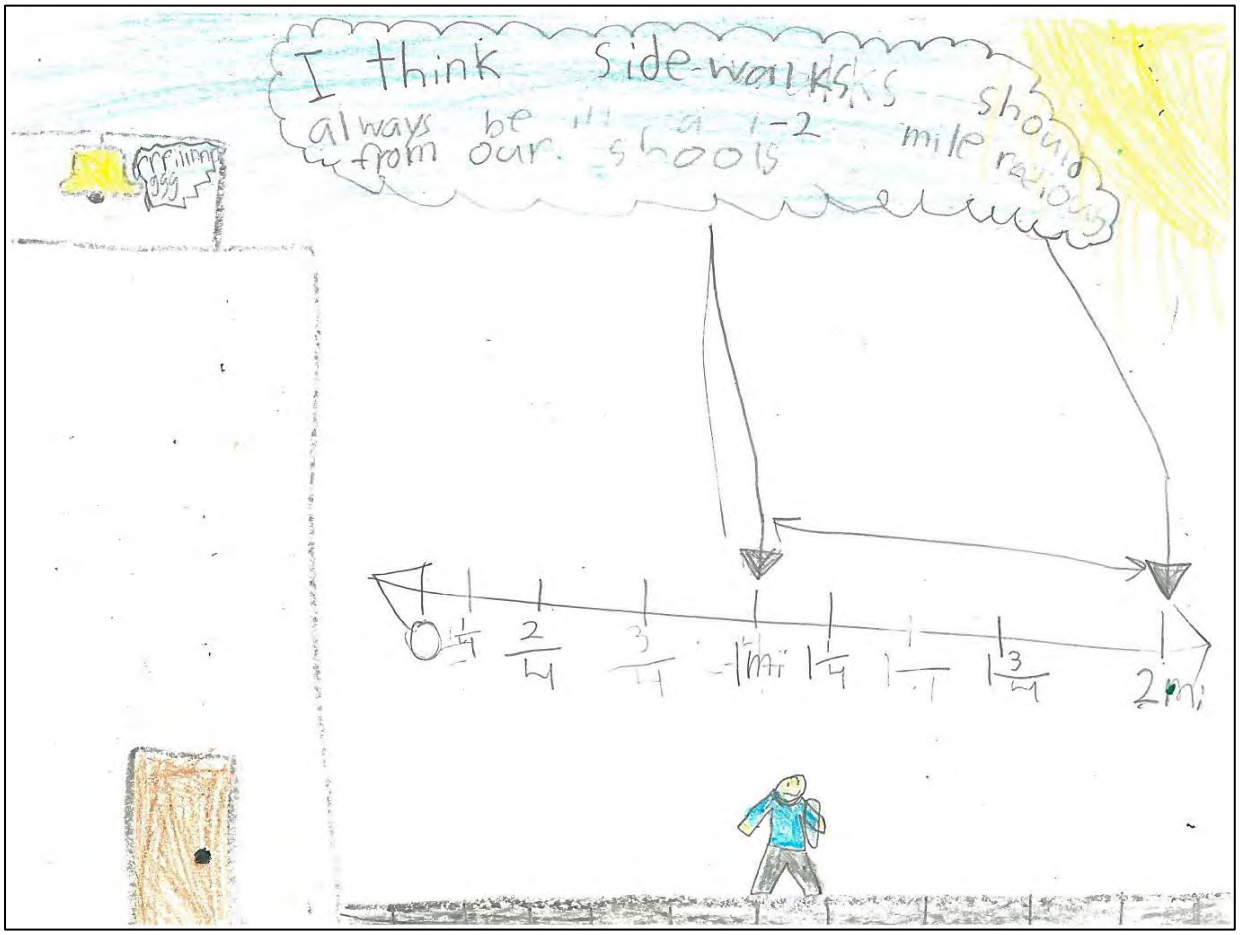

~~Furist attractions~~: Theme parks, (better) 200, Military base, More
airsoft stores, Bring in famous people, better economy,
Fafaris, ~~Tires for more~~ higher taxes towards rich
people, less violence, 7/11, better jobs (higher paying, more jobs)
using more renewable resources, More traffic cameras, incorporate more
cultural changes, and improving infastructure
~~Essential stores~~:

- Flying Cars
- Underground Subways
- Less Pollution
- Amusement Parks
- Scheduled transportation routes
- Less Traffic
- More Sports Leagues
- More Field Trips
- Bigger roads
- Bigger airports
- More stores
- Less Cars
- More ways to get around
- More playgrounds
- Closer stores
- More places to work
- More trees
- More zoos
- Less violence
- Later starting schools
- Better economy
- Exploring alternative fuels
- Less density

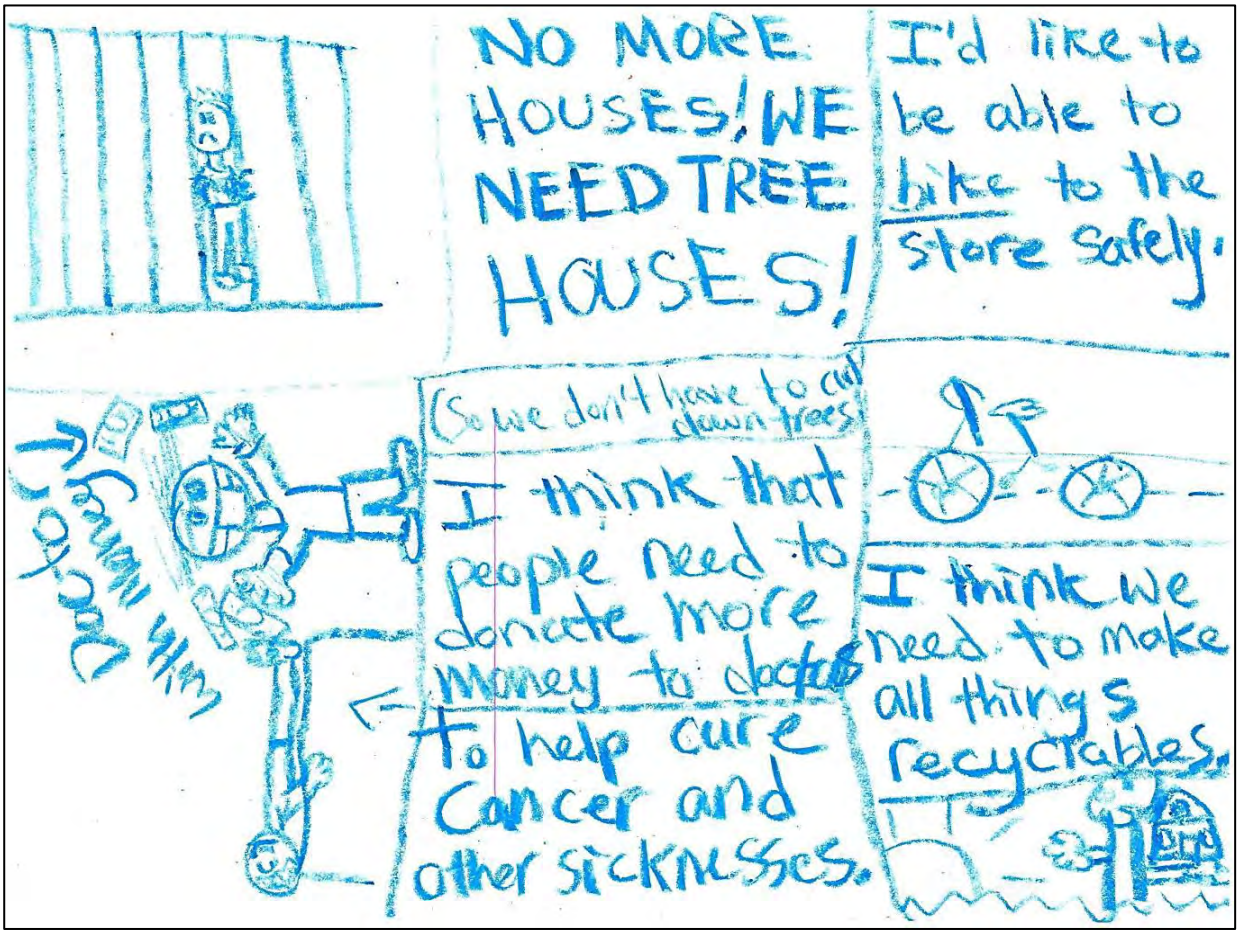

PLANT TREES
Carpool to /from school
Safer ways to to walk and bike
Recycle
BUILD BUILDINGS
HOUSES
Vertical
to save trees!

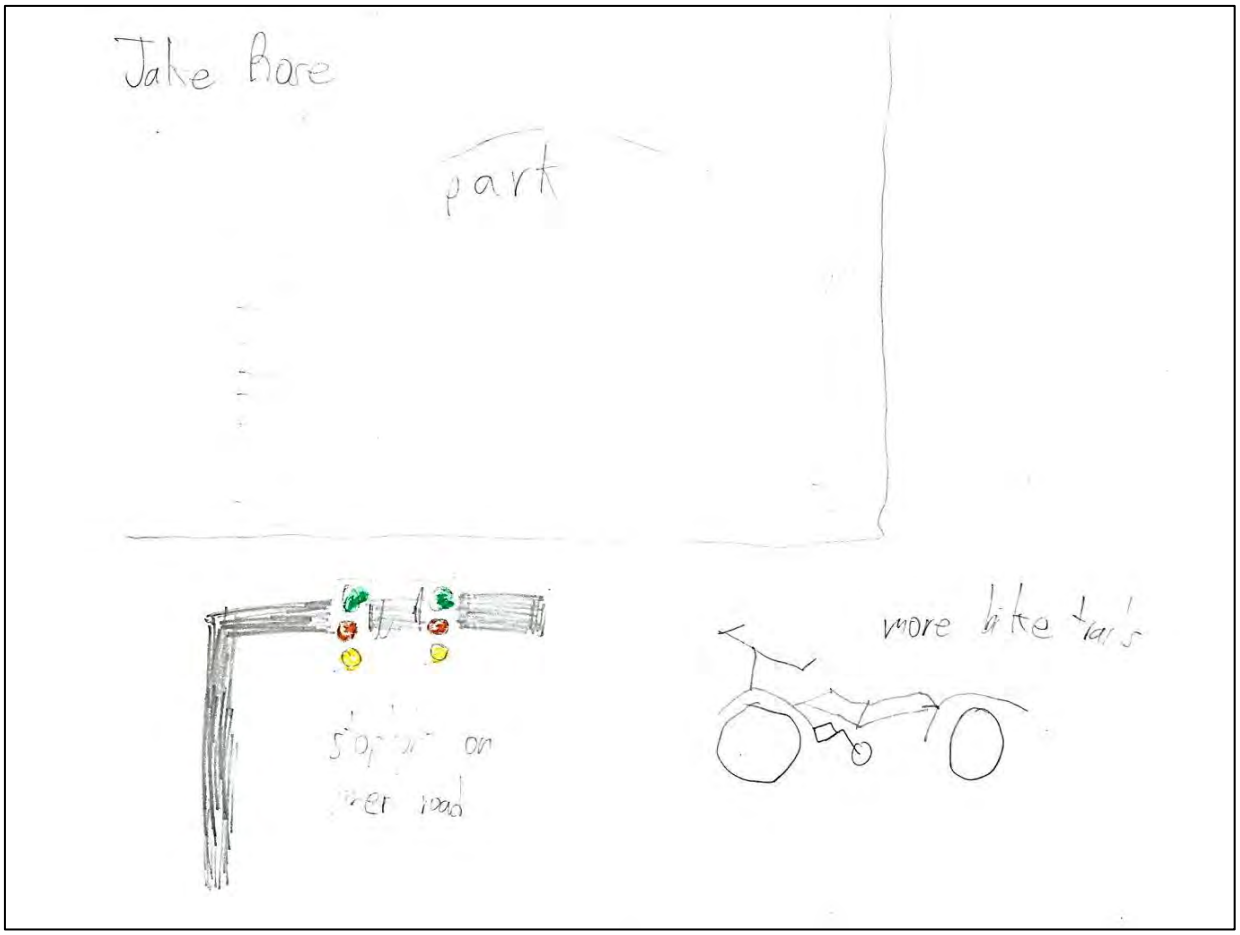

more recreational parks
bike rentals for short distances
more homeless shelters
Recreational Parks
YMCA
more...

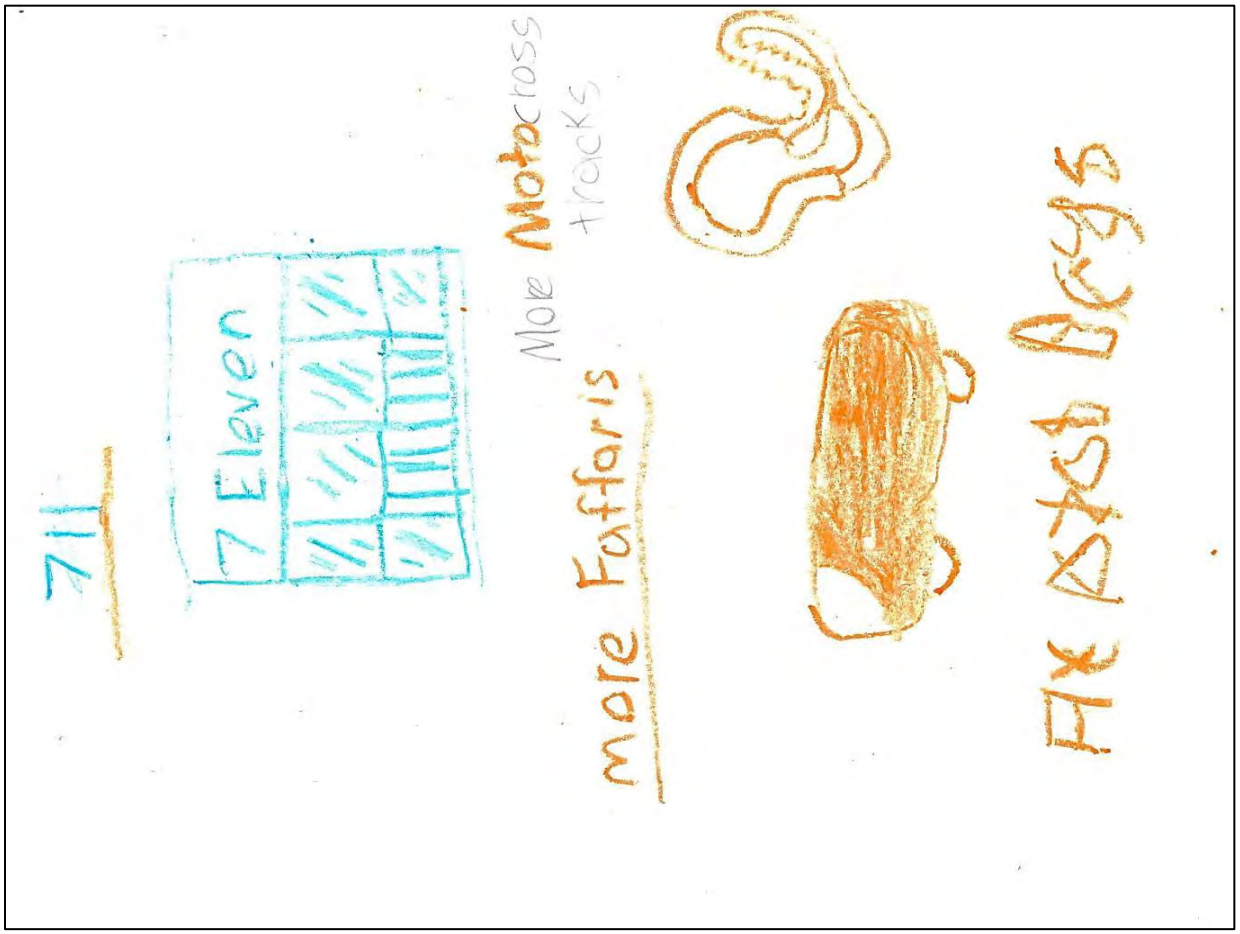
more Sidewalks
more roundabouts
Hybrid cars

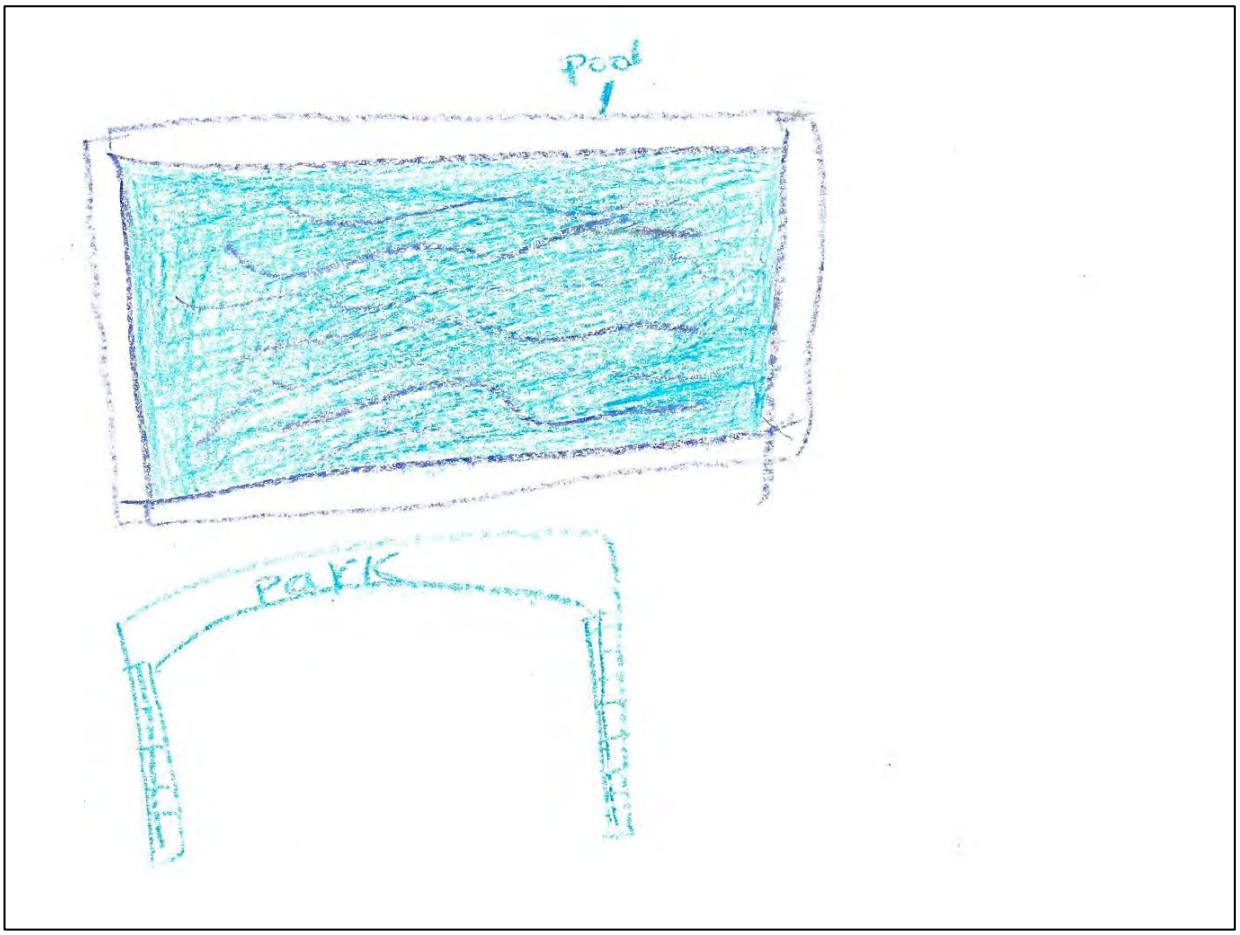

I think side-walks should always be 1-2 mile radius from our schools
0
1/4
2/4
3/4
1 mi
1 1/4
1 1/2
1 3/4
2 mi

Neighborhood
bike path
playground

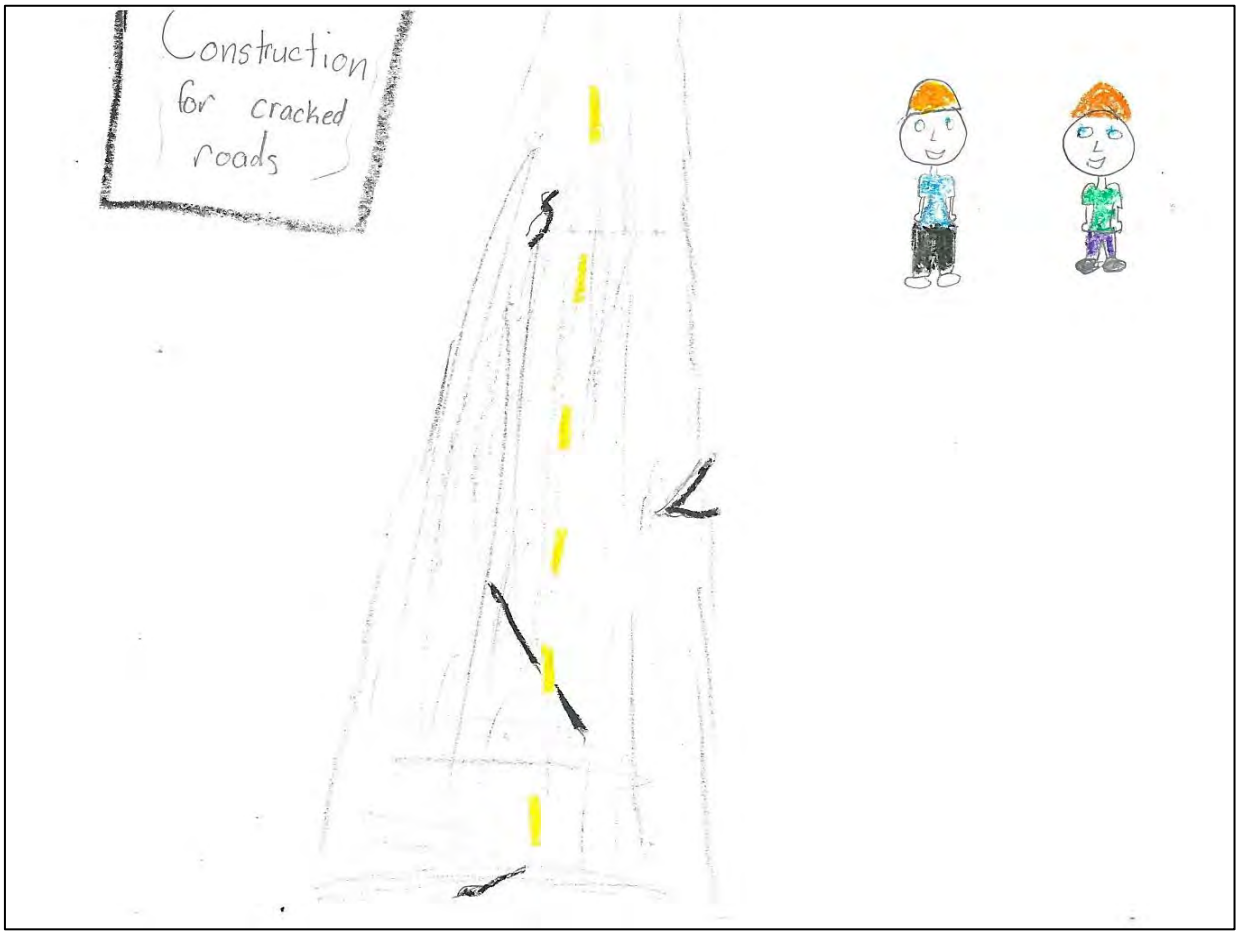

NO MORE HOUSES! WE NEED TREE HOUSES!
I'd like to be able to bike to the store safely.
So we don't have to cut down trees!
I think that people need to donate more money to doctors to help cure Cancer and other sicknesses.
I think we need to make all things recyclables.

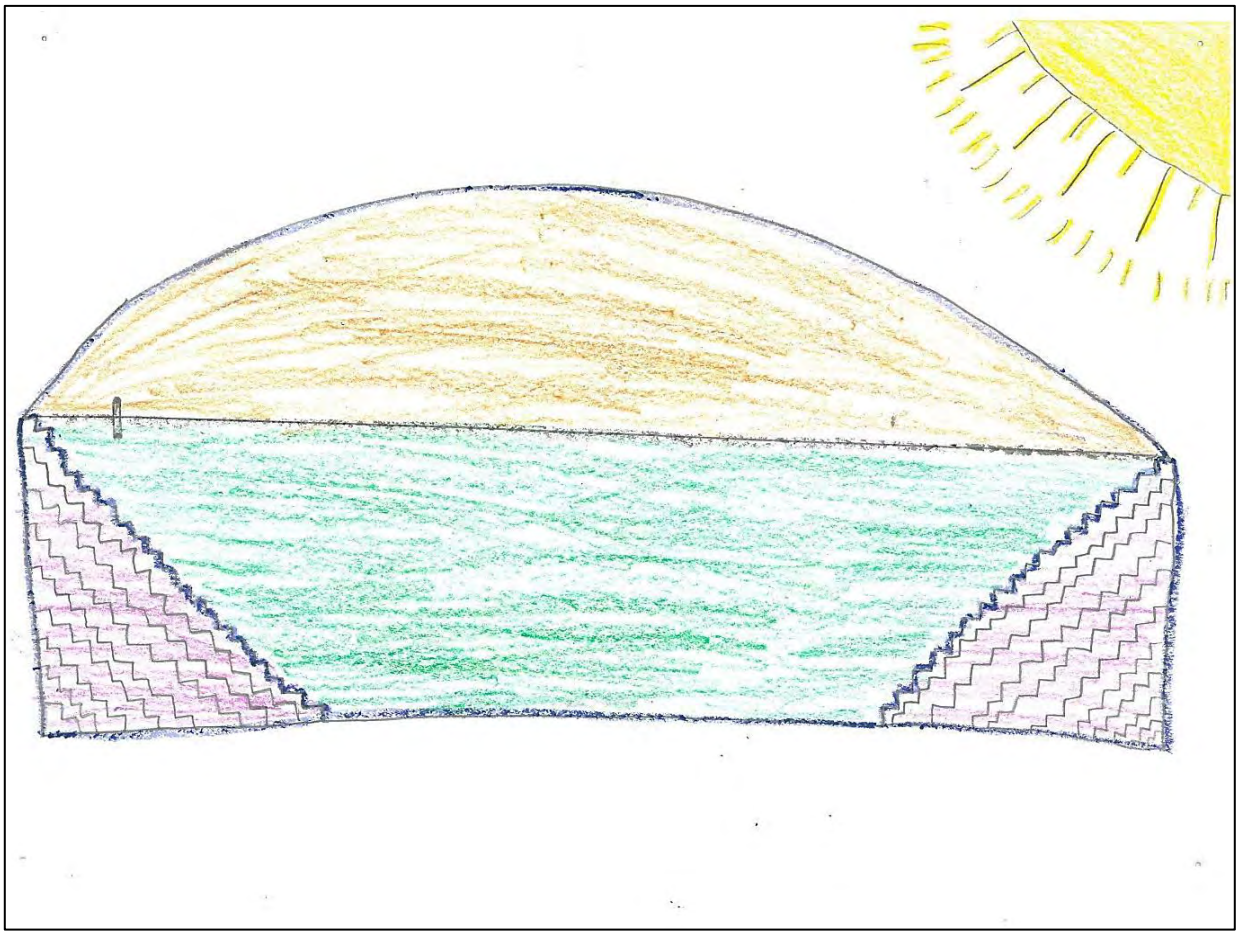

Jake Rose
part
more bike trails

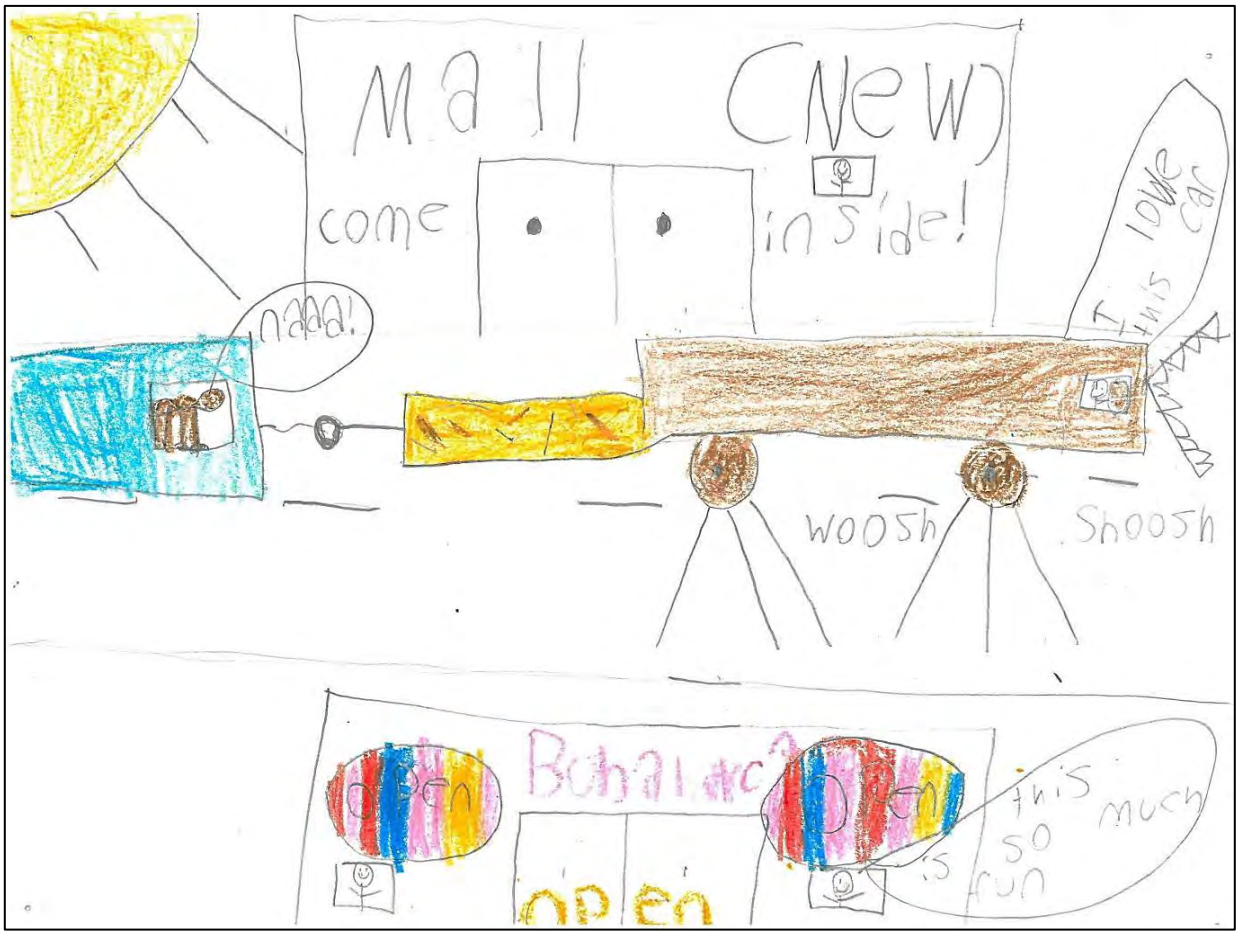

7 Eleven
More Motocross tracks
more Fafforis


Pool
Park

a big candy
Wendy


Construction
for cracked
roads

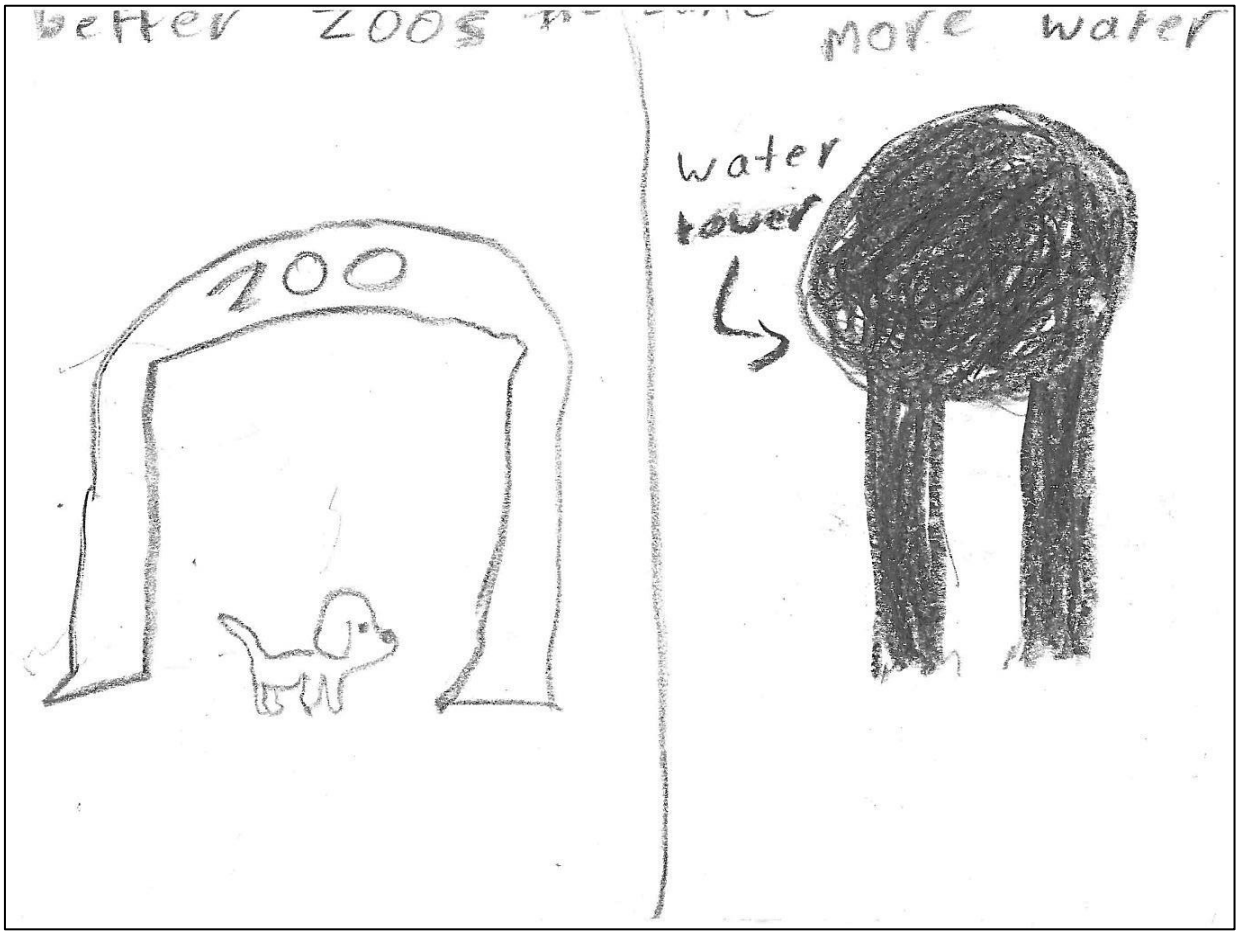


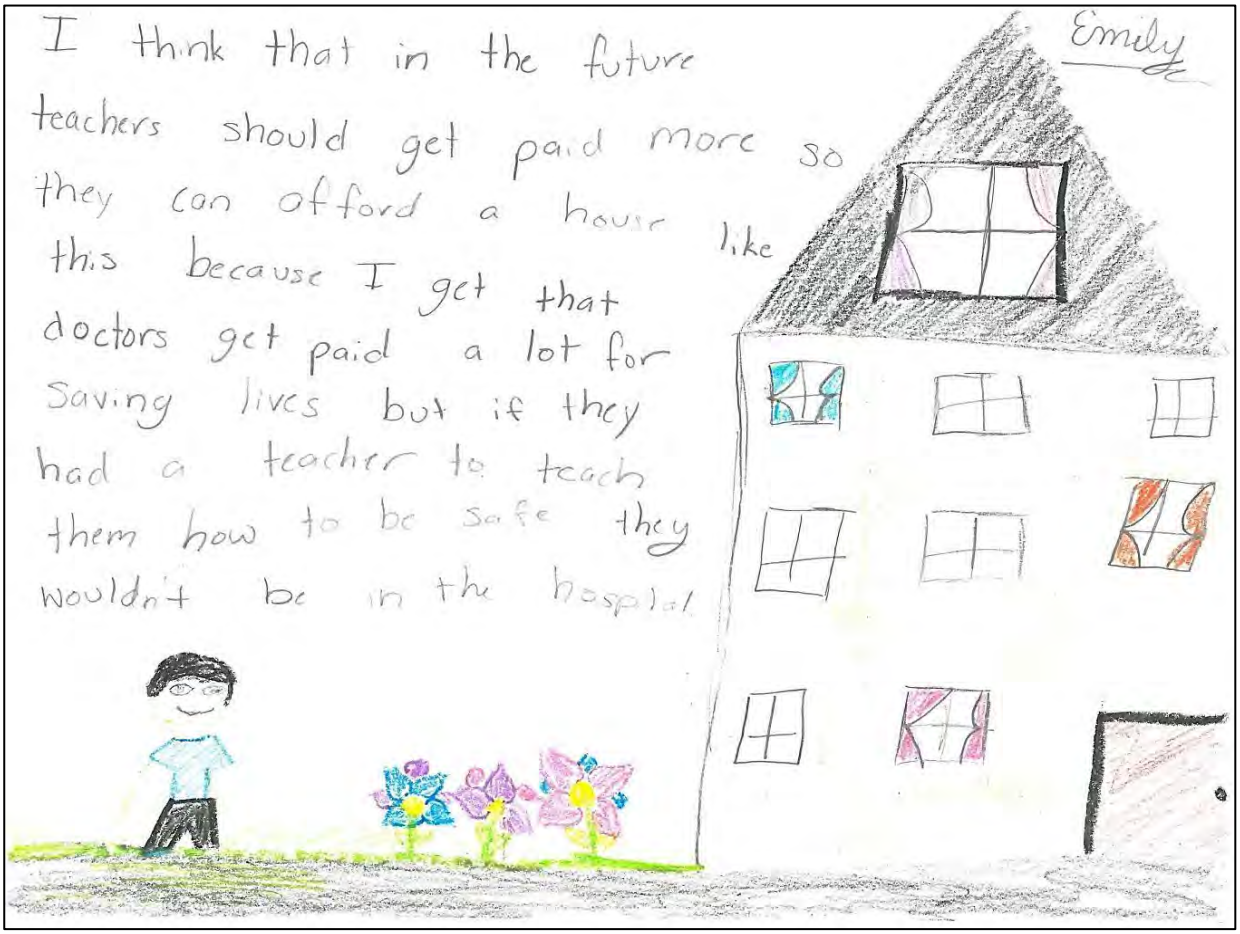

Mall (New)
come inside!
naaa!
I love this car
woosh
Shoosh
open
Bohalarca
open
open
this is so much fun

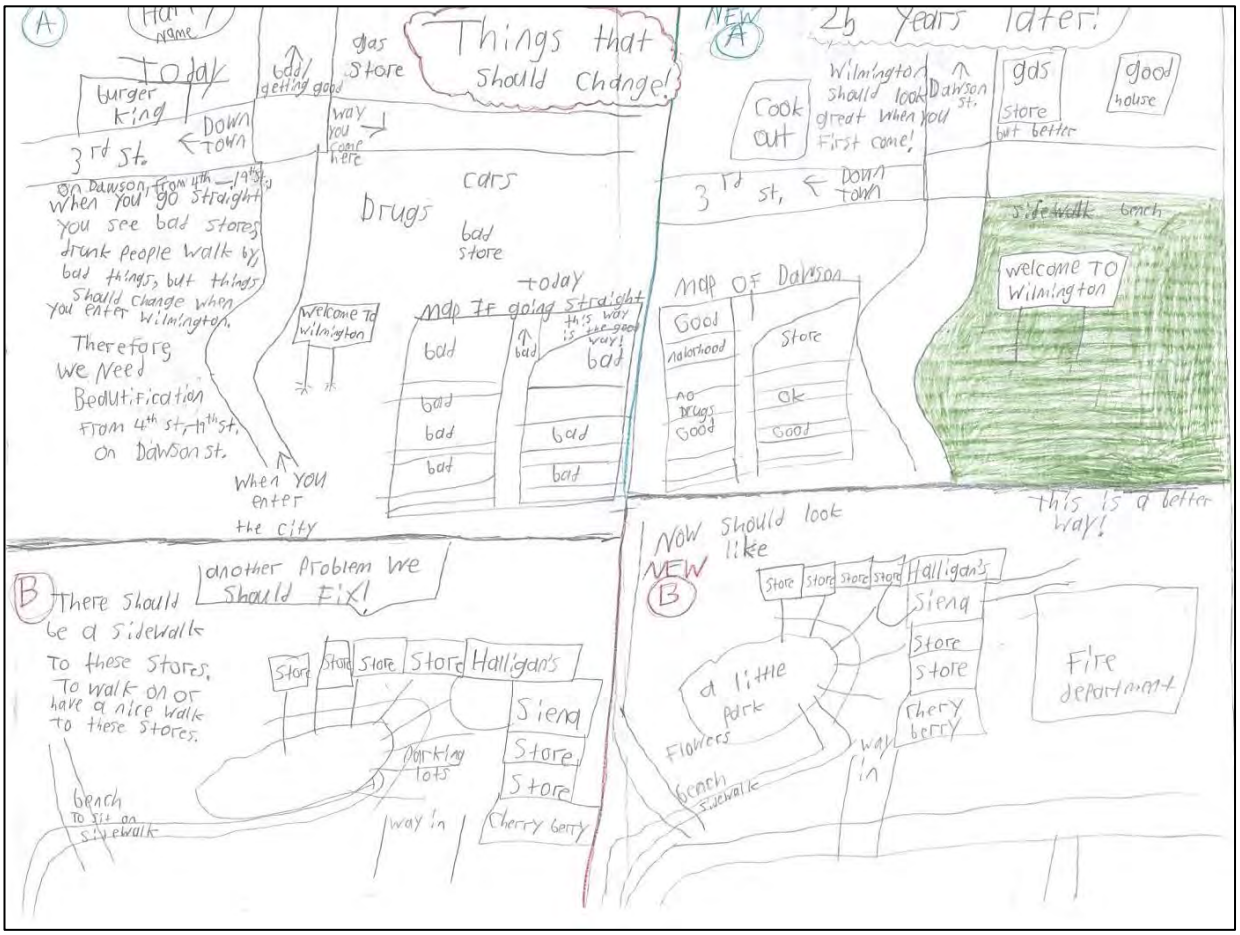
ZOO
FOOD
tickets 13
Cheap tickets so everyone can afford enjoying the zoo without the hash payment.

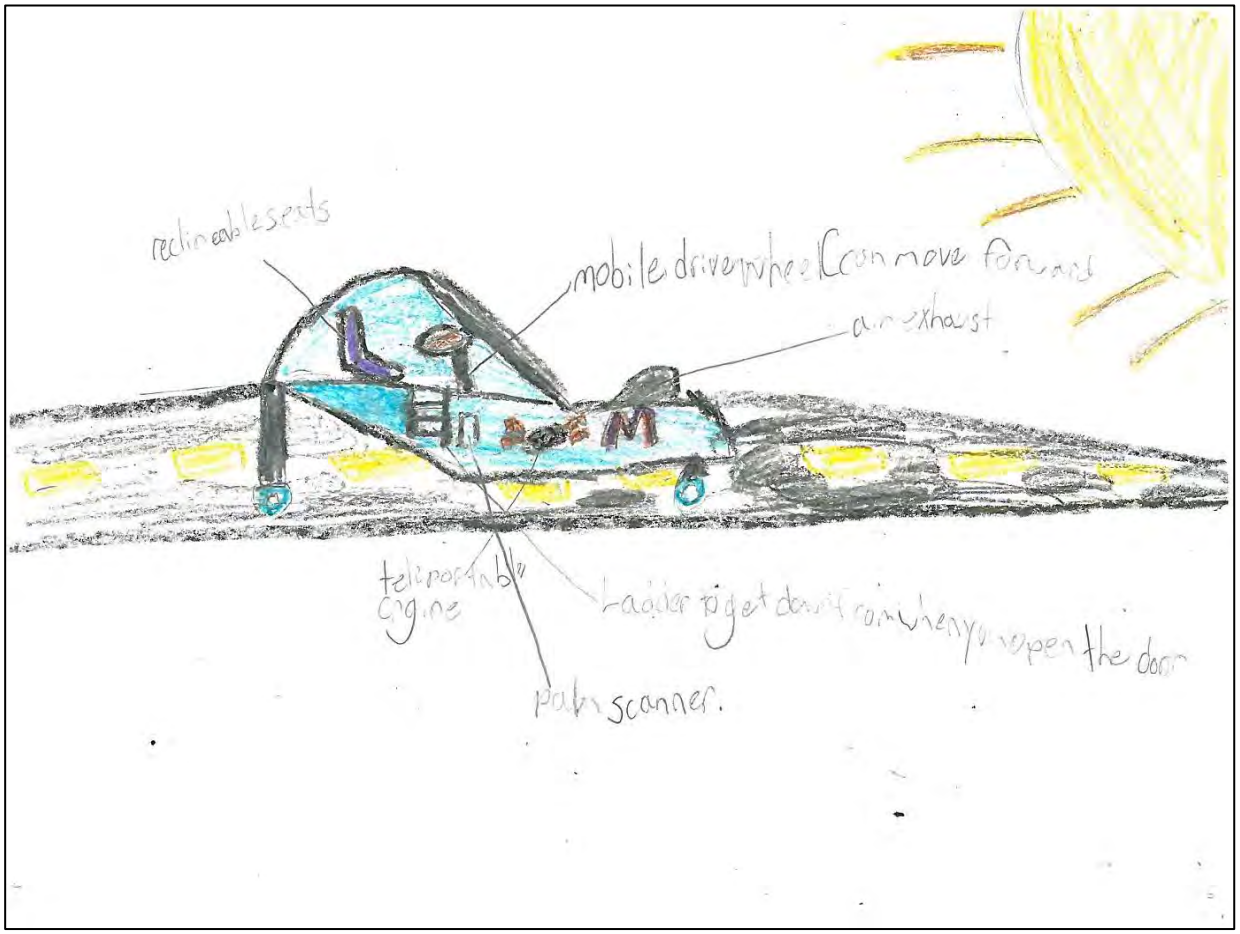
More Targets!
• Military Base • 711
• Flying cars
• Less factory
• No litering
• Better zoos.
• Tubes which flying cars go through
Home Depot
Target

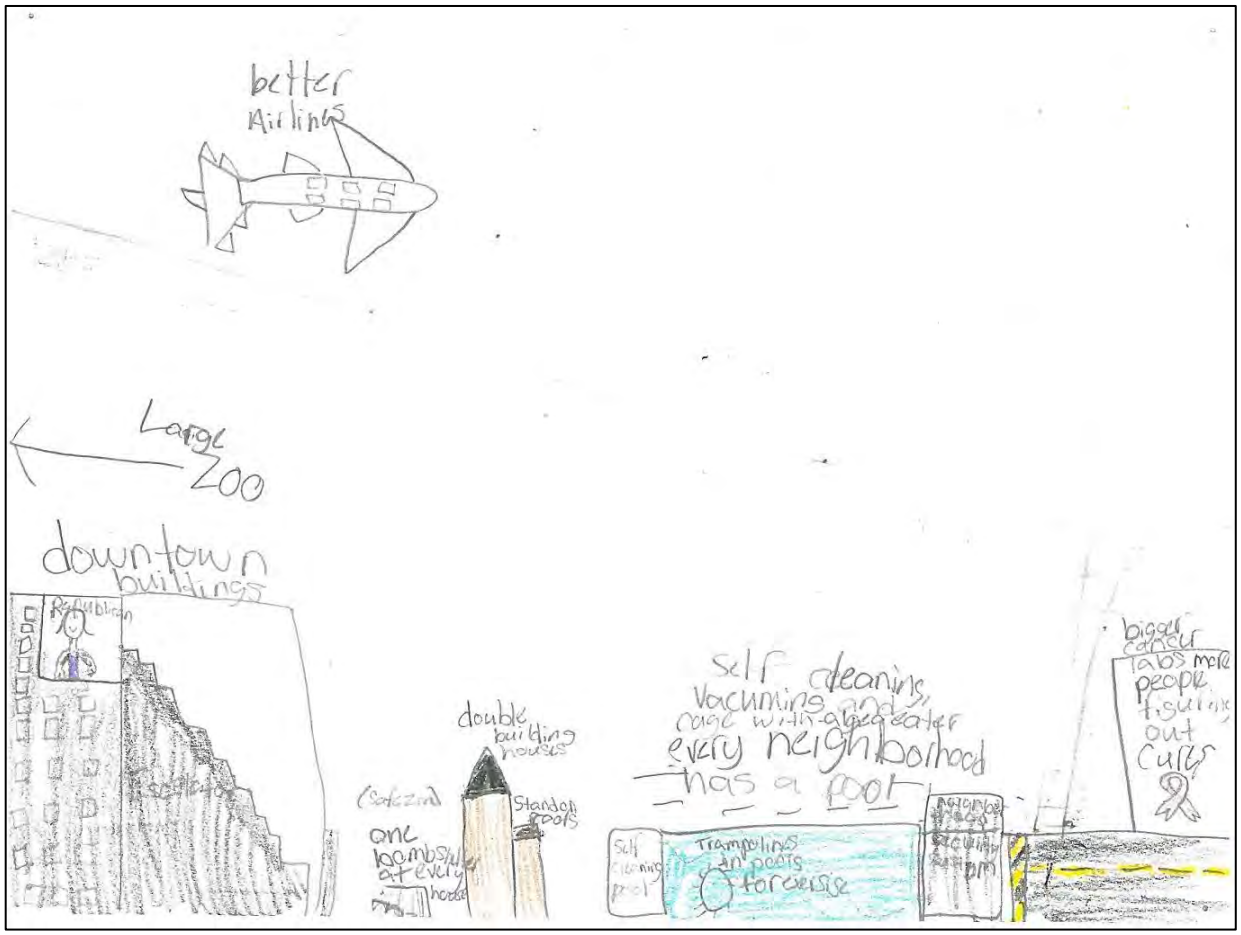
a movie theater in monkey Junction.
an amusement parks
More disc golf feilds
another britz dount shop in monkey Juction
another childrens doctor
another Pelican Snowbans
Less Smoke produced by cars
Less Drinking achacher
a place to fish in monkey Junction
no Littering
We need to do something about an the wrecks
another musem
Safty issues
No more abuse
a second walmart near Mayfaire
Buy my food
Less adds everyware
a Shoe store in monkey Junction
Less Smoking
Something to make Wilmington known like hollywood
higher paying Jobs
People turn up their radio all the way and roll down their windows
an outlet like target
a turning lane into bellamy elemtary
a better zoo. A lot of animals are dying.
less cigreet butts on ground
an ice rink near monkey Junction
every 5 blocks have a playground
a mall in monkey Junction
Playground near monkey Junction
a target and Son'c in monkey Junction
no more hitchhiking

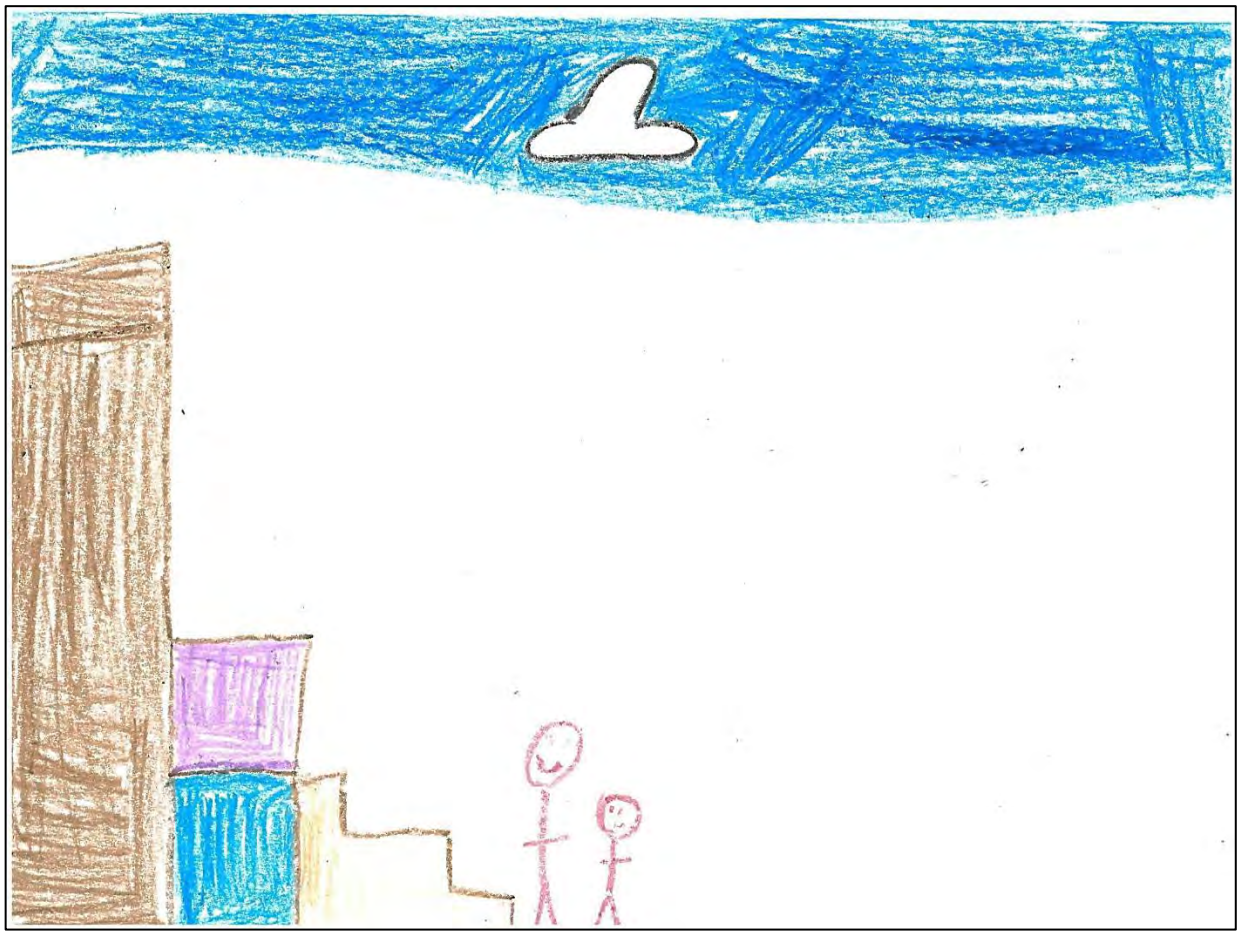

better zoos
more water
water tower
ZOO


I think that in the future teachers should get paid more so they can offord a house like this because I get that doctors get paid a lot for saving lives but if they had a teacher to teach them how to be safe they wouldn't be in the hospital
Emily

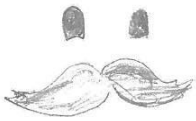

A
Harry
name
Today
burger king
3rd st.
Down Town
bad/ getting good
gas store
Things that should change!
way you come here
Drugs
cars
bad store
On Dawson, from 4th - 19th st.
When you go straight you see bad stores drunk people walk by, bad things, but things should change when you enter Wilmington.
Therefore we need Beautification from 4th st, 19th st. on Dawson st.
When you enter the city
welcome to Wilmington
today
map If going straight
this way is the good way!
bad
bad
bad
bad
bad
bad
bad
NEW A
25 Years later!
Cook out
Wilmington should look great when you first come!
Dawson st.
gas store but better
good house
3rd st.
Down Town
sidewalk
bench
welcome to Wilmington
map of Dawson
Good
Store
no drugs
Good
ok
Good
this is a better way!
B
There should be a sidewalk to these stores. To walk on or have a nice walk to these stores.
another Problem we should Fix!
Store
Store
Store
Store
Halligan's
Siena
Store
Store
Cherry berry
parking lots
way in
bench to sit on sidewalk
NEW B
Now should look like
Store
Store
Store
Store
Halligan's
Siena
Store
Store
Cherry berry
a little park
Flowers
way in
bench
sidewalk
Fire department


reclineable seats
mobile driver wheel (can move forward
air exhaust
teleportable engine
Ladder to get down from when you open the door
palm scanner.


better
Airlines
Large
Zoo
downtown
buildings
double
building
houses
Standard
pools
one
bomb shelter
at every
house
self cleaning
vacuuming and
every neighborhood
has a pool
Trampolines
and pools
for exercise
bigger
cancer
labs more
people
survive
out
cure



Maya



- Smoking is illegal
- a better zoo, bigger/needs more animals/the animals need at least 1 or more from their own speices
- more Britt's Doughnut shops
- more convertables
- 4-3 times a year we should have Earth Day
- 20# helicopter rides, (they have this in Myrtle Beach)
- A broadway with carnival rides, shops, arcades, and have Dip N Dots for once (year long)
- More public play grounds
- More public swimming pools/neighborhood pools
- Less grease at Mc Donalds
- Less polution to air
- ~~We should~~

Trask Middle School Input and Comments

Harmony with Nature

- We should have more space for trees
- Don't chop down trees, you're killing animal habitats! Park!
- Instead of cutting down trees, build on older unused areas
- For every tree we cut down, we should plant one somewhere else
- Have more places for animals to live
- Recreational parks in all neighborhoods
- Clean our beaches
- Protect the animals
- Less erosion
- I believe we need to, instead of just building more and more neighborhoods and killing more trees and wildlife, take old houses and old neighborhoods and rebuild/refurbish them. Therefore we are not ripping away more vegetation and habitat.
- More vegetation is needed like trees
- Conversion to alternative energy sources instead of so much fossil fuel usage
- Keep trees and other goods unless you really need to do it, but it needs/should be for a good cause
- To have rainwater filtered then used for drinking water
- Better environmental regulation
- More trees
- Stop cutting trees
- Less polluting the earth – laws
- Help with greenhouse gasses
- Don't build close to the beach

Health Community

- Gyms/parks/sidewalks
- Access to healthier food
- Multiuse workout area
- More grocery stores
- Healthier choices
- Safe neighborhoods for people
- Make sure everyone has the proper equipment (golf course, basketball courts, pools, etc. (activities))
- More places for activities like football, basketball, etc.
- More gyms and healthier food
- Heathier foods
- More health activities
- More produce stands
- More YMCAs

Resilient Economy

- Try to make electric cars to save the pollution in multiple areas
- Put solar panels on houses in the community
- Less Harris Teeters
- To have more nature around more buildings/offices
- Places where people can eat healthier (our country is an obese country)
- More trees because less trees = less life
- Small business and things that deal with economic health
- Better structurally built homes in safer areas
- More ecofriendly jobs instead of so many industrial based ones
- Explore green energy for job growth
- A lot more roadwork done in our county overall
- Improvement on police departments
- More internet and cable providers to bring down prices
- No kill animal shelters
- A Cheesecake Factory
- The water company needs to be regulated and controlled more to prevent high water and sewage rate
- More bike usage around the city to reduce pollution
- Cheaper gas prices

Responsible Regionalism

- Helping the elder
- Treat people nicely
- Help injured
- More athletic competitions between one another
- Better cars and other ways for transportation
- Help the sickly, injured, disabled-organization that pays the bills
- Try to get the homeless off the streets
- Add more schools, more hospitals
- To have miniature shelters along the street
- More attention and help given to the less fortunate
- Don't Pollute!!!!
- Even though there are many littering laws, there are still people out there that littler anyways
- Enforced police officers

Interwoven Equity

- Elevators in multistory churches for the elderly
- Build more affordable homes
- Transit all over the city (county)
- More law enforcement facilities
- More sidewalks
- More bike trails

- Build more medical centers
- Things should be more accessible to the elderly, to the handicapped, and to the disabled
- Apartments
- Glass or other things to keep out of little kids sites
- Build more condos or houses for people to live in
- (Major) Do we really know how many homeless people there are on the streets?? I have seen at least 4 or 5 on the streets. We should step up our game and build homes, condos, apartments, or even shelters because we wouldn't like it if we were to become homeless in the next few years.

Livable Built Environment

- We should have more houses dealing with nature
- More schools for better way of education
- Cars with little or no pollution
- More houses with solar panels
- Houses should be less expensive
- More intersections
- Solar power buildings
- Restriction of oil fuels
- More energy sources
- Bio bus
- More systems to be safer/should be cheaper
- Public gardens that pay workers well

Additional Input:

- Use less technology
- No textbooks, use iPads
- Manage our time with technology
- Better neighborhoods
- Limitation on guns
- Security systems
- Nicer neighborhoods
- More homeless shelters
- Treat disabled people nicer and with more respect
- Less expensive technology
- Healthcare
- Hoverboard
- Another college
- Less expensive college
- Space technology improve
- Bigger lockers
- Back entrance to Trask
- Better education for children
- Digital homework

- Puppies
- More trees planted
- Cheesecake Factory
- Cheaper gas
- No kill animal shelters
- No school on Mondays and Fridays
- More bike usage
- Use less technology
- New textbooks or use iPads
- Manage our time with technology better
- Safer neighborhoods/able to pay for them
- More protection with guns
- Security cameras
- Recycling programs that clean out earth
- Better places for disable or poor people to go
- Treat disable people better and with more respect
- Technology should be cheaper
- Healthcare-cheaper prices
- College should be less expensive
- Full size and bigger lockers/width
- Back entrance to be able to access Trask
- Better restaurants, that are clean
- Easy ways to progress not having germs
- Better education for kids
- Wind/water turbine
- Sports center
- Donut Shop
- More businesses
- Recreational Parks
- UNCW college basketball/football team televised
- Borders around roads to keep animals safe
- More colleges that provide different majors
- Place to learn more languages
- Scholarship for more subjects/majors
- Charging case (it charges the phone as long as you have it on)

Isaac Bear Early College Input

*Number in parenthesis represents the voting count for each of the originally suggested goals

Health Community

- More options for healthcare (3)
- Lower healthcare prices (8)
- More sports in schools/early colleges (2)
- Education-mainly dealing with living healthy (0)
- Accessibility to county health programs (i.e. immunizations) (1)
- Bike path in Carolina Beach/Kure Beach-conflict with Sunny Point (1)
- More walk/bike friendly communities (3)

Harmony with Nature

- Wildlife preservation (2)
- Deforestation Control (0)
- Pollution Control (3)
- Incorporate plant life into city area- green space (1)
- Transcendentalism (9)
- Nature Appreciation (0)
- Community vegetable gardens (3)
- Protection of costal habitats (2)
- Erosion- especially in Wrightsville Beach and other beach communities (1)

Responsible Regionalism

- Have a tri county committee so ideas can be expressed amongst the three (5)
- Make one county as prosperous as another (3)
- How do city and county governments work together? Will they ever merge? (1)

Interwoven Equity

- No food deserts (3)
- Soup kitchens (3)
- Homeless shelters (5)
- More transportation hubs (3)
- More sidewalks and walkways and bikeways (7)

Livable Built Environment

- What will happen when the mall goes out of business? What could go in that space? Government offices? (2)
- What about the land K-Mart is on? If K-Mart goes out of business, it can be demolished and the land can be repurposed for a larger [early college] school building. (8)
- Public transportation- further reaching (1)
- Road improvements (0)
- More green type buildings (1)

Resilient Economy

- Draw green industry (1)
- What is happening with Titan? (0)
- Need more ways to draw productions here (1)
- Better job opportunities; this could possibly bring more people/ business to the area (2)
- More business internships in high school (4)

Chapter 4 Appendix

NEW HANOVER COUNTY BOARD OF COMMISSIONERS

RESOLUTION VALIDATING THE FOURTH CHAPTER OF PLAN NHC: VISUALIZING THE FUTURE

WHEREAS, New Hanover County is updating the CAMA Land Use Plan and creating a Comprehensive Plan for the unincorporated portion of the County; and

WHEREAS, the Board of Commissioners has adopted Chapter 1: Public Engagement Plan; and

WHEREAS, the Board of Commissioners has adopted Chapter 2: Evaluating the Present (a report of existing conditions); and

WHEREAS, the Board of Commissioners has adopted Chapter 3: Framing the Policy; and

WHEREAS, staff has worked with the community at large to develop Chapter 4: Visualizing the Future.

NOW, THEREFORE, BE IT RESOLVED, that the New Hanover County Board of Commissioners hereby validates "Visualizing the Future" as the fourth chapter within the Comprehensive Plan.

ADOPTED this the 19th day of January, 2016.

NEW HANOVER COUNTY

Beth Dawson, Chairman

ATTEST:

Teresa P. Elmore, Clerk to the Board

Alternative Futures Report Summary

The Alternative Futures report set out to answer the following question: "where can future growth be accommodated, and what are the positives and negatives of accommodating that growth in different ways."

Alternative Futures sheds light on the long-term effects of physical change in the tri-county Cape Fear region (New Hanover, Brunswick, and Pender Counties) helping to guide the vision for the region's future that not only builds on existing strengths and future opportunities, but is also fiscally and environmentally sustainable over the long term. It identified four future scenarios using different mixes of market-based and policy-based actions to investigate future growth and development patterns, economic development potential, quality of life, and environmental stewardship. To reach this goal, the report employed a data-rich and performance-driven process using enhanced Geographic Information Systems (GIS) tools.

Below lists the steps used to create the future scenarios and summarizes the thought process and subsequent analysis that went into the Alternative Futures report.

1. Establish baseline and long term population and employment forecasts;
2. Assess existing land based on its availability and attractiveness as a future development site; and
3. Generate Alternative Futures development patterns based on distinct mixes of market and policy-based land use factors.

Each step is covered in more detail in the following sections.

Population and Employment Forecasting

The baseline conditions were based on United States Census data from 2010. Long term forecasts are less certain than existing conditions, so the scenario planning effort used two alternative 2040 forecasts. Forecast 1(F1) was based the on North Carolina Statewide Travel Model population and employment forecasts, which are also being used by the Wilmington Urban Area Metropolitan Planning Organization (WMPO). Forecast 2(F2) was based on population and employment forecasts from a private analytic firm, Moody's Analytics. The findings from the baseline conditions and forecast conditions are shown in the table below. In general, the F1 forecast sees less rapid growth in the County than does the F2 forecast, but both forecasts expect significant growth in population and employment over the next 25 years.

POPULATION			
	2010	2040	
	BASE	FORECAST 1	FORECAST 2
New Hanover County	**202,667**	**249,026**	**337,054**
Unincorporated	85,973	105,639	152,157
Wilmington	106,476	130,832	167,904
Other Jurisdictions	10,218	12,555	16,993
EMPLOYMENT			
	2010	2040	
	BASE	FORECAST 1	FORECAST 2
New Hanover County	**93,274**	**111,291**	**172,939**
Unincorporated	18,830	27,823	51,882
Wilmington	71,086	77,904	112,410
Other Jurisdictions	3,358	5,565	8,647

NOTE: Projections were also created for housing demand, retail spending, and generalized industry types (Commercial, Industrial, etc.)

Land Use Availability and Attractiveness Assessment
The land use assessment utilized a 3-step process: 1) determine existing land use conditions; 2) identify available developable land (i.e. land supply); and 3) determine the development attractiveness, or development suitability, of available land.

Step 1: Existing Conditions
An existing conditions model provides a physical snapshot of current on-the ground development conditions, and is vital for any future scenario modeling. The primary metric of this existing conditions model is activity unit density, which shows the combined density of both residential and non-residential development. At this stage of the analysis, the important aspect is to know how much development there is and not so much what kind of development exists.

- Relatively compact, intense, urban development, focused primarily in downtown Wilmington, surrounding the primary arterial intersections in the center of New Hanover County, and at major employment destinations like UNC Wilmington and New Hanover Regional Medical Center.
- Diffused, widespread, low-density suburban development enveloping much of New Hanover County.
- Small nodes of very low-density rural development on the periphery of the County.
- Undeveloped or very sparsely developed land in the northern portions of New Hanover County. Some of this land is reserved for conservation, but much is developable.

Step 2: Land Availability
The second step in the modeling process was the identification of land available for potential future development.

Many areas of New Hanover County are unavailable for development, either due to policy, topography, or are already developed. All areas of unavailability were identified. This includes areas having significant prohibitions against development, such as state parks and game lands, public land trusts, county parks, dedicated natural preserves, significant heritage areas, water bodies and others. An additional assumption was made that some land not currently protected may in the future be protected. This is focused in particular on prime farmland. Once these areas of unavailability were determined, the land in the region was divided into three (3) availability types:

- Infill – already developed areas that have future development potential through additional density or vacant/unoccupied parcels.
- Greenfields – currently undeveloped areas that are available for future development.
- Conservation areas – those areas that should be deemed unavailable, as discussed above.

Step 3: Land Suitability
The final step in the modeling process was a land suitability analysis, which combines how "attractive" a location is to new development (both housing and employment development) with how densely that attractive land would be developed.

To determine attractiveness, the analysis considered six key dimensions of a location's suitability for new development:

- Access and Centrality
- Economics and Land Value
- Infrastructure
- Natural Features and Environment
- Planning and Policy
- Services and Amenities

The combination of these six dimensions led to the creation of two general land suitability scenarios:

- A 'Market-Based' scenario in which the market forces such as accessibility, land value and highway infrastructure featured prominently
- A 'Compact Development' scenario in which planning and policy variables and multimodal transportation improvements take on greater significance

These steps determine attractiveness, the first of the two stated components of suitability. To determine the other - density - two different sets of assumptions were developed: a 'Lower Density' pattern where new development mirrors today's lower density development; and a 'Higher Density' pattern where greater infill potential was assumed.

Alternative Futures Scenarios
The attractiveness scenarios and density scenarios were then brought together, creating four distinct Alternative Futures scenarios:

1) Market-based, lower density scenario (called 'Business As Usual')
2) Market-based, higher density scenario (Mixed Use Development)
3) Compact development, lower density scenario (Redevelopment & Infill)
4) Compact development, higher density scenario (High Growth Nodes)

Future land use could then be modeled based on these four scenarios, allowing for an opportunity to see a wide range of possible development trends.

Business as Usual Scenario
This scenario envisioned a continuation of the region's most recent development patterns. This means that the shift from rural to urban would continue to advance on the periphery of the County, and that development types, such as lower-density single-family housing and auto-oriented strip malls, would still be the preeminent form of new development. Wilmington would continue to see slow and steady infill development, but development on currently undeveloped land would continue to move north and northeast in New Hanover County.

The implications for this scenario are that the County becomes even more spread out and dependent on cars. Fewer residents would have walking or transit access to jobs, recreation, or daily services, and total travel by car would increase.

Mixed Use Development Scenario
Under this development scenario, new, higher density developments emerge, usually in small pockets around areas with good transportation access. These small centers exhibit concentrated housing and employment, allowing for some opportunities for walking or transit use. For New Hanover County, mixed use development occurs in established areas such as Castle Hayne, Downtown Wilmington and the Market Street/New Center area.

The implications for this pattern are decreases in total vehicle miles traveled and amount of paved surfaces, along with increases in overall access to transit, recreation, and employment.

Redevelopment & Infill Scenario
This scenario concentrates growth in existing urbanized areas, and assumes a high level of in-town development. This means that new, higher density development types have to emerge to accommodate growth. Infill development is seen in several places in New Hanover County, including established beach communities and the existing urbanized area of Wilmington such as downtown, the New Center area, South College Road and Oleander Drive.

This scenario has the highest overall population density of any scenario, but does not necessarily have improved access to some services like parks and recreation facilities. Auto use is still expected to rise to levels similar to the Mixed Use Development Scenario, and the amount of paved surfaces increases more in this scenario than any other.

High Growth Nodes Scenario
This scenario creates smaller, higher-density growth nodes throughout the region, as opposed to the larger, more diffuse infill of the Redevelopment & Infill Scenario. This scenario optimizes development diversity in these nodes, creating efficiency in existing and new infrastructure. Growth nodes in New Hanover County include North College Road, US Highway 17, the beaches, and Castle Hayne.

This scenario sees reductions in paved surfaces and vehicle miles traveled relative to the Redevelopment & Infill Scenario, while also improving overall access to jobs, transit, and services.

Alternative Futures Findings and Implications

This scenario planning effort showed that there are many different ways to accommodate future growth. The future land use map reflects a mix of strategies that utilize nodes of intensive development, areas of conservation, and opportunities for more "business as usual" development that still has strong market potential even as infill and urban development become a more desirable development pattern.

Community Input and Meetings

Stakeholder Meeting at the Executive Development Center

The stakeholder meeting was held in the Executive Development Center on the 20th of February 2015 from 3 to 5 pm. Thirty-two stakeholders from New Hanover County and the surrounding area were in attendance. Staff received thirty-two comments from the maps, notecards, and emails provided. Stakeholders were given a questionnaire at the check in table pertaining to each of the seven different place types. Four questionnaires were returned to staff.

Industry and development were two main themes discussed at the meeting. Several suggestions were made regarding the character areas, such as areas along U.S. Highway 421 and Sidbury Road/Military Cutoff Extension junction, enlarging the character area at the I-40/I-140 junction to include Cape Fear Community College, and also enlarging the Downtown Gateway area. Another comment referred to more community mixed use along Castle Hayne Road by adding grocery stores, pharmacies, and restaurants to the area. School sites were also discussed and their ability to drive residential growth in an area. It was also recommended to add pedestrian and wetland areas to the Conservation place type.

Staff also received several comments pertaining to conservation. Comments included adding parks and County owned lands to the draft map, showing natural heritage areas, wetland areas, aquifer protection areas, and riparian buffers along the Cape Fear River. It was also proposed for the department to contact Leland and the Eagles Island Coalition in regarding how to label the area.

Other comments included the need to distinguish between the City and County, visiting schools and minority populations, and adding school sites to the map. Suggestions to work with the City of Wilmington, Brunswick County, and Pender County in order to see how the draft Future Land Use map lines up with their maps were also discussed.

Executive Development Center

The first public meeting was held at the Executive Development Center on the 26th of January from 4 to 6 pm. One person attended the meeting and no comments were received.

Bellamy Elementary School

The second public meeting was held in the cafeteria of Bellamy Elementary School on the 29th of January from 6 to 7:30 pm. The meeting had a turnout of thirty-two individuals. Twenty-seven comments were received from the maps and notecards provided.

Overall, most of the comments touched on topics involving parks and recreation and multi-modal options. Several of these comments included a desire for pedestrian and bike paths, specifically on Sanders Road and additional options in the southern part of the County. Remarks were received about hiking and nature trails along Sanders Road and make River Road a scenic byway by widening the road and including walking and bicycle paths. Attendees liked the idea of pushing the envelope and creating a more European style of transportation options. Along with interests in the future land use map, attendees were interested in current development projects in the area.

Conservation options were discussed in length at this meeting. Multiple attendees expressed the need for a copy of the current CAMA Land Use Map at the meeting and stated it would allow the public to see the current situations along with future plans. Commenters wanted to also see a parks plan that showed current parks and any planned future parks. One comment stated if the Loran Station is ever available, the land should be conservation or recreation. Other remarks included adding more conservation lands in the southern part of the County and the need for wildlife protection and erosion prevention. Along with conserving land, attendees asked for the reduction to the number of trees cut down for development.

Additional concerns pertained to voluntary annexations by the City, less traffic Congestion on Sanders Road, concerns about uncontrolled development without consideration for schools and roads, and population density. One comment conveyed a need for traffic impact studies to precede the approval of new residential and commercial developments southeast of the city. Interest in seeing more alternative uses in Monkey Junction were expressed. Celebration in Florida was suggested for the future development options in the County.

Ogden Elementary School

The third public meeting was held in the multi-purpose room at Ogden Elementary School on the 3rd of February from 6 to 7:30 pm. Twenty-one individuals were in attendance at the meeting. Staff received thirty-one comments overall from the maps, notecards, and emails.

Comments focused on conservation and multi-modal options. Several individuals wanted more conservation areas and buffer zones throughout the County, especially in the northern part of the County and along the U.S. Highway 421 corridor. One specific area of concern was the land area around Rich Inlet and the desire for it to be shown as conservation. Individuals also stated concerns about protecting the aquifer and future water supply areas. It was suggested that the conservation place type should include the 100 year flood plain. Comments also expressed more bike and pedestrian friendly facilities in the Kirkland area.

Various comments were received regarding the future density of the County including wanting to keep low density for all sound areas, limiting high rise apartments, and the need for developments to provide more open space than currently provided. A comment was also made pertaining to the Military Cutoff Road Extension corridor and suggesting it to be designated General Residential rather than Urban Mixed Use.

There were also concerns about traffic and stormwater around the school, limiting and restricting smokestack industry along 421, and the need for new zoning regulations place types. Concerns of preserving and enhancing “urban” agriculture such as, picking strawberries at Lewis Farms, buying local eggs, local flowers at the farmer’s market, etc. were addressed.

Murray Middle School

The fourth meeting was held in the cafeteria of Murray Middle School on the 10th of February from 5 to 6:30 pm. There were five people in attendance and no comments were received pertaining to the Future Land Use Map.

Eaton Elementary School
The fifth meeting was held in the cafeteria of Eaton Elementary School on the 12th of February from 6:30 to 7:30 pm. Seven people were in attendance at the meeting. Staff received two comments from notecards.

The first comment pertained to strip malls and how the individual believed they were not a part of a sustainable community. The comment stated that strip malls become seedy, that businesses come and go, and solutions usually involve abandonment and replacement of another strip mall down the road. The second comment was related to the Urban Mixed Use place type and how its uses would encourage local business as opposed to big box business. The concern was mainly focused on the Urban Mixed Use area on Sidbury Road and how if a big box store comes in, what would happen to the trees, the logging industry and the jobs in that industry, as well as the animals that would be displaced.

Myrtle Grove Middle School
The sixth meeting was held in the cafeteria of Myrtle Grove Middle School on the 17th of February from 5 to 6:30 pm. Four individuals were in attendance. Staff received three comments from the provided maps.

One comment suggested raising the number of stories in the Urban and Community Mixed Use areas. The comment went on to state that this combined with proper green space regulations would make buildings and parking more efficient and create less impervious surface. The other two comments included the addition of railroad line corridors and water well fields to the maps.

Wrightsboro Elementary School
The seventh meeting was held in the cafeteria of Wrightsboro Elementary School on the 23rd of February from 5 to 6:30 pm. Thirty-six individuals were in attendance. Staff received sixty-one comments from the maps, notecards, and emails.

Comments from individuals who attended this meeting primarily pertained to conservation and industry. Attendees expressed the need for more conservation, wetlands, and riparian areas along the Northeast Cape Fear River, and protection of groundwater and aquifers due to the fact that most Castle Hayne residents rely on their own well for drinking water. Additionally they wanted to see efforts to reduce the amount of pollution to impaired waters and increase preservation of environmentally sensitive areas. Connectivity between conservation areas for wildlife corridors and creating contiguous corridors for conservation and wetland areas were also suggested. Another comment focused on the area along the Northeast Cape Fear River north of Holly Shelter Road that suggested that the area should be a conservation area to allow for aquifer recharge, protect the river wildlife corridor, and control downstream flooding.

There were also concerns about industry in the north eastern section of the county along Holly Shelter Rd and that redevelopment of existing industrial areas, especially along the 421 corridor will reduce the size of needed land. There was also a need to establish multi-modal lanes in commerce and employment zones with new development. Comments were also received about keeping the area low density and how they believed the County was too small for so much designated commerce area. Some comments would like to only have the Commerce Center place

type along the U.S. Highway 421 Corridor. Other comments included the desire for no heavy industry along the Northeast Cape Fear River. It was also suggested no high rise or industry on Eagles Island and asking for staff to work with the coalition.

There were comments about agriculture and its practices in the Wrightsboro area. This included concerns about the reduction of agriculture area and how different land uses could encourage growth not characteristic of Wrightsboro and Castle Hayne's agricultural past. Attendees noted the preservation of fruitful soils in the area for food production, and were concerned about why light industry was included in the definition of the Agriculture place type.

Other comments included allowing micro homes to be placed on privately owned lands and in residential areas, allowing business owners to live on site of their business, allowing the opportunity to burn non-trash county wide, and county-wide recycling pick up options. Many comments were also made about the lack of recreational areas in Wrightsboro and Castle Hayne and the need for more biking and walking paths.

City-County at the Executive Development Center

The City-County meeting was held at the Executive Development Center on the 11th of March from 3 to 6pm. Ninety-eight individuals were in attendance. Staff received thirty-one comments from the maps provided. The second draft Future Land Use map was revealed to the public and allowed attendees to see the changes that had been made based on the comments from the seven previous meetings.

Transportation, multi-modal options, and recreation were among some of the topics addressed at this meeting. One commenter suggested better bus transportation, such as more routes in northern area of the county. Also there was a desire for ball fields on the 421 Corridor and for recreational areas in Wrightsboro neighborhoods. One commenter discussed the idea for a pedestrian and/or bike path either over or under Military Cutoff Extension to connect bike paths and increase foot traffic.

Industry and development were discussed in detail. Concerns were expressed pertaining to industry near schools in the Castle Hayne area. One commenter observed the difference in the amount of Commerce Center on the first draft map to the expanded amount on the second along with a suggestion to take the commerce area and shrink it to the Corridor of U.S. Highway 421 and the bypass. It was also suggested to shrink the Commerce Center area along Holly Shelter Road to just along the highway. There was a concern about creating suburban wastelands. Designating the area along I-40/I-140 as a commerce/employment zone with access to the bypass and interstate was also recommended. Some commenters were supportive of the Community Mixed Use place type, while others wanted more of a distinction between the two mixed uses.

Comments pertaining to conservation were also received. The comments included allowing for low impact business in designated conservation areas for things such as bee keeping, medical plant collection, kayak usage, protecting natural areas like Eagles Island, and creating contiguous conservation land in the Northeast part of the county. Another suggestion was to show the floodplain on the map and include it with conservation along with all other environmental constraints. One comment focused on the dense development of New Hanover County and stated

that the county should work with Brunswick County and Pender County to conserve land and heritage. There was also the suggestion that the land next to the Cape Fear River wetland game land should be kept as conservation land.

Some other comments related to agriculture and county perspectives. These included bringing the agriculture area up to and include both sides of Castle Hayne Road, as well as incorporating agriculture areas into the southern part of the county. Another comment addressed making Monkey Junction an official place name.

Reference Documents

List of Acronyms

AEC- Areas of Environmental Concern

CFCC- Cape Fear Community College

CFPUA- Cape Fear Public Utilities Authority

CDC- Center for Disease Control and Prevention

CLRD- Chronic Lower Respiratory Disease

CAC- Citizen Advisory Board

CAMA- Coastal Area Management Act

C-CAP- Coastal Change Analysis Program

CRC- Coastal Resource Commission

CDBD- Community Development Block Grant

CPTED- Crime Prevention through Environmental Design

EBT- Electronic Benefits Transfer

FEMA- Federal Emergency Management Agency

FAICP- Fellow of the American Institute of Certified Planners

FLU/FLUM- Future Land Use/Future Land Use Map

GIS- Geographic Information Systems

LUP- Land Use Plan

LSA- Logistics Support Analysis

LOS- Loss of service

LID- Low Impact Development

NCSS- National Cooperative Soil Survey

NOAA- National Oceanic and Atmospheric Administration

NHC- New Hanover County

NHCPS- New Hanover County Public Schools

NCAC- North Carolina Administrative Code

NCDENR- North Carolina Department of Environment and Natural Resources

NCDEQ- North Carolina Department of Quality

NCDOT- North Carolina Department of Transportation

ORW- Outstanding Resource Waters

PM- Particulate Matter

PNA- Primary Nursery Areas

SA- Shellfishing Areas

SNHA- Significant Natural Heritage Areas

SENC- Southeastern North Carolina

SFHA- Special Flood Hazard Areas

STIP- State Transportation Improvement Plan

SNAP- Supplemental Nutrition Assistance Program

TRC- Technical Review Committee

TMDL- Total Maximum Daily Load

TDR- Transfer Development Rights

UNCW- University of North Carolina Wilmington

USB- Urban Services Boundary

V/C- Volume to capacity

WQ- Water Quality

WIC- Benefits for Women, infants, and Children

ILM- Wilmington International Airport

WNHTA- Wilmington/New Hanover Transportation Agency

WTA- Wilmington Transit Authority

WMPO/MPO- Wilmington Urban Area Metropolitan Planning Organization

Glossary

Areas of Environmental Concern (AECs): an area of natural importance that may be easily destroyed by erosion or flooding, or may have environmental, social, economic or aesthetic values that make it valuable to the public. In NC, the Coastal Resources Commission has set up four categories of AECs:

A. The Estuarine and Ocean System

B. The Ocean Hazard System

C. Public Water Supplies

D. Natural and Cultural Resource Areas

AECs cover almost all coastal waters and less than 3 percent of the land in the 20 coastal counties.

Annexation: The incorporation of a land area into a municipal corporation with a resulting change in the corporate limits of that municipality. This is the process by which cities extend their municipal services, regulations, voting privileges, and taxing authority into new territory.

Aquifer: An underground geological formation or group of formations containing water. Aquifers are sources of groundwater for wells and springs.

Best Management Practices (BMP): Methods, measures, practices, and maintenance procedures intended to prevent or reduce water pollution of water within the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sledge or waste disposal, or drainage from raw material storage.

Biodiversity: The variety of life and its processes which includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

Buffer: A transitional area of land between two distinct land uses or types used to lessen the impact of one land use type on another. For example, a commercial area that borders a residential neighborhood may be subject to additional restrictions on height, noise, or fencing requirements to insulate the neighborhood from the effects of the commercial zone.

Cluster Development: A planning method that generally sites houses or structures on smaller parcels of land, while the additional land that would have been allocated to individual lots is converted to common shared open space. Typically, road frontage, lot size, setbacks, and other traditional development regulations are redefined to permit the developer to preserve ecologically sensitive areas, historical sites, or other unique characteristics of the land being subdivided.

Coastal Infrastructure: North Carolina recognizes the importance of coastal risk reduction and resiliency as well as the benefits tourism and our natural resources represent in supporting our coastal infrastructures' industrial base. The coastal infrastructure (healthy shorelines and inlet access) provides critical protection and benefit to public and private infrastructure, small businesses, the tourism industry, public recreation, state/local tax bases and coastal biological resources.

Coastal Wetlands: Any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide water reach the marsh lands through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides.

Community Boating Facility: A private nonprofit boating facility including a dock, pier, and/or launching ramp on property which has water frontage, the use of which is intended to serve 5 or more residential lots or units. The right to use such facility must be conferred by an easement appurtenant to the residential lot it is intended to serve. No commercial activities of any kind, including commercial letting of slips to parties who are not residents of the waterfront subdivision, shall be allowed within the confines of the facility.

Complete Streets: A transportation and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Allows for safe travel by those walking, cycling, driving automobiles, riding public transportation, or delivering goods.

Designed and operated to enable safe access for all users; pedestrians, bicyclist, motorists, and public transportation users of all ages and abilities are able to move safely along and across a Complete Street. Designed and operated to enable safe continuous travel networks for all users.

Development: Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations; excluding bona fide farming activities.

Density: The number of dwelling units permitted per a unit of land area, usually expressed as the ratio of residential units per acre.

Dredging: To enlarge or clean out a waterbody, watercourse, or wetland.

Ecosystem: The interacting system of a biological community and its non-living environmental surroundings.

Environmentally Sensitive Areas: Areas including coastal wetlands, exceptional and significant non-coastal wetlands, land within 2000 feet of outstanding resource waters (ORW), aquifer recharge areas, significant natural heritage areas, and shellfish waters. These areas are those that generally make up the Resource Protection areas on the Land Classification Map.

Estuarine Watersheds: Refers to the entire land area that contributes to surface drainage and other run-off into and estuary.

Estuary: Refers to a body of water where fresh water from the river or stream mixes with salt water. These waters are tidally influenced and have varied salinity levels. Region of interaction between rivers and near-shore ocean waters where tidal action and river flow mix fresh and salt water. Such areas include bays, mouths of rivers, salt marshes, and lagoons. These brackish water ecosystems shelter and feed marine life, birds, and wildlife.

Exceptional Resource Areas: Are areas that are valued and protected to ensure the longevity of NHC's natural environment and safety of its citizens.

Floating Homes: Any structure, not a boat, supported by a means of flotation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce.

Floodplain: The land area susceptible to inundation by water as a result of flood. Typically a floodplain is geographically defined by the likelihood of a flood of a certain severity. A 100-year floodplain would be inundated by a flood whose severity could be expected on average once every 100 years; likewise a 500-year floodplain would be defined by floodwaters whose severity could be expected on average once every 500 years.

A relatively flat or low land area adjoining a river, stream, or watercourse which is subject to partial or complete inundation or an area subject to the unusual and rapid accumulation of run-off or surface waters from any source.

Floodway: That portion of the waterway channel that is, during flooding, extremely hazardous due to the velocity of storm waters, erosion potential, and water-borne debris.

The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

Flood Zone: A geographical area shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

Geographic Information System (GIS): A method of storing geographic information on computers, Geographic information can be obtained from a variety of sources, including topographical maps, soil maps, aerial and satellite photographs, and remote sensing technology.

Greenway: A series of connected green spaces that may follow natural features such as ravines, creeks, or other corridors.

Growth Node: Concentrated development of regional scale activity in the vicinity of key major intersections. Regional commercial activity, including big-box retail that serves a regional

market, is directed to the nodes with the remainder of the commercial areas along a corridor outside of the node remaining at community scale and use intensity.

An identifiable grouping of land uses concentrated in and area, usually of higher intensity than their surroundings.

Impaired Waters: Term that applies to a water body that has a use support rating of partially supporting or not supporting of its designated uses.

Impervious Surface: Any hard-structured, man-made area that does not readily absorb or retain water, including but not limited to building roofs, parking and driveway areas, graveled areas, sidewalks, and paved recreation areas.

Any material which prevents, impedes, or slows infiltration or absorption of stormwater directly into the ground at the rate of absorption of vegetation-bearing soils, including building, asphalt, concrete, gravel, and other surfaces.

Infill: Development on vacant or underused sites within an established development pattern.

Land Trust: A private, nonprofit conservation organization formed to protect natural resources, such as productive farm and forest land, natural areas, historic structures, and recreational areas. Land trusts purchase and accept donations of conservation easements. They educate the public about the need to conserve land, and some provide land-use and estate planning services to local governments and individual citizens.

Land Use: Land Use is a general representation of how land is occupied or utilized, according to standard categories such as residential, commercial, and industrial. Future Land Use is a representation of the vision of New Hanover County for the next 25 years created by the citizens involved in the Plan NHC process. While not legally binding (like Zoning), it shall be used by planning staff, NHC Planning Board, and NHC Board of Commissioners as a tool to guide development.

Low Impact Development (LID): An approach to site development and stormwater management that combines resource conservation, and a hydrological functional site design with pollution prevention measures to reduce development impacts and to better replicate natural watershed hydrology and water quality. Through a variety of serially integrated small-scale site design techniques, LID controls runoff discharge, volume, frequency, and quality to mimic predevelopment runoff and hydrologic conditions.

Marina: Any publicly or privately owned dock, basin, or wet storage facility constructed to accommodate more than 10 boats and providing any of the following services: permanent or transient docking spaces, dry storage fueling facilities, haul out facilities, or repair services. Excluded from this definition are boat ramp facilities allowing access only, temporary docking that includes none of the previous listed services, and community boating facilities.

Major Development: The term major development project shall include but is not limited to shopping centers, subdivision and other housing developments, and industrial and commercial projects, but shall not include any project of less than 2 contiguous acres in extent (G.S. 113A-9. Definitions-NC Environmental Policy Act).

Mixed-Use: Containing two or more of the following major categories of land use: residential, office, retail, hotel, entertainment. The mixing can be vertical, in the form of mixed-use buildings; or horizontal, when part of a mixed-use development, provided that the development is walkable.

Multimodal Transportation: The use of more than one type of transportation, particularly the use of modes like bicycles and buses in addition to or other than the single-occupant automobile.

Open Space: Any parcel or area of land or water essentially unimproved and set aside, dedicated, designated, or reserved for public or private use or enjoyment or for the use and enjoyment of owners, occupants, and their guests of land adjoining or neighboring such open space. Open space may include active or passive recreational facilities. Its purposes maybe recreation, historic and farmland preservation, viewshed protection, or environmental conservation.

Outstanding Resource Waters: Supplemental classification in North Carolina intended to protect unique and special waters having excellent water quality and being of exceptional state or national ecological or recreational significance. To qualify, waters must be rated "Excellent" by DWQ and have one of the following outstanding resource values:

- Outstanding fish habitat or fisheries,
- Unusually high level of water based recreation,
- Some special designation such as NC or National Wild/Scenic/Natural/Recreational River, National Wildlife Refuge, etc.,
- Important component of state or national park or forest, or
- Special ecological or scientific significance (rare or endangered species habitat, research or educational areas).

No new or expanded wastewater discharges are allowed although there are no restrictions on the types of discharges to these waters. There are associated development controls enforced by DWQ.

Passive Recreation: Those activities which avoid or minimize the use of impervious or built upon surfaces, such as raised wooden walkways, vegetated greenways, non-paved pathways, and other similar uses. Passive recreation activities shall conform to standards for setbacks, buffers, impervious surfaces, etc.

Place Type: Description of the desired character and function of the different types of development that collectively make up a community: neighborhoods, employment centers, downtowns, and more.

Pollutant: Generally, any substance introduced into the environment that adversely affects the usefulness or health of a resource.

Primary Nursery Areas: Those areas in the estuarine system where initial post-larval development takes place. There areas are usually located in the uppermost sections of a system where populations are uniformly very early juveniles.

Public Trusts Areas: Refers to land and water subject to the Public Trust Doctrine. Black's Law Dictionary defines the public trust doctrine as a doctrine which, "Provides that submerged and submersible lands are preserved for public use in navigation, fishing, and recreation and the state, as trustee for the people, bears responsibility of preserving and protecting the right of the public to the use of these lands and the waters above them for those purposes." Generally, areas included in the Public Trust are tidewaters to their farthest reach, tidelands, navigable waters, and permanently submerged lands, including those extending lakeward or seaward to the limit of state ownership.

Redevelopment: The substantial modification of existing developed areas, not to include interior remodeling or interior modifications which do not include substantial structural modification to the facility. When fifty percent of the site is being redeveloped, the entire site shall be considered as being redeveloped.

Riparian Access: The legal right of waterfront property owners to construct docks or piers that are contained within the boundaries of their riparian area limit (90 degree angle from the edge of the channel back to the property line or shore).

Sediment: Mineral or organic solid particulate matter that has been removed from its site of origin by (A) soil erosion; (B) suspension in water; and/or (C) wind or water transport.

Significant Natural Heritage Areas: Are sites that are evaluated based on the presence of rare plant and animal species, rare or high quality natural communities, and special animal habitats.

Stormwater: The flow of water which results from precipitation and which occurs immediately following rainfall or a snowmelt.

Streetscape: The area within a street right of way that contains sidewalks, street furniture, landscaping, or trees.

Transfer of Development Rights: The conveyance of development rights by deed, easement, or other legal instrument authorized by local or state law to another parcel of land and the recording of that conveyance.

The removal of the right to develop or build, expressed in units per acre or floor area ratio, from one lot or parcel to another, or from a portion of a lot to another part of the same lot.

A process by which development rights may be transferred from one parcel of land to another.

Transportation Mode: Shipment movement method from point A to point B by air, rail, road, or sea.

Waterfront Community: A community located in proximity to navigable water that has at least 5 waterfront lots contiguous with the community.

Water Quality: A measure of the levels of pollutants occurring within a specified area of a water body.

Water Quality Use Designation: All surface waters in North Carolina are assigned a primary classification by the NC Division of Water Resources (DWR) based on their designated best use. All waters must at least meet the standards for Class C or SC (fishable / swimmable) waters. The other primary classifications provide additional levels of protection for primary water contact recreation (Class B), shellfish waters (class SA) and drinking water (Water Supply Classes I through V).

Watershed: The land area that drains into a stream. The watershed for a major river may encompass a number of smaller watershed that ultimately combine at a common point.

Wetlands: Areas that are inundated and saturated by water at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas.

Wetlands are generally delineated on the basis of physical characteristics such as soil properties indicative of wetness, the presence of vegetation with an unusually strong affinity for water, and the presence or evidence of surface wetness.

Zoning: Specifically defines the type of development allowed. It is how land is occupied or utilized, including but not limited to subdivision, residential, commercial, industrial, recreational, agricultural, or other development. Zoning is a regulation enforceable by law and may include design requirements, such as buffers, building setbacks, and height limitations on buildings.

Local laws used by jurisdictions to regulate the uses of land, buildings, and structures within designated areas.

Map Sources

Dataset	Source	Date	Map Reference
City of Wilmington Annexation	New Hanover County	2014	2.1
Concentration of Elderly Population	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.2
National Land Cover Dataset	Multi-Resolution Land Characteristics Consortium	2011	2.3
National Land Cover Dataset	Multi-Resolution Land Characteristics Consortium	2011	2.4
Conservation Lands	North Carolina Department of Environmental Quality & New Hanover County	2014	2.5
Existing Land Use	New Hanover County Tax Department	2014	2.6
Zoning Districts	New Hanover County Planning Department	2014	2.7
Urban Services Boundary	New Hanover County Planning Department	2006	2.8
Coastal Area Management Act Land Classifications	New Hanover County Planning Department	2006	2.9
Community Development Block Grant Sites	New Hanover County Planning Department	2014	2.10
Road Classifications	North Carolina Department of Transportation	2014	2.11
Bicycle & Pedestrian Facilities	NHC Planning & Wilmington Urban Area Metropolitan Planning Organization	2014	2.12
Railroad Lines	New Hanover County GIS	2014	2.13
Cape Fear Public Utility Authority Water and Sewer Service Areas	Cape Fear Public Utility Authority	2014	2.14 & 2.15
Telecommunication Sites	Federal Communications Commission	2014	2.16
Parks and Boat Access	New Hanover County Parks and Gardens Department	2014	2.17
Proximity to Physical Activity Centers	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.18
Chronic Disease Vulnerability	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.19

Proximity to Medical Facilities	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.20
Proximity to Dental Facilities	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.21
Proximity to Grocery Stores	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.22
Proximity to Active Transportation	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.23
Proximity to Physical Activity	Holland Consulting Planners/Health Gaps Analysis Report	2014	2.24
Water Bodies	United States Geological Survey	2014	2.25
Watersheds	City of Wilmington Stormwater Management Department	2014	2.26
Shellfishing Areas	North Carolina Department of Environmental Quality	2014	2.27
Water Quality	North Carolina Department of Environmental Quality	2014	2.28
Fishing Nursery Areas	North Carolina Department of Environmental Quality	2014	2.29
Special Flood Hazard Areas	North Carolina Floodplain Mapping Program	2006	2.30
Soil Classifications	United States Department of Agriculture	1980	2.31
Agricultural Lands	United States Department of Agriculture	1980	2.32
Biodiversity/Wildlife Habitat Conservation	North Carolina Department of Environmental Quality	2014	2.33
Significant Natural Heritage Areas	North Carolina Department of Environmental Quality	2014	2.34
Future Land Use Placetypes	New Hanover County Planning Department	2015	Ch 4. Pg 11
Special Flood Hazard Areas	North Carolina Floodplain Mapping Program	2006	Ch 4. Pg 25
Public Coastal Waters (AEC)	North Carolina Department of Environmental Quality	2014	Ch 4. Pg 26
Public Inland Waters (AEC)	North Carolina Department of Environmental Quality	2014	Ch 4. Pg 27
Significant Natural Heritage Areas	North Carolina Department of Environmental Quality	2014	Ch 4. Pg 28
Outstanding Resource Waters	North Carolina Department of Environmental Quality	2007	Ch 4. Pg 29

List of Plans and Policies

Planning:

1. New Hanover County Zoning Ordinance ***(Implementation Tool)***
2. New Hanover County Subdivision Ordinance ***(Implementation Tool)***
3. Market Street Corridor Study (2011)
4. CAMA Land Use Plan (2006) ***(In process of updating, part of PlanNHC)***
5. New Hanover County Flood Damage Prevention Ordinance (2006) ***(Implementation Tool)***
6. New Hanover County Multijurisdictional Hazard Mitigation Plan (2010) ***(In process of updating)***
7. Small area plans:
    a. Castle Hayne (2008 updated 2014)
    b. Wrightsboro (1991)
    c. Porters Neck (1989)
    d. Middle Sound (1987)
    e. Seabreeze (1988)
8. Trees and Plant Materials for Landscaping (1990) **(Resource)**
9. Bicycle Facilities Study for the Blue Clay Corridor (2008)
10. Conservation Resources in New Hanover County (1984) **(Resource)**
11. New Hanover County Mobile Home and Travel Trailer Park Ordinance (1970) ***(Implementation Tool)***
12. Cape Fear River Corridor Plan (1997); Stage I Inventory Report; Alternatives
13. Low Impact Development Guidance Manual (2008) **(Resource)**
14. New Hanover County Aquifer Management Plan (1982)
15. Public Water Access Plan for New Hanover County (1986)
16. Drinking Water in New Hanover County (1989)
17. Classification of Soils in NHV for Septic Tank Suitability (1980) ***(Resource)***
18. New Hanover County Local Watershed Planning Initiative (2002)
19. Futch Creek Watershed Plan (1997)
20. Smith Creek Watershed Plan (2010)
21. Pages Creek Watershed Study (1998)
22. Watershed Protection Roundtable Final Report (2001)
23. Master Plan for Parks, Recreation and Open Space (2006) ***(In process of updating)***
24. Soil Survey of New Hanover County (1977) *USDA/NHC Commissioners* ***(Resource)***
25. Traffic Impact Study Standards Manual (2002) ***(Implementation Tool)***
26. Historic Architecture of New Hanover County (1986) ***(Resource)***
27. Wilmington International Airport Height Restrictions Ordinance (2003) ***(Implementation Tool)***
28. Language Access Policy Plan (2011)
29. Fair Housing (2011)

30. Wilmington/New Hanover Comprehensive Greenway Plan
31. 2011-2016 Strategic Plan, New Hanover County, NC

Outside Agencies:

1. Natural Area Inventory of New Hanover County (2003) *NCDENR – NC Natural Heritage Program*
2. Geology and Groundwater Resources of New Hanover County (1970) *NCDENR*
3. Cape Fear Arch Conservation Plan (2009) *Cape Fear Arch Conservation Collaborative*
4. Cape Fear River Basinwide Water Quality Plan (2005)
5. NC Division of Coastal Management – SLR Policy and Administrative Code policies for coastal development
6. Cape Fear Commutes 2035 Transportation Plan (2011) *WMPO* ***(In process of updating)***
7. River Road Small Area Plan (2007) *WMPO*
8. WAVE Short Range Transit Plan (2005) *WAVE*
9. WAVE Local Coordinated Plan (2008) WAVE

Surface Water Quality Classes

The State has classified the water quality of surface water bodies in the County as summarized in the *Cape Fear River Basin wide Water Quality Plan*. These classes are based upon the "best usage" for each water body, as determined through studies, evaluations and the holding of public hearings to consider the proposed classification schemes. Each class is subject to protection toward maintaining "best usage" and regulation of discharges into the waters. Some waters have multiple supplemental classifications. More details on each class can be found in "Classifications and Water Quality Standards Assigned to the Waters of the Cape Fear River Basin" (1990) by the Division of Environmental Management. The classifications are subject to change.

Fresh Waters:

Class WSIV: waters are those that can serve as an alternative source of drinking water for the city, assuming adequate treatment was provided. This class can was found at one location in the county - Toomer's creek, 0.8 mile upstream of Wilmington's water supply intake. Toomer's Creek has been abandoned and is no longer used as a source of drinking water in emergency situations.

Class WSIII: waters are protected as water supplies. These areas are usually found in undeveloped watersheds. Point source discharges of treated wastewater must follow rules of the State surface water standards. In addition, local programs are required to control non-point sources and storm water discharges of pollution. These waters are suitable for all usage specified by the C classification.

Class B: waters are protected for primary recreation which includes swimming on a frequent or organized basis and other uses specified by the C classification.

Class C: waters are those areas best used for aquatic life propagation and survival, fishing, wildlife, secondary recreation and agriculture. (Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner)

Tidal Salt Waters:

Class SA waters are best used for commercial shell fishing and other uses specified by SB and SC. Many of the County's SA waters are also classed as Outstanding Resource Waters, described below.

Class SB waters are best used for primary recreation and other uses specified by the SC class.

Class SC waters are best used for aquatic life propagation and survival, fishing, wildlife, and secondary recreation. All salt waters at a minimum are classified as SC. Note that shell fishing is not allowed in Class SC waters.

Supplemental Classes:

Swamp waters (Sw) are waters that have low velocities and other natural characteristics which are different from adjacent streams.

High Quality Waters (HQs) are waters which are rated as excellent based on biological and physical or chemical characteristics through Division of Environmental Management monitoring or special studies. This class includes, native and special trout waters (and their tributaries), some Primary Nursery Area's and other functional nursery areas, critical habitat areas, special water supply watersheds and all class SA waters.

Outstanding Resource Waters (ORW) are unique and special waters of exceptional state or national, recreational or ecological significance which require special protection to maintain existing areas. This designation, which applies to many SA waters in the County, requires that new development within 575 feet of the waters meet coastal storm water management regulations as specified by DEM. For example, the built-upon area for development within this 575 foot area is limited to 25% of the parcel. The ORW designation also prohibits new or expanded discharges and new or expanded marinas. Also, additional storm water control and land development restrictions may apply to areas with this classification.

Matrix for Land Use Plan Elements – 15A NCAC 7B .0702		
	Plan Reference(s)	**Description/Reference Material/Notes**
Organization of the Plan		
• Matrix that shows the location of the required elements as set forth in this Rule	Appendix pg(s) **157-159**	
Community Concerns and Aspirations		
• Description of the dominant growth-related conditions that influence land use, development, water quality and other environmental concerns in the planning area	Ch 2	Chapter 2, the existing conditions report, describes the comprehensive view of New Hanover County and its associated growth factors.
Description of the land use and development topics most important to the future of the planning area, including:	Ch 2, Ch 3, Ch 4 & Ch 5	Chapter 2 under Land Development explains current land use. Chapter 3 covers overarching goals of the plan Chapter 4 explains future land use Chapter 5 explores implementation strategies and guidelines
• Public Access	Ch 2 pg(s) **47** & Ch 5	Map **2.17** & Chapter 5 implementation strategies and guidelines (see policy section of matrix)
• Land Use Compatibility	Ch 2 pg(s) **12-19**, **54 – 65**. Ch 4 & Ch5	Ch 2 maps **2.9**, & **2.25 -2.34**. Ch 4 includes Future Land Use Map and Natural Systems maps, and Chapter 5 includes implementation strategies and guidelines (see policy section of matrix)
• Infrastructure Carrying Capacity	Ch 2 pg(s) **23-50**, & Ch 5	Chapter 2 details county infrastructure while Chapter 5 explains implementation strategies and guidelines in reference to in protecting AECs and natural resources (see policy section of matrix)
• Natural Hazard Areas	Ch 2 pg(s) **59-61**. Ch 4 & Ch5	Ch 2 map **2.30**, and Ch 4: Natural Systems SFHA map, and Chapter 5 implementation strategies and guidelines
• Water Quality	Ch 2 pg(s) **54-58**. & Ch5	Ch 2 maps **2.25 - 2.29**, and Figure **2.74**. Ch 5 implementation strategies and guidelines (see policy section of matrix)
• A community vision that describes the general physical appearance and form that represents the local government's plan for the future. It shall include objectives to be achieved by the plan and identify changes that may be needed to achieve the planning vision.	Ch 1, Ch 3, Ch 4, & Ch 5	Chapters 1, 3, 4 and Chapter 5 explore the goals set by the citizens of New Hanover County, the vision of future land use, and implementation strategies and guidelines to achieve the county's overarching goals.
Existing and Emerging Conditions		
Population, Housing and Economy		The tri-county area is one the fastest growing regions in the country. The region as a whole is expected to grow nearly 90% by 2040, with New Hanover County capturing the majority of that growth at a rate of 66%. The projected population for 2040 for New Hanover County is 337,054.
Discussion of the following data and trends:		
• Permanent population growth trends using data from the two most decennial Censuses	Ch 2 pg(s) **2-11**	See figures in Population section of Chapter 2: Existing Conditions Report.
• Current permanent and seasonal population estimates	Ch 2 pg(s) **2-11**	Figure **2.5** **Note* Seasonal projections are not included in report*
• Key population characteristics including age and income	Ch 2 pg(s) **7 -11**	Figures **2.1 – 2.22** & Map **2.2**
• Thirty-year projections of permanent and seasonal population in five-year increments	Ch 2 pg(s) **3**	Figure **2.5** **Note* Seasonal and permanent projections in five-year increments are not included in report*
• Estimate of current housing stock, including permanent and seasonal units, tenure, and types of units (single-family, multifamily, and manufactured)	Ch 2 pg(s) **19-22**	There are currently 101,402 housing units in New Hanover County. See Figures in Land Development section beginning on page **19**
• Description of employment by major sectors and community economic activity	Ch 2 pg(s) **33-37**	Figures **2.51 – 2.59**
Natural Systems		
Description of natural features in the planning jurisdiction to include:		
• Areas of Environmental Concern (AECs) as set forth in Subchapter 15A NCAC 07H	Ch 2 pg(s) **54-62** & Ch 4 pg(s) **19-29**	Ch 2 Maps **2.25, 2.27, 3.30.** Ch 4 Natural System maps pg(s) **25-29**
• Soil characteristics, including limitations for septic tanks, erodibility, and other factors related to development	Ch 2 pg(s) **63**	Ch2 Map **2.31**
• Environmental Management Commission (EMC) water quality classifications and related use support designations	Appendix pg(s) **155**	See appendix for water quality classifications.
• Division of Marine Fisheries (DMF) shellfish growing areas and water quality conditions	Ch 2 pg(s) **55-57**	Ch 2 Figure **2.74** & Map **2.27**
• Flood and other natural hazard areas	Ch 2 pg(s) **59-60** & Ch 4 pg(s) **20 & 25**	Ch 2 Map **2.30** & Natural Systems section of chapter 4
• Storm surge areas	Ch 2 pg(s) **59-61**	
• Non-coastal wetlands, including forested wetlands, shrub-scrub wetlands and freshwater marshes	Ch 2 pg(s) **62** & Ch 4 pg(s) **24**	
• Water supply watersheds or wellhead protection areas	N/A	There are no water supply watersheds in New Hanover County. Wellhead protection areas are included in the Future Land Use map within the conservation place type. The Cape Fear Public Utility Authority also has established a wellhead protection plan.
• Primary nursery areas	Ch 2 pg(s) **58**	Ch 2 Map **2.29**
• Environmentally fragile areas, such as wetlands, natural heritage areas, areas containing endangered species, prime wildlife habitats, or maritime forests	Ch 2 pg(s) **57,58, 62, 64, 65** & Ch 4 pg(s) **20-29**	Maps **2.27, 2.28, 2.29, 2.32, 2.33, 2.34**.

• Additional natural features or conditions identified by the local government	Ch 2 pg(s) **64** & Ch 4 pg(s) **24**	Ch 2 Map **2.32** (Agricultural Lands) & Ch 4 (Aquifer Sensitivity Areas pg **24**)
Environmental Conditions	**Plan Reference(s)**	
Discussion of environmental conditions within the planning jurisdiction to include an assessment of the following conditions and features:		
• Status and changes of surface water quality; including:		
- Impaired streams from the most recent Division of Water Resources (DWR) Basin Planning Branch Reports	N/A	Cape Fear River Basin Report currently being updated by the Division of Water Resources.
- Clean Water Act 303 (d) List	Ch 2 pg(s) **57**	Ch2 Map **2.28**
- Other comparable data	Ch 2 pg(s) **55-56**	Ch2 Figure **2.74**
• Current situation and trends on permanent and temporary closures of shellfishing waters as determined by the Report of Sanitary Survey by the Shellfish Sanitation and Recreational Water Quality Section of the DMF	Ch 2 pg(s) **57**	Ch 2 Map **2.27**
• Areas experiencing chronic wastewater treatment malfunctions	N/A	
• Areas with water quality or public health problems related to non-point source pollution	Ch 2 pg(s) **55-57**	Ch2 Figure **2.74**
• Areas subject to recurrent flooding, storm surges and high winds	Ch 2 pg(s) **59-61**	
• Areas experiencing significant shoreline erosion as evidenced by the presence of threatened structures or public facilities	N/A	See the New Hanover County Hazard Mitigation Plan
• Environmentally fragile areas (as defined in Part (c)(2)(A)(ix) of this Rule) or areas where resources functions are impacted as a result of development	Ch 2 pg(s) **62** & Ch 4 pg(s) **24**	
• Natural resource areas that are being impacted or lost as a result of incompatible development. These may include, but are not limited to the following: coastal wetlands, protected open space, and agricultural land.	Ch 2 pg(s) **62, 64,65** & Ch 4 pg(s) **11**, **24**	
Existing Land Use and Development		
MAP of existing land use patterns		
• Description of the existing land use patterns	Ch 2 pg(s) **12-18**	Ch2 Maps **2.3, 2.4, 2.5, 2.6**
• Estimates of the land area allocated to each land use category	Ch 2 pg(s) **15**	Ch 2 Map **2.6** & Figure **2.23**
• Characteristics of each land use category	Ch 2 pg(s) **15**	Ch 2 Map **2.6** & Figure **2.23**
MAP of historic, cultural, and scenic areas designated by a state or federal agency or by the local government	Ch 2 pg(s) **50**	For a more complete list of historic structures see the New Hanover County Historical Structures Brochure
• Descriptions of the historic, cultural and scenic areas	Ch 2 pg(s) **50**	For a more complete list of historic structures see the New Hanover County Historical Structures Brochure
Community Facilities		
Evaluation of existing and planned capacity, location and adequacy of community facilities to include:		
• Description of existing public and private water supply systems to include:		
- Existing condition	Ch 2 pg(s) **41-42**	Ch2 Map **2.14**
- Existing capacity	Ch 2 pg(s) **41-42**	
- Documented overflows, bypasses or other problems that may degrade water quality or constitute a threat to public health as documented by the DWR	N/A	
- Future needs based on population projections	Ch 2 pg(s) **41-42**	For more information see CFPUAs updated long range plan.
- MAP of existing and planned service areas	Ch 2 pg(s) **42**	Ch2 Map **2.14**
• Description of existing public and private wastewater systems to include:		
- Existing condition	Ch 2 pg(s) **41-42**	
- Existing capacity	Ch 2 pg(s) **41-42**	
- Documented overflows, bypasses or other problems that may degrade water quality or constitute a threat to public health as documented by the DWR	N/A	
- Future needs based on population projections	Ch 2 pg(s) **41-42**	For more information see CFPUAs updated long range plan.
- MAP of existing and planned service areas	Ch 2 pg(s) **42**	Ch2 Map **2.15**
MAP of existing and planned multimodal transportation systems and port and airport facilities	Ch 2 pg(s) **25-32**	Ch2 Maps **2.12** & **2.13**
• Description of any highway segments deemed by the NC Department of Transportation (NCDOT) as having unacceptable service as documented in the most recent NCDOT Transportation and/or Thoroughfare Plan	N/A	For detailed information on transportation see the Wilmington Urban Area Metropolitan Planning Organizations long range plan: Cape Fear Transportation 2040.

Community Facilities, contd.	Plan Reference(s)	
• Description of highway facilities on the current thoroughfare plan or current transportation improvement plan	Market Street Corridor Plan & WMPO CFT 2040	See the Market Street Corridor Plan and the Wilmington Urban Area Metropolitan Planning Organizations long range plan: Cape Fear Transportation 2040.
• Description of the impact of existing transportation facilities on land use patterns	Ch 2 pg(s) **23-27**	
• Description of the existing public storm water management system	Ch 2 pg(s) **43**	
• Identification of existing drainage problems and water quality issues related to point-source discharges of storm water runoff	N/A	
	Goal	**Implementation Strategy and Guideline**
Future Land Use		
Policies		
• Policies that exceed the use standards and permitting requirements found in Subchapter 7H, State Guidelines for Areas of Environmental Concern	Goal(s) **IX** pg 10, **X** pg 11, **XII** pg 12	**IX.A**: IX.A.1; **IX.B**: IX.B.1; **IX.C**: IX.C.1, IX.C.2, IX.C.3; **X.A**: X.A.1, X.A.2, **X.B**: X.B1, X.B.2, X.B.3, X.B.4, X.B.5, X.B.6, X.B.7; **XII.A**: XII.A.1; **VII.B**, **XII.C**: XII.C.1
Policies that address the Coastal Resources Commission's (CRC's) management topics:		
Public Access Management Goal: *Maximize public access to the beaches and the public trust waters of the coastal region.*		
The planning objectives for public access are local government plan policies that:		
• Address access needs and opportunities	Goal(s) **VI** pg(s) **7**; **VII** pg(s) **8**	**VI.A**: VI.A.1, VI.A.2, VI.A.3, VI.A.4; **VII.1**: VII.A.1, VII.A.2, **VII.B**, **VII.C**, **VII.D**: VII.D.I, VII.D.2
• Identify strategies to develop public access	Goal(s) **VI** pg(s) **7**; & **VII** pg(s) **8**	**VI.A**: VI.A.1, VI.A.2, VI.A.3, VI.A.4; **VII.1**: VII.A.1, VII.A.2, **VII.B**, **VII.C**, **VII.D**: VII.D.I, VII.D.2
• Address provisions for all segments of the community, including persons with disabilities	Goal(s) XX pg(s) **17**	**XX.B**: XX.B.1
• For oceanfront communities, establish access policies for beach areas targeted for nourishment	N/A	
Land Use Compatibility Management Goal: *Ensure that development and use of resources or preservation of land balance protection of natural resources and fragile areas with economic development, and avoids risks to public health, safety, and welfare.*		
The planning objectives for land use compatibility are local government plan policies that:	Ch 4 & Ch 5	The Future Land Use map in Chapter 4 and the Implementation strategies and guidelines in Chapter 5 address land use compatibility
• Characterize future land use and development patterns	Ch 4 pg(s) **3-9, 11-18;** Goal(s) **I** pg 4, **III** pg 5, **VI** pg 7, **VII** pg 8, **VIII** pg 9, **IX** pg 10, **X** pg 11, **XI** pg 12, **XIII** pg 13-14**, XVIII** pg 17, **XXI** pg 18	Ch 4 outlines future development patterns and the future land use map. Ch 5 Goal (s) **I.C**: I.C.1; **III.A**: III.A.1; **VI.A:** VI.A.2, VI.A.3, VI.A.4; **VI.D**: VI.D.3; **VII.A**: V.A.1, V.A.2; **VII.D**: VII.D.2; **VIII.A**: VIII.A.1, VII.A.2; **VIII.C**: VII.C.1; **VIII.D**: VIII.D.1, VIII.D.2; **VIII.E**: VIII.E.1, VIII.E.2, VIII.E.3; **IX.A**: IX.A.2, **IX.D**: IX.D.1, IX.D.2; **X.A**: X.A.1; **X.B**: X.B.2; **XI.A:** XI.A.1, XI.A.2; **XIII.O**: XIII.O.1; XVIII.A: XVIII.A.1, XVIII.A.2; **XXI.A**: XXI.A.1; **XXI.B**: XXI.B.1
• Establish mitigation criteria and concepts to minimize conflicts	Goal(s) **I** pg 4, **VII** pg 8, **IX** pg 10, **X** pg 11, **XII** pg 12, **XIII** pg 13-14, **XXI** pg 18	**I.C**: I.C.1; **VI.A**: VII.A.1; **VII.D**: VII.D.1, VII.D.2; **IX.A**: IX.A.1, IX.A.2; **IX.B**: IX.B.1, IX.B.2, IX.B.3, **IX.C:** IX.C.1, IX.C.2, IX.C.3, IX.C.4; **X.A**: X.A.1, X.A.2; **X.B**: X.B1, X.B.2, X.B.3, X.B.4, X.B.5, X.B.6, X.B.7; **IIX.A**: XII.A.1; **VII.B**, **XII.C**: XII.C.1; **XIII.A**: XIII.A.1; **XIII.B**: XIII.B.1; **XIII.D; XIII.G**; **XII.H**: XIII.H.1; **XIII.I**; **XIII.M**; **XXI.A**: XXI.A.1
Infrastructure Carrying Capacity Management Goal: *Ensure that public infrastructure systems are sized, located, and managed so the quality and productivity of AECs and other fragile areas are protected or restored.*		
The planning objectives for infrastructure carrying capacity are local government plan policies that:		
• Establish service criteria	Goal(s) **III** pg 5, **IV** pg 6, **VII** pg 8, **X** pg 11	**III.A**: III.A.1; **III.F**: III.F.1; **IV.A**: IV.A; **IV.B**: IV.B.1; **VII.A**: VII.A.1, VII.A.2; **X.A**: X.A.1
• Ensure improvements minimize impacts to AECs and other fragile areas	Goal(s) **III** pg 5, **IV** pg 6, **VII** pg 8, **X** pg 11	**III.A**: III.A.1; **III.F**: III.F.1; **IV.A**: IV.A; **IV.B**: IV.B.1; **VII.A**: VII.A.1, VII.A.2; **X.A**: X.A.1
Natural Hazard Areas Management Goal: *Conserve and maintain barrier dunes, beaches, floodplains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.*		
The planning objectives for natural hazard areas are local government plan policies that:		
• Establish mitigation and adaptation concepts and criteria for development and redevelopment, including public facilities	Goal(s) **VI** pg 7, **VII** pg 8, **X** pg 11, **XII** pg 12	**VI.A**: VI.A.1, VI.A.3**; VII.A**: VII.A.1, VII.A.2; **VII.D**: VII.D.1, VII.D.2; **X.A**: X.A.1; **X.B**: X.B.2, X.B.3, X.B.4, X.B.5, X.B.6; **X.C**; **XI.A**: XII.A.1
• Minimize threats to life, property and natural resources resulting from erosion, high winds, storm surge, flooding, or other natural hazards	Goal(s) **VII** pg 8, **X** pg 11, **XII** pg 12	**VII.A**: VII.A.1, VII.A.2; **VII.D**: VII.D.1, VII.D.2; **X.A**: X.A.1; **X.B**: X.B.2, X.B.3, X.B.4, X.B.5, X.B.6; **X.C**; **XI.A**: XII.A.1
Water Quality Management Goal: *Maintain, protect and where possible enhance water quality in all coastal wetlands, rivers, streams, and estuaries.*		
The planning objectives for water quality are local government		

plan policies that:		
• Establish strategies and practices to prevent or control nonpoint source pollution	Goal(s) **VI** pg 7, **VII** pg 8, **X** pg 11, **XII** pg 12	**VI.A**: VI.A.1; **VII.A**: VII.A.1; **VII.D**: VII.D.1, VII.D.2; **X.B**: X.B.4, X.B.5, X.B.6; **XII.A**: XII.A.1; **XIII.A**: XIII.A.1; **XIII.J**; **XIII.K**; **XIII.L**: XIII.L.1, XIII.L.2; **XIII.M; XIII.O**: XIII.O.1
• Establish strategies and practices to maintain or improve water quality	Goal(s) **III** pg 5, **VII** pg 8, **X** pg 11, **VIII** pg 13-14	**III.A**: III.A.1; **VII.D**: VII.D.1, VII.D.2; **X.B**: X.B.1, X.B.2, X.B.3, X.B.4, X.B.5, X.B.6; **XIII.A**: XIII.A.1; **XIII.B**: XIII.B.1; **XIII.C**; **XIII.D**; **XIII.E**; **XIII.F**; **XIII.G**: XIII.G.1, XIII.G.2; **XIII.H**: X.H.1; **X.I**; **XIII.J**: XIII.J.1; **XIII.K**; **XIII.L**: XIII.L.1, XIII.L.2; **XIII.M**; **XIII.N**: XIII.N.1, XIII.N.2; **XIII.O**: XIII.O.1
Future Land Use Map	**Plan Reference(s)**	
MAP of future land uses that depicts the policies for growth and development and the desired future patterns of land use and development with consideration given to natural system constraints and infrastructure	Ch 4 pg(s) **2-29**	Chapter 4 details the Future Land Use map and its corresponding place types. It also includes Natural System maps that gives considerations to environmental constrains and hazards.
• Descriptions of land uses and development associated with the future land use map designations	Ch 4 pg(s) **3-18**	See Future Land Use map and place type descriptions and exceptional resource area maps.
Tools for Managing Development		
• Description of the role of plan policies, including the future land use map, in local decisions regarding land use and development	Prologue, Ch 4 & Ch 5	
• Description of the community's development management program, including local ordinances, codes, and other plans and policies	Ch 5 pg(s) **2-4** & Appendix pg(s) **151**	Chapter 5 describes the implementation strategies, guidelines and action plan. A new unified development ordinance is scheduled. The appendix includes additional plans and ordinances governed by New Hanover County.
Action Plan and Implementation Schedule		
• Description of actions that will be taken by the local government to implement policies that meet the CRC's management topic goals and objectives, specifying fiscal year(s) in which each action is anticipated to start and finish	Ch 5 pg(s) **2-3**	See the Chapter 5 description of the Action Plan.
• Identification of specific steps the local government plans to take to implement the policies, including adoption and amendment of local ordinances, other plans, and special projects	Ch 5 pg(s) **3**,**4**,**6**,**7**,**8**,**9**,**11**,**12**,**13**,**14**,**15**,**16**,**17**,**18**	See Action Plan & Goal(s) **I.B**, **I.E**, **II.A**, **IV.A**, **V.A**, **VI.B**, **VI.C**, **VII.B**, **VII.C**, **VIII.B**, **X.C**, **XII.B**, **XIII.C**, **XIII.D**, **XIII.E**, **XIII.F**, **XIII.I**, **XIII.K**, **XIII.M**, **XIV.C**, **XVI.C**, **XVII.A**, **XVII.B**, **XVII.D**, **XIX.A**, **XXI.D**