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, Chairman

Teresa P. Elmore, Clerk to the Board

ATTEST:
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
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.

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 Wilmington
- 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
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.
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.

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.
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

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.
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.

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.

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.

### Table: Average Annual Population Rates

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New Hanover</td>
<td>1.6%</td>
<td>3.3%</td>
<td>2.6%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Brunswick</td>
<td>4.2%</td>
<td>4.3%</td>
<td>4.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Pender</td>
<td>3.0%</td>
<td>4.2%</td>
<td>2.7%</td>
<td>1.9%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1.3%</td>
<td>2.1%</td>
<td>1.8%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Wilmington</td>
<td>2.6%</td>
<td>3.7%</td>
<td>4.0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Unincorporated New Hanover</td>
<td>0.7%</td>
<td>3.1%</td>
<td>1.4%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

### Population Projections

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 Metropolitan 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.

### Table: Population Forecasts for Sub-Areas of Region

<table>
<thead>
<tr>
<th>Population</th>
<th>2010</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base</td>
<td>Low Growth</td>
</tr>
<tr>
<td>New Hanover County</td>
<td>202,667</td>
<td>249,026</td>
</tr>
<tr>
<td>Unincorporated</td>
<td>85,973</td>
<td>105,639</td>
</tr>
<tr>
<td>Wilmington</td>
<td>106,476</td>
<td>130,832</td>
</tr>
<tr>
<td>Beach Towns</td>
<td>10,218</td>
<td>12,555</td>
</tr>
<tr>
<td>Brunswick County</td>
<td>107,431</td>
<td>212,355</td>
</tr>
<tr>
<td>Leland</td>
<td>13,672</td>
<td>27,025</td>
</tr>
<tr>
<td>Other Brunswick</td>
<td>93,759</td>
<td>185,330</td>
</tr>
<tr>
<td>Pender County</td>
<td>52,217</td>
<td>90,261</td>
</tr>
<tr>
<td>Southeast Pender</td>
<td>21,190</td>
<td>42,423</td>
</tr>
<tr>
<td>Other Pender</td>
<td>31,027</td>
<td>47,838</td>
</tr>
<tr>
<td>3-County Region</td>
<td>362,315</td>
<td>551,642</td>
</tr>
</tbody>
</table>
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.

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**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New Hanover</td>
<td>47,935</td>
<td>63,272</td>
<td>71,742</td>
<td>82,996</td>
<td>103,471</td>
<td>120,384</td>
<td>160,307</td>
<td>202,667</td>
</tr>
<tr>
<td>Wilmington</td>
<td>33,407</td>
<td>45,043</td>
<td>44,013</td>
<td>46,169</td>
<td>44,000</td>
<td>55,283</td>
<td>75,838</td>
<td>106,476</td>
</tr>
<tr>
<td>Unincorporated</td>
<td>25,521</td>
<td>33,069</td>
<td>53,976</td>
<td>57,815</td>
<td>75,668</td>
<td>85,996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beach Towns</td>
<td>2,208</td>
<td>3,758</td>
<td>5,495</td>
<td>7,186</td>
<td>8,801</td>
<td>10,195</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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%).

<table>
<thead>
<tr>
<th>Year</th>
<th>Wilmington</th>
<th>Unincorporated</th>
<th>Beach Towns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>61.3%</td>
<td>35.6%</td>
<td>3.1%</td>
</tr>
<tr>
<td>1970</td>
<td>55.6%</td>
<td>39.8%</td>
<td>4.5%</td>
</tr>
<tr>
<td>1980</td>
<td>42.5%</td>
<td>52.2%</td>
<td>5.3%</td>
</tr>
<tr>
<td>1990</td>
<td>46.0%</td>
<td>48.1%</td>
<td>5.9%</td>
</tr>
<tr>
<td>2000</td>
<td>47.3%</td>
<td>47.2%</td>
<td>5.5%</td>
</tr>
<tr>
<td>2010</td>
<td>52.5%</td>
<td>42.4%</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
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.
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](image)

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

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.

![FIGURE 2.13](image)

Source: U.S. Census Bureau

### POPULATION BY GROUP: NEW HANOVER COUNTY 1990-2010

<table>
<thead>
<tr>
<th>Age Group</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>65+</td>
<td>13.9</td>
<td>12.8</td>
<td>13.0</td>
</tr>
<tr>
<td>45-64</td>
<td>25.9</td>
<td>23.7</td>
<td>22.9</td>
</tr>
<tr>
<td>25-44</td>
<td>27.8</td>
<td>25.0</td>
<td>22.7</td>
</tr>
<tr>
<td>18-24</td>
<td>13.5</td>
<td>12.0</td>
<td>12.3</td>
</tr>
<tr>
<td>&lt;18</td>
<td>16.9</td>
<td>21.8</td>
<td>21.3</td>
</tr>
</tbody>
</table>
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

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

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.
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)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Unincorporated</th>
<th>City of Wilmington</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-44</td>
<td>2%</td>
<td>32%</td>
</tr>
<tr>
<td>45-64</td>
<td>21%</td>
<td>62%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Unincorporated</th>
<th>%</th>
<th>Wilmington</th>
<th>%</th>
<th>Beach Towns</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18</td>
<td>18,545</td>
<td>24.5%</td>
<td>13,942</td>
<td>18.4%</td>
<td>1,105</td>
<td>12.6%</td>
</tr>
<tr>
<td>18-24</td>
<td>5,380</td>
<td>7.1%</td>
<td>13,033</td>
<td>17.2%</td>
<td>836</td>
<td>9.5%</td>
</tr>
<tr>
<td>25-44</td>
<td>24,566</td>
<td>32.5%</td>
<td>21,594</td>
<td>28.5%</td>
<td>2,678</td>
<td>30.4%</td>
</tr>
<tr>
<td>45-64</td>
<td>19,512</td>
<td>25.8%</td>
<td>15,632</td>
<td>20.6%</td>
<td>2,917</td>
<td>33.1%</td>
</tr>
<tr>
<td>65+</td>
<td>7,665</td>
<td>10.1%</td>
<td>11,637</td>
<td>15.3%</td>
<td>1,265</td>
<td>14.4%</td>
</tr>
</tbody>
</table>

AGE GROUP TRENDS FOR UNINCORPORATED AREA: 2000-2010

AGE GROUP TRENDS FOR BEACH TOWNS: 2000-2010
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.
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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gender</th>
<th>New Hanover %</th>
<th>Unincorporated %</th>
<th>Wilmington %</th>
<th>Beach Towns %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>Male</td>
<td>57,071</td>
<td>47.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>63,213</td>
<td>52.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Male</td>
<td>77,371</td>
<td>48.3%</td>
<td>35,397</td>
<td>51.9%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>82,936</td>
<td>51.7%</td>
<td>40,441</td>
<td>48.1%</td>
</tr>
<tr>
<td>2010</td>
<td>Male</td>
<td>98,269</td>
<td>48.5%</td>
<td>50,857</td>
<td>50.9%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>104,398</td>
<td>51.5%</td>
<td>55,619</td>
<td>49.1%</td>
</tr>
</tbody>
</table>
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.
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.
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.
**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).
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.
Land Development

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.
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.

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.

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 Authority. 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.
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.

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.

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.

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.
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.

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.
TRANSPORTATION

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 citizens 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

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

<table>
<thead>
<tr>
<th>Roadway Description</th>
<th>Location</th>
<th>Traffic Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH 23RD STREET</td>
<td>BETWEEN DIVISION DRIVE AND AIRPORT BOULEVARD</td>
<td>12,642</td>
</tr>
<tr>
<td>NORTH COLLEGE ROAD (US 117/NC 132)</td>
<td>BETWEEN BLUE CLAY ROAD AND PARMELE ROAD</td>
<td>10,417</td>
</tr>
<tr>
<td>NORTH COLLEGE ROAD (US 117/NC 132)</td>
<td>SOUTH OF BAVARIAN LANE</td>
<td>25,978</td>
</tr>
<tr>
<td>NORTH COLLEGE ROAD (US 117/NC 132)</td>
<td>BETWEEN LONG RIDGE DRIVE AND BAVARIAN LANE</td>
<td>27,081</td>
</tr>
<tr>
<td>PINER ROAD</td>
<td>EAST OF MONKEY JUNCTION</td>
<td>15,050</td>
</tr>
<tr>
<td>SOUTH COLLEGE ROAD (NC 132)</td>
<td>BETWEEN JUNCTION CREEK DR AND JUNCTION PARK DR</td>
<td>29,576</td>
</tr>
</tbody>
</table>
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.
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.

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.

**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.
TRANSPORTATION

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.

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.
Transportation

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.
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.
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.

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.
TRANSPORTATION

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 forecasting 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.

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

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.

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.

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.

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 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).
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.

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.

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

**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**

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
**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.

---

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

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.


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

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.

**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.

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.
INFRASTRUCTURE & URBAN SERVICES

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.

<table>
<thead>
<tr>
<th>Availability</th>
<th>New Hanover County</th>
<th>North Carolina</th>
<th>Nationwide</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL</td>
<td>94.40%</td>
<td>86.60%</td>
<td>89.70%</td>
</tr>
<tr>
<td>Cable</td>
<td>99.90%</td>
<td>90.50%</td>
<td>88.60%</td>
</tr>
</tbody>
</table>

**Speed:
Megabytes per second (Mbps)**

<table>
<thead>
<tr>
<th>Medium &amp; Large Business</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Download</td>
<td>6.35</td>
<td>9.44</td>
<td>8.83</td>
</tr>
<tr>
<td>Median Upload</td>
<td>1.58</td>
<td>6.53</td>
<td>4.19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Small Business</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Download</td>
<td>1.29</td>
<td>3.76</td>
<td>4.3</td>
</tr>
<tr>
<td>Median Upload</td>
<td>0.34</td>
<td>0.87</td>
<td>1.25</td>
</tr>
</tbody>
</table>

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.

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.
Crime

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

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

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

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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NHC</td>
<td>678</td>
<td>684</td>
<td>748</td>
<td>763</td>
<td>803</td>
<td>807</td>
<td>806</td>
<td>814</td>
<td>826</td>
<td>841</td>
</tr>
<tr>
<td>Wilmington</td>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sworn Rate Per 1,000 Pop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHC</td>
<td>3.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilmington</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CB</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KB</td>
<td>5.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WB</td>
<td>9.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNCW</td>
<td>10.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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 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.

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.
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 vulnerable to chronic disease. Due to concentrations of the elderly and populations of low socioeconomic status,

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.
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.

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.
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).
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.

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.
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 chlorophyll-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**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Barnards Creek</th>
<th>Futch Creek</th>
<th>Lords Creek</th>
<th>Motts Creek</th>
<th>Pages Creek</th>
<th>Prince Georges Creek</th>
<th>Smith Creek</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turbidity</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>POOR</td>
<td>POOR</td>
<td>GOOD</td>
</tr>
<tr>
<td>Chlorophyll-a</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
<td>GOOD</td>
</tr>
<tr>
<td>Enterococci</td>
<td>POOR</td>
<td>GOOD</td>
<td>FAIR</td>
<td>POOR</td>
<td>POOR</td>
<td>POOR</td>
<td>POOR</td>
</tr>
<tr>
<td>Fecal Coliform</td>
<td>N/A</td>
<td>POOR</td>
<td>N/A</td>
<td>N/A</td>
<td>POOR</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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.
Primary Nursery Areas

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, Hewlets 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.

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.
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 Greenvue Ranches, the I-140 corridor and Sidbury Road.

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 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 Biodiversity/Wildlife Habitat Conservation

MAP 2.34 Significant Natural Heritage Areas
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.
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.

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.
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.

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.
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.


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  Don Ellson  Joe Suleyman  Phil Prete
Barbara Rowe  Earla Pope  John Taggart  Randall Johnson
Bobby Chappell  Heather Caveny  Julie Hurley  Roger Shew
Cary Paynter  Gary McSmith  Julia Worth  Ryan McAlister
Charley Winterbauer  Gus Simmons  Lara Berkley  Scott Johnson
Dani McKeon  Kat Pohlman  Maggie O’Connor  Scott Whitham
Dave Silvia  Kayne Darrell  Matt Collogan  Shane Johnson
David Kellam  Kenny Bundy  Meg Young  Sherry O’Daniell
David Todd  Jared Taylor  Melanie Doyle  Tyler Newman
Debbie Elliott  Jodi Dellinger Rich  Nancy Jones  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  Gloria Garton  Mary Canel  Stan Turner
Andrea Tarantino  JC Skane  Mechelle Estes  Steve Spain
Angela Faison  Jenny Biddle  Meg Young  Suzanne Rogers
Atiba Johnson  Jessica Gray  Phil Lamotte  Tanya Gurganious
Chris McNamee  John Edge  Phil Prete  Terri Burhans
Dan Ferrell  Joshua Swift  Regina Penna  Tyler Newman
Dani McKeon  Karen Dunn  Rob Zapple  Vivian S. Wilson
Frankie Roberts  Katrina Knight  Roger Kelley  Wanda Coston
Gail Ginsberg  Laura McCabe  Shane Johnson
Gary McSmith  Kenny Bundy  Sharon Huffman

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

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

Healthy Community

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

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

Responsible Regionalism

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

A special thank you to Bruce Holsten for representing the Responsible Regionalism theme committee on the 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 the New 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

New Hanover County Future Land Use Map
Plan NHC: Charting the Course

The Future Land Use Map is not legally binding like the New Hanover County Zoning Map. It is intended to be a general representation of the 25 year vision for New Hanover County, created by the citizens who were involved with Plan NHC, and will be used to guide future development decisions.
COMMERCIAL 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.

DESIRED USES

Types of Uses / Projects

- Light Industrial
- Heavy Industrial
- Office
- Recreation

Mix of Uses

- Commercial
- Office
- Institutional
- Industrial

DEVELOPMENT INTENSITY

Massing / Scale Recommendations

<table>
<thead>
<tr>
<th>Use</th>
<th>Number of Stories</th>
<th>Ideal Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>1-7</td>
<td>Low-to-High</td>
</tr>
<tr>
<td>Industrial</td>
<td>1-3</td>
<td>Low/Moderate</td>
</tr>
</tbody>
</table>

Urban Design Recommendations

- Street Pattern: Grid or radial
- Block Length: 300 ft - 500 ft
- 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
- North Chase
- Hermitage Road

**DESIRED USES**
- **Types of Uses / Projects**
  - Office
  - Industrial
  - Single-Family Residential
  - Multi-Family Residential
  - Commercial / Retail
  - Recreational

**Mix of Uses**
- Commercial
- Office
- Institutional
- Industrial
- Low & Moderate Density
- Residential

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

**Urban Design Recommendations**
- Street Pattern:
  - Grid or radial
- Block Length:
  - 300 ft – 500 ft
- 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 sidewalks
  - 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 1/4 to 1/2 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
Wrightboro
Morston Loop

**DESired USES**
- **Types of Uses / Projects**
  - Single-Family Residential
  - Low-Density Multi-Family Residential
  - Light Commercial
  - Civic
  - Recreational

- **Mix of Uses**
  - Office
  - Light Commercial
  - Recreation
  - Planned Development
  - Low-Density Multi-Family
  - Single-Family Residential

- **Typical Zoning Categories**
  - Low Density Residential
  - Medium Density Residential
  - Office & Institutional
  - Planned Unit Development

**DEVELOPMENT INTENSITY**
- **Massing / Scale Recommendations**
  - Office: 1-2 stories, Ideal Density: Low
  - Retail: 1-2 stories, Ideal Density: Low
  - Planned Development: 1-3 stories, Ideal Density: Medium
  - Low-Density Multi-Family: 1-3 stories, Ideal Density: 2-6 du/acre

- **Urban Design Recommendations**
  - Street Pattern: Wapped 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 lams
  - 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**

- **Mix of Uses**
  - **HOUSING**
  - **RETAIL**
  - **MIXED USE**
  - **OFFICE**

**Typical Zoning Categories**
- Moderate to High-Density Residential
- Mixed Use
- Office & Institutional
- Commercial

**Development Intensity**

- **Massing / Scale Recommendations**
  - **Use**
    - Office
    - Retail
    - Planned Development
    - Residential
    - Commercial / Mixed Use
  - **Number of Stories**
    - 3-7
    - 1-3
    - 2-7
    - 2-5
    - 2-7
  - **Ideal Density**
    - Moderate / High
    - Low / Moderate
    - Moderate / High
    - Moderate / High
    - 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
  - Unlimited 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 streetscapes. 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 density single family development may be acceptable when limitations to mixed use development exist. Ideally, large-scale, lower density commercial and industrial developments are prohibited.

EXAMPLE AREAS

Castle Hayne
Sidbury Road
Carolina Beach Road
NorthChase

DESIGNED USES

Types of Uses / Projects

- Office
- Retail
- Mixed Use
- Multi-Family Residential
- Single-Family Residential
- Recreational

Mix of Uses

- Recreation
- Office
- Mixed Use
- Housing
- Retail

Typical Zoning Categories

- Moderate Density Residential
- Commercial
- Office & Institutional
- Mixed Use

DEVELOPMENT INTENSITY

Massing / Scale Recommendations

<table>
<thead>
<tr>
<th>Use</th>
<th>Number of Stories</th>
<th>Ideal Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>1-2</td>
<td>Moderate</td>
</tr>
<tr>
<td>Retail</td>
<td>1-2</td>
<td>Low/Moderate</td>
</tr>
<tr>
<td>Mixed Use</td>
<td>2-3</td>
<td>Moderate</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>2-3</td>
<td>Moderate (12-15 du/acre)</td>
</tr>
<tr>
<td>Single-Family Residential</td>
<td>1-3</td>
<td>Moderate (4-8 du/acre)*</td>
</tr>
</tbody>
</table>

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

PLAN NHC 2016

VISUALIZING THE FUTURE 16
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

DESIGNED USES
<table>
<thead>
<tr>
<th>Types of Uses / Projects</th>
<th>Mix of Uses</th>
<th>Typical Zoning Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Residential</td>
<td>RECREATION</td>
<td>Very Low Density Residential</td>
</tr>
<tr>
<td>Small-scale Agriculture &amp; Forestry</td>
<td>AGRICULTURAL</td>
<td>Agricultural</td>
</tr>
<tr>
<td>Recreational</td>
<td>HOUSING</td>
<td>Recreational</td>
</tr>
<tr>
<td>Open Space</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DEVELOPMENT INTENSITY

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

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
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.


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 throughout 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 3

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
This map represents a smaller version of the full-size printed map. As such, some 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.

**New Hanover County Natural Systems**

**Map 2 of 5**

**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 provides opportunity 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**

* 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.*
This map represents a smaller version of the full-size spatial plan. 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.planhcc.com.

**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 total 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

*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.*
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

<table>
<thead>
<tr>
<th>2016 Plan NHC Action Plan Strategies</th>
<th>Short Term Initiatives</th>
<th>Mid Term Initiatives</th>
<th>Long Term Initiatives</th>
<th>Ongoing Efforts</th>
</tr>
</thead>
</table>
| **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.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Streamline permitting process for targeted industries.</td>
<td>I.A.1 Encourage target industries in Employment Centers, Commerce Zones, and Growth Nodes.</td>
</tr>
<tr>
<td>B. Advocate for and develop a realistic and sustainable incentive policy for New Hanover County.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
</tbody>
</table>
| 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.

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

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
</table>
| 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.**

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Work with CFPUA on a targeted long range plan for water and sewer infrastructure.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
</tbody>
</table>
| 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.**

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Implement a program to identify and dispose of vacant or abandoned buildings that cannot be redeveloped.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
</tbody>
</table>
| 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.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>VI.A.2 Encourage the development of public spaces in mixed use developments through public, private partnerships.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>VI.A.4 Consider including Form Based Code elements in development regulations to enhance or create community focal points.</td>
</tr>
<tr>
<td>B. Consider creating a strong place-based economic development strategy.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>C. Make a case for sustainable funding sources to improve the County's economic development infrastructure and identify opportunities to leverage the funds effectively.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>D. Encourage conservation and enhancement of the unique environment, character and history of the county.</td>
<td>VI.D.1 Update New Hanover County inventory of historic places.</td>
</tr>
<tr>
<td></td>
<td>VI.D.2 Encourage preservation and conservation of historic sites identified in the county's historic sites survey.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Create and promote a network of greenways, blueways, and trails highlighting environmental assets.</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>VII.A.2 Provide for the protection and development of public shorefront and boat access areas.</td>
</tr>
<tr>
<td>B. Coordinate and partner with various agencies to develop future public water access points.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>C. Revitalize waterfront parks and public spaces to encourage opportunities for formal and informal social gatherings.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>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.</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td>• 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</td>
</tr>
<tr>
<td></td>
<td>• 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</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>VII.D.2 Develop guidelines and standards for community boating facilities and other water dependent uses through updated ordinances.</td>
</tr>
</tbody>
</table>

(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.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
</table>
| 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.**

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
</table>
| 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.*

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
</table>
| 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.*

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Allow developments to have urban farms to satisfy open space requirements.</td>
<td>XI.A.1 Incentivize the inclusion of urban farms and community gardens as amenities or open space in development proposals.</td>
</tr>
<tr>
<td>B. Encourage voluntary preservation of agricultural land.</td>
<td>XI.B.1 Support voluntary preservation of agricultural lands in the portions of the County where in demand.</td>
</tr>
</tbody>
</table>

**Goal XII: Link major natural habitats.**

*Desired Outcome: Connected open space and recreational opportunities that promotes biodiversity and provides continuity for wildlife through corridors.*

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify and prioritize natural areas for acquisition, preservation, and conservation to promote linkage opportunities.</td>
<td>XII.A.1 Encourage the provision of open space that protects our natural environment and wildlife habitats, and provides educational and recreational opportunities.</td>
</tr>
<tr>
<td>B. Consider developing a conservation land acquisition strategy.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>C. Review and update incentives for development to dedicate land and or easements to achieve habitat linkages.</td>
<td>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.</td>
</tr>
</tbody>
</table>
**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.*

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Continue to enhance a regional water quality program to include ocean, river and estuarine water quality monitoring in cooperation with UNCW and others.</td>
<td><strong>XIII.A.1</strong> 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.</td>
</tr>
<tr>
<td>B. Continue to identify watershed specific indicators of water quality degradation, establish baseline measures, and establish watershed development practices to achieve goals.</td>
<td><strong>XIII.B.1</strong> 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:</td>
</tr>
<tr>
<td>C. Consider establishing water quality improvement goals for the County.</td>
<td><em>Guidelines are not part of this strategy.</em></td>
</tr>
<tr>
<td>D. Identify and prioritize water quality improvement projects, including wetland and stream restorations, which will improve water quality.</td>
<td><em>Guidelines are not part of this strategy.</em></td>
</tr>
<tr>
<td>E. Identify and pursue funding sources for priority projects.</td>
<td><em>Guidelines are not part of this strategy.</em></td>
</tr>
<tr>
<td>F. Explore the value and benefits of reestablishing the Watershed Management Advisory Board.</td>
<td><em>Guidelines are not part of this strategy.</em></td>
</tr>
<tr>
<td>G. Continue to develop drainage systems and design standards that reflect the natural carrying capacity of the watershed.</td>
<td><strong>XIII.G.1</strong> Encourage stormwater management systems that mimic the predevelopment hydrology of the site. <strong>XIII.G.2</strong> Continue to ensure drainage from land use activities has rate of flow and volume characteristics as near to predevelopment conditions as possible.</td>
</tr>
<tr>
<td>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.</td>
<td><strong>XIII.H.1</strong> Encourage the retention, acquisition, and management of natural vegetative buffers to preserve, maintain, and protect water quality.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
</tr>
<tr>
<td>I.</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>J.</td>
<td>Continue to develop and update educational and other strategies to deal with point and non-point source impacts on water quality.</td>
</tr>
<tr>
<td></td>
<td>XIII.J.1 Encourage subdivision design that protects and improves water quality.</td>
</tr>
<tr>
<td>K.</td>
<td>Identify, evaluate, and prioritize an inventory of retrofit opportunities to reduce water quality impacts from stormwater runoff on receiving waters.</td>
</tr>
<tr>
<td></td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>L.</td>
<td>Identify water specific sources of pollutants to help direct protection and improvement measures.</td>
</tr>
<tr>
<td></td>
<td>XIII.L.1 Protect surface water quality by prohibiting new and eliminating existing collection systems that directly discharge storm water to surface waters.</td>
</tr>
<tr>
<td></td>
<td>XIII.L.2 Ensure that stormwater runoff from roadways does not directly discharge to surface waters.</td>
</tr>
<tr>
<td>M.</td>
<td>Promote expansion of water and sewer system to protect and enhance water quality.</td>
</tr>
<tr>
<td></td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>N.</td>
<td>Consider establishing a groundwater and aquifer protection ordinance.</td>
</tr>
<tr>
<td></td>
<td>XIII.N.1 Explore methods to protect groundwater aquifers.</td>
</tr>
<tr>
<td></td>
<td>XIII.N.2 Research and develop appropriate performance metrics for uses that may have adverse impacts on ground water aquifers.</td>
</tr>
<tr>
<td>O.</td>
<td>Consider removing barriers in codes/ordinances that hinder and prohibit low impact development.</td>
</tr>
<tr>
<td></td>
<td>XIII.O.1 Encourage low impact development and other best management practices.</td>
</tr>
</tbody>
</table>
**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.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
</table>
| 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.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
</table>
| 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.*

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Encourage best practices and design strategies in the built environment to help reduce crime.</td>
<td>XVI.A.1 Encourage best management practices for reducing crime such as Crime Prevention Through Environmental Design, Firewise, etc.</td>
</tr>
<tr>
<td>B. Encourage a walkable community that creates more human interaction between neighbors (eyes on the street/social space).</td>
<td>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.</td>
</tr>
</tbody>
</table>

#### 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.*

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Work with private sector and other regional jurisdictions to implement a countywide recycling program including construction demolition debris and consumer product packaging material.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>B. Work with private sector entities to identify recycling and other innovative strategies to divert material from the landfill. (Composting, gasification, anaerobic digestion, etc.)</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>C. Encourage adaptive reuse of building to limit construction and demolition waste production.</td>
<td>XVII.C.1 Encourage adaptive reuse for vacant or dilapidated structures and sites rather than demolition when practical or fiscally responsible.</td>
</tr>
<tr>
<td>D. Encourage consumer based responsibilities for waste reduction, recycling, and reuse.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
</tbody>
</table>
### Goal XVIII: Increase physical activity and promote healthy, active lifestyles.

**Desired Outcome:** A built environment that encourages active lifestyles and increased health through walking and biking.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Encourage a mixture of uses in developments that allows individuals to walk rather than rely upon vehicles.</td>
<td>XVIII.A.1 Provide sidewalks and/or multi-purpose paths within development projects.</td>
</tr>
<tr>
<td></td>
<td>XVIII.A.2 Encourage the inclusion of areas for physical activity in the design of residential open space areas.</td>
</tr>
<tr>
<td>B. Encourage siting of schools into the community allowing for students to walk or bike to school, while considering traffic impacts.</td>
<td>XVIII.B.1 Provide sidewalks or multiuse paths within close proximity of schools and other community facilities.</td>
</tr>
<tr>
<td>C. Connect walkways, parking lots, greenways, and developments to encourage pedestrian activity.</td>
<td>XVIII.C.1 Encourage dedication or provision of easements for multi-use paths consistent with the Greenway Master Plan and other adopted plans.</td>
</tr>
<tr>
<td></td>
<td>XVIII.C.2 Allow payment in lieu for recreational facilities.</td>
</tr>
</tbody>
</table>

### Goal XIX: Increase access to affordable and convenient healthy foods.

**Desired Outcome:** Increased community health.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Ensure zoning and land use regulations encourage and allow for community gardens and urban agriculture.</td>
<td>XIX.A.1 Allow agricultural uses in open space areas.</td>
</tr>
<tr>
<td>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.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Encourage public spaces and health related facilities (Gyms, pharmacies, physician offices, etc.) to be smoke free.</td>
<td>Guidelines are not part of this strategy.</td>
</tr>
<tr>
<td>B. Promote awareness of physical and mental disabilities and disease prevention.</td>
<td>XX.B.1 Sidewalks, pedestrian amenities, and residential common areas should be designed to be inclusive of persons with limited mobility.</td>
</tr>
</tbody>
</table>
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.*

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Implementation Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Promote compact development, mixture of uses, and infill that minimizes trips and vehicle miles traveled.</td>
<td><strong>XXI.A.1</strong> 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. <strong>XXI.A.2</strong> 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.</td>
</tr>
<tr>
<td>B. Encourage development patterns and neighborhood street designs that are conducive to pedestrian and bicycle use.</td>
<td><strong>XXI.B.1</strong> Encourage “complete street” design to accommodate all users and encourage alternative modes of travel. <strong>XXI.B.2</strong> Promote street, sidewalk, and greenway designs that support and enhance access between neighborhoods and to neighborhood-based commercial developments.</td>
</tr>
<tr>
<td>C. Discourage open burning of yard waste and trash in densely populated areas.</td>
<td><strong>XXI.C.1</strong> Discourage open burning in densely populated areas.</td>
</tr>
<tr>
<td>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.</td>
<td><strong>Guidelines are not part of this strategy.</strong></td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

## Chapter 1 Appendix

### Chapter 1 Resolution

- 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 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
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

<table>
<thead>
<tr>
<th>Principles</th>
<th>Livable Built Environment (11)</th>
<th>Harmony with Nature (10)</th>
<th>Resilient Economy (7)</th>
<th>Interwoven Equity (9)</th>
<th>Healthy Community (7)</th>
<th>Responsible Regionalism (9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice</td>
<td>6. Infill</td>
<td>17. Climate</td>
<td>27.</td>
<td>34.</td>
<td>43. Healthy</td>
<td>50. Local</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
<td>--------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Practice</td>
<td>8. Accessible public facilities &amp; spaces</td>
<td>19. Solid waste reduction</td>
<td>36. Protect vulnerable neighborhood from natural hazards</td>
<td>52. Regional development visions recognized in local plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice</td>
<td>10. Green building design</td>
<td>21. Stream, watershed, and floodplain protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice</td>
<td>11. Hazard zone avoidance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

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

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

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

### 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:**


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 to 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](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](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](http://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 measurable 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.

<table>
<thead>
<tr>
<th>Practice</th>
<th>Concept Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restore, connect, and protect natural habitats and sensitive lands</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for the provision and protection of green infrastructure</td>
<td>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.</td>
</tr>
<tr>
<td>Encourage development that respects natural topography</td>
<td>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.</td>
</tr>
<tr>
<td>Enact policies to reduce carbon footprints</td>
<td>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.</td>
</tr>
<tr>
<td>Comply with state and local air quality standards</td>
<td>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).</td>
</tr>
<tr>
<td>Encourage climate change adaptation</td>
<td>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.</td>
</tr>
<tr>
<td>Provide for renewable energy use</td>
<td>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.</td>
</tr>
<tr>
<td>Provide for solid waste reduction</td>
<td>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.</td>
</tr>
<tr>
<td>Encourage water conservation and activities and behaviors that support a lasting water supply</td>
<td>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.</td>
</tr>
<tr>
<td>Protect and manage streams, watersheds, and floodplains</td>
<td>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.</td>
</tr>
<tr>
<td>Practice</td>
<td>Concept Definition</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
</tr>
<tr>
<td><strong>Reduce exposure to toxins and pollutants in the natural and built environment</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Plan for increased public safety through reduction of crime and injuries</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Plan for the mitigation and redevelopment of brownfields for productive uses</strong></td>
<td>A brownfield is defined by the federal government as any abandoned, idled, or underused 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.</td>
</tr>
<tr>
<td><strong>Plan for physical activity and healthy lifestyles</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Provide accessible parks, recreation facilities, greenways and open space near all neighborhoods</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Plan for access to healthy, locally-grown foods for all neighborhoods</strong></td>
<td>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 &quot;local&quot; geographic range, this can encompass sources from backyards and community gardens to farms within the region or state.</td>
</tr>
<tr>
<td><strong>Plan for equitable access to health care providers, schools, public safety facilities, and arts and cultural facilities</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
# Interwoven Equity

<table>
<thead>
<tr>
<th>Practice</th>
<th>Concept Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide a range of housing types</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for jobs/housing balance</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for the physical, environmental, and economic improvement of at-risk, distressed, and disadvantaged neighborhoods</td>
<td>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).</td>
</tr>
<tr>
<td>Plan for improved health and safety for at-risk populations</td>
<td>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.</td>
</tr>
<tr>
<td>Provide accessible and quality public services, facilities, and health care to minority and low-income neighborhoods</td>
<td>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.</td>
</tr>
<tr>
<td>Upgrade infrastructure and facilities in older and substandard areas.</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for workforce</td>
<td>Workforce diversity is characterized by the employment of a wide variety of people in</td>
</tr>
<tr>
<td>diversity and development.</td>
<td>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.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Protect vulnerable populations from natural hazards</td>
<td>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.</td>
</tr>
<tr>
<td>Promote environmental justice</td>
<td>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.</td>
</tr>
<tr>
<td>Practice</td>
<td>Concept Definition</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Plan for multi-modal transportation</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for transit oriented development</td>
<td>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.</td>
</tr>
<tr>
<td>Coordinate regional transportation investments with job clusters</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for the provision of complete streets serving multiple functions</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for mixed land-use patterns in walkable and bikeable configurations</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for infill development</td>
<td>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.</td>
</tr>
<tr>
<td>Encourage design standards appropriate to the community context.</td>
<td>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.</td>
</tr>
<tr>
<td>Provide accessible public facilities and spaces</td>
<td>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.</td>
</tr>
<tr>
<td>Conserve and reuse historic resources</td>
<td>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.</td>
</tr>
<tr>
<td>Implement green building design and energy conservation.</td>
<td>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.</td>
</tr>
<tr>
<td>Discourage development in hazard zones</td>
<td>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.</td>
</tr>
<tr>
<td>Practice</td>
<td>Concept Definition</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Provide the physical capacity for economic growth</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for a balanced land-use mix for fiscal sustainability</td>
<td>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.</td>
</tr>
<tr>
<td>Plan for transportation access to employment centers</td>
<td>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.</td>
</tr>
<tr>
<td>Promote green businesses and jobs</td>
<td>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.</td>
</tr>
<tr>
<td>Encourage community-based economic development</td>
<td>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.</td>
</tr>
<tr>
<td>Provide and maintain infrastructure capacity in line with growth or decline demands</td>
<td>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).</td>
</tr>
<tr>
<td>Plan for post-disaster economic recovery</td>
<td>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.</td>
</tr>
<tr>
<td>Practice</td>
<td>Concept Definition</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Coordinate local land use plans with regional transportation investments</td>
<td>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.</td>
</tr>
<tr>
<td>Coordinate local and regional housing plan goals</td>
<td>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.</td>
</tr>
<tr>
<td>Coordinate local open space plans with regional green infrastructure plans</td>
<td>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.</td>
</tr>
<tr>
<td>Delineate designated growth areas that are served by transit</td>
<td>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.</td>
</tr>
<tr>
<td>Promote regional cooperation and sharing of resources</td>
<td>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.</td>
</tr>
<tr>
<td>Enhance connections between local activity centers and regional destinations.</td>
<td>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.</td>
</tr>
<tr>
<td>Coordinate local and regional population and economic projections</td>
<td>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.</td>
</tr>
<tr>
<td>Include regional development visions and plans in local</td>
<td>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</td>
</tr>
<tr>
<td>planning scenarios</td>
<td>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.</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Encourage consistency between local capital improvement programs and regional infrastructure priorities</td>
<td>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.</td>
</tr>
<tr>
<td>Process</td>
<td>Practice</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Authentic Participation</td>
<td>Utilize participatory techniques designed to include stakeholders, including representatives of disadvantaged and minority communities, at all stages of the planning process.</td>
</tr>
<tr>
<td>Authentic Participation</td>
<td>Seek diverse participation across generations, ethnic groups, and income ranges.</td>
</tr>
<tr>
<td>Authentic Participation</td>
<td>Promote leadership development in disadvantaged communities.</td>
</tr>
<tr>
<td>Authentic Participation</td>
<td>Provide ongoing and understandable information on planning issues, events, and outcomes for all participants, including non-English speakers.</td>
</tr>
<tr>
<td>Authentic Participation</td>
<td>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.</td>
</tr>
<tr>
<td>Authentic Participation</td>
<td>Plan to involve the public during plan implementation, updating, and amendment.</td>
</tr>
<tr>
<td>Accountable Implementation</td>
<td>Set priorities for plan-related capital improvements and align plan goals with community capital improvement programs.</td>
</tr>
<tr>
<td>Accountable Implementation</td>
<td>Link plan objectives with community’s annual budgeting process and categories.</td>
</tr>
<tr>
<td>Accountable Implementation</td>
<td>Coordinate plan implementation responsibilities and schedules among internal and external agencies and organizations.</td>
</tr>
<tr>
<td>Accountable Implementation</td>
<td>Commit necessary public and private funds for implementation of priority plan items.</td>
</tr>
<tr>
<td>Accountable Implementation</td>
<td>Use benchmarks, indicators, targets, and other metrics to monitor progress in implementing plan goals and objectives.</td>
</tr>
<tr>
<td>Accountable Implementation</td>
<td>Adjust plan goals, strategies, and priorities over time if conditions change or targets are not met.</td>
</tr>
<tr>
<td>Accountable Implementation</td>
<td>Regularly report plan implementation status and progress to the public and elected officials following adoption of the plan.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Criterion</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Content</td>
<td>Strengths, weaknesses, opportunities, and threats: identification of the major issues facing the community, the impacts of forecasted changes, and their planning implications.</td>
</tr>
<tr>
<td>Content</td>
<td>Fact base: evidence-based description and analysis of current and future conditions, in terms of the community’s land, development environment, economy, and population.</td>
</tr>
<tr>
<td>Content</td>
<td>Future vision: statement of the desired future state of the community in terms of its physical, social, and economic conditions.</td>
</tr>
<tr>
<td>Content</td>
<td>Goals: statements of community aspirations for achievement of its vision to be sought through public programs, investments, and initiatives.</td>
</tr>
<tr>
<td>Content</td>
<td>Policies: specification of principles to guide public and private actions to achieve goals.</td>
</tr>
<tr>
<td>Content</td>
<td>Objectives: measurable targets resulting from community action in carrying out the plan.</td>
</tr>
<tr>
<td>Content</td>
<td>Action agenda: commitments to implement the plan, including priorities, schedules, responsibilities, and funding sources.</td>
</tr>
<tr>
<td>Content</td>
<td>Monitoring and evaluation: provisions for measuring, and tracking plan outcomes, and responding to changes in community conditions, issues, and needs.</td>
</tr>
<tr>
<td>Content</td>
<td>Maps, tables, graphics, and summaries to communicate to the reader the information, intents, and relationships in the plan.</td>
</tr>
<tr>
<td>Content</td>
<td>Strengths, weaknesses, opportunities, and threats: identification of the major issues facing the community, the impacts of forecasted changes, and their planning implications.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Comprehensive: covers a wide range of topics, such as land use, transportation, housing, natural resources, economic development, community facilities, and natural hazards.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>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.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Innovative: containing creative strategies for dealing with community change, uncertainty, and development needs.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Persuasive: communicating key principles and ideas in a readable and attractive manner in order to inspire, inform, and engage readers.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Consistent: framing proposals as sets of mutually reinforcing actions in a systems approach linking the plan with development regulations and public programs.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Coordinated: integrating vertically with plans of federal, state, and regional organizations and horizontally with plans and forecasts of adjacent jurisdictions.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Compliant: meeting requirements of planning mandates and laws concerning preparing, adopting, and implementing comprehensive plans.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Transparent: The rationale for all goals, objectives, policies, actions, and key plan map(s) are transparent and explicit.</td>
</tr>
</tbody>
</table>
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 2.10

Community Development Block Grant

Data Source:
Community Development Block Grant Sites
New Hanover County Planning Department, 2014
Map 2.20

Proximity to Medical Facilities

Distance to Medical Facilities

- Quarter Mile
- Half Mile
- One Mile

Data Source:
Proximity to Medical Facilities
Holland Consulting Planners
Health Gaps Analysis Report, 2014
Map 2.21

Proximity to Dental Facilities

Distance to Dental Facilities
- Quarter Mile
- Half Mile
- One Mile

Data Source:
Proximity to Dental Facilities
Holland Consulting Planners
Health Gaps Analysis Report, 2014
Map 2.22

Proximity to Grocery Stores

Distance to Grocery Stores
- Quarter Mile
- Half Mile
- One Mile

Data Source:
Proximity to Grocery Stores
Holland Consulting Planners
Health Gaps Analysis Report, 2014
Map 2.23

Proximity to Active Transportation

Distance to Active Transportation

- Quarter Mile
- Half Mile
- One Mile

Data Source:
Proximity to Active Transportation
Holland Consulting Planners
Health Gaps Analysis Report, 2014
Map 2.24

Proximity to Physical Activity

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
Map 2.30

FEMA Flood Zones

Flood Zones
- AE
- AE Floodway
- VE
- 2% Annual Chance

Data Source:
Special Flood Hazard Areas
North Carolina Floodplain Mapping Program, 2006

Appendix | 60
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
Policy Recommendation #2:

Increase access to physical and nutrient-rich foods.

Policy Recommendation #3:

Promote disease prevention and mental health wellness.
Appendix | 69

Plan NH

- Strengthen partnerships: develop partnerships between businesses, government, and community organizations to support economic development and workforce training.
- Implement policies and programs to attract and retain businesses, including incentives for job creation and expansion.
- Expand public transportation options to improve access to jobs and services.
- Support community development projects that enhance the environment and quality of life for residents.

Policy Recommendation #4

Year-long festival: organize a year-long festival to promote tourism and local businesses.
- Provide a variety of entertainment options, such as live music, food trucks, and cultural events.
- Collaborate with local businesses to create unique experiences for visitors.

Policy Recommendation #5

Encourage workforce development and increase workforce housing.

Policy Recommendation #6

Provide a range of housing options.

Community engagement:

- Participate in community events and meetings to gather input and feedback.
- Establish a community advisory committee to provide ongoing oversight and support.
- Encourage community members to get involved and take ownership of the plan.

Parental involvement:

- Involve parents in the decision-making process, particularly in matters related to education and child care.
- Provide resources and support to help parents access services and opportunities.

Youth engagement:

- Engage youth in the planning process, particularly in matters related to recreation and community events.
- Provide opportunities for youth to participate in leadership roles and decision-making.

Involvement:

- Engage stakeholders in the planning process, particularly in matters related to economic development and workforce training.
- Provide opportunities for stakeholders to provide input and feedback.

Implementation:

- Develop an implementation plan that outlines specific actions and timelines.
- Establish a governance structure to ensure accountability and oversight.
- Secure funding and resources to support the implementation of the plan.

Monitoring:

- Establish key performance indicators to track progress and effectiveness.
- Conduct regular reviews and evaluations to assess progress and make adjustments as needed.
- Ensure that the plan is adaptable and responsive to changing circumstances.

Sustainability:

- Ensure that the plan is designed to be sustainable and resilient over the long term.
- Foster partnerships and collaborations to support ongoing investment and support.
- Promote a culture of innovation and continuous improvement.
Plan NH

Connecting Business By providing public with
information on key developments in the region

Policy Recommendation #1:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #2:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #3:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #4:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #5:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #6:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #7:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #8:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #9:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #10:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #11:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #12:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #13:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #14:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #15:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #16:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #17:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #18:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #19:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #20:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #21:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #22:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #23:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #24:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #25:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #26:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #27:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #28:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #29:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #30:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #31:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #32:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #33:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #34:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #35:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #36:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #37:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #38:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #39:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #40:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #41:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #42:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #43:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #44:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #45:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #46:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #47:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #48:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #49:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #50:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #51:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #52:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #53:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #54:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #55:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #56:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #57:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #58:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #59:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #60:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #61:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #62:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #63:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #64:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #65:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #66:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #67:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #68:
Support local food systems.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #69:
Support local and small business success and
innovation.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #70:
Develop local and state partnerships.

Background:
- Improved business by providing public with
  information on key developments in the region

Policy Recommendation #71:
Develop tourism.

Background:
- Improved business by providing public with
  information on key developments in the region
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 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 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, evaluating, and prioritizing 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.
Less Trash on Ground!

MORE TREES
We need more trees!

"MORp TREES!"
Clean Air

More Trees

More Self-Confidence

More Eco-Friendly Community

Less Hassle

Friendly

Non-Friendly

Libre
I want a more ecofriendly environment!

No Littering

Littering is not good for our ecosystem and environment.
Do not litter!

Save our trees.

Animals eat the trash and die!

TRASH Save our animals!

Appendix | 85
No trash.
Taller buildings can help the environment because they will use less trees and we should plant trees.
End world hunger
81 for 2 apples
Save the animals
Save endangered animals
Recycle
In 15 years I want the floor fixed and clean, and the kitchen clean, too.
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 so it is very clean.

End Cancer
More older kit parks
More fields for sports

Bike lanes/sidewalk in neighborhoods

More

showcase
I think that in some intersections we leave wires, I think we should have metal holding the street lights.

I think that our all food in the fridge is not organic food that is locally grown.

I believe more weeds could be done to make the area more beautiful.

I believe the greenhouse should be a different color.

I believe the baseball field should have a separate field for little kids.
Less murder or crime. I get more officers on patrol.

To do this we will need more officers.

A more expensive educational system.
We should start learning more science, and start in first or second grade.
Doing this can open up spots for learning different languages, etc.
New Hanover County 2015

- More soccer fields with good drainage and lights.
  - Due to popularity in the park and lack of quality fields.
- More housing for homeless people or shelters.
  - They could take rundown (candy) warehouses or hotels and convert and redo them.
- Parks should all have equipment so more kids can have fun and exercise.
  - Add swings at the same time.
  - Due to the lack of not having swings in our park.
There could be more places for people to run and bike.

There could be more parks for kids to play.

There could be more dog parks.

There could be a waterpark.

There could be more water parks.

I want there to be more soccer fields. I also want the soccer fields to have lights so you can play at night.

More education for kids so people have after school classes for whoever you are struggling with in school.

More sidewalks.

More trees instead of cutting them down.

Reading books.

History.

Math.
House

Slide

Pool

No Electronics

Learning exciting fun ways to learn more outside

No Electronics having fun
More exciting fractions
Less accidents: There are less accidents. More parks, less traffic. Military base. More business.


- Flying Cars
- Underground Subway
- Less Pollution
- Amusement Parks
- Scheduled transportation routes
- Less Traffic
- More Sports Leagues
- More Field Trips
- Bigger roads
- Bigger airports
- More stores
- Fewer cars
- More ways to get around
- More playgrounds
- More trees
- More zoos
- Less violence
- Less sharing schools
- Better economy
- Exploring alternative fuels
- Less density
I think sidewalks should always be within 1-2 mile radius from our schools.
NO MORE HOUSES! WE NEED TREE HOUSES!

I'd like to be able to ride my 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.
Construction for cracked roads
More Targets!

- Military Base
- 9/11
- Flying cars
- Less factories
- No littering

Home Depot

Target

Conservancy: a movie theater in nineteen Junction.

Less drinking.

Less disc golf fields.

A place to fish.

No littering.

Another cotton gin.

Another pet store.

Another convenience store.

A second Walmart.

A mall.

Buy more, less everywhere.

We need to do something about all the litter.

Less smoking.

We need to do something about all the litter.

Less cars.

A better zoo. A lot of animals are dying.

An outlet mall.

A turning lane into an empty... er... you know.

At Target and the mall.

A flying dog.

Higher flying bugs.

Less cough.

Not smoking.

Less trash.

No more littering.

People flush up their toilets with anything.

Every 5 blocks there is a playground.

A mall in nineteen Junction.

Playground near money junction.
I think that in the future teachers should get paid more so they can afford 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.
Maya

- Smoking is illegal
- A better zoo, bigger needs more animals, the animals need at least 1 or more from their own species
- More ballet doughnut shops
- More conventibles
- 4-5 times a year we should have Earth Day
- 200 helicopter rides! (They have this in Myrtle Beach)
- A boardway with carnival rides, shops, arcades, and have Dip N Dot for once
- More public playgrounds
- More public swimming pools/neighborhood pools
- Less grease at McDonald's
- Less pollution to air
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 litter 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 on 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

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BASE</td>
<td>FORECAST 1</td>
</tr>
<tr>
<td>New Hanover County</td>
<td>202,667</td>
<td>249,026</td>
</tr>
<tr>
<td>Unincorporated</td>
<td>85,973</td>
<td>105,639</td>
</tr>
<tr>
<td>Wilmington</td>
<td>106,476</td>
<td>130,832</td>
</tr>
<tr>
<td>Other Jurisdictions</td>
<td>10,218</td>
<td>12,555</td>
</tr>
</tbody>
</table>

## EMPLOYMENT

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BASE</td>
<td>FORECAST 1</td>
</tr>
<tr>
<td>New Hanover County</td>
<td>93,274</td>
<td>111,291</td>
</tr>
<tr>
<td>Unincorporated</td>
<td>18,830</td>
<td>27,823</td>
</tr>
<tr>
<td>Wilmington</td>
<td>71,086</td>
<td>77,904</td>
</tr>
<tr>
<td>Other Jurisdictions</td>
<td>3,358</td>
<td>5,565</td>
</tr>
</tbody>
</table>

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 11\(^{th}\) 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 an 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. These 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

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Source</th>
<th>Date</th>
<th>Map Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Wilmington Annexation</td>
<td>New Hanover County</td>
<td>2014</td>
<td>2.1</td>
</tr>
<tr>
<td>Concentration of Elderly Population</td>
<td>Holland Consulting planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.2</td>
</tr>
<tr>
<td>National Land Cover Dataset</td>
<td>Multi-Resolution Land Characteristics Consortium</td>
<td>2011</td>
<td>2.3</td>
</tr>
<tr>
<td>National Land Cover Dataset</td>
<td>Multi-Resolution Land Characteristics Consortium</td>
<td>2011</td>
<td>2.4</td>
</tr>
<tr>
<td>Conservation Lands</td>
<td>North Carolina Department of Environmental Quality &amp; New Hanover County</td>
<td>2014</td>
<td>2.5</td>
</tr>
<tr>
<td>Existing Land Use</td>
<td>New Hanover County Tax Department</td>
<td>2014</td>
<td>2.6</td>
</tr>
<tr>
<td>Zoning Districts</td>
<td>New Hanover County Planning Department</td>
<td>2014</td>
<td>2.7</td>
</tr>
<tr>
<td>Urban Services Boundary</td>
<td>New Hanover County Planning Department</td>
<td>2006</td>
<td>2.8</td>
</tr>
<tr>
<td>Coastal Area Management Act Land Classifications</td>
<td>New Hanover County Planning Department</td>
<td>2006</td>
<td>2.9</td>
</tr>
<tr>
<td>Community Development Block Grant Sites</td>
<td>New Hanover County Planning Department</td>
<td>2014</td>
<td>2.10</td>
</tr>
<tr>
<td>Road Classifications</td>
<td>North Carolina Department of Transportation</td>
<td>2014</td>
<td>2.11</td>
</tr>
<tr>
<td>Bicycle &amp; Pedestrian Facilities</td>
<td>NHC Planning &amp; Wilmington Urban Area Metropolitan Planning Organization</td>
<td>2014</td>
<td>2.12</td>
</tr>
<tr>
<td>Railroad Lines</td>
<td>New Hanover County GIS</td>
<td>2014</td>
<td>2.13</td>
</tr>
<tr>
<td>Cape Fear Public Utility Authority Water and Sewer Service Areas</td>
<td>Cape Fear Public Utility Authority</td>
<td>2014</td>
<td>2.14 &amp; 2.15</td>
</tr>
<tr>
<td>Telecommunication Sites</td>
<td>Federal Communications Commission</td>
<td>2014</td>
<td>2.16</td>
</tr>
<tr>
<td>Parks and Boat Access</td>
<td>New Hanover County Parks and Gardens Department</td>
<td>2014</td>
<td>2.17</td>
</tr>
<tr>
<td>Proximity to Physical Activity Centers</td>
<td>Holland Consulting planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.18</td>
</tr>
<tr>
<td>Chronic Disease Vulnerability</td>
<td>Holland Consulting planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.19</td>
</tr>
<tr>
<td>Category</td>
<td>Source</td>
<td>Date</td>
<td>Page</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------------------------------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Proximity to Medical Facilities</td>
<td>Holland Consulting Planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.20</td>
</tr>
<tr>
<td>Proximity to Dental Facilities</td>
<td>Holland Consulting Planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.21</td>
</tr>
<tr>
<td>Proximity to Grocery Stores</td>
<td>Holland Consulting Planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.22</td>
</tr>
<tr>
<td>Proximity to Active Transportation</td>
<td>Holland Consulting Planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.23</td>
</tr>
<tr>
<td>Proximity to Physical Activity</td>
<td>Holland Consulting Planners/Health Gaps Analysis Report</td>
<td>2014</td>
<td>2.24</td>
</tr>
<tr>
<td>Water Bodies</td>
<td>United States Geological Survey</td>
<td>2014</td>
<td>2.25</td>
</tr>
<tr>
<td>Watersheds</td>
<td>City of Wilmington Stormwater Management Department</td>
<td>2014</td>
<td>2.26</td>
</tr>
<tr>
<td>Shellfishing Areas</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>2.27</td>
</tr>
<tr>
<td>Water Quality</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>2.28</td>
</tr>
<tr>
<td>Fishing Nursery Areas</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>2.29</td>
</tr>
<tr>
<td>Special Flood Hazard Areas</td>
<td>North Carolina Floodplain Mapping Program</td>
<td>2006</td>
<td>2.30</td>
</tr>
<tr>
<td>Soil Classifications</td>
<td>United States Department of Agriculture</td>
<td>1980</td>
<td>2.31</td>
</tr>
<tr>
<td>Agricultural Lands</td>
<td>United States Department of Agriculture</td>
<td>1980</td>
<td>2.32</td>
</tr>
<tr>
<td>Biodiversity/Wildlife Habitat Conservation</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>2.33</td>
</tr>
<tr>
<td>Significant Natural Heritage Areas</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>2.34</td>
</tr>
<tr>
<td>Future Land Use Placetypes</td>
<td>New Hanover County Planning Department</td>
<td>2015</td>
<td>Ch 4. Pg 11</td>
</tr>
<tr>
<td>Special Flood Hazard Areas</td>
<td>North Carolina Floodplain Mapping Program</td>
<td>2006</td>
<td>Ch 4. Pg 25</td>
</tr>
<tr>
<td>Public Coastal Waters (AEC)</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>Ch 4. Pg 26</td>
</tr>
<tr>
<td>Public Inland Waters (AEC)</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>Ch 4. Pg 27</td>
</tr>
<tr>
<td>Significant Natural Heritage Areas</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2014</td>
<td>Ch 4. Pg 28</td>
</tr>
<tr>
<td>Outstanding Resource Waters</td>
<td>North Carolina Department of Environmental Quality</td>
<td>2007</td>
<td>Ch 4. Pg 29</td>
</tr>
</tbody>
</table>
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 Plan NHC)*
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:
   b. Wrightsboro (1991)
   d. Middle Sound (1987)
   e. Seabreeze (1988)
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
21. Pages Creek Watershed Study (1998)
23. Master Plan for Parks, Recreation and Open Space (2006) *(In process of updating)*
27. Wilmington International Airport Height Restrictions Ordinance (2003) *(Implementation Tool)*
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*
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**

**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:**

- 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.
  - Chapters 1, 3, 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.
### Environmental Conditions

**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
  - Clean Water Act 303 (d) List
  - Other comparable data
  - 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
  - Areas experiencing chronic wastewater treatment malfunctions
  - Areas with water quality or public health problems related to non-point source pollution
  - Areas subject to recurrent flooding, storm surges and high winds
  - Areas experiencing significant shoreline erosion as evidenced by the presence of threatened structures or public facilities
  - 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
  - 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.

- **Map of historic, cultural, and scenic areas designated by a state or federal agency or by the local government**
- **Descriptions of the historic, cultural and scenic areas**

**Map reference(s):**

- N/A
- Ch 2 pg(s) 55-57
- Ch 2 pg(s) 59-61
- See the New Hanover County Hazard Mitigation Plan
- Ch 2 pg(s) 62 & Ch 4 pg(s) 24
- Ch 2 pg(s) 11, 24

### Existing Land Use and Development

**MAP of existing land use patterns**

- Description of the existing land use patterns
- Estimates of the land area allocated to each land use category
- Characteristics of each land use category

**MAP of historic, cultural, and scenic areas designated by a state or federal agency or by the local government**

- Descriptions of the historic, cultural and scenic areas

**MAP reference(s):**

- Ch 2 pg(s) 12-18
- Ch 2 pg(s) 15
- Ch 2 pg(s) 15
- Ch 2 Maps 2.3, 2.4, 2.5, 2.6
- Ch 2 Map 2.6 & Figure 2.23
- Ch 2 Map 2.6 & Figure 2.23
- Ch 2 pg(s) 50
- For a more complete list of historic structures see the New Hanover County Historical Structures Brochure
- Ch 2 pg(s) 42
- For more information see CFPUAs updated long range plan.

### 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
  - Existing capacity
  - Documented overflows, bypasses or other problems that may degrade water quality or constitute a threat to public health as documented by the DWR
  - Future needs based on population projections
  - MAP of existing and planned service areas

- Description of existing public and private wastewater systems to include:
  - Existing condition
  - Existing capacity
  - Documented overflows, bypasses or other problems that may degrade water quality or constitute a threat to public health as documented by the DWR
  - Future needs based on population projections
  - MAP of existing and planned service areas

- 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

**MAP reference(s):**

- Ch 2 Maps 2.3, 2.4, 2.5, 2.6
- Ch 2 Map 2.23
- Ch 2 Map 2.23
- Ch 2 pg(s) 50
- Ch 2 Maps 2.14
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 42
- Ch 2 Map 2.14
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 41-42
- Ch 2 pg(s) 42
- Ch 2 Maps 2.12 & 2.13
- N/A
- For more information see CFPUAs updated long range plan.
- For more information see CFPUAs updated long range plan.
- For detailed information on transportation see the Wilmington Urban Area Metropolitan Planning Organizations long range plan: Cape Fear Transportation 2040.

Appendix 156
<table>
<thead>
<tr>
<th>Community Facilities, contd.</th>
<th>Plan Reference(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Description of highway facilities on the current thoroughfare plan or current transportation improvement plan</td>
<td>Market Street Corridor Plan &amp; WMPO CFT 2040</td>
</tr>
<tr>
<td>• Description of the impact of existing transportation facilities on land use patterns</td>
<td>Ch 2 pg(s) 23-27</td>
</tr>
<tr>
<td>• Description of the existing public storm water management system</td>
<td>Ch 2 pg(s) 43</td>
</tr>
<tr>
<td>• Identification of existing drainage problems and water quality issues related to point-source discharges of storm water runoff</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal</th>
<th>Implementation Strategy and Guideline</th>
</tr>
</thead>
</table>

**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
  

- 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:

    • 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.I: VII.I.1, VII.A.2, VII.B, VII.C, VII.D: VII.D.1, 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.I: VII.I.1, VII.A.2, VII.B, VII.C, VII.D: VII.D.1, 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:

- Characterize future land use and development patterns
  
  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, XII pg 13-14, XVII pg 17, XXI pg 18
  
  I.C: I.C.1; III.A: III.A.1, III.A.2; VI.A: VI.A.1, VI.A.2; VII.I: VII.I.1, VII.I.2, VII.D: VII.D.1, VII.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, X.L.A: XI.A.1, XI.A.2, XII.A: XII.A.1, XII.B.XII.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
  

**Infrastructure Carrying Capacity Management Goal:**

Ensure that public infrastructure systems are sized, located, and managed so that 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
  

**Natural Hazard Areas Management Goal:**

Conservate 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: X.L.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
  

**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
<table>
<thead>
<tr>
<th>Plan Policies That:</th>
<th>Goal(s)</th>
<th>Plan Reference(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish strategies and practices to prevent or control nonpoint source pollution</td>
<td>VI pg 7, VII pg 8, X pg 11, XII pg 12</td>
<td>VLA: VI.A.1; VI.A.7; VII.D.1; VII.D.2; X.B.4; X.B.5; X.B.6; XILA: XILA.1; XILA.2; XIII.L.1; XIII.L.2; XHLM: XHLO: XIII.O.1</td>
</tr>
<tr>
<td>Establish strategies and practices to maintain or improve water quality</td>
<td>III pg 5, VII pg 8, X pg 11, XII pg 13-14</td>
<td>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; XILA: XIII.A.1; XHIB: XIII.B.3; XHL.C: XHL.D; XHL.E; XHL.F; XHL.G: XIII.G.1; XHL.H: XIII.K.1; XHL.I: XHL.J.1; XHL.K: XHL.L.1; XHLM: XHLM.1; XHLO: XIII.O.1</td>
</tr>
</tbody>
</table>

Future Land Use Map

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

Goal(s) VI pg 7, VII pg 8, X pg 11, XII pg 13-14

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

Goal(s) VI pg 7, VII pg 8, X pg 11, XII pg 13-14

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.

Tools for Managing Development

- Description of 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

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

Chapter 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

Chapter 5 pg(s) 3.4.6.7.8.9.11.12.13.14.15.16.17.18