



SWANSBORO
FRIENDLY CITY BY THE SEA *North Carolina*

CAMA LAND USE PLAN UPDATE



TOWN ADOPTED: JANUARY 22, 2019
NC DCM ADOPTED: MAY 6, 2019

ACKNOWLEDGMENTS

Many people helped to facilitate the update of the Town's Coastal Area Management Act Land Use Plan Update. In addition to the stakeholders and residents who provided their input, the following people were integral to the process.

MAYOR AND COMMISSIONERS

- » Mayor John Davis
- » Mayor Pro Tem Frank Tursi
- » Commissioner Pat Turner
- » Commissioner Roy Herrick
- » Commissioner Philip Keagy
- » Commissioner Brent Hatlestad

STAFF

- » J. Scott Chase, Town Manager
- » Andrea Correll, Town Planner

STEERING COMMITTEE

- » Mayor John Davis
- » Mayor Pro Tem Frank Tursi
- » Commissioner Pat Turner
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CONSULTANT TEAM

- » Stewart

This land use plan update performed on
behalf of the Town of Swansboro by:



STEWART

ADOPTED: JANUARY 22, 2019

MATRIX OF REQUIRED ELEMENTS

(Note: This new CAMA Land Use Plan update (also known as the “2019 Plan”) supersedes Chapters 5.A, 5.B, 5.C, 5.E, 5.F and 6.E of Swansboro’s CAMA CORE LAND USE PLAN adopted in 2009 and referred to as the “2009 Plan”. Where not otherwise specified, this page references below refer to the 2009 Plan.)

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
(a) Organization of the Plan (Note: This new CAMA Land Use Plan update (also known as the 2019 Plan) supersedes Chapters 5.A, 5.B, 5.C, 5.E, 5.F and 6.E of Swansboro’s CAMA CORE LAND USE PLAN adopted in 2009 and referred to as the “2009 Plan”.)	2019 Plan, page i and ii; Also on 2009 Plan page i and 1
(b) Community Concerns and Aspirations (1)Significant Existing and Emerging Conditions	2019 Plan page 13-31 (Previously 2009 Plan, page 5-9)
(2)Key Issues	2019 Plan page 7-11 (Previously 2009 Plan, page 5-9)
(3)A Community Vision	2019 Plan page 33-35 (Previously 2009 Plan, page 10)
(c) Analysis of Existing and Emerging Conditions (1)Population, Housing, and Economy (A) Population: (i) Permanent population growth trends using data from the two most recent decennial Censuses; (ii) Current permanent and seasonal population estimates; (iii) Key population characteristics; (iv) Age; and (v) Income	2019 Plan page 13-15, 20-21 (Previously 2009 Plan, pages 11-15, 21)
(B) Housing Stock: (i) Estimate of current housing stock, including permanent and seasonal units, tenure, and types of units (single- family, multi-family, and manufactured); and (ii) Building permits issued for single-family, multi-family, and manufactured homes since last plan update	2019 Plan page 20-21 (Previously 2009 Plan, pages 16-20)

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
(C) Local Economy	pages 21-25
(D) Projections	page 25
<p>(2) Natural Systems Analysis</p> <p>(A) Mapping and Analysis of Natural Features</p> <ul style="list-style-type: none"> (i) Areas of Environmental Concern (AECs); (ii) Soil characteristics, including limitations for septic tanks, erodibility, and other factors related to development; (iii) Environmental Management Commission water quality classifications and related use support designations, and Division of Environmental Health shellfish growing areas and water quality conditions; (iv) Flood and other natural hazard areas; (v) Storm surge areas; (vi) Non-coastal wetlands including forested wetlands, shrub-scrub wetlands, and freshwater marshes; (vii) Water supply watersheds or wellhead protection areas; (viii) Primary nursery areas, where mapped; (ix) Environmentally fragile areas; and (x) Additional natural features or conditions identified by the local government. 	<p>2019 Plan page 22-25, 30-31</p> <p>(Previously 2009 Plan, pages 26-51 pages 32-40) pages 41-44 pages 27-28 pages 29-31 pages 37-38</p> <p>page 35 2019 Plan page 30-31, 26-27</p> <p>(Previously 2009 Plan, page 35) page 38</p>
<p>(B) Composite Map of Environmental Conditions:</p> <ul style="list-style-type: none"> (i) Class I (ii) Class II (iii) Class III 	pages 44-46

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
<p>(C) Environmental Conditions</p> <ul style="list-style-type: none"> (i) Water Quality: <ul style="list-style-type: none"> (I) Status and changes of surface water quality, including impaired streams from the most recent NC Division of water Quality Basinwide Water Quality Plans, 303(d) List and other comparable data; (II) Current situation and trends on permanent and temporary closures of shellfishing waters as determined by the Report of Sanitary Survey by the Shellfish Sanitation Section of the NC Division of Environmental Health; (III) Areas experiencing chronic wastewater treatment system malfunctions; and (IV) Areas with water quality or public health problems related to non-point source pollution (ii) Natural Hazards: <ul style="list-style-type: none"> (I) Areas subject to storm hazards such as recurrent flooding, storm surges, and high winds; (II) Areas experiencing significant shoreline erosion as evidenced by the presence of threatened structures or public facilities; and (III) Where data is available, estimates of public and private damage resulting from floods and wind that has occurred since the last plan update (iii) Natural Resources: <ul style="list-style-type: none"> (I) Environmentally fragile areas or areas where resource functions may be impacted as a result of development; and (II) Areas containing potentially valuable natural resources 	<p>pages 47-51</p>
<p>(3) Analysis of (Existing) Land Use and Development</p>	<p>2019 Plan page 16-19, 27-31 (Previously 2009 Plan, pages 51-58) page 53 page 54 pages 54-55 pages 56-58</p>
<p>(A) A map of land including the following: residential, commercial, industrial, institutional, public, dedicated open space, agriculture, forestry, confined animal feeding operations, and undeveloped;</p>	<p>2019 Plan page 16-19, 27-31 (Previously 2009 Plan, pages 51-58) page 53</p>
<p>(B) The land use analysis shall including the following:</p> <ul style="list-style-type: none"> (i) Table that shows estimates of the land area allocated to each land use; (ii) Description of any land use conflicts; (iii) Description of any land use-water quality conflicts; 	<p>page 54 pages 54-55 pages 56-58</p>

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
<ul style="list-style-type: none"> (iv) Description of development trends using indicators; and (v) Location of areas expected to experience development during the five years following plan certification by the CRC and a description of any potential conflicts with Class II or Class III land identified in the natural systems analysis 	<p>page 55 page 55</p>
(C) Historic, cultural, and scenic areas designated by a state or federal agency or by local government	page 56
(D) Projections of future land needs	pages 55, 82
(4) Analysis of Community Facilities	
<ul style="list-style-type: none"> (A) Public and Private Water Supply and Wastewater Systems 	page 64-67
<ul style="list-style-type: none"> (B) Transportation Systems 	page 59 and Appendix V
(C) Stormwater Systems	pages 70-73
(D) Other Facilities	pages 59-73
<ul style="list-style-type: none"> (5) Land Suitability Analysis <ul style="list-style-type: none"> (A) Water quality; (B) Land Classes I, II, and III summary environmental analysis; (C) Proximity to existing developed areas and compatibility with existing land uses; (D) Potential impacts of development on areas and sites designated by local historic commission or the NC Department of Cultural Resources as historic, culturally significant, or scenic; (E) Land use and development requirements of local development regulations, CAMA Use Standards and other applicable state regulations, and applicable federal regulations; and (F) Availability of community facilities, including water, sewer, stormwater, and transportation 	<p>2019 Plan page 28-31</p> <p>(Previously 2009 Plan, pages 74-77)</p>
<ul style="list-style-type: none"> (6) Review of Current CAMA Land Use Plan <ul style="list-style-type: none"> (A) Consistency of existing land use and development ordinances with current CAMA Land Use Plan policies; (B) Adoption of the land use plan's implementation measures by the governing body; and (C) Efficacy of current policies in creating desired land use patterns and protecting natural systems 	pages 77-81
<ul style="list-style-type: none"> (d) Plan for the Future <ul style="list-style-type: none"> (1) (Future) Land Use and Development Goals: <ul style="list-style-type: none"> (A) Community concerns and aspirations identified at the beginning of the planning process; (B) Needs and opportunities identified in the analysis of existing and emerging conditions 	<p>2019 Plan page 37-58</p> <p>(Previously 2009 Plan, pages 5-9 pages 82-103)</p>

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
<p>(2) Policies:</p> <p>(A) Shall be consistent with the goals of the CAMA, shall address the CRC management topics for land use plans, and comply with all state and federal rules;</p> <p>(B) Shall contain a description of the type and extent of analysis completed to determine the impact of CAMA Land Use Plan policies on the management topics, a description of both positive and negative impacts of the land use plan policies on the management topics, and a description of the policies, methods, programs, and processes to mitigate any negative impacts on applicable management topics;</p> <p>(C) Shall contain a clear statement that the governing body either accepts state and federal law regarding land uses and development in AECs or, that the local government's policies exceed the requirements of state and federal agencies.</p>	<p>pages 108-113</p>
<p>(3) Land Use Plan Management Topics.</p>	<p>2019 Plan page 57-63</p> <p>(Previously 2009 Plan, pages 113-115)</p>
<p>(A) Public Access</p>	<p>2019 Plan page 57-58</p> <p>(Previously 2009 Plan, pages 115-117)</p>
<p>(B) Land Use Compatibility</p>	<p>2019 Plan page 58-59</p> <p>(Previously 2009 Plan, pages 117-126)</p>
<p>(C) Infrastructure Carrying Capacity</p>	<p>2019 Plan page 59-60</p> <p>(Previously 2009 Plan, pages 126-131)</p>
<p>(D) Natural Hazard Areas</p>	<p>2019 Plan page 60-61</p> <p>(Previously 2009 Plan, pages 131-133)</p>
<p>(E) Water Quality</p>	<p>2019 Plan page 61-62</p> <p>(Previously 2009 Plan, pages 134-138)</p>
<p>(F) Local Areas of Concern</p>	<p>2019 Plan page 62-63</p> <p>(Previously 2009 Plan, pages 138-143)</p>

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
<p>(4) Future Land Use Map</p> <ul style="list-style-type: none"> (A) 14-digit hydrological units encompassed by the planning area; (B) Areas and locations planned for conservation or open space and a description of compatible land use and activities; (C) Areas and locations planned for future growth and development with descriptions of the following characteristics: <ul style="list-style-type: none"> (i) Predominant and supporting land uses that are encouraged in each area; (ii) Overall density and development intensity planned for each area; (iii) Infrastructure required to support planned development in each area (D) Areas in existing developed areas for infill, preservation, and redevelopment; (E) Existing and planned infrastructure, including major roads, water, and sewer <p>In addition, the plan shall include an estimate of the cost of any community facilities or services that shall be extended or developed. The amount of land allocated to various uses shall be calculated and compared to the projection of land needs. The amount of land area thus allocated to various uses may not exceed projected needs as delineated in Part (c)(3)(A)(iv) - Projection of Future Land Needs.</p>	<p>2019 Plan, FLU map on page 38-39, character area descriptions on page 40-55</p> <p>(Previously 2009 Plan, pages 143-155)</p>
<p>(e) Tools for Managing Development</p> <ul style="list-style-type: none"> (1) Guide for Land Use Decision-Making (2) Existing Development Program (3) Additional Tools. <ul style="list-style-type: none"> (A) Ordinances: <ul style="list-style-type: none"> (i) Amendments or adjustments in existing development codes required for consistency with the plan; (ii) New ordinances or codes to be developed (B) Capital Improvements Program (C) Acquisition Program (D) Specific Projects to Reach Goals (4) Action Plan/Schedule 	<p>2019 Plan page 57-63</p> <p>(Previously 2009 Plan, pages 156-169)</p>

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Below is a copy of the resolution passed by the Town of Swansboro formally adopting this land use plan.

RESOLUTION 2019-R2

**RESOLUTION OF THE TOWN OF SWANSBORO NORTH CAROLINA
AUTHORIZING AN AMENDMENT TO THE CAMA CORE LAND USE PLAN**

WHEREAS, the Town desires to amend its 2009 CAMA Core Land Use Plan, specifically the Future Land Use Map (Map 16). Land use related policy, recommendations, and mapping in this LUP update supersede information contained in Chapters 5.A, 5.B, 5.C, 5.E, 5.F and 6.E of Swansboro's CAMA CORE LAND USE PLAN adopted in 2009; and

WHEREAS, the Town conducted a duly advertised public hearing on the draft CAMA LUP Update at the Regular Meeting of the Board of Commissioners on January 22, 2019; and

WHEREAS, the amendment to the Future Land Use Map has been evaluated for its consistency with other existing policies and no internal inconsistencies exist; and

WHEREAS, the amendment is consistent with the currently approved North Carolina Coastal Management Program and the rules of the Coastal Resources Commission; and

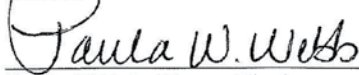
WHEREAS, the amendment does not violate any state or federal laws.

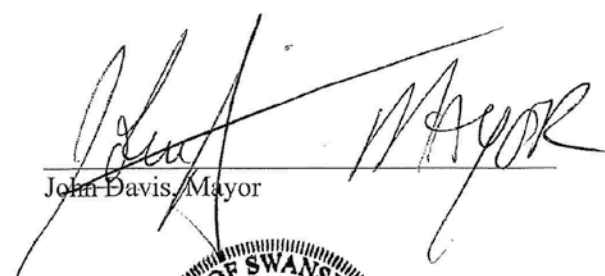
NOW, THEREFORE, BE IT RESOLVED THAT the Board of Commissioners of the Town of Swansboro, North Carolina, unanimously adopted the draft CAMA Core Land Use Plan Update; and

BE IT FURTHER RESOLVED that the Town Manager of Swansboro is hereby authorized to submit the adopted CAMA Core Land Use Plan Update to the State for certification as described above.

Adopted this 22th day of January 2019.

Attest:


Paula Webb, Town Clerk


John Davis, Mayor



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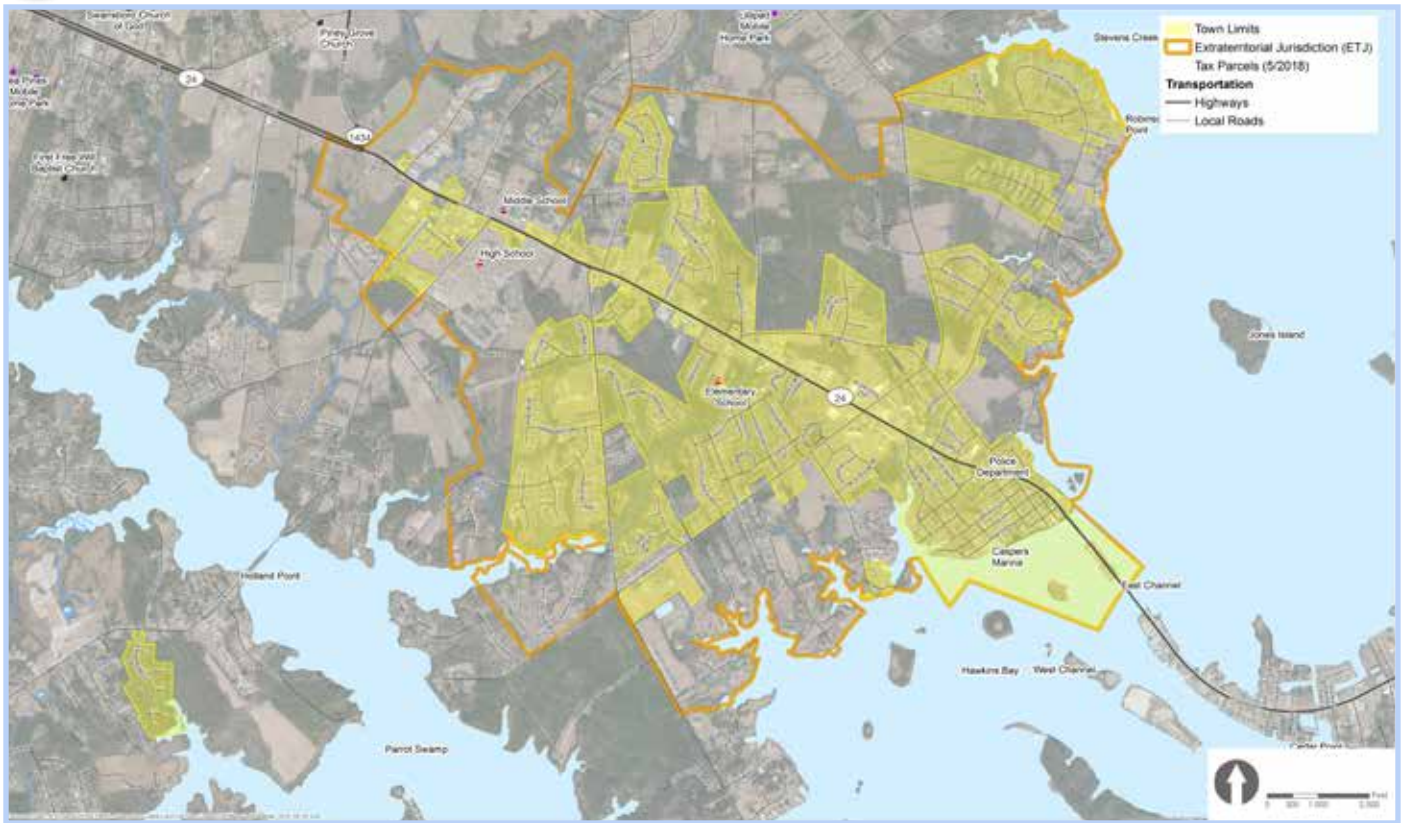


INTRODUCTION

All land use plans should be frequently updated - usually about every 5-10 years - to remain relevant and actionable. Swansboro's Coastal Area Management Act (CAMA) Land Use Plan has not been significantly updated since its 2009 adoption. During this time, the town has experienced significant growth, changing development conditions, expansion of the town limits, and a shift in perspectives that has heightened concerns about the effects of increased stormwater flow on wetlands and other natural resources, flooding and land uses.

Swansboro officials decided that the 2009 Land Use Plan (LUP) no longer encouraged smart land use decisions that would balance growth with the protection of environmentally sensitive areas within the town limits and its roughly one-mile extraterritorial planning and zoning jurisdiction (ETJ). While satisfied with most of the contents, leaders decided to revisit land use designations and update the Future Land Use Map, specifically. Consequently, this plan is not an entirely new CAMA land use plan, but an update of significant components that will prepare the town to guide new development, invest public resources, and protect its charming coast and estuarine habitat.

Land use related policy, recommendations, and mapping in this LUP update supersede information contained in Chapters 5.A, 5.B, 5.C, 5.E, 5.F and 6.E of Swansboro's CAMA CORE LAND USE PLAN adopted in 2009.



Town of Swansboro Planning Jurisdiction (town limits and Extra-Territorial Jurisdiction).

Hurricane Florence heavily affected the town in 2018. Whenever a major natural disaster hits a community, thoughts inevitably emerge about how to become more resilient to future events. This is especially relevant to this seaside community as current science indicates the likelihood that hurricanes will both increase in frequency and intensity, leading to more frequent flooding and storm damage. The town is coordinating this update with a plan that identifies land areas and critical infrastructure that will be prone to future flooding. The two plans should help town officials make decisions about future land uses that will make the town more resilient to the consequences of a changing climate and will preserve natural resources and vulnerable properties in an uncertain future.

Town leaders in 2018 engaged consultants to facilitate the update. The process included extensive public outreach and comment. Throughout the seven-month process, information was gathered and analyzed and the findings were vetted by a steering committee appointed

by the Board of Commissioners. The committee was composed of elected officials, town staff and residents. Ultimately, the final plan was presented again to the public for review and comment, before adoption by the town.

There are several reasons to create a comprehensive LUP. First, it is an opportunity to frame “The Big Picture” and to clearly state the community’s vision for the future. An LUP establishes a road map and policies to guide development, public investment of resources. It also communicates a cohesive community direction and provides a framework for making land use decisions.

The LUP looks at the interconnectedness between land uses, transportation, utilities, recreation, economic development, and other factors that form the town’s physical and policy environment. This update is an opportunity for residents and business owners of Swansboro to tell their story and help shape the distinct vision and unique identity for the community.

COASTAL AREA MANAGEMENT ACT (CAMA)

The following is an excerpt (with minor modifications) from the NC Division of Environmental Quality (NCDEQ).

The Coastal Area Management Act (CAMA) requires each of the 20 coastal counties to have a local Land Use Plan (LUP) in accordance with guidelines established by the Coastal Resources Commission (CRC). The CRC's guidelines provide a common format and a set of issues that must be considered during the planning process.

The LUP may include policies specific to the locality addressing growth management, protection of productive resources (i.e., farmland, forest resources, fisheries) and natural resources, economic development, and reduction of storm hazards.

The Division of Coastal Management (DCM) which serves as staff to the CRC, uses the Plans to review proposed projects and activities to ensure consistency with rules and policies and to make federal consistency determinations.

At the local level, the CAMA LUP provides guidance for both review and approval of individual projects, public investments or resources, and development of regulatory ordinances, and broader policy issues. Public involvement in the planning process affords residents and business owners the opportunity to help shape their coastal community by providing policies, recommendations, and support for a resilient future.

CONTRIBUTING PLANS AND EFFORTS

The relevant policies and recommendations of the following planning efforts were incorporated into this plan where relevant. The ability to align multiple plans strengthened this process and will contribute to the success in each associated planning effort.

STRATEGIC ECONOMIC DEVELOPMENT PLAN (2018)

A 20-year vision to take advantage of and mitigate the effects of growth, while preserving the town's character. Goals focus on

- » enhancing connectivity such as sidewalks and greenways, to destinations,
- » protecting wetlands and other critical features of the natural environment,
- » enhancing the town's sense of place, and
- » actively seeking economic development opportunities for new and existing businesses.

VULNERABILITIES, CONSEQUENCES, AND ADAPTATION PLANNING SCENARIOS (VCAPS) (2018/2019)

Outlines potential vulnerabilities and outcomes that could be anticipated from climate related incidents. Each potential vulnerability is explored, with a particular attention paid to how they might be mitigated through land use policy or public or private actions.

PARKS AND RECREATION MASTER PLAN (DRAFT)

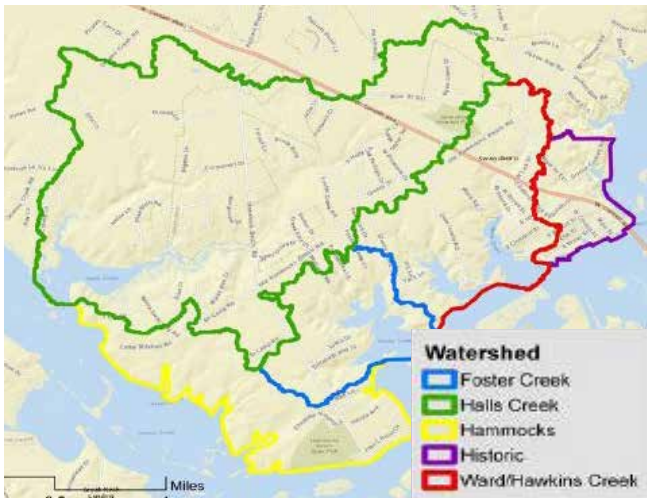
The Town is updating the Parks and Recreation Master Plan. The new plan, available in 2019, will update the vision and goals for services and programming, and incorporate recommendations to protect CAMA waterfront access points and to continue to provide high level services and facilities for residents.

CAMA CORE LAND USE PLAN (EXISTING PLAN, BEING UPDATED, 2009)

This plan is being amended by the current planning process.

WATERSHED RESTORATION PLAN (2017)

An outline to reduce the flow of stormwater runoff, primarily across four target watersheds. Suggested projects have timelines and metrics for determining progress.



Swansboro's watersheds (Watershed Restoration Plan, 2017)

WATERFRONT ACCESS AND DEVELOPMENT PLAN (2012)

This plan describes the conditions associated with development along the public and private waterfront in Swansboro. It also rescinds a previous plan to extend a public promenade along the entire waterfront downtown, and instead suggests a more modest approach that integrates with the downtown more and uses existing walkways where appropriate. Options are also discussed for expanding access to the waterfront, especially at docks in the downtown area.

GATEWAY CORRIDOR REPORT (2013)

A committee was convened to discuss a vision and strategies for enhancing the NC 24 corridor through Swansboro, which divides the town. Recommendations for improvements focused on land use and development regulation, wayfinding,

signage and landscaping enhancements, stormwater management, and pedestrian and motorist enhancements.

DOWNTOWN PARKING IMPACT AND TRAFFIC STUDY (DRAFT, IN-PROCESS, 2018)

A consultant is currently investigating the potential for converting two downtown streets into one-way streets, as a potential solution to a perceived lack of downtown parking. This study was recommended as part of the 2013 Downtown Parking Study.

Findings will be incorporated into this report as they are available.

DOWNTOWN PARKING STUDY (2013)

A parking study was commissioned to investigate if sufficient, convenient, safe parking is available downtown. Recommendations are also made for parking alternatives and parking management improvements. The study determined that parking was sufficient, but could be improved by more effective management (including altering employee parking habits), and that there may be a future deficit of parking supply. The study also recommended investigating the potential for one-way streets in downtown as a solution.

HAZARD MITIGATION PLAN, (ANNEX 5 TO ONSLOW COUNTY HAZARD MITIGATION PLAN) (2015)

This plan is an extension of Onslow County's hazard planning, as required by the state and federal governments. It identifies hurricanes and flooding as the most predominant hazards for the Swansboro. Prevention and mitigation strategies are identified for multiple types of natural hazards.

COMPREHENSIVE PARKS PLAN (2008)

This document is an inventory of the existing parks and their maintenance requirements.

BICYCLE PLAN (2011)

This succinct plan provides recommendations and a prioritization map for future bicycle projects. The plan identifies potential funding sources, policy and trial development toolboxes. An

aggressive and extensive multi-use trail network is laid out as well, especially for a town the size of Swansboro.

ONslow COUNTY CAMP LEJEUNE JOINT LAND USE STUDY (IN- PROCESS)

This study will address land use compatibility around nearby military installations and identify timelines and trends that might create an encroachment challenge for Camp Lejeune and MCAS New River. The study is a cooperative effort between Onslow County, Camp Lejeune, New River Air Station, City of Jacksonville, Town of Holly Ridge, Town of Swansboro, Town of North Topsail Beach, Town of Richlands, and state and federal agencies and organizations.

OTHER PLANS REVIEWED

- THOROUGHFARE PLAN FOR THE TOWN OF SWANSBORO (1993)
- COMPREHENSIVE TRANSPORTATION PLAN UPDATE (DRAFT, IN-PROCESS, 2018)



Swansboro Downtown Parking Study Area



Swansboro Bicycle Plan

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PUBLIC INVOLVEMENT & OUTREACH

Extensive public participation was a key focus and component of this LUP. For more on the structure of public engagement, see Appendix A. Overarching themes from each engagement and outreach effort are summarized below. This information was used to inform the update of the Plan.

STAKEHOLDERS

Residents, property owners, and business people shared their thoughts and perspectives related to past, present, and future issues, needs, and trends. Major themes and findings included:

- » **Charm, history, and community character:** People deeply treasure the charm of their historic coastal town. There is an acknowledgment of the importance of the history of the town and what people perceive distinguishes it from other towns and settlements in the area. The tightly-knit community also values its small-town friendliness and feel and wants to preserve that moving forward.



Steering Committee Meeting

- » **Downtown:** The historic downtown is treasured and its preservation is important. This theme was echoed throughout the planning process.
- » **Traffic Congestion and NC 24:** Although it is the primary means of transportation through and within the community, NC 24 known as Corbett Avenue locally, is perceived as unattractive. It also divides the community, primarily posing a barrier to non-motorized mobility.
- » **Environment and Wetlands:** Residents recognize that quality of the environment, especially wetlands, coastal marshes, and water quality in the White Oak River is the primary force behind the growth and economic success of the area. Preservation of wetlands and environmentally sensitive areas is important.
- » **Managing Growth:** The rate of growth in recent years is perceived as fast. Some residents would prefer to see a halt to all new development, although others recognize that the only feasible solution is to manage that growth effectively. The quality and attractiveness of recent development are perceived as substandard compared to previous development. Stakeholders want new development to be of high and lasting quality.
- » **Open Space and Agriculture:** The community wants to make sure that agriculture has a place and is not entirely consumed by development. There are still a few working farms, and owners have expressed a desire to continue them in agriculture. Open spaces and views are also important.
- » **Maintain Quality of Life:** The quality and pace of life in Swansboro is treasured by residents, and a desire to

preserve it as it is has led some residents to slow new development. Other residents believe that a balance is possible, if growth is managed appropriately.

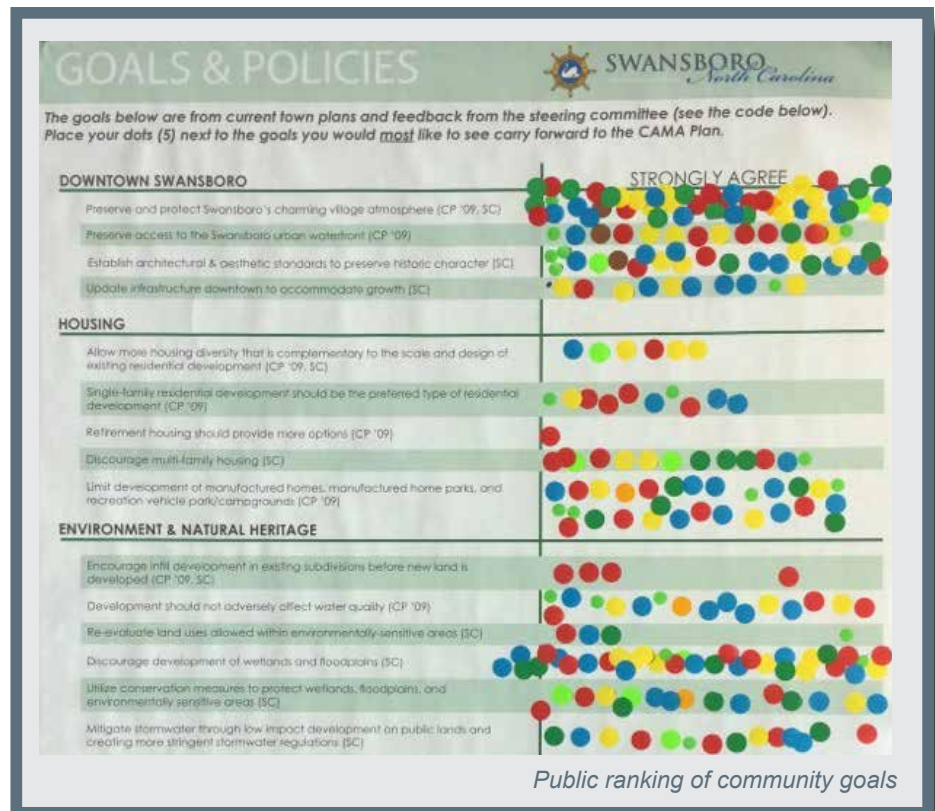
- » **Parks and Recreation:** Recent and significant gains in parks and recreational facilities are recognized as successes. Stakeholders would like to continue to see gains made in these areas.

STEERING COMMITTEE

Throughout the planning process the steering committee reviewed and evaluated the information that forms the basis for this update. Major themes and findings of their particular efforts are listed below.

SWOT ANALYSIS

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) was undertaken with the Steering Committee to identify issues and opportunities impacting the community. The following themes stood out:





Screenshot of project website

- » **Strengths:** Tightly-knit and motivated community; the charm, heritage, and uniqueness of the historic downtown; waterfront and natural resources, including the state park; vibrant local business community.
- » **Weaknesses:** NC 24 traffic, unsafe intersections, and concerns about congestion; limited tax base of the community; infrastructure concerns, especially related to water, wastewater, and stormwater; traditional zoning code not providing high quality development; a lack of diversity in the economy; and a lack of pedestrian and bicycle connectivity.
- » **Opportunities:** Continue to capitalize on tourism, especially related to the waterfront, natural resources, and historic/cultural tourism; taking a new and focused approach to growth management through planning and coordination; enhance non-automobile connectivity; enhance the appearance of NC 24; and develop a charter fishing fleet.
- » **Threats:** Growing too fast, especially without sufficient growth management provisions; limited tax base to pay for services; negative perception of growth;

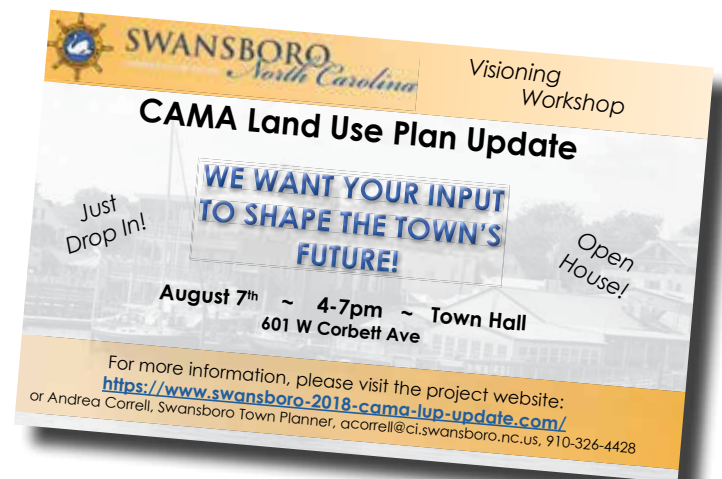
continuing degradation of traffic congestion on NC 24; lack of sufficient building character regulation to ensure high quality development; threats to the natural environment, especially wetlands and the waterfront; signage regulation.

PUBLIC OPEN HOUSE & HEARING

Overall, major themes and findings from the well-attended public open house generally reinforced themes that were heard in previous outreach and knowledge-gathering efforts:

- » Preserve historic character and village charm
- » Clean up appearance of NC 24
- » Enhance non-motorized connectivity with sidewalks, bike paths, and access to the water.
- » Protect wetlands and environmentally sensitive areas
- » Build and maintain infrastructure and services to keep pace with growth

More specific comments focused on increasing handicap access in the downtown, and generally making Swansboro more bike- and pedestrian-friendly, including connections for these user-types across NC 24. A connection from downtown, along major corridors, and to the state park was a common comment, as well as



Workshop invitation

a prominent pedestrian connection across the highway from downtown to Mt. Pleasant Road.

Spatial and character information was also gathered regarding the type and location that certain types of development were most desired. Residents also conveyed information regarding their preferred style of development. Generally speaking, they favored small, dense, detached single family housing, while walkable, active, attractive, pedestrian-oriented commercial areas was the preferred nonresidential type. The community does not want to allow any more strip development along NC 24.

Community priorities were vetted by residents at the public open house. Those that were most-preferred were consolidated into the goals and objectives found in a later chapter.

Input was also taken about the NC 24 character and appearance, and there appears to be a mandate to enhance the function and appearance

through:

- » Lighting
- » Parking location/placement
- » Building facades and materials
- » Regulation of signage
- » Enhanced landscaping

SURVEY

The major themes and findings from the public survey mirrored those from the other public engagement efforts. The vast majority of respondents were locals with a representative distribution of residency tenure, and nearly half of respondents were age 60 or older. Values of respondents mirrored those of the stakeholder group, and identification of pressing community issues were similar as well.



Public support for enhanced standards on the NC 24 corridor

There was a preference to locate development near existing, supportive infrastructure and away from environmentally sensitive areas. Generally, single family detached residential was preferred over multi-family residential, although some deference was granted if the scale and design of the development fit into the existing fabric of the community. A strong preference was shown for pedestrian-oriented commercial development.

The environment is closely tied to quality of life in Swansboro, and residents recognize that fact acutely. Survey respondents believe that open space preservation should focus on streams, wetlands, floodplains, waterfront access points, and also areas that preserve or enhance water quality. They also think the town should create a

development-restricted, conservation zone that protects environmentally sensitive lands, which would likely consist primarily of wetlands and areas likely to be flooded during storms.

The historic character of development helps define this community. The historic downtown is a treasured resource for the community, and there is a preference for a preservation and continuation of that historic development character. This preference also extends to smaller, pedestrian-scaled businesses and homes. The development along the NC 24 corridor is seen as unattractive, and a majority or plurality of respondents would like to see beautification, enhanced pedestrian and cyclist facilities, and increased access control.

The “most preferred” development character images from the public open house, including style and preferred location.

SINGLE FAMILY RESIDENTIAL



Bungalow

Preferred
Location:
Downtown
& NC 24

MULTIFAMILY RESIDENTIAL



Townhomes

Preferred
Location:
NC 24

NEIGHBORHOOD COMMERCIAL



Mixed use with civic space

Preferred
Location:
Downtown
& NC 24

COMMERCIAL CENTER



Upscale shopping plaza

Preferred
Location:
NC 24

Results of visual preference activity

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DEMOGRAPHICS

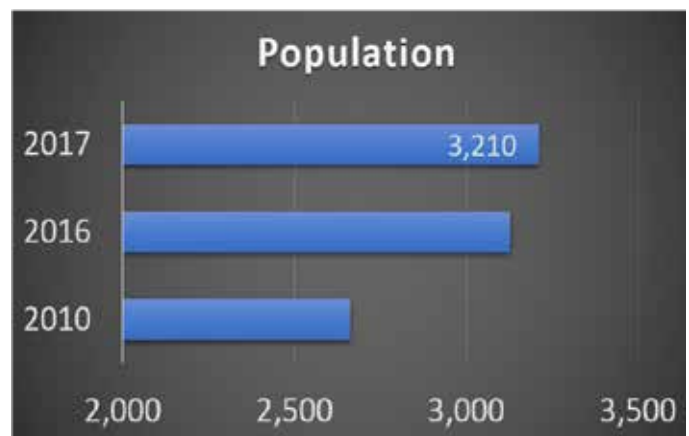
Because Swansboro is a fairly small town by most standards, it is often difficult to accurately estimate the demographic statistics. The information below primarily is drawn from the most recent American Community Survey which is produced by the U.S. Census Bureau. Some data is also taken from the ESRI OnTheMap, which estimates data of irregular geographies, but is also derived from the most current U.S. Census data available.

POPULATION & HOUSING

Population growth in the town limits has been substantial, increasing at approximately 2.9% annually since 2010 (compared to 1.1% growth in NC). The share of households with children has not changed significantly since 2010 and remains at 28.5%.

The median age is 37.9 years old, which is younger than it was in 2010. The median age in the state and the nation has increased over this same period.

Median home value in the town was \$188,800 in 2016, and has declined 8.9% since 2010, but is



Source: American Community Survey 2016 and US Census.

still higher than the state median. Overall, coastal property values are generally higher than most places in the state.

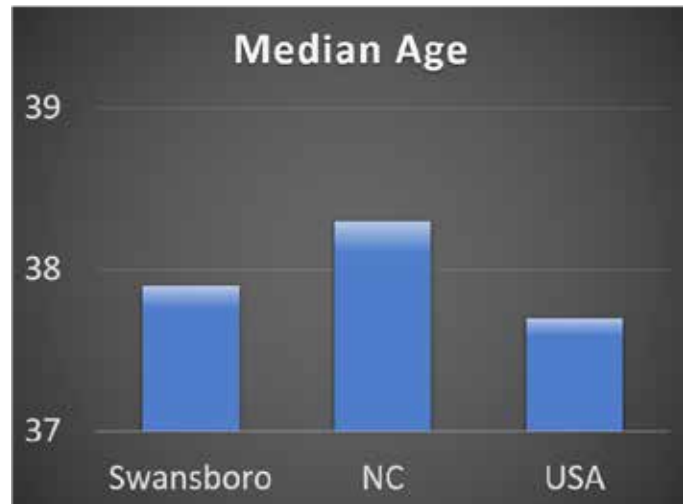
EARNINGS & EMPLOYMENT

Median household income is 7.2% lower than the state and has declined 7.0% since 2010, while it has risen in the state as a whole almost 6% over that same time period. The median household earns \$44,805 per year in Swansboro.

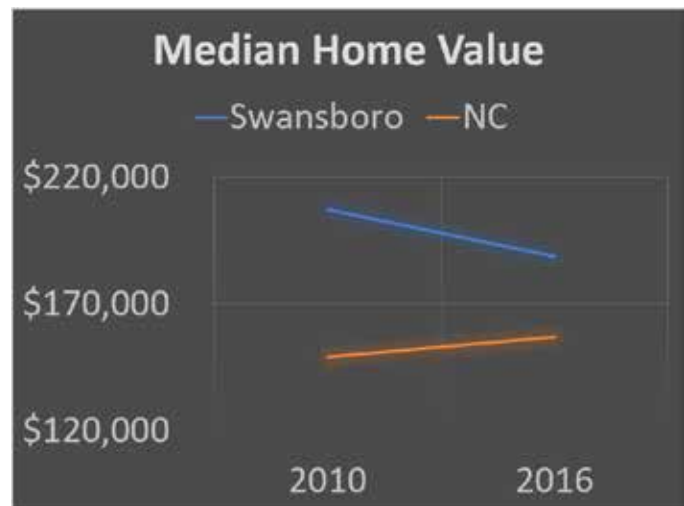
From 2010 to 2016, civilian unemployment has increased 5.2% in Swansboro. For context, the U.S. Bureau of Labor Statistics reports that the unemployment rate for the U.S. was 4.9% in 2016.

The poverty rate is higher than both the state and the nation. In 2016, the poverty rate for a family of four was \$24,300, and \$11,800 for a one-person household. The poverty rate in the town for individuals is higher than for families.

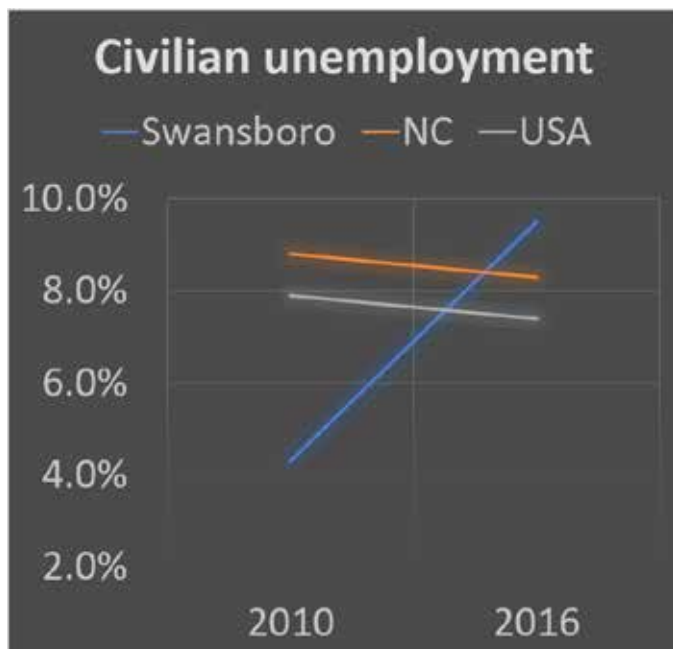
According to Esri's 2015 employment and commuter dataset, about 90% of employed Swansboro residents work outside of the town limits. Tourism, retail, and service industry jobs dominate employment in Swansboro, although there is also a small, but expanding light industrial and manufacturing presence.



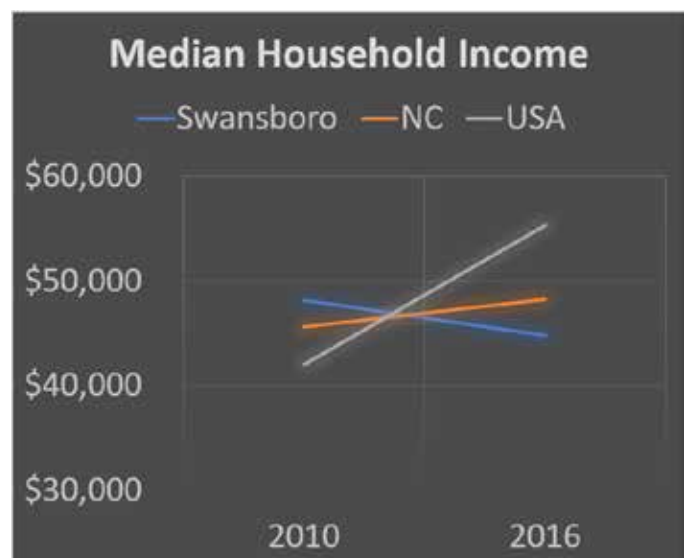
Source: American Community Survey 2016 and US Census.



Source: American Community Survey 2016 and US Census.



Source: American Community Survey 2016 and US Census.



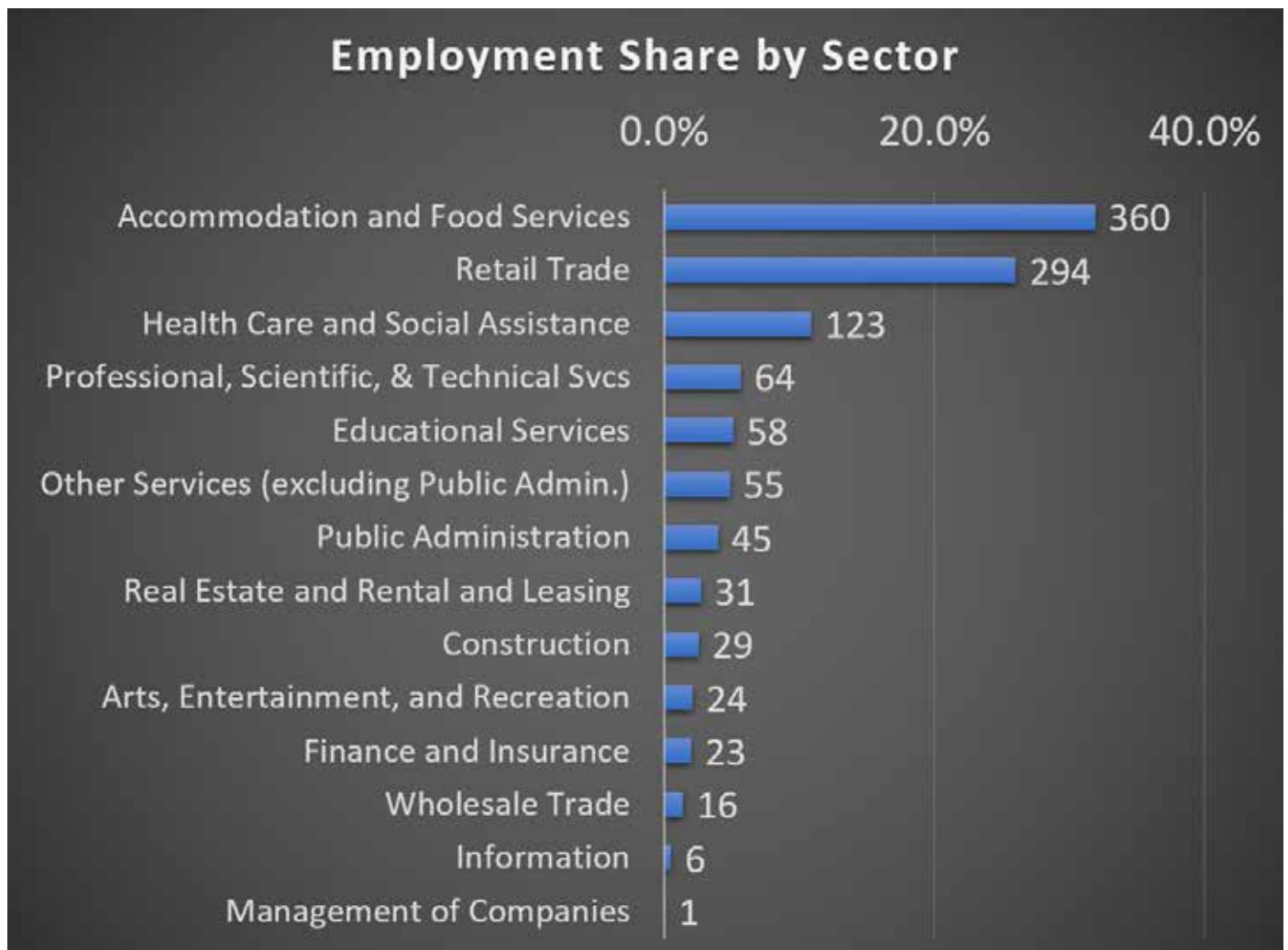
Source: American Community Survey 2016 and US Census.

Commute Patterns



*Inflow worker migration is in part due to a large number of service-related jobs and the relative high cost of housing.

Source: US Census via Esri OnTheMap, 2015



Source: US Census via Esri OnTheMap, 2015

MAPPING AND RESOURCE INVENTORY

The maps in this section represent the effort to inventory and spatially quantify the resources of the community. The map data assembled reflects many aspects of the study area, including land use, natural resources such as biodiversity and wildlife habitat, coastal resources and wetlands (both coastal and upland), and agricultural and farmland (ranked by priority). The interface between water and land (wetlands, creeks, coastline, etc.) is identified by the community and the CAMA as significant natural resources deserving of special consideration relative to growth and development. All maps and data resources used in the plan development were reviewed and vetted by town staff and the steering committee. The following maps are included in this section:

- » Existing Land Use
- » Land Supply and Availability
- » Natural Resources and Agriculture
- » Floodplains and Storm Surge
- » Conservation Suitability
- » Development Suitability

EXISTING LAND USE



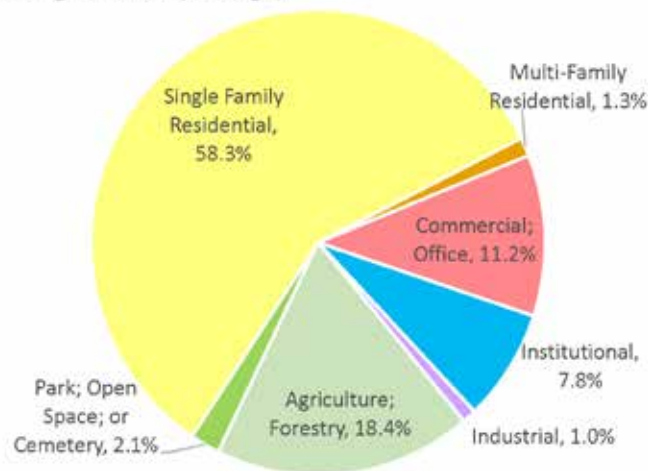
Examples of existing land uses: top left (clockwise) single family residential, multi-family residential, hotel, strip commercial development

The current, use of land within town was inventoried, primarily using Onslow County property appraiser data. The current use of each parcel is displayed, not to be confused with the existing or proposed future land use map. This is an assessment of present-day use of each parcel, based on parcel data and on-the-ground knowledge. In terms of acreage, residential, agricultural, office, institutional, and commercial land uses cover most of the town, but single-family residential properties represent the majority of value in Swansboro, in part due to the high value of the many waterfront properties.

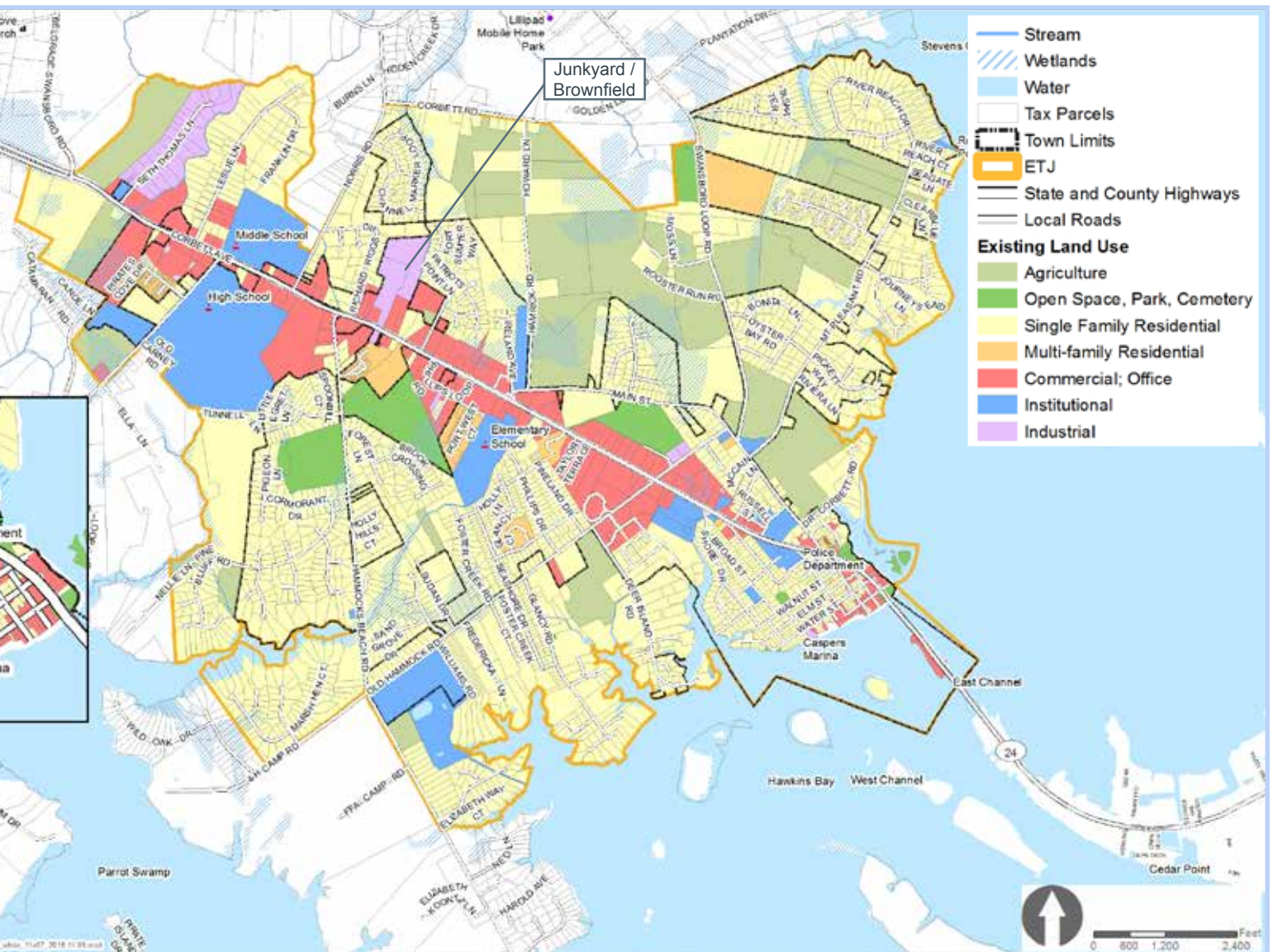
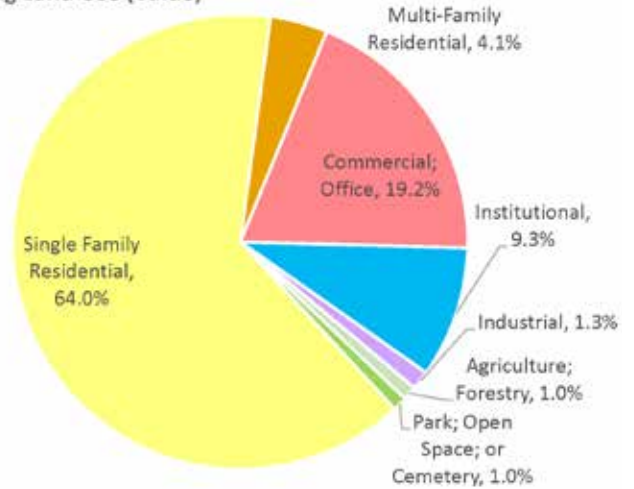
Multi-family residential, considered a commercial use, generate tax revenue more than three times the value of the land it occupies. Commercial uses are primarily concentrated along NC 24 and downtown. Industrial uses are along NC 24 as well, with the largest parcels near the intersection of Hammocks Beach Road and further west.



Existing Land Use (Acreage)



Existing Land Use (Value)



Existing Land Use, derived from County property appraiser data

LAND SUPPLY

Land supply is generated from comparing the ratio of the value of structure versus the land on which it was built. It does not take into account environmental constraints, such as wetlands or brownfields, or owner intentions, such as a generational desire to continue land as a working farm. Although not perfect, it is useful for visualizing which parts of a community are more likely to be developed or redeveloped.

A measure of land supply availability is important to understand what and where development is likely to occur, and what pressures might be present on existing structures and neighborhoods. In this analysis using parcel data from the county property appraiser, land was categorized as follows:

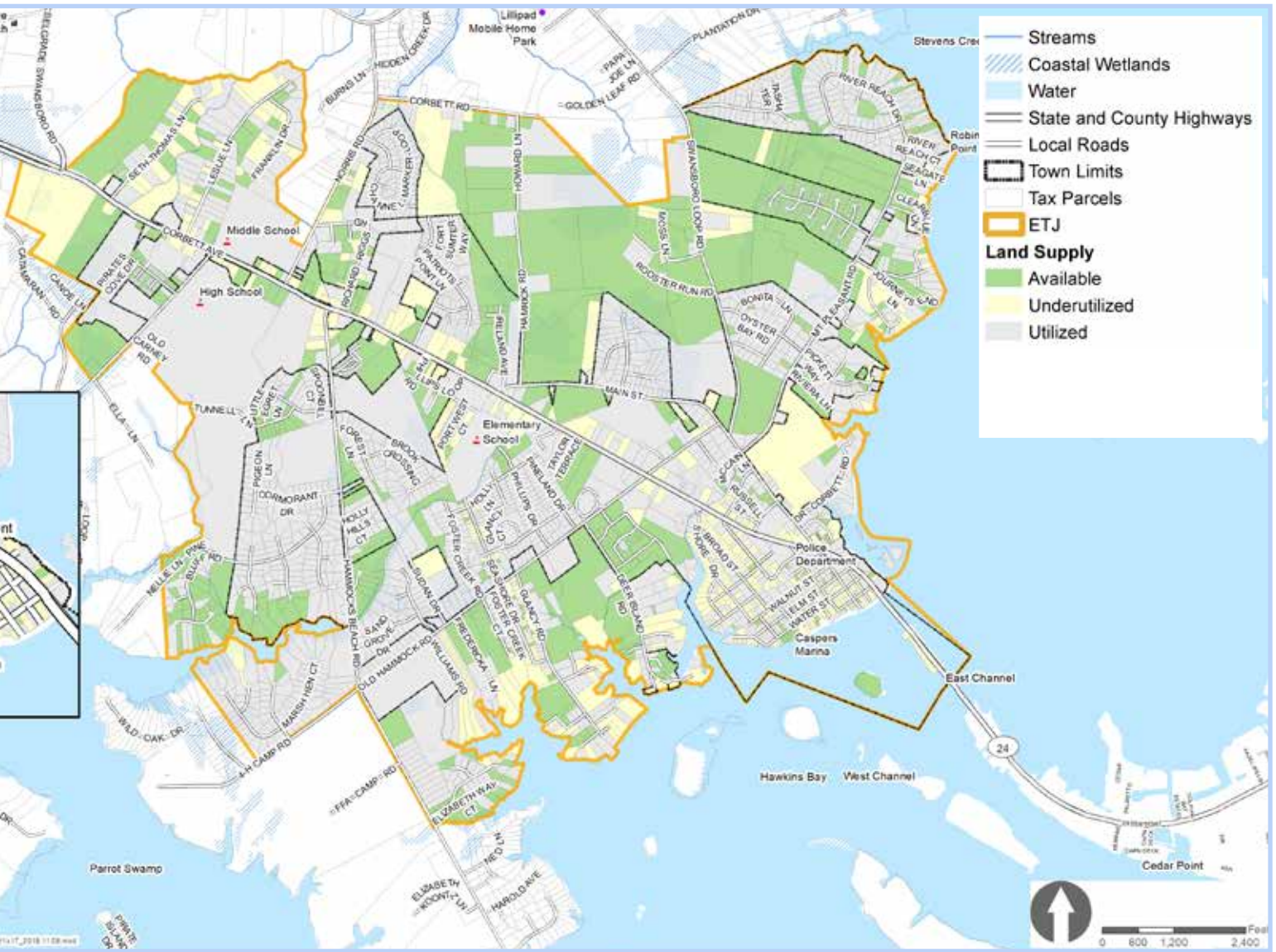
- » **Available:** no structures of any significance. Generally, these are undeveloped parcels, which include most agricultural fields.
- » **Utilized:** primary structure value that is more than the land value. Generally, these are developed parcels with inhabited structures, either residential or non-residential.
- » **Underutilized:** primary structure value that is less than the land value. Generally, this indicates land that is ripe for redevelopment or not being utilized in a highest and best purpose.

Although these designations are derived from property value data provided by the County, they are not the only factors that influence the potential of a property to be developed or redeveloped. However, this analysis is useful in attempting to answer that question and to make decisions about where to encourage development or conserve land.



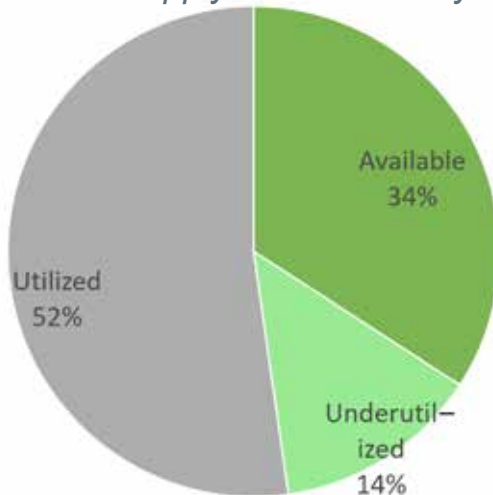
Some land is functionally “unavailable”, especially very recent development, meaning that redevelopment is unlikely in the short- to mid-term





Land Supply Availability, derived from County property appraiser data

Land Supply and Availability



Summary of land availability.

Land Supply	Parcels	Acres	Available and Underutilized*
Available*	498	938	1,311
Underutilized*	420	373	
Utilized	1,966	1,435	

* These calculations do not account for environmentally or otherwise constrained lands.

RESIDENTIAL DENSITY

People often have an initial negative reaction to the word “density” until they are given examples in their own community where they can put a number to a place. The map shows select areas where net density has been quantified for the purposes of discussing future densities as well. In this case, “net density” describes the number of dwellings divided by lot area, which does not include right-of-way or public streets. When rights-of-way are added in, the gross density is actually much lower.

Many people in Swansboro may object to the idea of 8 homes per acre (net density). That said, the downtown neighborhoods on Water and Church Streets (which are held dearly to many residents), are developed at that same net density. Likewise, less dense developments (1.5 - 2 homes per acre) tend to consume land very quickly and return fewer tax dollars per linear foot of street frontage, all other things being equal.

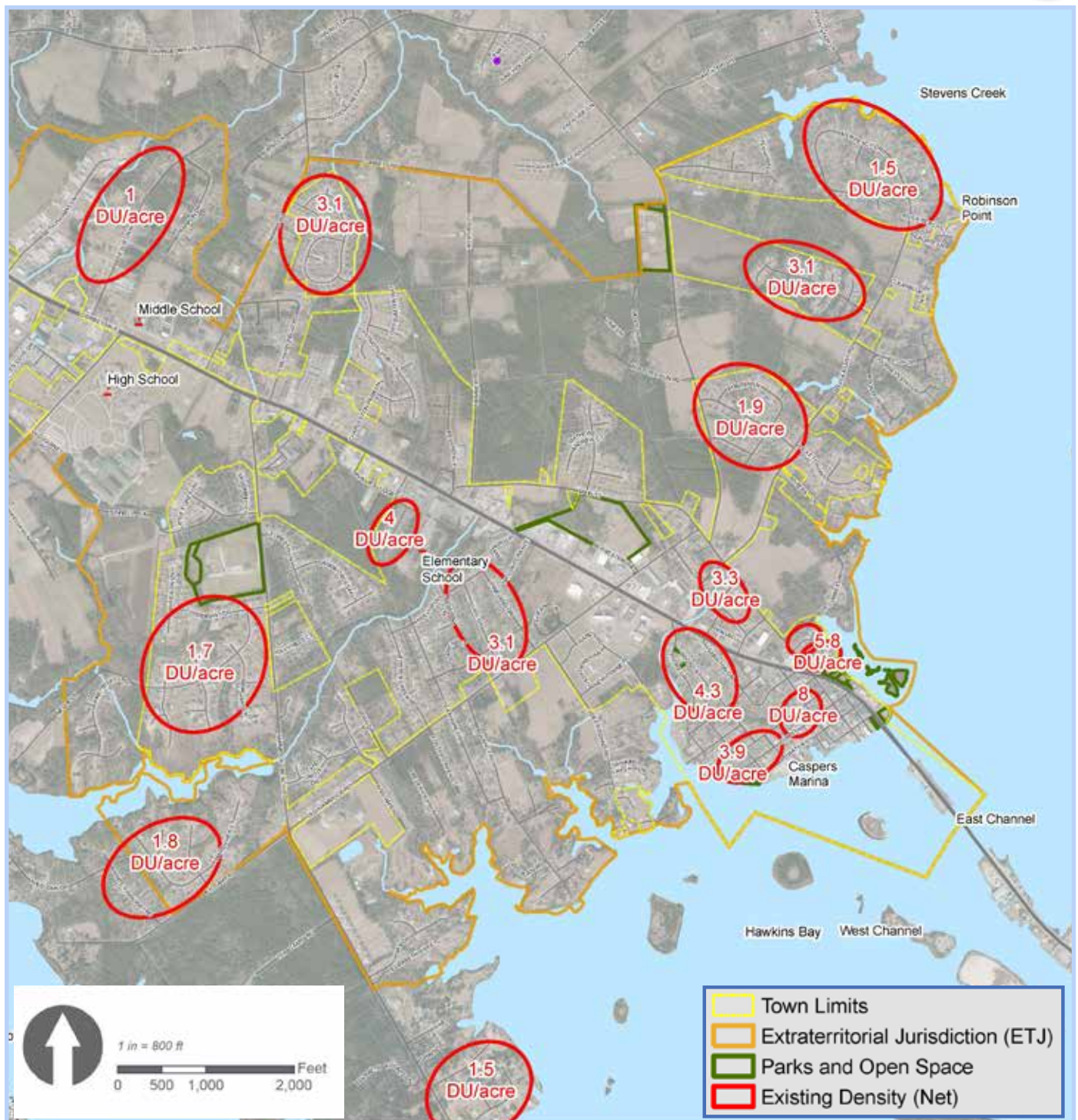
Linear frontage is a decent proxy for measuring the public infrastructure (roads, sidewalks, water and sewer pipes, etc.) that property tax dollars are used to support. There is often a conflict between a community’s desire to balance their tax rolls (expenditures to income), while restricting development to lower densities, and still providing adequate public services for residents.

Often times, it is the case that the more dense parts of town (central business district, multi-family apartments, small lot residential neighborhoods, etc.) wind up subsidizing the public services provided to the less dense parts of town (large lot residential, big box and strip commercial plazas, etc.). However, an economic analysis is necessary to determine the exact relationship.

Nevertheless, if preservation of green space, agriculture, and natural areas is a priority, one of the best strategies is to allow more dense development in targeted areas, to hopefully prevent large tracts of land from being quickly



Example of new residential development in Swansboro



Existing Net Residential Densities

consumed by low density suburban residential neighborhoods. Reducing or eliminating required minimum parking standards is also a strategy for allowing the market to provide an adequate amount of parking. Reducing lot width minimums,

even just to those currently in the historic residential areas, is also a way to minimize impervious surfaces and associated loss of green space.

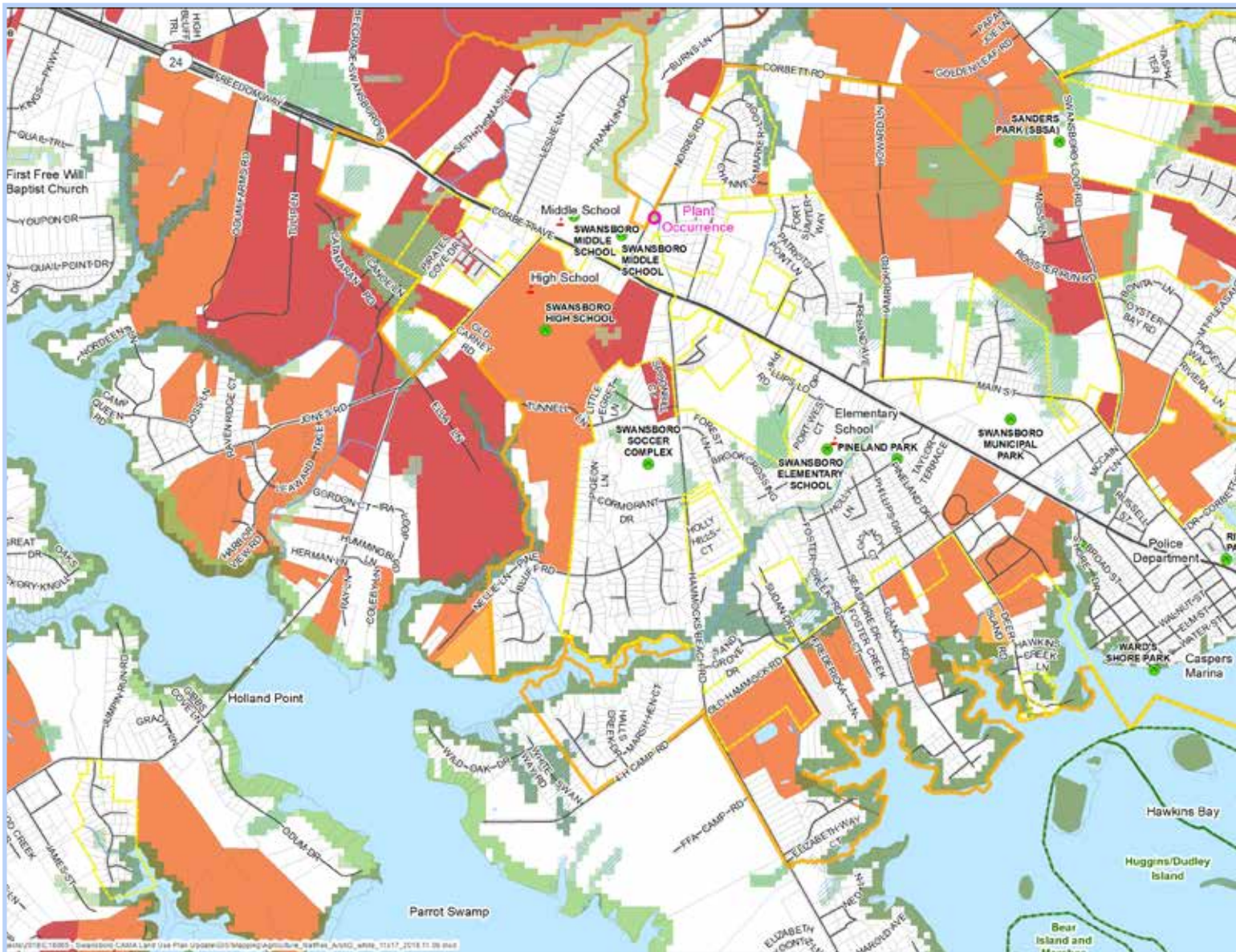
NATURAL RESOURCES & AGRICULTURE

Areas of high biodiversity and environmental significance tend to be centered on the shoreline, along creeks, in floodplains, and in or near wetlands. Nearly all shorelines are significant for natural habitat and biodiversity. Tidal creeks and connected salt marshes are important for estuary health. Upland wetlands are also important for filtering water, even though they do not contain saltwater-associated species. The area also has some upland wetlands known as pocosins that are distinct from the coastal wetlands. These freshwater wetlands are often home to rare or

endangered plants and provide important wildlife habitat.

Hammocks Beach State Park, a crown-jewel of the North Carolina coast is an undeveloped barrier island. It is also identified as a significant natural, economic, and cultural resource that is accessible only from the water by ferry, canoe or kayak. The park is outside the town's municipal borders.

There is still some prime farmland in the town's ETJ, but other parcels already have been converted to development, e.g. the high school.





Coastal wetlands at the town's Riverview Park



Agricultural Lands and Natural Features

Adopted: January 22, 2019



View from Swansboro looking toward Hammocks Beach State Park



Agricultural lands near Swansboro

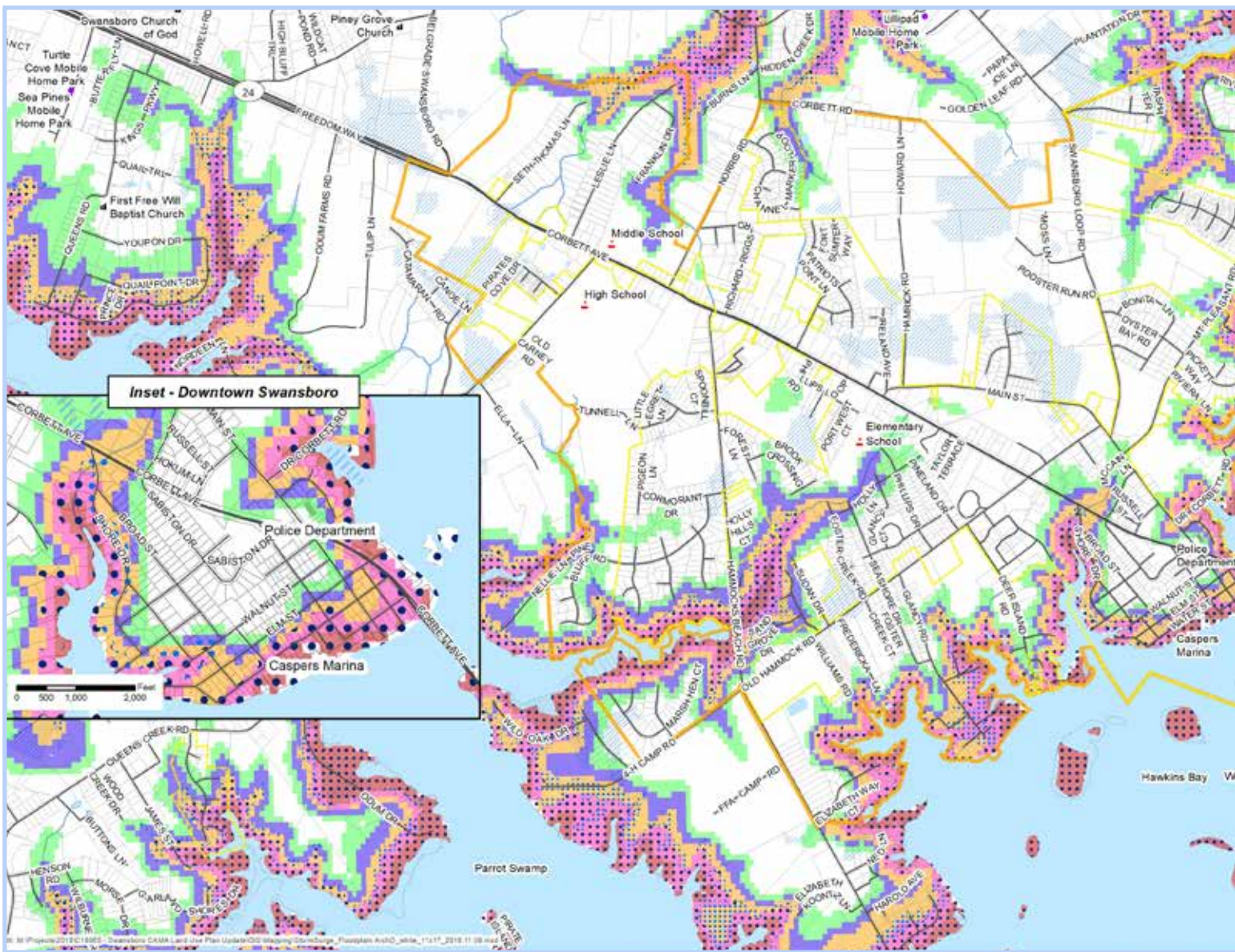
FLOODPLAINS AND STORM SURGE

Given the location, context and historic development, the town is particularly susceptible to storm surge. Swansboro's topography, generally low elevation and proximity to the water mean effective stormwater management is difficult yet important.

Floodplain maps are in the process of being revised. At the guidance of the steering committee, the most current 2018 maps were used, though they have not yet been formally adopted by the town.

Storm surge potential and floodplains were mapped in relation to each other. The map below shows the SLOSH (Sea, Lake, Overland Surges from Hurricanes) storm surge model, which gives a rough approximation of inundation expected from different categories of hurricanes, under a worst-case scenario. Storm surge modeling at the county-level provides a perspective on inundation that can be expected from differing intensities of hurricanes.

For the most part, the Category 1 and 2 storm surge areas correspond to the 100-year floodplain. Unfortunately, a Category 1 hurricane

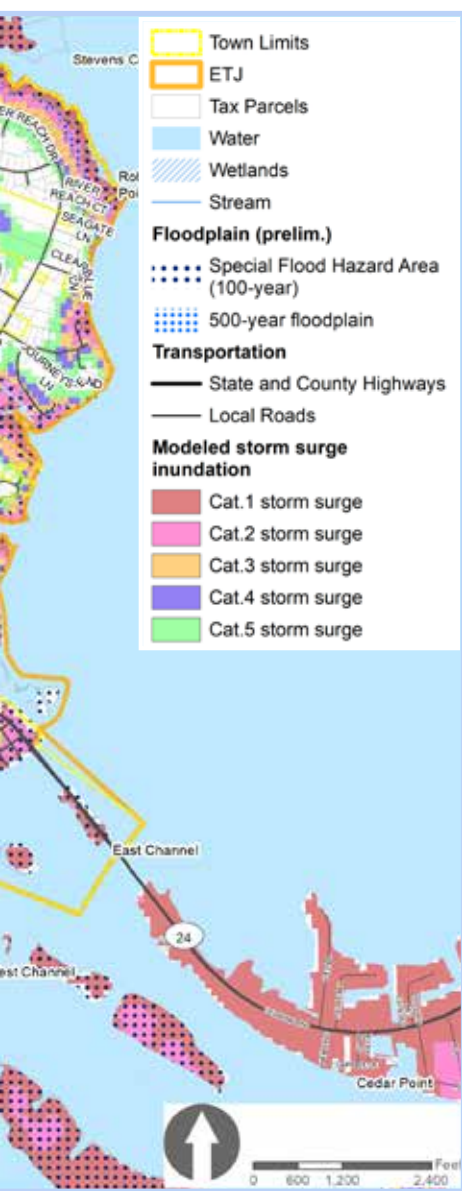


SLOSH Storm

(Florence) struck the coast during the course of this planning process and significantly damaged many structures in town, particularly along the waterfront.

As the climate continues to warm, scientists expect sea-level rise to accelerate throughout the century. Floodplains can be expected to expand in size and scope, although no effort has yet been made to project where the future floodplains will be. This will be especially important in many coastal areas in the near future, as structures that are now built outside of the current floodplain could later be threatened as the sea rises and the

floodplain boundaries expand. Communities that plan for this future condition will likely suffer less damage during future storm and flooding events.



m Surge Model & (prelim. 2018) Floodplains

Adopted: January 22, 2019



Flood prone coastal wetlands. (Credit: Andrea Correll)

RESILIENCY AND CLIMATE ADAPTATION

Coastal communities are particularly vulnerable to storms, waves, and changing climatic conditions, including sea level rise. In parallel with the CAMA Land Use Plan update process, the town also underwent a Vulnerabilities, Consequences, & Adaptation Planning Strategies (VCAPS) process.

Developed by NOAA's Sea Grant program, this interactive planning process identifies areas that are prone to flooding and storm damage. With such knowledge, elected officials can then make policy decisions to lessen future damage. The Sea Grant program at N.C. State University, the state's Division of Coastal Management, the Nature Conservancy and the N.C. Coastal Federation helped the town perform the analysis as part of the LUP update. Swansboro is among a handful of towns along the N.C. coast that has taken this critical step.

The town experienced a hurricane in September 2018, that further crystallized the importance of climate resiliency and adaptation as crucial to the ongoing success and survival of the town.

CLIMATE VULNERABILITY AND SEA LEVEL RISE

Due to Swansboro's coastal legacy and unique relationship to the sea as a coastal fishing village, the changing climate and increasing storm intensity coupled with sea level rise will have a

greater impact than on other, more inland towns which are further removed from the coast. The town has identified conservation of coastal areas, wetlands, and floodplains as important not only for preserving quality of life, but also with respect to climate resiliency. By incorporating climate resiliency planning into their long-range planning efforts, the Town has taken concrete efforts to prepare for an uncertain climate future.

The resulting decision to cluster development away from environmentally sensitive and Conservation Priority Areas (CPAs), coupled with changing floodplains and rising sea levels, will have effects on the physical environment and land use within the town. The town should also consider these factors when making public investments and locating infrastructure, balancing risk against necessity.

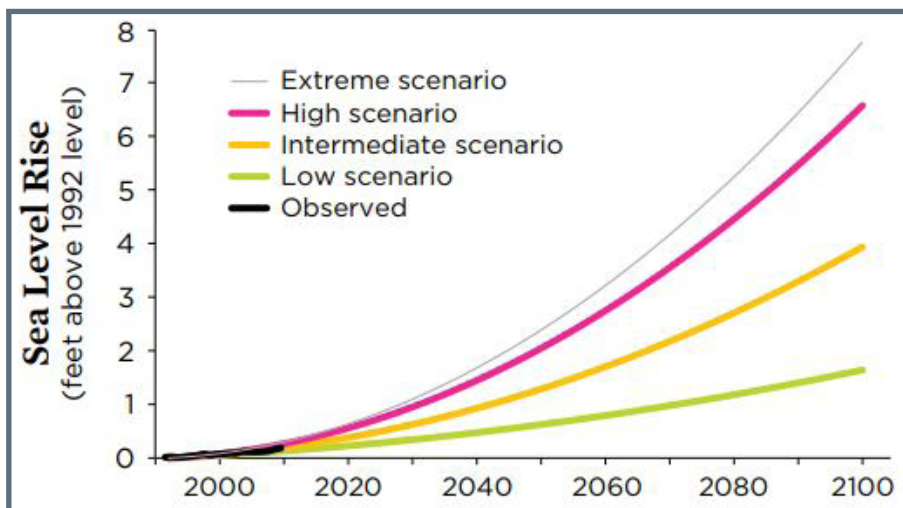
During the creation of this plan, the town weathered a significant hurricane (Florence) that caused tremendous amounts of damage across southeastern North Carolina. During the course of the LUP, projections for sea level rise were released that affirm that future flooding events will likely be more extensive and more damaging than in the past. In the Swansboro area, sea level has generally risen about 3 mm per year for decades according to NOAA tide gauge data.

NOAA estimates that global sea level will rise nine more inches by the end of the century if countries immediately begin reducing the amount of pollutants that are triggering the warming of the atmosphere.

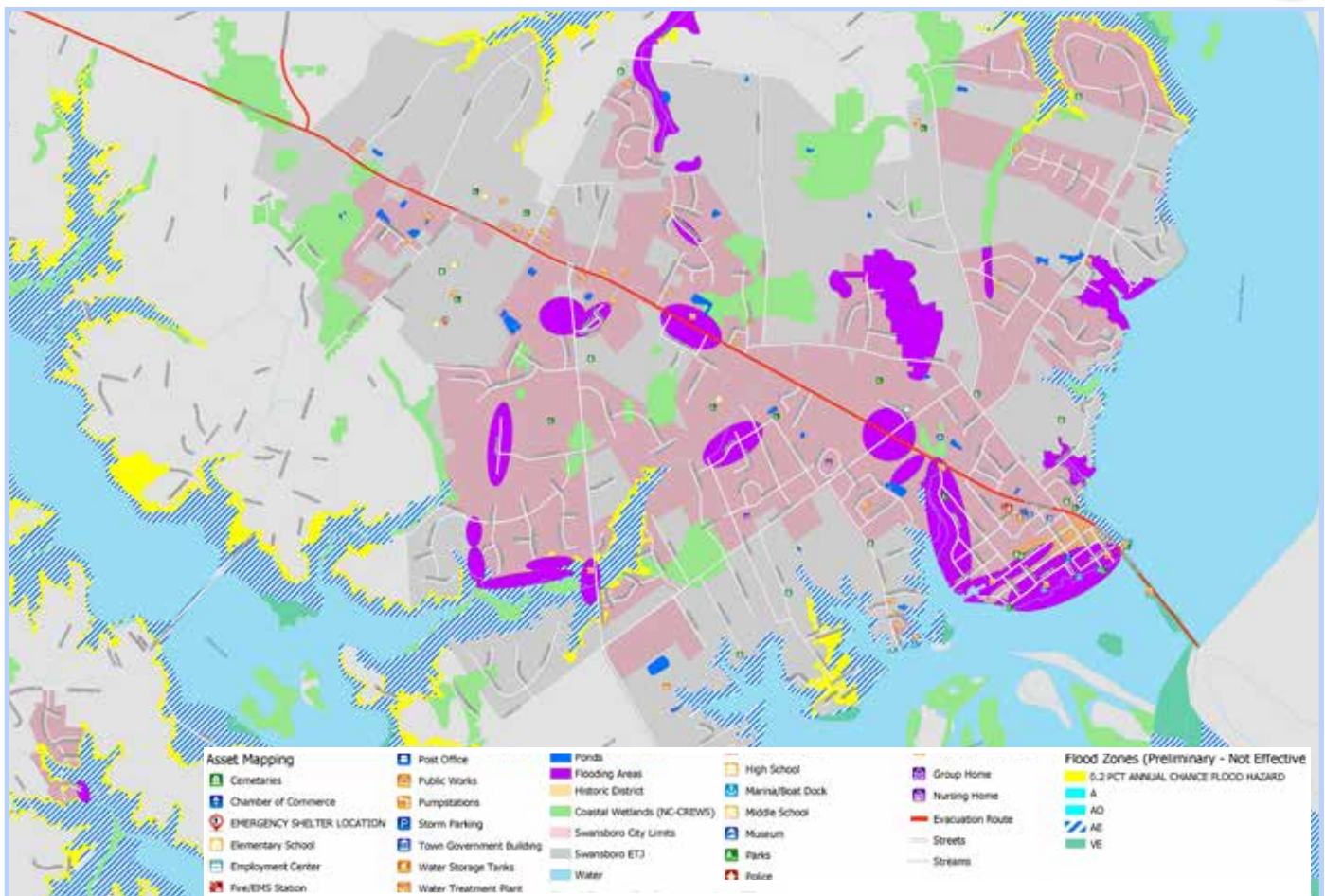
If nothing or little is done, NOAA scientists estimate that the sea could rise almost nine feet by 2100.

FLOODING

As sea levels rise, some seaside and lower-lying parcels will become inundated (either entirely or periodically and chronically) and floodplains will expand and push inland. Given that the lifespan of a typical "stick-built" structure (which includes most residential homes and smaller multi-family structures) is 60-100 years, and that sturdy commercial structures can last at



Sea Level Rise projections. (Source: Third and Fourth National Climate Assessment)



VCAPS Asset Mapping (Source: NC Sea Grant)

least the same amount of time, it is important to consider what the future environment will be for these structures when the next hurricane comes through the area. Some building code requirements (such as additional strapping or waterproofing) can be retrofitted more easily than others (such as raising the base floor elevation out of the floodplain).

HISTORIC STRUCTURES

During the hurricanes, the historic waterfront central business district was hit hard by storm surge and wave action. Many of the structures were damaged, nearly destroying the historic Ice House restaurant.

Recovery and rebuilding will be to more strict development standards, including higher base floor elevations to get above the floodplain. These upgrades will eventually change the appearance of the downtown area somewhat, but will help ensure that it can continue to flourish in the coming years.

Much of the low-lying area that comprises Swansboro's ETJ is proposed for inclusion in the Conservation Priority Area (CPA) FLU overlay. The CPA is proposed for reduced density/intensity, in part to reduce the vulnerability of the town in future storm events. The historic downtown, in particular, is within an area that is in the 100-year floodplain and the identified storm surge areas for hurricanes. Even though the Traditional Town Center (TTC) FLU is proposed to continue in this area, it will be dependent, in part, on climate vulnerability mitigation actions by the town, and potentially also by a slow migration of the business district up main street and toward higher ground. This slow process will occur over decades, through individual decisions by business owners, property owners, and town leadership. Continuing to reduce density in the areas identified as floodplains and CPA will provide increased resiliency to storm events and flooding.

SUITABILITY ANALYSIS

An analysis was performed to determine the physical and economic suitability of land within the ETJ for different land use types. For the purposes of the LUP update, two different analyses were conducted: one to determine suitability for urban uses or development (i.e. - residential, non-residential, commercial, industrial, etc.), and one to determine suitability for conservation purposes (i.e. - environmentally sensitive areas, agriculture, biodiversity and habitat, etc.). These two analyses were chosen based on the expressed priorities of the community through stakeholders, steering committee, and local leadership.

FACTORS INFLUENCING SUITABILITY

The GIS-based suitability analysis factors in proximity to interchanges, traffic volumes, environmental constraints such as wetlands. The suitability analysis is used to inform the development of the future land use plan. However, it does not account for free will or personal preference.

URBAN & DEVELOPMENT SUITABILITY

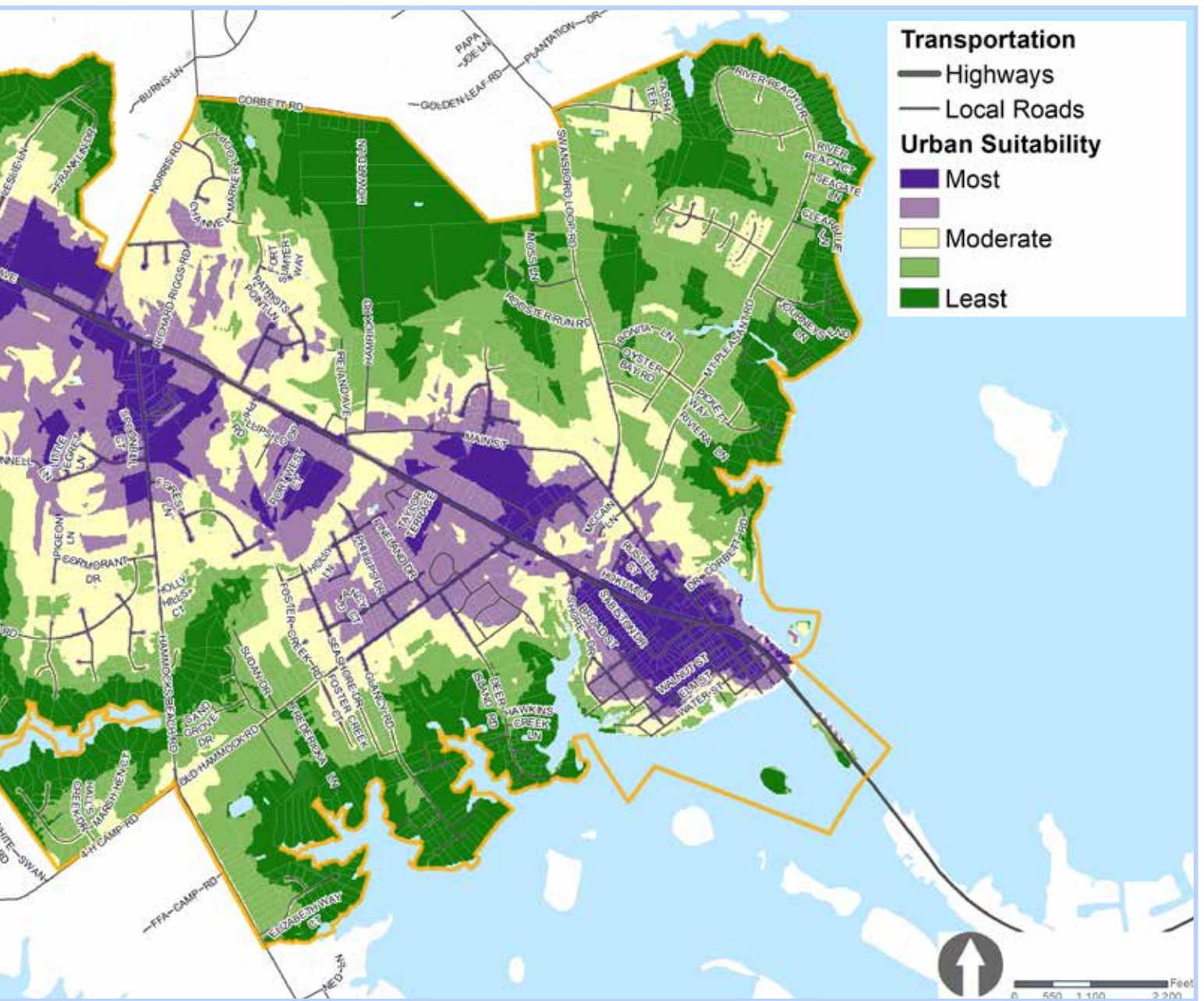
This analysis of suitability combines residential and non-residential uses into one category of suitability. Given Swansboro's relatively small size, this is appropriate because any smaller grain of analysis would likely overstate any findings. In other words, the town is intimate enough that the residents and staff do not need a computer model to tell them specifically where commercial and residential growth should go, beyond the general parameters of identifying which areas are suitable for urban development. The transportation network and major intersections along it significantly affect the outcomes of the final suitability map, which reinforces the community's desire for distinct nodes along that corridor. For the most part, NC 24 is the spine of this community, providing the majority of connectivity in the town. Similarly, the downtown could be equated to the heart of the town, providing much of its identity.

The areas generally located around downtown and the intersections of NC 24 with Main Street, Old Hammocks Road, Hammocks Beach Road, and Queens Creek Road are identified as areas generally possessing the physical and economic characteristics that make them suitable for development. This is not entirely surprising, since these areas have the established and existing infrastructure to support development. The areas around sensitive environmental areas (creeks, wetlands, the coast, etc.) are also generally less suitable for development.



This suitability map is created from assembling and combining the following information:

- » Proximity to sewer lines
- » Proximity to water lines
- » Near existing residential uses
- » Near existing commercial uses
- » Near major intersections (good for commercial development)
- » Near parks and schools (good for residential development)
- » Parcel size (larger parcels provide economies of scale for developers)
- » Away from streams, wetlands, floodplains
- » Away from areas vulnerable to storm surge inundation
- » Areas that do not intrude on agriculture or farming uses



Urban & Development Suitability

CONSERVATION SUITABILITY

In the context of this analysis, conservation suitability includes agricultural lands, as these were identified by the community as desirable for preservation where appropriate. There are only a few working farms left in Swansboro's jurisdiction and some of those families have expressed a strong desire to continue that way of life. Given the community's expressed interest in regulating growth away from areas that are highly suited for conservation, this analysis is particularly relevant

and was a component of the creation of the future Land Use Plan.

The areas generally located along the coast, tributary waterways and existing wetlands (especially coastal wetlands) are identified as areas generally possessing the natural characteristics that make them suitable for conservation. Stands of mature trees also mostly correspond with wetland areas (either coastal or upland) are highly suitable for conservation as well. Some areas are also suitable for continuing



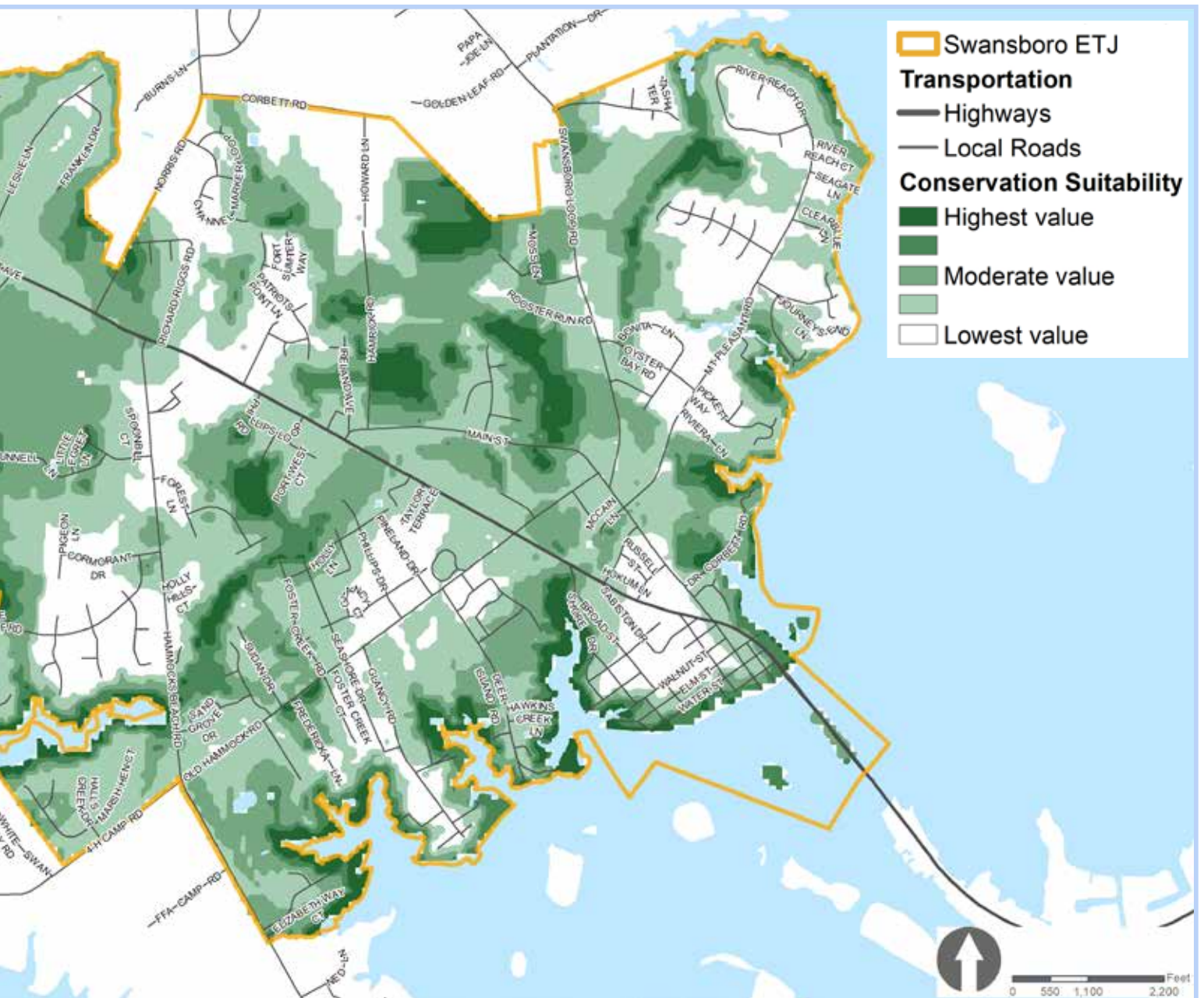
Coastal wetlands are prime for conservation and resource protection. (Credit: Andrea Correll)



agricultural activities. As expected, the downtown and other developed highly impervious areas show up as generally unsuitable for conservation or agriculture.

This suitability map is created from assembling and combining the following information:

- » Streams and wetlands (both coastal wetland and upland pocosins)
- » Floodplains
- » Storm surge vulnerability
- » Agriculture
- » High biodiversity and wildlife value
- » Natural heritage elements (generally located at the coastline)
- » Managed areas and parks
- » Forests (mature stands of forest have higher habitat value)



Conservation Suitability

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GOALS & OBJECTIVES

4

VISION

The town's vision comes from the recently adopted (June 2018) Economic Development Strategic Plan, and states:

Swansboro, the quaint and friendly city by the sea, is recognized by visitors and residents as a gem of North Carolina's coast. All who know and appreciate Swansboro celebrate the town's relaxed waterfront lifestyle, abundance of thriving, family-friendly, locally-owned businesses, recreational opportunities, and a broad range of historic, arts, dining, and shopping opportunities. The town remains committed to preserving its heritage, environment, and small-town appeal.

GOALS & OBJECTIVES

The goals and objectives were developed through extensive public outreach and input, and will be used to guide re-zonings and investment decisions. They will also be used to guide land use policy decisions in the town. Primary themes from all public outreach are summarized below.



1 PRESERVE AND ENHANCE SWANSBORO'S CHARMING COASTAL CHARACTER

- » Extend historic development aesthetic/elements of downtown
- » Establish architectural & aesthetic standards to preserve historic character
- » Foster and improve the town's sense of place through balanced growth that can attract residents, visitors and business investment

2 FOSTER GROWTH THAT SUSTAINS AND ENRICHES THE COMMUNITY

- » Encourage context sensitive residential development
- » Ensure infrastructure and public services keep pace with growth
- » Extend the coastal village design concept to key locations
- » Manage multifamily development in locations that create a walkable, mixed use village and promote social interaction

3 PRIORITIZE THE NATURAL ENVIRONMENT THAT IS KEY TO SWANSBORO'S QUALITY OF LIFE

- » Utilize conservation measures to protect wetlands, floodplains, environmentally sensitive areas and to enhance water quality
- » Utilize conservation-oriented measures
- » Encourage water-based recreation and tourism
- » Maximize and clarify access to the waterfront
- » Make a "place" for people that takes advantage of the unique location and natural assets
- » Improve and protect the town's natural environment in order to attract new residents and maximize the town's economic development potential

4 TRANSFORM NC 24 INTO A WELCOMING THOROUGHFARE TO SWANSBORO AND ITS HISTORIC DOWNTOWN

- » Encourage mixed use development at nodes/key intersections; discourage additional strip development
- » Promote placemaking and an attractive, cohesive development style along NC 24
- » The gateway corridor should be designed as a tree-lined boulevard, with trees and other landscaping along the median and both sides of the road

5 DEVELOP AS A CONNECTED COMMUNITY

- » Connect downtown to the north side on NC 24 and to the west
- » Connect major destinations including parks, commercial centers, schools with safe sidewalks and off-road paths

6 BUILD COMMUNITY RESILIENCE IN A CHANGING ENVIRONMENT

- » Direct growth and public infrastructure investment to locations that are least likely to be affected by inundation, and where necessary manage the abandonment of imperiled infrastructure
- » Accurately communicate risk and regulate high risk areas through enhanced development regulations
- » Pursue projects that will increase resiliency to storms, flooding, and sea level rise

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FUTURE LAND USE DESIGNATIONS

The Future Land Use Map (FLUM) and associated future land use (FLU) designations will be used to guide rezoning, investment, and land use decisions in the town. Just as the goals and objectives have generated recommendations, the FLU designations are associated with specific character descriptions and criteria. These FLUs and the FLUM are a guideline and reference point for the community, and will inform, but not necessarily definitively predetermine, the outcome of land use decisions and policies by the town.

The mixing of non-residential and residential uses is viewed positively in Swansboro, because of mixed development in the downtown historic district that demonstrates different uses can coexist peacefully. As such, the mixed use FLU designations generally function as overlays that show where additional uses or density can be added to or mixed with the underlying residential uses. Where mixed use FLUs overlap other FLUs, the criteria associated with each must be considered.

Residential FLUs are the underlying character within which the mixed use and non-residential overlap at more intense nodes of activity. Appropriate density is determined in part by a property's position within or proximity to the activity nodes. This allows a stepping down of density and intensity with distance from mixed use activity centers. It also allows the positioning of people next to the goods and services that they need for daily life, and this increased connectivity was a common thread in the community conversation.

FUTURE LAND USE DESIGNATIONS

TRADITIONAL TOWN CENTER (TTC)

This designation is characterized by a mix of residential, commercial, and civic uses in the historic downtown central business district or TTC node. Redevelopment or new development should be compatible with and embody the desired heart of “Swansboro” character.

SUBURBAN TOWN CENTER (STC)

The highway commercial designation contains medium to high intensity uses on the NC 24 corridor. A mix of uses including multi-family with managed access is encouraged.

EMPLOYMENT / LIGHT INDUSTRIAL (ELI)

This designation includes office, light industrial or assembly, and flex-tenant spaces. Site layout should allow for truck circulation, buffers between dissimilar uses, and quality architecture adjacent to the highway.

GATEWAY CORRIDOR (GC)

State-owned NC 24 and the adjacent development make the first impression of the town. Signage, lighting, sidewalks, landscaping, architectural design along the roadway should reflect the unique features and values of Swansboro.

CONSERVATION PRIORITY AREA (CPA)

The CPA designation includes lands influenced by the natural environment containing features including but not limited to wetlands, woodland, shoreline, pocosins, open space, vistas that are worth conserving and that define Swansboro.

COASTAL TRADITIONAL NEIGHBORHOOD (CTN)

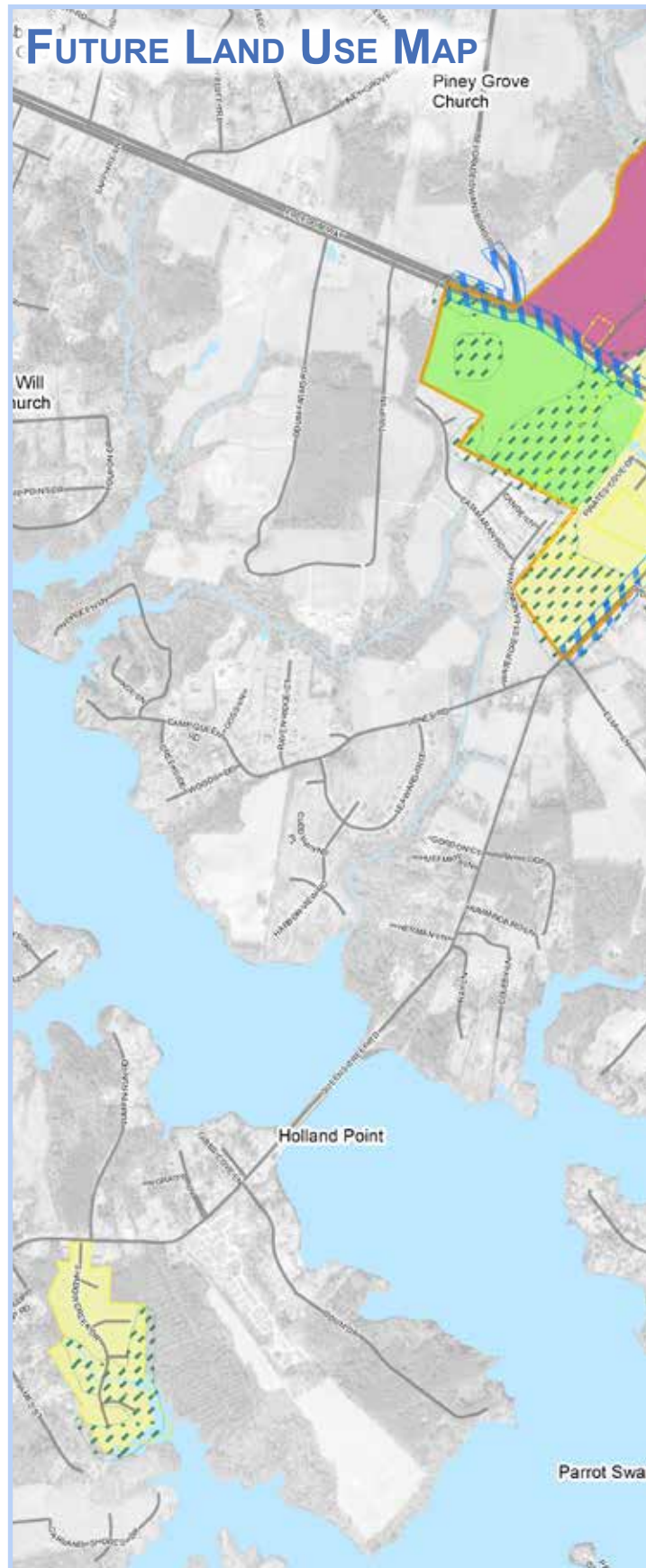
This is a walkable, compact, residential district laid out based on traditional neighborhood development patterns. It generally surrounds the TTC and contains single and two-family residential with small-scale multi-family and neighborhood commercial.

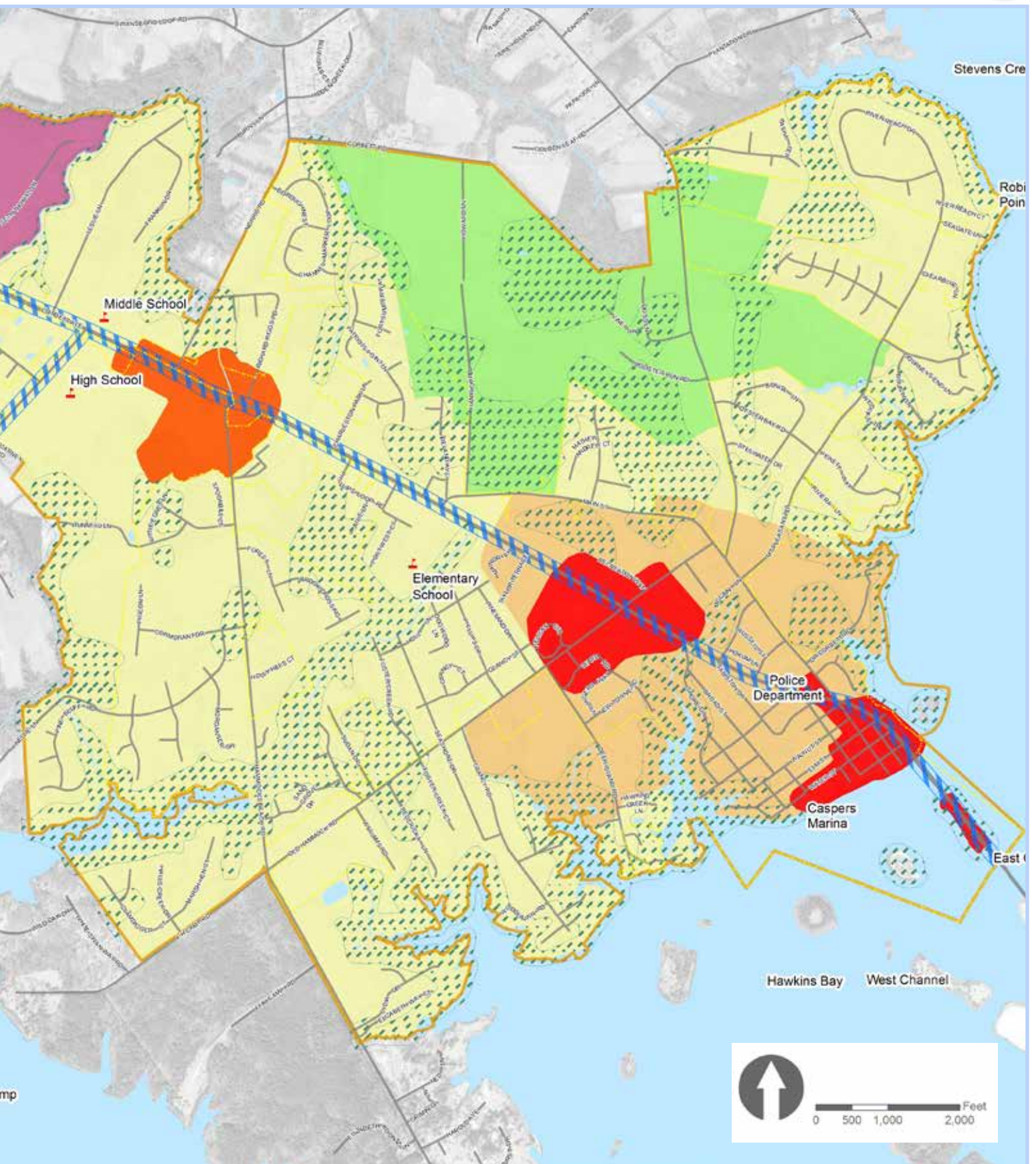
LOW DENSITY / SUBURBAN NEIGHBORHOOD (LDSN)

This designation characterizes the majority of new subdivision development. It is auto-oriented and should be connected to water and sewer infrastructure, and contain sidewalks and streets that connect to parks, educational, or religious uses.

RURAL / AGRICULTURAL (RA)

Agricultural land generally occurs outside the town limits but is within the town’s ETJ. Though there are working farms, rural residential and agritourism activities may occur here. Water and sewer infrastructure are typically not available.





TRADITIONAL TOWN CENTER (TTC)

When most people talk about Swansboro, they are talking about the historic district, businesses on Front Street and surrounding “old town” residential neighborhood. Homes and businesses stand side-by-side in a historical development pattern and complement, rather than detract from each other. Many older residential homes have been converted into businesses, with second -story residential, with a working marina directly adjacent. This is an area where uses are mixed both vertically and horizontally.

This active, vibrant part of the community is both a window into the past and provides character that defines the community. Using traditional pattern and character to influence future development of small-lot single family homes in other parts of Swansboro, fulfills a strong desire by many in the community to connect people to destinations, especially by non-motorized means.

CHARACTER

A traditional town center district translated to other areas of Swansboro should incorporate the following characteristics to the extent possible. These areas would be mixed use pedestrian-oriented districts with a mixture of small to mid-size retail, restaurants and multifamily residences intertwined with civic and institutional spaces. Upper story residential uses are encouraged. Pedestrians would be prioritized, and automobiles are accommodated.

ACCESS AND CIRCULATION

The rights-of-way within these districts may be narrower than typical local streets of Swansboro with two-way traffic and on-street parking but will not be as narrow as those in the historic downtown. These roads are meant to handle slow speed traffic and serve a similar purpose as a parking aisle so that people can park-and-walk to their destinations. Sidewalks flank the roads and buildings built up to or within a few feet of the right-of-way line.



Historic downtown Swansboro

SETBACKS

Typical of a downtown district, buildings are set close enough to interact with the street. Minimal setbacks accommodate a greater density and intensity of uses and promote social interaction.

MASSING AND BUILDING HEIGHTS

Buildings are “human-scaled,” meaning not more than three stories tall, but also should be a minimum of two stories to create a street presence.



Example of Traditional Town Center (TTC)

BLOCKS

Block length of no more than 400 feet further promote walkability and discourage automobile use for short trips. Crosswalks and mid-block pedestrian connections should be used throughout.

PARKING

Off-street parking requirements for nonresidential uses may be lessened due to the walkable district and availability of on-street, shared or lots for parking. Front-loaded parking is discouraged.

APPROPRIATE DENSITY / INTENSITY

This district should replicate the densities and intensities of those in downtown to provide an alternative to other housing and retail experiences in Swansboro. The norm should be:

- » Compact residential - Up to eight dwellings per acre single family or 12 for multi-family.
- » Ground floor retail is encouraged but lobbies and entrances would be allowed.
- » Development of this intensity should employ stormwater control measures with extensive Low Impact Design



Example of downtown development.



Example of downtown development.

SUBURBAN TOWN CENTER (STC)

These areas are meant to be commercial activity nodes that are more auto-oriented such as the intersections of Hammocks Beach Road or Queen's Creek Road with NC 24. In well-designed projects, a person can patronize several businesses via access easements between businesses, a secondary road network, or on foot. Uses may be mixed, generally are larger in scale and include higher density residential including townhomes, market-rate apartments with access to major thoroughfares and existing utilities. Office, civic and institutional uses may be incorporated into this land use class. Development opportunities may occur on greenfields or sites with underutilized uses ripe for redevelopment.

CHARACTER

This auto-oriented business district, located at nodes along NC 24, supplies goods and services used by the community over the course of a week or month. These businesses are often supported by customers over a large geographic area and may be a regional draw. Uses may be mixed - often mixed horizontally - outlots and larger-scale (ex - grocery, larger-scale retail up to a certain square footage, etc.). While vehicular traffic dominates, all modes of travel are accommodated.

ACCESS AND CIRCULATION

Access management from major thoroughfares is key and the creation of a secondary internal street network can relieve or reduce the number of curb cuts and turning movements. Access to private or shared

Variety of scale and character for commercial development





Example of Suburban Town Center (STC)

parking, cross-access and shared driveways between adjacent businesses should be required in order to reduce traffic congestion. There are limited on-street parking opportunities.

Complete streets should be utilized, including bicycle and pedestrian infrastructure. Sidewalks should be included on all roads and from the main roads to business entrances. Ideally, sidewalks will be separated from traffic lanes by landscaping which is also used to screen the parking areas. Inter-parcel access is paramount for improving traffic circulation between developments and adjacent parcels of land.

SETBACKS

Large developments should be presented as a cohesive plan and can be implemented in phases. Smaller lot development is characterized by moderate setbacks which can accommodate vehicular circulation. Access between parcels is required. Parking may be either allowed or discouraged between the main structure and the streets, depending on context, but should be screened with landscaping.

MASSING AND BUILDING HEIGHTS

Scale is important. Large buildings setback behind a field of parking a couple hundred feet from the road is not the desired aesthetic expressed by the community. Minimum heights and maximum setbacks should be considered along thoroughfares. The orientation of entrances

to other buildings to create “spaces” that are “places” is important.

PARKING

Parking is primarily accommodated in private lots for each business or building. Some on-street parking may be present, but likely only in targeted areas.

APPROPRIATE DENSITY / INTENSITY

This district has a moderate level of density with:

- » Up to eight dwellings per acre single family detached residential.
- » Up to 12 dwellings per acre multi-family residential.
- » Development of this intensity should employ stormwater control measures that exceed the State stormwater control standards, and may include solutions that are shared between several properties. With increased density, the minimum elements of the Watershed Plan should be addressed:
 - » Identify pollution sources that need control measures
 - » Identify and detail reduction load and measures necessary to meet water quality standards
 - » Detailed management activities and the expected outcome
 - » Utilize green infrastructure

COASTAL TRADITIONAL NEIGHBORHOOD (CTN)

This walkable district is the “old town” residential neighborhood that surrounds the historic central business district. It is walkable and dense, with small lots clustered on regular blocks that create a cozy and neighborly feel. While it is not uncommon for a non-residential use to occupy a previously residential structure, most non-residential uses occur in the nearby mixed use activity node, which is within a short walk. The historic development pattern has narrow streets and rights-of-way, with sidewalks generally only on one side of the street. Lots are narrow, but porches are wide.

CHARACTER

Primarily single family residential, but with multi-family structures sprinkled throughout, this high density district is walkable and its residents primarily support the businesses in the Traditional Town Center (TTC). This community type is based on historical and existing densities found in the oldest residential sections of Swansboro. It is not uncommon to have a variety of residential products, including accessory dwellings or garage apartments, duplexes, quadplexes, patio or garden apartments, and small or context sensitive apartments.

Variety of scale and character for residential CTN development



ACCESS AND CIRCULATION

Narrow rights-of-way typically mimic the design found in the TTC. Sidewalks are important and may directly abut the street.

SETBACKS

Setbacks are minimal so that each front porch still has interaction with, but a comfortable





Two examples of a Coastal Traditional Neighborhood (CTN), from the “old town” area of Swansboro.

distance from, people walking on the sidewalk. Side setbacks may be enough to accommodate a vehicular pass through on one side but not the other. Shared driveways in order to maximize lot density are potentially encouraged.

MASSING AND BUILDING HEIGHTS

Single or multistory buildings are appropriate but should accentuate the “human feel” of the area. It is unusual to have structures over three stories tall.

BLOCKS

- » 400-500 feet maximum block length, with up to 600 feet allowed only if necessary to avoid floodplains, creeks, or other environmentally sensitive areas.
- » Blocks generally match the design of the TTC.



PARKING

Parking is not allowed between the building and street, even on corner lots, and is primarily in the rear of lots, or in on-street, parallel spaces. Density of lots and homes is important for the neighborhood to be functionally walkable, but vehicles must still be accommodated. This is especially true for residential uses, which must maintain enough off-street parking (in the rear) to accommodate residents.

APPROPRIATE DENSITY

- » This moderate- to high-density neighborhood type will accommodate a large percentage of the town’s residents in comparatively less space, while also placing them closer to the businesses they frequent regularly.
- » Up to 12 dwellings per acre multi-family residential within a 1/4-mile walking distance of a Traditional Town Center area.
- » Up to 8 dwellings per acre single family detached residential within a 1/4-mile walking distance of a Traditional Town Center area.
- » Up to 5 dwellings per acre of any type of residential in all other areas.

REPRESENTATIVE AREAS

- » Water Street
- » Elm Street
- » Walnut Street

LOW DENSITY / SUBURBAN NEIGHBORHOOD (LDSN)

This residential neighborhood type generally reflects recent development in Swansboro. Lots are a little larger and although the neighborhood is walkable, most people move into and out of the neighborhood by car. Although some small-scale non-residential or multi-family residential may occur at key intersections or near significant public resources (like parks), this area is primarily single family detached residential homes.

CHARACTER

Almost exclusively single family detached residential, although occasionally more intense development may be allowed near select town infrastructure, such as near large parks. Low intensity, low nuisance nonresidential uses may also be allowed at select crossroads or neighborhood activity centers. Lots are wider and regular.

ACCESS AND CIRCULATION

Streets are residential in character, with low speeds and occasional, informal on-street parallel parking. Street trees are present but may be separated from the edge of pavement by a ditch. Sidewalks are present but depending on density may not be on both sides of the street.

SETBACKS

Setbacks are generally more restrictive than in other residential districts, with significantly sized yards often present on all sides of a building.

MASSING AND BUILDING HEIGHTS

Lower height structures, that typically do not exceed two stories, with one-story structures also common. Buildings are separated from each other by relatively large side yards.

BLOCKS

Maximum block lengths must be similar to those of the CTN, regardless of density of development. This is especially relevant when connecting to existing roads which are or will be thoroughfares or collectors of any sort, including residential collectors. The appropriate block length will allow the neighborhood to evolve as the town grows and changes through time.



Forestbrook Neighborhood



Example of Low Density / Suburban Neighborhood (LDSN)

PARKING

Parking location is less restrictive than in CTN, and can be located on any side of a building, including in corner yards. The larger lots accommodate garages on the sides of buildings, which may be front- or side-loaded.

APPROPRIATE DENSITY

- » This low-density residential type will occupy most of the town's land area.
- » Up to 5 dwellings per acre of any type of residential within 1/2 mile walking distance of any Town Center area or within 1/4 mile walking distance of a Coastal Traditional Neighborhood area, whichever is greater (i.e. - allows increased density).
- » Up to 4 dwellings per acre of any type residential within 1/4 mile walking distance of a public park of 5 acres or more in size, if there is improved pedestrian access.
- » Up to 2 dwellings per acre in all other areas.

REPRESENTATIVE AREAS

- » The Forestbrook, Halls Creek, Halls Creek North, and River Reach neighborhoods, especially if there was greater connectivity or stub-outs to adjacent parcels.
- » The neighborhood surrounding Swansboro Hills Apartments

OTHER CONCERNS

Maintaining connectivity between subdivisions and neighborhoods is what creates a community. Blocks and street connections must be designed such that future connections and extensions are made that create a cohesive, regular, intuitive street pattern, to the greatest extent possible. This also ensures that as the area evolves, more intense uses can replace older uses through redevelopment.

The lower density of development in the outskirts of this FLU designation (2 du/acre) will quickly consume land and may inadvertently displace residential demand and development to just outside the town's ETJ. This may be exacerbated by the availability of water and sewer services, and potentially lower lot size requirements. The Town should coordinate with the County and ONWASA to avoid this outcome.

Additionally, a restriction on density within the town (i.e. - 2 dwellings per acre) which provides municipal services (i.e. - parks, streets, water, sewer, police, etc.) may consume a large amount of land and return a lower amount of revenue (property taxes) that is used to support those municipal services. Generally speaking, higher density lots will provide greater return on investment (property taxes) to support the services that the town provides.

RURAL / AGRICULTURAL (RA)

Respect for agricultural lands was determined to be an important character of the Swansboro area. Rural views and working farms were once a major component of the landscape. Contrary to common conception, farms are not idyllic gardens or “neighborhoods waiting to develop” but are an almost industrial-type use where soil is worked and food/products are grown and harvested by large machines. Higher, flatter, drier areas are often the first to be consumed by development, and that has occurred in Swansboro, even as recently as the construction of the new high school. Preservation of existing agricultural areas was therefore prioritized with the creation of a FLU designed to protect these landscapes.

CHARACTER

Residential structures are typically separated from each other by large yards and/or working farms that may contain industrial-style structures like pole barns or large metal sheds. Farm equipment and machinery is likely to be found stored outside either year-round or in between jobs. Landscaping is often sparse and generally is subservient to the uses on the farms.

ACCESS AND CIRCULATION

Characterized by rural roads with ditches and very little accommodation for pedestrians. Additional right-of-way may be reserved if the road is a rural thoroughfare, or likely to be widened and improved in the future.



Example of a rural homestead



Agricultural field

SETBACKS

Setbacks for residential structures often mimic Low Density/Suburban Neighborhood (LDSN), but setbacks for industrial structures should be closer to or greater than those found in Employment / Light Industrial (ELI). Minimum setbacks are often exceeded by nonresidential structures, which are located to facilitate work operations. Farm buildings often also function as repair shops, storage facilities, and limited processing operations, and so should be treated (and buffered) as such.

MASSING AND BUILDING HEIGHTS

Usually lower height structures, especially for residential, although some non-residential structures will likely be two stories tall to accommodate larger farm equipment.

BLOCKS

Maximum block lengths must not exceed twice the specifications found in Coastal Traditional Neighborhoods, regardless of density of development. This is especially relevant when connecting to existing roads which are or will be thoroughfares or collectors of any sort, including residential collectors. The appropriate block length will allow the neighborhood to evolve as the town grows and changes through time.

PARKING

Off-street parking is prevalent in this area. It is not uncommon to have informal parking areas associated with farm operations. Residential uses will have parking consistent with their zoning.

APPROPRIATE DENSITY

- » Lower densities that are separated by working agricultural areas.
- » Up to 4 dwellings per acre of any type of residential within a 1/2-mile walking distance of any Town Center area or within 1/4 mile walking distance of a Coastal Traditional Neighborhood area, whichever is greater (i.e. - allows increased densities to more property).
- » Up to 4 dwellings per acre of any type residential within a 1/4-mile walking distance



Example of Rural Agricultural (RA)

of a public park of 5 acres or more in size, if there is improved pedestrian access.

- » Up to 0.2 dwellings per acre in all other areas.

REPRESENTATIVE AREAS

- » Farmland and residential homes on Howard Lane
- » And to a lesser degree, on Corbett Road, Ella Lane, and some areas along Swansboro Loop Road

OTHER CONCERNS

The lower density of development in RA will quickly consume land in this area when it is developed and may inadvertently displace residential demand and development to just outside the town's ETJ. This may be exacerbated by the availability of water and sewer services, and potentially lower lot size requirements. The Town should coordinate with the County and ONWASA to avoid this outcome.

Additionally, a restriction on density within the town which provides municipal services (i.e. - parks, streets, water, sewer, police, etc.) may consume a large amount of land and return a lower amount of revenue (property taxes) that is used to support those municipal services. Generally speaking, higher density lots will provide greater return on investment (property taxes) to support the services that the town provides.

EMPLOYMENT / LIGHT INDUSTRIAL (ELI)

This land use designation primarily occurs off of NC 24 on the western end of Swansboro, including the existing development on Seth Thomas Lane. The light industrial uses involve automotive or vehicular work, storage of goods, and limited manufacturing, which occurs entirely indoors and not likely to be nuisance to neighbors. The expansion of this district provides a prime location for economic development opportunities that could also include warehousing, distribution, office, research and development, tech-flex. The ELI district is distinguished by the look and feel of an industrial park with circulation for trucks but should include amenities for employees and customers.

CHARACTER

Light industrial and manufacturing, office, and tech-flex uses are encouraged in the ELI. Work occurs almost exclusively indoors, with only storage of vehicles or goods potentially allowed outdoors. With buffers and screens, these areas can be made somewhat compatible with mixed use or adjacent higher density residential development. Water and sewer utilities should be available.



Flex-tenant/ light industrial site



Light industrial manufacturing site



Example of Employment / Light Industrial (ELI)

ACCESS AND CIRCULATION

Streets are designed to accommodate larger vehicles and trucks that are used in deliveries goods and bulk products. Sidewalks should be considered at a minimum on one side of the street to accommodate employee/pedestrian traffic. Businesses should be accessed by way of an internal road that connects to the thoroughfare and a cross access to the adjacent similar development. Landscaping should be placed to buffer dissimilar uses.

SETBACKS

Setbacks are greater and are partially intended to create space for landscaping screen operations and buffer adjacent dissimilar development from potential nuisance from the light industrial / employment use, whether visual, sound, smell, or vibration.

MASSING AND BUILDING HEIGHTS

Buildings are designed to facilitate their intended purpose although some may be spec'd as "flex" industrial space. How the structures interact with the main highway is less important, though the placement of these sort of uses close to the gateway of town begs attention to the quality of the viewshed (signage, lighting, landscaping). High quality architecture and materials should be used on sides that are adjacent to or highly visible from NC 24.

BLOCKS

- » 600 feet maximum block length, with up to 800 feet allowed only if necessary to avoid floodplains, creeks, or other environmentally sensitive areas, or to accommodate structures of significant size that cannot otherwise be reconfigured.
- » Adequate loop and loading area circulation or turnaround, especially for trucks and delivery vehicles.

PARKING

Parking is primarily accommodated in private lots for each business or building.

APPROPRIATE INTENSITY

- » Intensity of development is regulated by the zoning district.
- » Business activities are generally conducted inside of a building, although outdoor storage may be allowed.
- » Residential units are not allowed in this area.
- » Site layout needs to respect the probably need for truck and delivery circulation.
- » Loading and service areas should be screened from the public right-of-way.



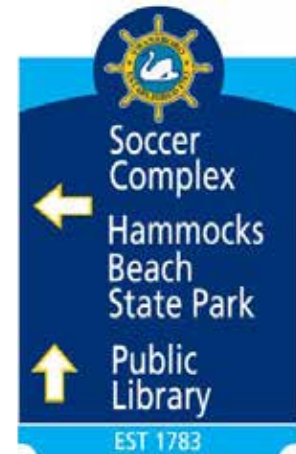
GATEWAY CORRIDOR (GC)

The area around and encompassing NC 24 is the foyer of the community: a place that welcomes travelers and residents alike. For some people, it may be the only part of Swansboro that they see, and the impression it leaves should be reflective of the community's values: welcoming friendliness, coastal charm, and beauty. The appearance and function of this corridor are in need of attention, and updated and enhanced regulation were identified as important to the community. The Gateway Corridor is all lots within 100' of and visible from, or with frontage on NC 24.

CHARACTER

The Gateway Corridor is a new designation intended to enhance the function and appearance of the NC 24 corridor, as well as other main entranceways to the town. Generally, the GC area encompasses properties that are directly adjacent to, visible from, and interact with NC 24, although any regulations developed

Character concepts for the GC district





Example of Gateway Corridor (GC)

may need to reduce or expand that definition to accomplish their goals. Recommendations from the Gateway Corridor Report (2013) as well as input from the public open house workshop should inform any regulations that will be developed for this area.

ACCESS AND CIRCULATION

This designation lies along the major thoroughfares in the Town. These high speed, NCDOT-owned roadways designed for local and through traffic. Pedestrian accommodations (likely built to NCDOT Complete Street standards), median beautification and additional landscaping, and reduced left-turn movements should be required and retrofitted. Additional right-of-way dedication or reservation will likely be required for new development or redevelopment, to accommodate anticipated or likely future widenings.

SETBACKS

Additional setbacks, and potentially right-of-way reservation or dedication, will likely be required along major thoroughfares, particularly state highways that are likely to be widened in the future.

MASSING AND BUILDING HEIGHTS

The underlying FLU may control the massing of buildings within the GC, but additional

requirements may also be necessary depending on the particulars of the desired outcome(s).

BLOCKS

As designated by the underlying FLU category, but potentially modified depending on access and traffic management concerns. Adding cross access and interconnectivity between parcels will be crucial to enhancing connectivity and function.

PARKING

Parking is governed by the underlying FLU designation but should also take into account visual impacts on the corridor. Generally, jurisdictions seek to minimize the visibility of parking areas along character enhancement corridors.

APPROPRIATE DENSITY / INTENSITY

As designated by the underlying FLU category, and potentially modified to create an area with enhanced functional and visual characteristics.

REPRESENTATIVE AREAS

This newly formed designation functions as an overlay designed to enhance the existing NC 24 corridor. Ideally, it will have associated zoning regulations that will regulate and enhance the function and appearance of the corridor.

CONSERVATION PRIORITY AREA (CPA)

Conservation Priority Areas (CPA) represent opportunities to allow lower density development clustered away from and respectful of environmentally sensitive areas, important natural views, and priority conservation preservation areas as identified by the community. Agricultural preservation was also identified as a community priority, but where Rural Agricultural (RA) areas overlap the CPA, the development character and density restrictions of the RA area shall prevail, and not be further restricted by the CPA.

CHARACTER

Generally speaking, flood-prone areas (including 100-yr and 500-yr floodplains), all wetlands (coastal and upland), streams (perennial or “blue line” and intermittent), riparian areas and mature forests are priority preservation areas. This is especially true of areas that have an impact on water quality and accommodation of storm surge.

Development within this overlay should respect the natural environment that creates the quality of life that defines Swansboro. Clustering development away from sensitive environmental features or assets (views, habitat, etc.) is required. Deviations from typical lot standards may be necessary to accommodate clustering.



Coastal wetland



Agricultural field

ACCESS AND CIRCULATION

Streets will respect the underlying FLU designation, but may be designed with additional criteria that respect and enhance the natural environment. In particular, additional or enhanced flood mitigation, low impact design, or stormwater treatment measures may be necessary.

SETBACKS

Setbacks should provide enhanced protection of environmental assets and provide additional buffering for structures or infrastructure that will be placed near CPAs. As such, setbacks will likely be determined by the underlying FLU(s) or zoning, but with additional setbacks from environmental features (stream, wetland, floodplain, open water body) that are within the CPA.

MASSING AND BUILDING HEIGHTS

Modifications to the massing standards of the underlying FLU may be necessary to protect environmental resources and additional attention may be necessary to accommodate views of CPAs, which in some cases are considered a community asset.

BLOCKS

- » Blocks are allowed as appropriate for the underlying FLU category, but larger blocks should be allowed if necessary to avoid environmentally sensitive areas.
- » Stub-out connections should be located logically to facilitate future connections to adjacent areas, if environmentally feasible.

PARKING

Parking areas should be designed to minimize stormwater generation or other negative externalities (i.e. - light pollution, runoff, etc.) that might impact CPAs.

APPROPRIATE DENSITY / INTENSITY

Low intensity development is allowed within this FLU designation at 50% of the gross density otherwise specified by the underlying FLU category. This means that less development will occur in or near the CPAs. All development that does occur must be clustered in the least



Example of Conservation Priority Area (CPA) with coastal wetlands.

environmentally sensitive part of the property and net density in that clustered, developed area may exceed the gross density for the total property, particularly if it is uplands.

REPRESENTATIVE AREAS

Currently, there are no representative areas in town that effectively demonstrate environmentally respectful cluster development.

OTHER CONCERNS

It is important to note maps within this plan depicting the CPA are for reference only, as these areas will naturally shift and realign, requiring field verification to determine exact location.

Lowering the intensity and density of development within this area in the town's jurisdiction may result in the demand for that development being displaced elsewhere, including to the area just outside the ETJ. If Onslow County has less restrictive regulations on development, it is likely this will result in additional higher intensity growth just outside of town, which could quickly consume farmland and land in environmentally-sensitive areas. This effect will likely be accelerated by availability of water and sewer services by the ONWASA. Consequently, the Town should coordinate with the County to implement a mutually-beneficial solution to this potential problem.



Example of Conservation or Cluster subdivision. (Source: Chatham County Comprehensive Plan)

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RECOMMENDATIONS & STRATEGIES

Community plans are meant to be living documents. Priorities and directions are set in the plan, but implementation of the plan's recommendations and strategies will be carried out by Town leadership and staff. Swansboro embarked on the Land Use Plan update at the same time as other planning efforts, offering the opportunity for plans to be significantly aligned to each other, and enhancing the likelihood of successful implementation. The following recommendations and strategies are intended to provide additional guidance for implementing the goals and objectives of this plan.

PUBLIC ACCESS

PROVIDE, ENHANCE, AND ENFORCE PUBLIC WATER ACCESS.

Waterfront access points should be clearly designated and designed as public spaces, without encroachment from neighboring property owners attempting to exert private influence over the area. Enhanced facilities (kayak and canoe launches, public benches or tables, trash cans, docks, etc.) also increase the appeal and use of these areas. When providing public access to waterfront areas, natural shoreline and habitat should be preserved as much as possible to protect water quality.

PROTECT VIEWS OF THE WATER AND OF NATURAL AREAS AND WETLANDS.

Preserve signature views and create new visual and/or physical connections to the water when accommodating new growth. Partner with land owners in existing development to increase connections to the shoreline.

INCREASE ADA ACCESSIBILITY AND IMPLEMENT ADA TRANSITION PLAN.

The Americans with Disability Act (ADA) accessibility retrofits can be difficult to implement in older sections of town where space is limited. However, providing access, particularly to businesses and areas the general public is invited to visit, is important and should be the norm when evaluating upfits or redevelopment plans. The creation, adoption, and implementation of an ADA Transition Plan should also be a top priority.

LAND USE COMPATIBILITY

INCORPORATE DEVELOPMENT STANDARDS THAT IMPLEMENT THE CHARACTER DESCRIPTIONS PROPOSED IN THE FUTURE LAND USE CATEGORY DESCRIPTIONS.

The development character of certain parts of town are prized and must be measured and codified in the zoning code in order to see those changes occur in new development. A revision of the development standards and zoning regulations should be undertaken to see the character of the future land use designations carried forward into new development. For instance, parking minimums and maximums should be reviewed and revised to better implement the recommendations and goals of this plan.

REVIEW DEVELOPMENT STANDARDS OF THE DOWNTOWN AND THE HISTORIC NEIGHBORHOODS SURROUNDING DOWNTOWN, AND EXTEND THOSE STANDARDS TO AREAS IN THE TRADITIONAL TOWN CENTER (TTC) AND COASTAL TRADITIONAL NEIGHBORHOOD (CTN).

The people of Swansboro treasure the feel and character of the historic downtown and surrounding residential areas. This character should be quantified and codified so that future development and redevelopment can achieve a similar feel (setbacks, lot widths, parking location, materials, etc.), while also incorporating enhanced standards and performance (stormwater, pedestrian facilities, ADA access, etc.)

CONTINUE TO IMPLEMENT ADOPTED TOWN PLANS.

For plans to remain relevant and actionable, they must be acted upon, reviewed, and revised regularly, which may be as simple as a regular status update from staff on accomplishments and status of projects within each plan. Aging plans should be reviewed and revised to remain relevant, and a progress update schedule developed for each relevant plan with associated responsible town department.

Continue implementation of the adopted town plans, including but not limited to:

- » Economic Development Strategy (2018)
- » Parks & Recreation Master Plan (2019)
- » Watershed Restoration Plan (2017)

CREATE ZONING STANDARDS AND STRATEGIES TO ADDRESS DEVELOPMENT IN AND NEAR RURAL AGRICULTURAL (RA).

Farming is a largely industrial activity that can create significant nuisances for adjacent residential properties. However residential development will seek to locate on dry, flat areas, most of which have previously been or adjacent to farmland. Enhance zoning standards for rural development to buffer and compliment farmland in the RA.

CREATE ZONING STANDARDS TO ENHANCE THE FUNCTION AND APPEARANCE OF THE GATEWAY CORRIDOR (GC), PARTICULARLY THE NC 24 CORRIDOR.

The public open house workshop identified several areas where public support exists for strengthening

regulations along the NC 24 corridor. Implement the recommendations of the Gateway Corridor Plan, including but not limited to enhancement of the Gateway Corridor character area through development guidelines and ordinance standards that:

- » Preserve or create deep and enhanced, landscaping buffers between roadway and development site.
- » Encourage residential building setbacks and massing that blend in with the natural environment.
- » Significantly restrict individual access drives and require cross-access between adjacent parcels and sites unless absolutely unachievable.
- » Discourage frontage streets, or if allowed modify setbacks accordingly.
- » Create pedestrian-supportive infrastructure (sidewalks, crosswalks, signals, etc.) along the gateways.
- » Create parking location requirements, with strong preference for parking in the rear of buildings, and enhanced screening requirements that provide consistency and contribute to the appearance of the corridor.

INFRASTRUCTURE CARRYING CAPACITY

DIRECT DEVELOPMENT TO PLACES THAT CAN SUPPORT IT WHILE ALSO REINFORCING THE COMMUNITY CHARACTER AND SOCIAL FABRIC.

The best way to connect people to destinations is to place them in proximity to each other. Locate higher density residential development within walking distance of goods and services to strengthen businesses, reduce vehicular traffic, and encourage active transportation. Consider existing built form and community characteristics when reviewing new development.

Allow dense, context-sensitive development in areas that have adequate public service, proximity to goods and services, and resiliency to foreseeable environmental threats. Mixed use development, both horizontal and vertical, should be encouraged where appropriate.

Consider incentives for infill growth such as by-right approval processes, while also requiring development to connect to utilities and pay for needed system upgrades.

PRIORITIZE UTILITY SYSTEM UPGRADES.

Continue to work with ONWASA to prioritize water and sewer expansion and distribution to targeted areas in accordance with the Future Land Use Plan. Prioritize utility system upgrades for mixed use areas. Incorporate concepts and design that respect the current and future vulnerability of these facilities to a changing climate, storms, and sea level rise.

EVALUATE THE COST OF PROVIDING SERVICES TO NEW DEVELOPMENT AND USE THAT INFORMATION WHEN EVALUATING PROPOSED DEVELOPMENTS OR EXTENDING UTILITY SERVICES.

By using a measurable metric, such as cost per linear foot of street frontage, a community can quantify existing public services costs, and estimate the impact that future development will have if the town is required to take over infrastructure and provide services. A benchmark figure will assist decision makers in evaluating the long-term impact of service extension and growth. Ultimately, the cost of services and infrastructure provided by the town must be recouped, and a balanced approach can be best informed with knowledge of those costs.

IDENTIFY FUNDING SOURCES AND PARTNERSHIP OPPORTUNITIES.

Investigate potential funding sources for the water system and utilize inter-local agreements with either the County or ONWASA for annexation and utility service provision, as appropriate.

NATURAL HAZARD AREAS

CONTINUE TO PROVIDE INFORMATION TO RESIDENTS AND THE DEVELOPMENT COMMUNITY ON THE RISKS AND BEST AVAILABLE DATA RELATING TO ENVIRONMENTAL RESOURCES AND CONDITIONS.

Continue education efforts related to flooding, storm surge, sea level rise, stormwater, and governmental programs and processes related to each. This may include becoming involved in the Community Rating System (CRS) and potentially other programs related to flood protection and flood insurance.

PRIORITIZE CAPITAL IMPROVEMENT PROJECTS IN AREAS THAT WILL INCREASE OVERALL RESILIENCY TO STORMS AND FLOODING.

- » Identify priority areas and actions to make the town more resilient to storms and flood events using VCAPS process and knowledge of recent storms.
- » Evaluate public and private infrastructure for risk, especially critical infrastructure (operations center, police/fire/EMS stations, water and wastewater treatment plants, hospitals, assisted living facilities, etc.), and use this evaluation to guide future locations and expansions.
- » Consider locating highly critical infrastructure well outside of the 500-year floodplain, while less critical infrastructure may be in more flood prone areas with disruptions anticipated but minimal. The nature of each infrastructure component will determine how risk-adverse the public is to a lapse in service.
- » Map and identify stormwater infrastructure that needs upsizing or replacement, and incorporate into capital improvement planning.

USE CURRENT, BEST AVAILABLE SEA LEVEL RISE PROJECTIONS AND ENVIRONMENTAL VULNERABILITY KNOWLEDGE WHEN MAKING PUBLIC INFRASTRUCTURE INVESTMENT DECISIONS.

Public investments communicate to the public that an area is “safe”. They are also frequently lasting decisions that obligate funds for construction, operation, or maintenance for many years. A town that appropriately sites new infrastructure will be more likely to be prosperous and safe.

- » Consider retracting services or strategically abandoning infrastructure in areas that are likely to be risky or dangerous.
- » Major public facilities (hospitals and resident-occupied health facilities, operations centers, water/wastewater facilities, etc.) should be located in areas that will not flood during intense storm events (500-year or 1,000-year), and access to these facilities should also be hardened against storm impacts.
- » New roads should only be allowed if built to withstand a significant storm event without flooding, and even then should be located entirely outside of floodplains.
- » Utilize the information from the VCAPS process regarding projected future floodplains (see Appendix).

STRENGTHEN DEVELOPMENT STANDARDS TO ENHANCE RESILIENCY TO STORMS, FLOODING, AND AN UNCERTAIN CLIMATE FUTURE.

- » Require new construction be built to withstand lower probability / higher impact storms (500-year, 1,000-year, etc.) to reduce damage liability, economic losses, and speed recovery when these events occur. This will be especially important as future floodplain limits will expand as noted on new FIRMS which

are based on SLOSH storm surge modeling. Incentives to reduce insurance costs could also make this strategy more achievable.

- » Perform analyses to identify areas that will likely become the new 100-year floodplain as sea levels continue to rise and consider restricting development or enhancing development regulations in these areas. Look for future guidance from FEMA on this particular subject.
- » Encourage or incentivize low impact development techniques by updating stormwater ordinances and improving outreach efforts. Updates should include but not be limited to:
 - » Encourage reduction of impervious surface cover and increased use of permeable surfaces
 - » Allow naturalized detention areas, rain gardens, and bioswales to satisfy open space requirements
 - » Consider zoning overlays in areas of specific stormwater management concern that require certain types of stormwater or flooding management techniques
 - » Treatment and storage of stormwater on-site, where appropriate
 - » Implementation of Low Impact Development (LID) or green infrastructure stormwater and water quality measures, where appropriate; this may involve multi-property solutions
 - » Implementation of projects that enhance or restore shoreline or wetlands, or otherwise improve water quality and the natural environment
- » Consider requiring a higher freeboard requirement (2- or 3-foot) for new development and/or in places that are particularly susceptible to flooding or storm surge with or without wave action.
- » Develop unique solutions to mitigate future flooding in the historic waterfront district in order to preserve the town's heritage and history.

REVIEW AND REVISE THE WATERSHED RESTORATION PLAN TO ENSURE THAT IT ANTICIPATES AND ADDRESSES EXISTING AND FUTURE ISSUES.

- » Identify opportunities for retention and green stormwater infrastructure that can serve infill and redevelopment
- » Consider regional stormwater detention solutions for future employment sites or other large development sites; consider partnership with developers (or regional solutions)

SCRUTINIZE DEVELOPMENT IN ENVIRONMENTALLY-SENSITIVE AND FLOOD-SUSCEPTIBLE AREAS CONSERVATION PRIORITY AREAS (CPAs).

Consider requiring the mapping and quantification of the CPAs when reviewing new development applications in these areas. Note that these areas are comprehensively mapped herein, and local criteria should be created to assist developers in making on-the-ground inventories, similar to the mapping of stream buffer corridors. This information should then be used during preliminary and final development application decisions. It may also be beneficial to encourage or even incentivize the clustering of development outside of the CPAs.

WATER QUALITY

CREATE ZONING STANDARDS AND STRATEGIES TO ADDRESS DEVELOPMENT IN CONSERVATION PRIORITY AREAS (CPAs).

Restrict the development of natural areas, especially in floodplains, to preserve water quality. Clustering

and other density transfer strategies will help protect priority environmental areas, as well as keep new development further from harm's way, as in the case of king tides, and storm-related flooding.

CONTINUE TO IMPLEMENT THE TOWN'S WATERSHED RESTORATION PLAN.

The town has recently obtained funding to install retrofit stormwater solutions to improve water quality. Any historic downtown has challenges when dealing with stormwater, since regulations did not exist when the town developed. Continuing to implement stormwater solutions is important to water quality, especially since much of the development of the town predates current stormwater control regulations. The Town may also choose to increase regulation of stormwater or raise stormwater fees to pay for other mitigative measures.

COMBINE WATERFRONT ACCESS WITH HABITAT RESTORATION AND STORM RESILIENCY.

- » Enhance water quality and storm resiliency while also providing increased access to public trust waters.
- » Pursue funding from multiple sources to achieve complimentary outcomes.
- » Consider additional setbacks from salt marshes, per the recommendations from the VCAPS process.
- » Consider implementing the Living Shorelines recommendations from the VCAPS process.

INVEST IN WATER QUALITY PROJECTS THAT ENHANCE BOTH QUALITY OF LIFE AND NATURAL ENVIRONMENT.

One of Swansboro's primary assets is the waterfront and coastal character of the town. Water quality and the natural environment is a major reason that people continue to settle in the town. Protection of water quality is crucial to the town's long-term vitality. Zoning and development standards are the primary avenue to locally influence water quality, and protective standards should be incorporated into the ordinance, including but not limited to:

- » Reduction of site impervious surfaces
- » Treatment and storage of stormwater on-site, where appropriate
- » Implementation of Low Impact Development (LID) or green infrastructure stormwater and water quality measures
- » Implementation of projects that enhance or restore shoreline or wetlands, or otherwise improve water quality and the natural environment
- » Disconnected and/or enhanced Stormwater Control Measures (SCMs), possibly requiring measures in excess of state standards

OTHER COMMUNITY PRIORITIES

PRIORITIZE NEW PEDESTRIAN INFRASTRUCTURE.

Identify potential pedestrian connections (sidewalks and multi-use trails) between high residential density areas and popular destinations and include those projects in the Capital Improvement Plan.

Destinations identified at the public open house workshop include:

- » Areas north and south of NC 24
- » The historic downtown
- » Parks and recreation facilities
- » Waterfront access areas

- » Hammocks Beach State Park
- » The intersections of NC 24 with Hammocks Beach Road and Old Hammock Road
- » Queens Creek Road
- » Main Street Extension

FACILITATE CROSS-DEPARTMENTAL, INTER-AGENCY, AND INTER-JURISDICTIONAL COORDINATION.

Encourage collaboration to provide county services that support recommendations in this plan. Work with outside agencies (local, regional, state, federal) to implement land use decisions that reinforce and support the values of the town. Of particular importance are communication and coordination with the County and ONWASA on land use and service provision decisions and standards that occur just outside the town's ETJ, as these will have the greatest impact on the town.

CONNECT NEW AND EXISTING DEVELOPMENT TO THE BROADER COMMUNITY.

Institute requirements that connect development to nearby amenities, open spaces, residential and commercial areas, and road networks by implementing the following strategies:

- » Limit maximum cul-de-sac length, and then only allow if a future connection is not achievable. Developing secondary connections between destinations is crucial to creating community and reducing congestion on major roadways.
- » Establish maximum block lengths, and require achievable stub-outs. Where stub-outs would require a culvert or bridge, require the developer to pay fee-in-lieu for their portion of the future facility. Consider also adopting Appendix D of the NC Fire Code, which discusses access points, cul-de-sac length, and maximum number of units for safe provision of EMS/fire safety services.
- » Update pedestrian and bicycle plans to address acquisitions and requirements for easements for these facilities. Require new construction to connect to existing or planned facilities.
- » Strengthen connectivity policies to require interconnectivity and reduce traffic on main roads.

ENHANCE APPEARANCE AND MAINTAIN SMALL-TOWN, COASTAL CHARACTER.

The appearance and quality of appearance of structures, especially those with larger footprints (~40,000 sqft), should be balanced or mitigated by higher-quality materials and stormwater control measures, including but not limited to:

- » Use of high quality materials and prohibition or reduction in the use of low quality materials.
- » Breaking up the roofline or overall massing through architectural embellishments and fenestrations.
- » Balancing greater impervious surface areas with:
 - » Carefully considered setbacks that reduce visual impact - for instance, stepped setbacks.
 - » Additional stormwater control measures, particularly Low Impact Development (LID) design.
 - » Additional or enhanced landscape buffering, lighting, or pedestrian infrastructure and spaces.

IMPLEMENT THE ACTIONS IDENTIFIED IN THE VCAPS STUDY (SEE APPENDIX).

The community-identified actions and solutions identified in the VCAPS study are incorporated in this report as an appendix and include priority actions. Planning and implementation of this sort is a major step toward creating a more climate resilient future for Swansboro.

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PUBLIC ENGAGEMENT AND INVOLVEMENT

STEERING COMMITTEE

The Town appointed a steering committee composed of community members representing a variety of invested perspectives. This committee met monthly. Throughout the process, the steering committee reviewed, discussed, guided, and vetted the findings, public input, and proposed direction as presented by the consultant and staff. Through the information they gained from all of these exercises, the steering committee helped build a plan that represented the views and perspectives of the wider community, with an eye toward the detailed inner workings, opportunities, and constraints of each component of the plan. Members of the steering committee are listed in the Acknowledgments section of this plan.

SURVEY DEVELOPMENT

The steering committee provided conceptual guidance for the survey that was eventually delivered to the public. Their concerns included how to reach representative members of the town to get a broad picture of local perspectives as well as substantive questions, such as what type of development should be encouraged in certain locations.

EXISTING CONDITIONS REVIEW AND MAPPING

The steering committee reviewed and vetted information and mapping related to capturing existing conditions. When required, the committee members corrected those datasets and augmented them with local knowledge to ensure that they were the most current information available.

PREVIOUS GOALS ASSESSMENT

Steering committee members reviewed goals from previous plans, including the past CAMA Land Use Plan. These goals were also evaluated for their continuing relevance to this Land Use Planning effort. These 30+ revised goals were then brought forward to the public open house, where they were ranked and evaluated by the members of the town.

STAKEHOLDERS

Three separate stakeholder meetings were held to gather input from representative groups that might be most affected by changes to the Land Use Plan. A full day of interviews captured the knowledge, perspectives, issues and desires of stakeholders that were organized into the following groups:

- » Property owners and developers
- » NC Hwy 24 business owners, real estate professionals, builders, attorneys, and design professionals
- » Major landowners, historic district representatives, and town and ETJ residents
- » Government agencies, economic development, tourism, and business representatives

- » Religious organizations, schools, parks & recreation
- » Town commission, advisory boards, and steering committee members

In addition to the full day of interviews, two follow up meetings (one in-person and one by conference call) were held on separate occasion to gather input from people that were unable to attend the first meeting. The stakeholders of the in-person meeting included representatives of the development community, historical preservation, the business community (banking and hoteling), as well as long-term residents. The stakeholders from the conference call included eleven agency personnel that regularly coordinate with the Town of Swansboro. These were subject area experts representing the NC Coastal Federation, Duke Energy, Jacksonville/Onslow Economic Development, Waste Management, and the Chamber of Commerce. In addition, representatives were in attendance who are also involved in the Joint Land Use Study with Camp Lejeune military base, recently adopted Economic Development Strategy, and the ongoing Parks & Recreation Master Plan for the Town.

PROJECT WEBSITE

A unique website was created specifically for gathering and disseminating information about this Land Use Plan update process. The website was populated with information about the general process, as well as specific information generated by research and public engagement throughout the process. Regular updates and a general comment form allowed visitors to learn about the planning process, review information, and provide comment. The website was advertised at all meetings and in all printed materials. It was available through traditional computer browsers as well as through mobile phones.

SURVEY

A online survey was conducted to gather input on the direction that the public would like to see the town move toward in the future. 113 people (4.5% of Swansboro's adult population) responded to the survey, which was available one week before

and two weeks after the public open house. This significant response rate was driven in part by significant outreach by town staff and steering committee members.

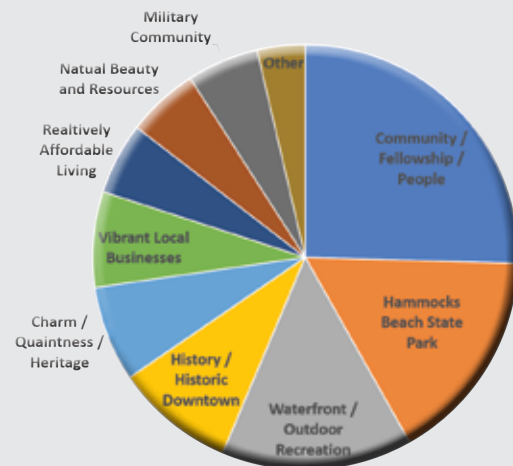
PUBLIC OPEN HOUSE

Over 110 community members attended a public open house in Town Hall on August 7th, 2018. This robust attendance was a function of extensive outreach by town staff as well as an internet website presence, email outreach, and articles in the local paper. Town staff posted signs, held mini-public engagement outreach meetings, and handed out flyers. Steering committee members even distributed materials within their neighborhoods and went door-to-door

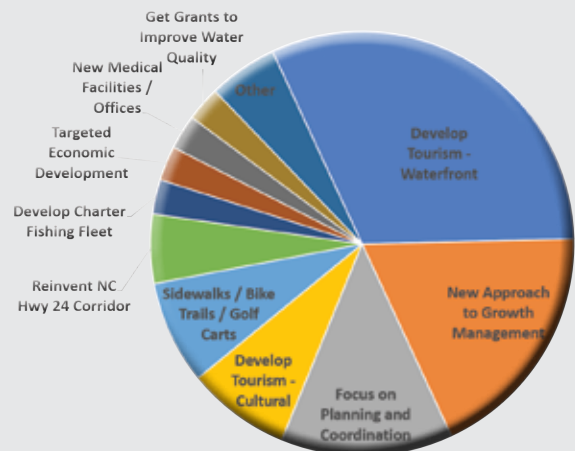
to notify residents. As a result, this well-attended event provided a significant amount of valuable information about public perceptions and desires that was used to inform this plan.

PUBLIC HEARING

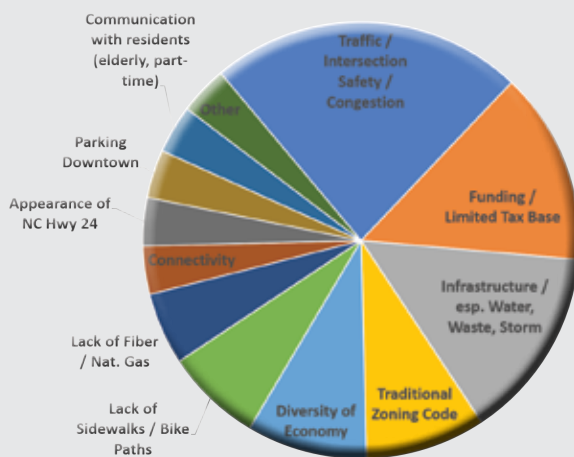
The plan was also reviewed by both the Planning Commission and Town Commission for Swansboro. Each of these meetings were public and noticed publicly, and provided opportunity for the community to review and comment on the plan.



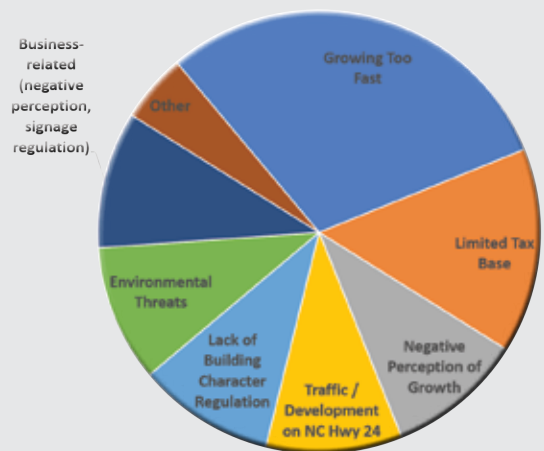
SWOT Analysis: Strengths



SWOT Analysis: Opportunities



SWOT Analysis: Weaknesses

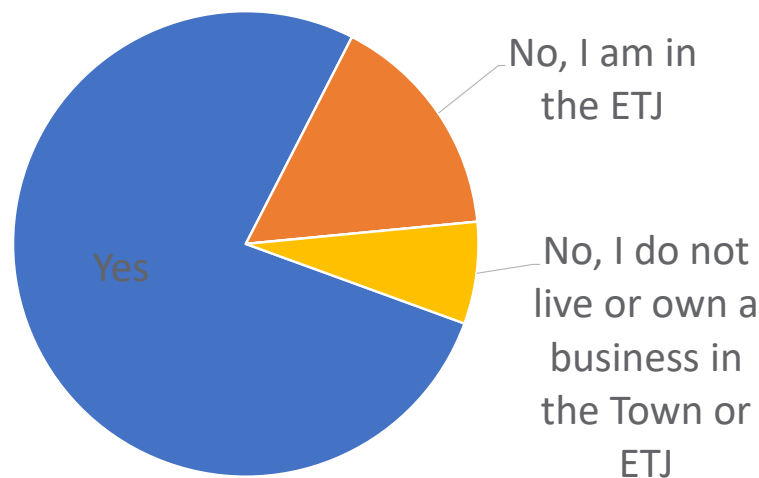


SWOT Analysis: Threats

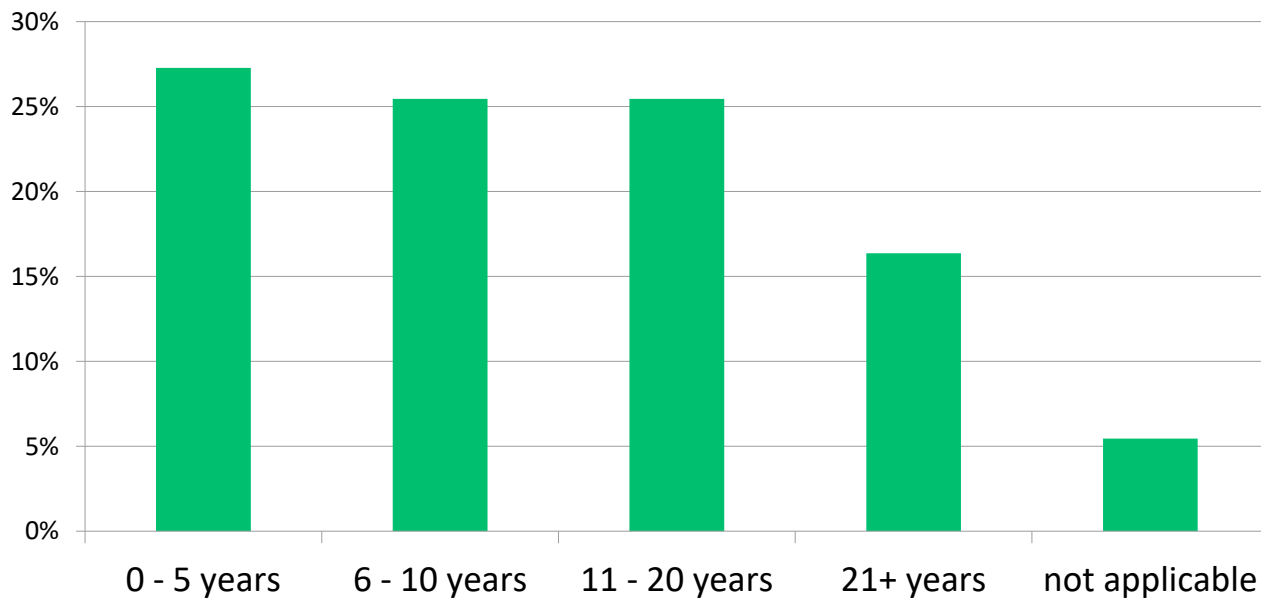
PUBLIC SURVEY RESULTS

- Survey open from July 31 – August 21, 2018
- 113 respondents, equivalent to 4.5% of the adult population of Swansboro → great response rate!
- Major themes include:
 - Historic character and small-town charm
 - Clean up / beautify NC Hwy 24
 - Connect destinations, sidewalks and bike paths
 - Access to the water
 - Protection of wetlands and environmentally sensitive areas
 - Infrastructure and services to keep pace with growth

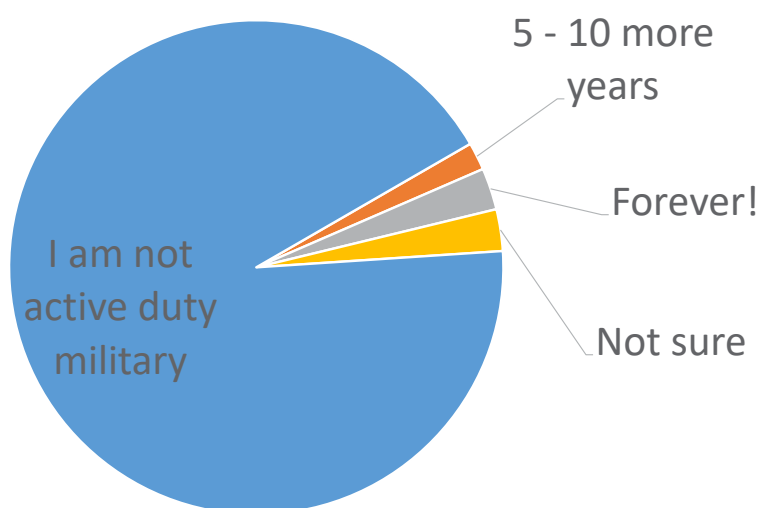
Do you live or own a business or land in Swansboro?



How long have you been a resident, business, or land owner in Swansboro?

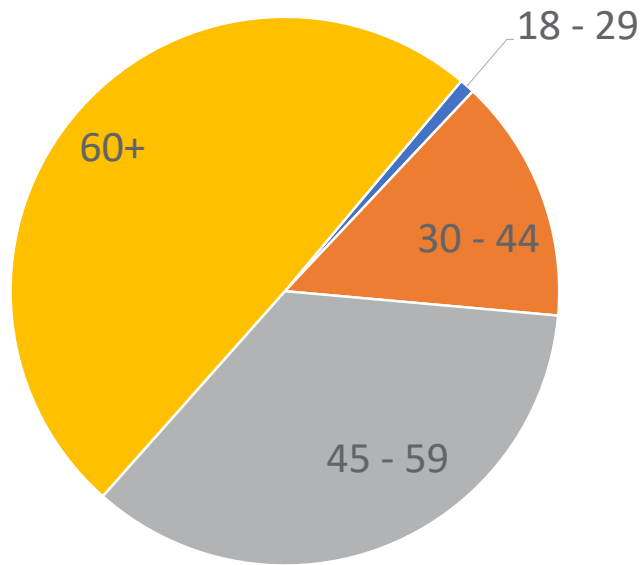


If you are active duty military, how long do you think you will continue to live in the Swansboro area?



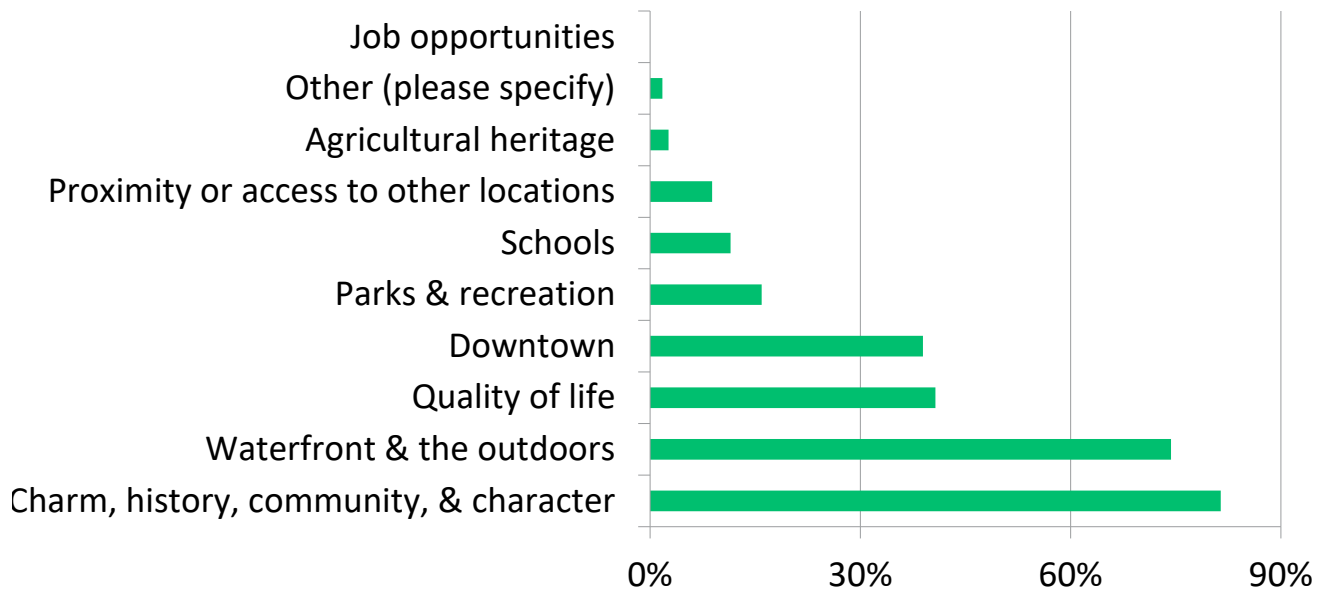
*Zero respondents marked that they will leave within 5 years or less.

What is your age?

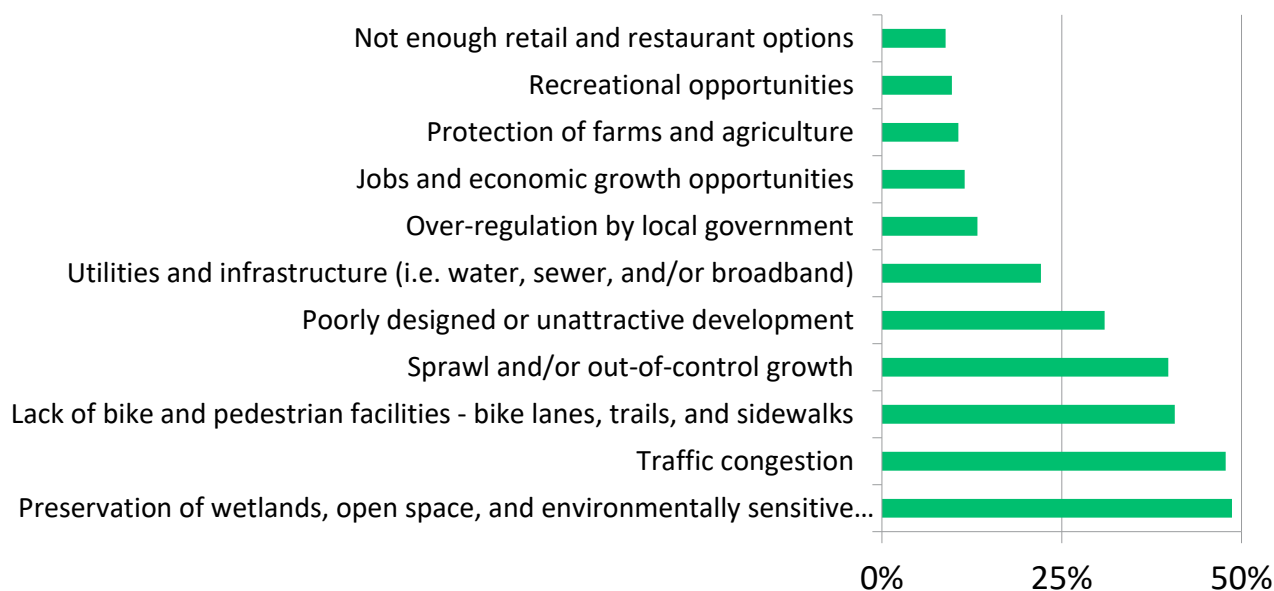


*Zero respondents are under 18 years old.

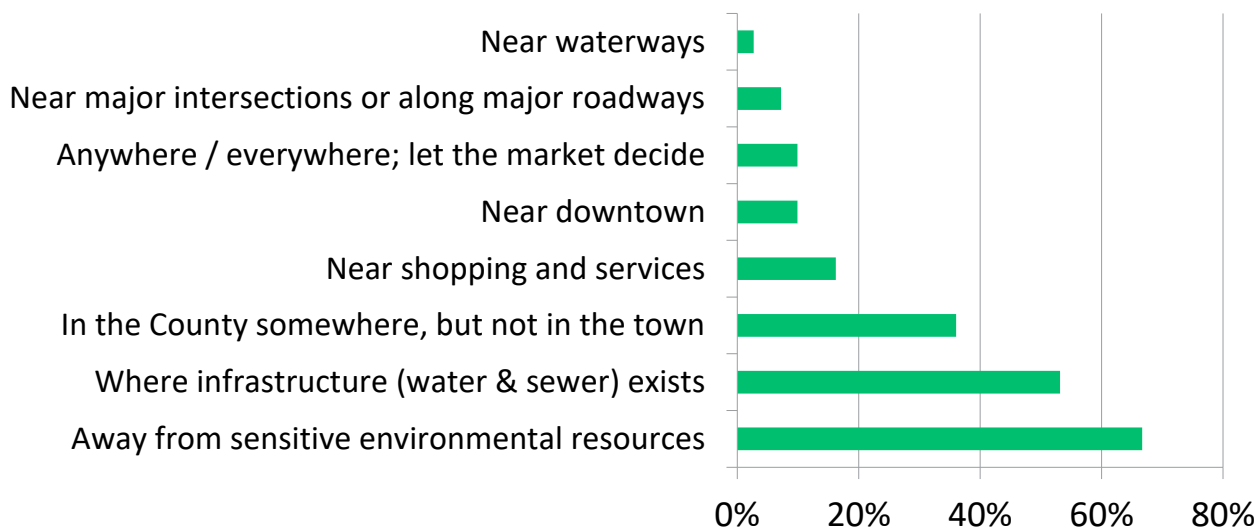
Of the following, which do you value most about Swansboro? (Select up to three)



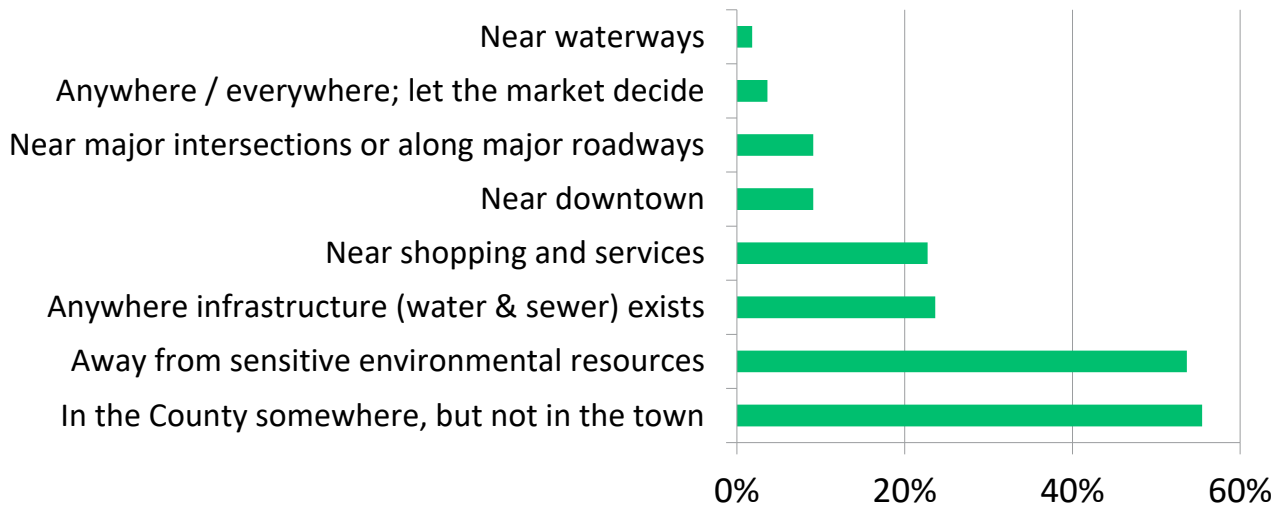
Of the following, the most pressing issues related to Swansboro's growth are: (Select up to three)



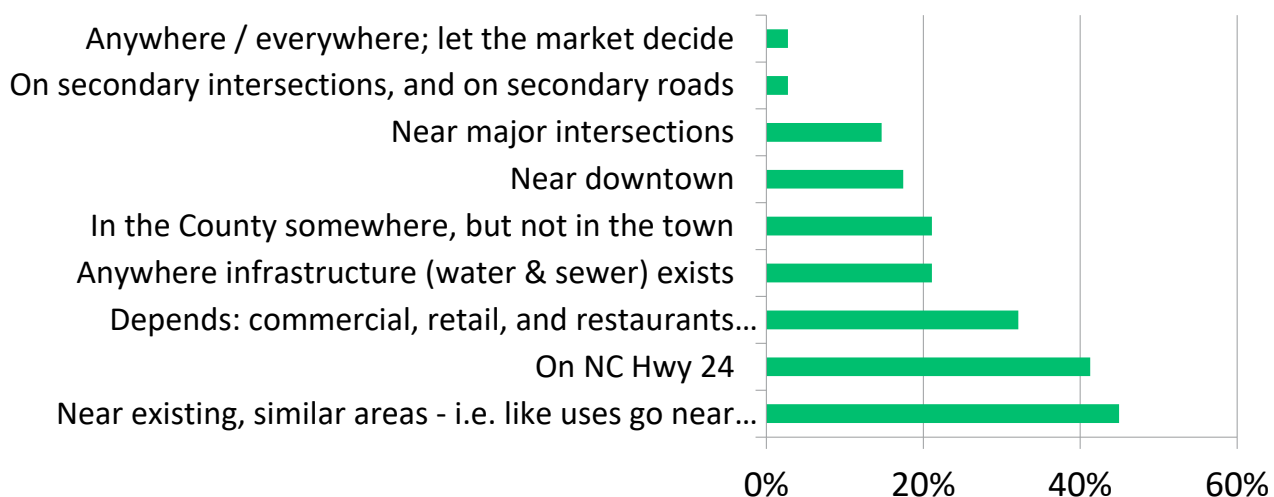
Development of new single family detached residences should be focused/encouraged in the following locations (check all that apply):



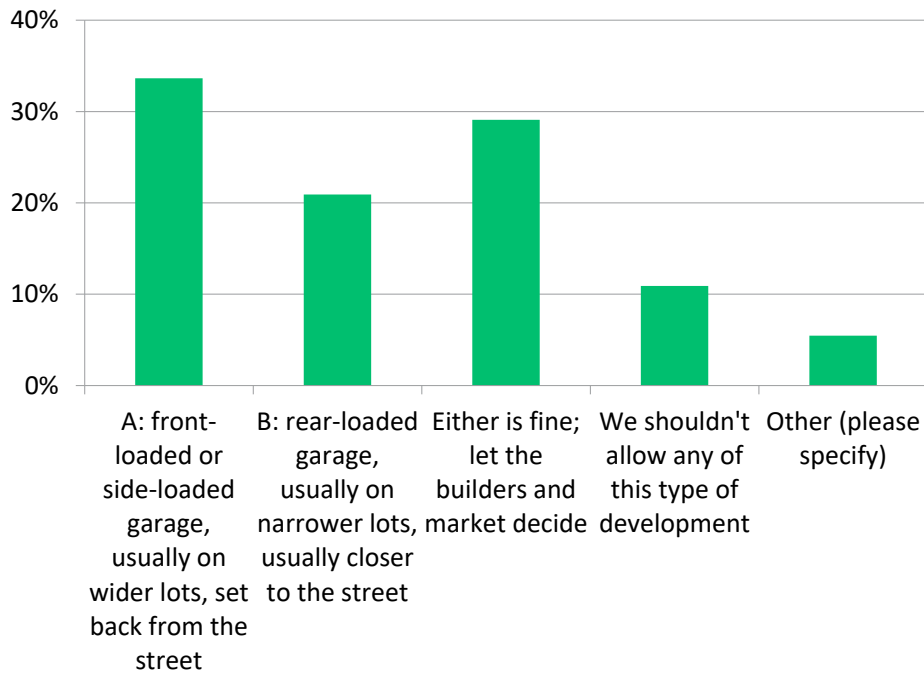
Development of new multi-family residences (i.e. - townhomes or apartments) should be focused/encouraged in the following locations (check all that apply):



New commercial, retail, restaurants, office, and nonresidential development should be focused/encouraged in the following locations (check all that apply):

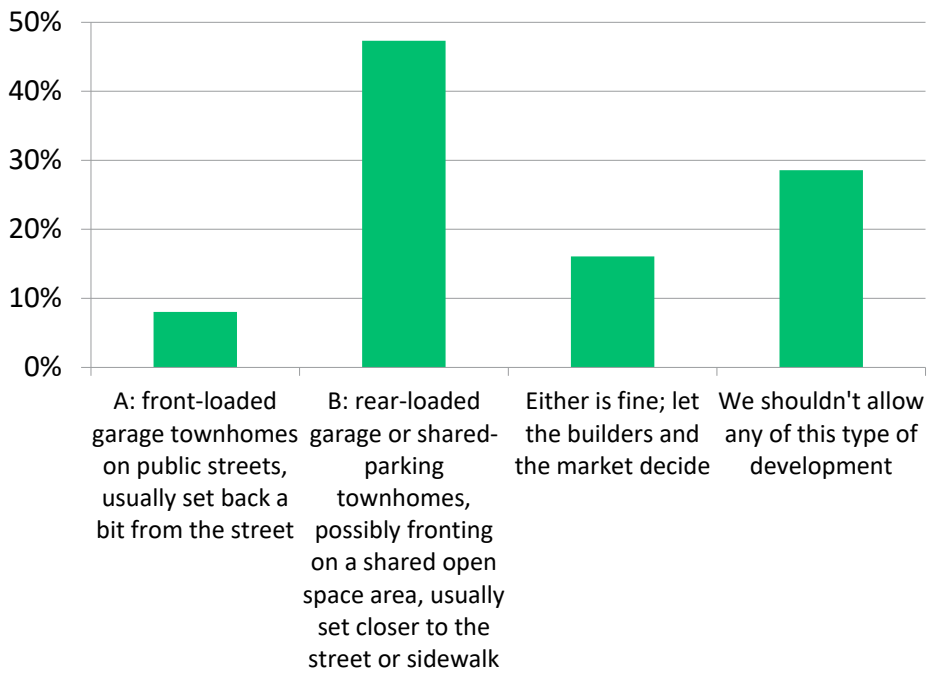


Preference for single family homes



Swansboro CAMA Land Use Plan Update

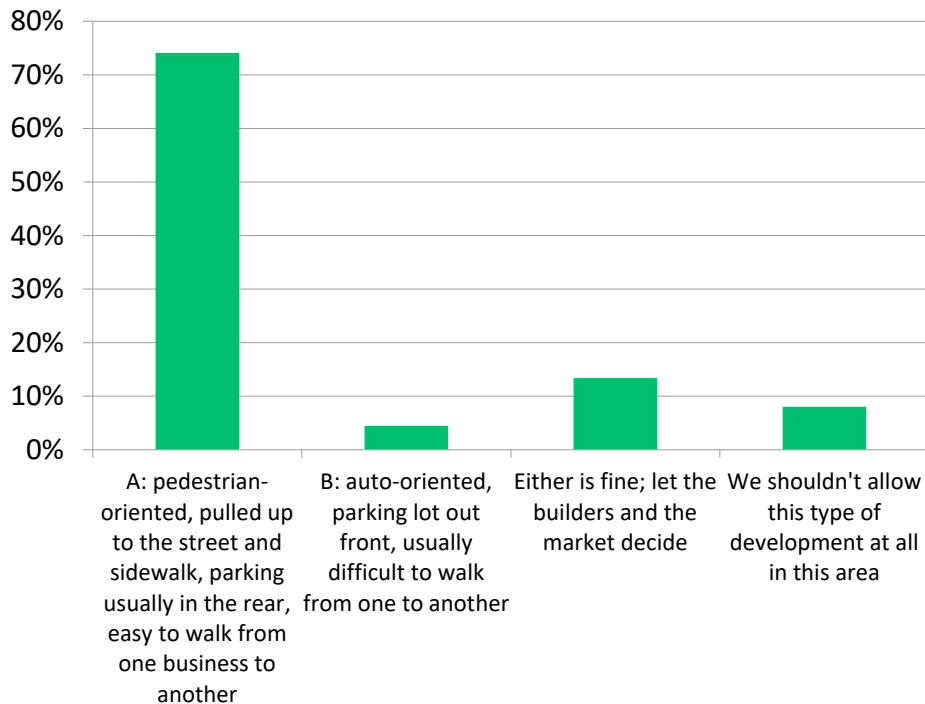
Preference for multi-family (townhomes)



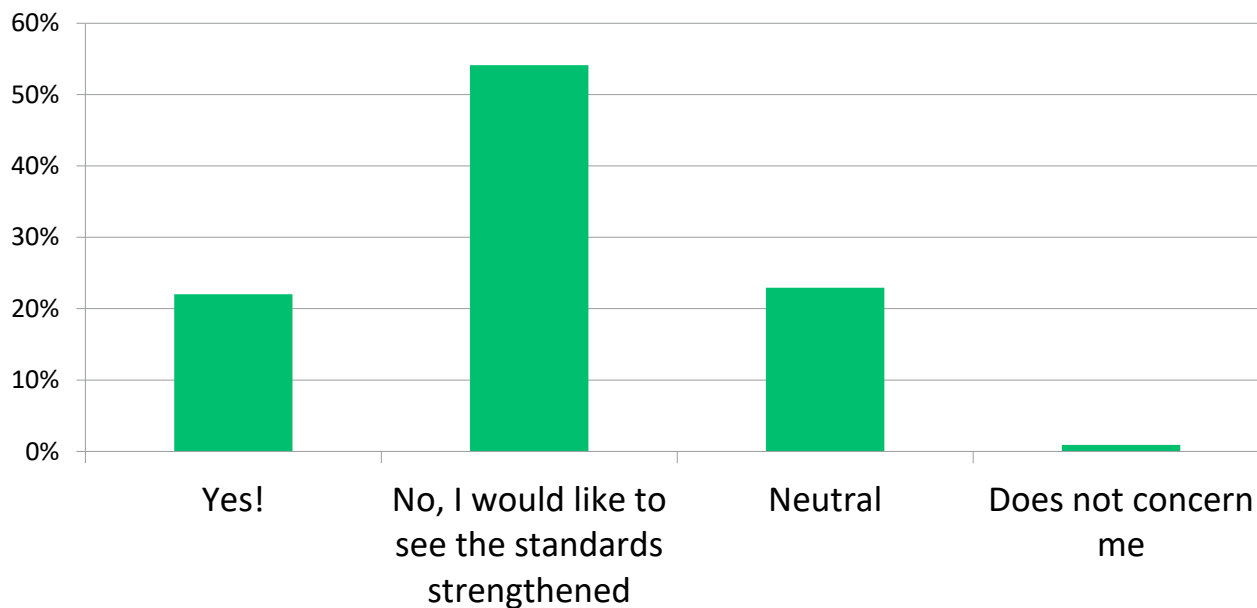
Preference for multi-family (apartments)



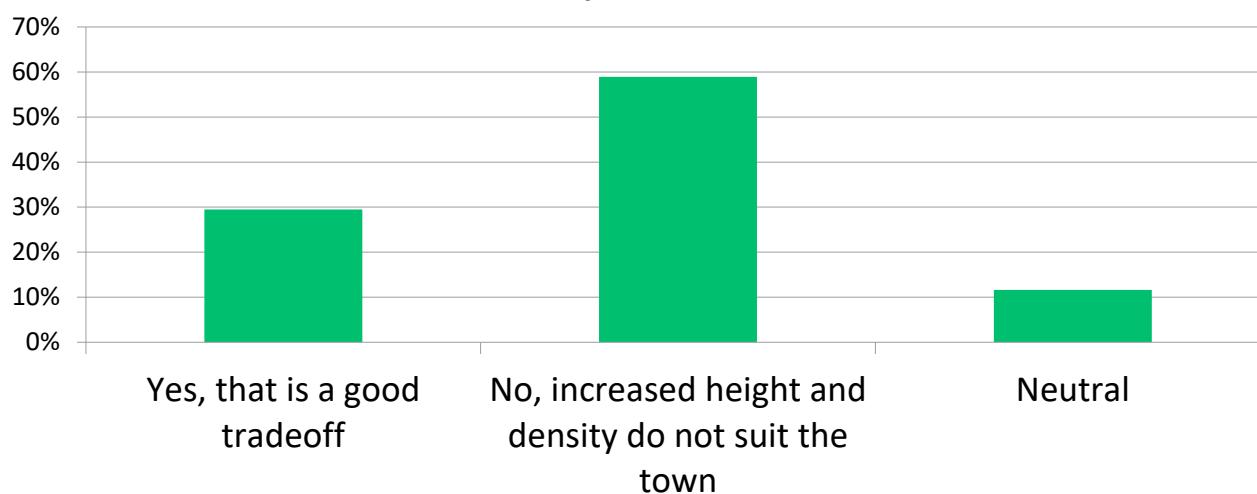
Preference for commercial centers



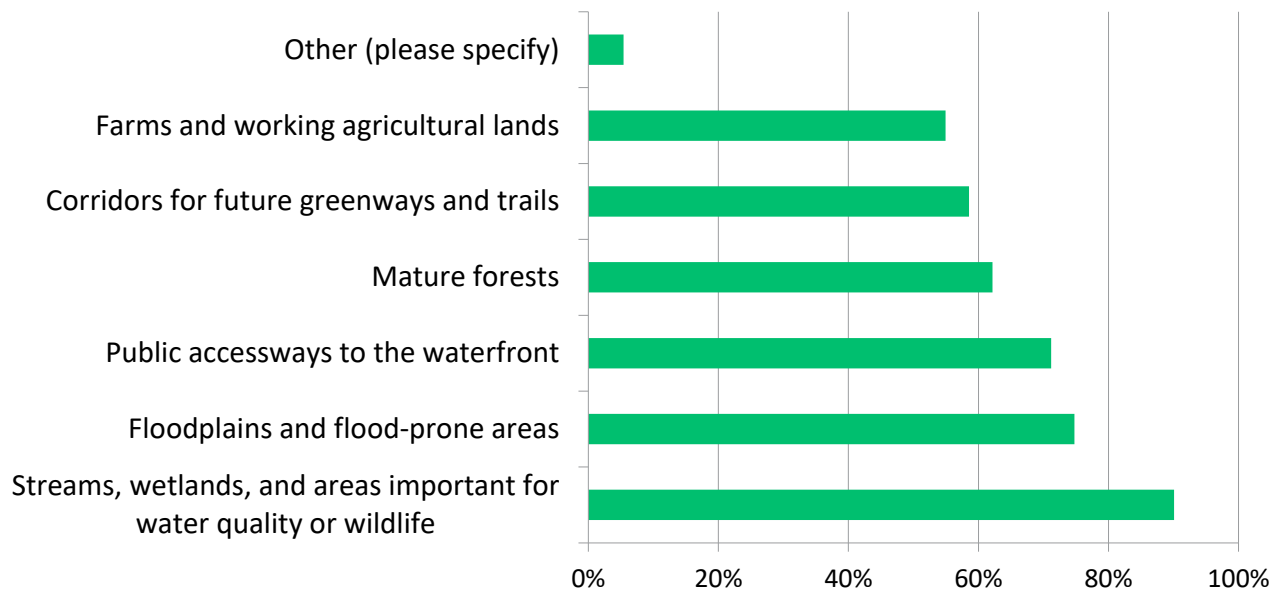
Is the Town's zoning code effective in creating attractive developments and public streetscapes?



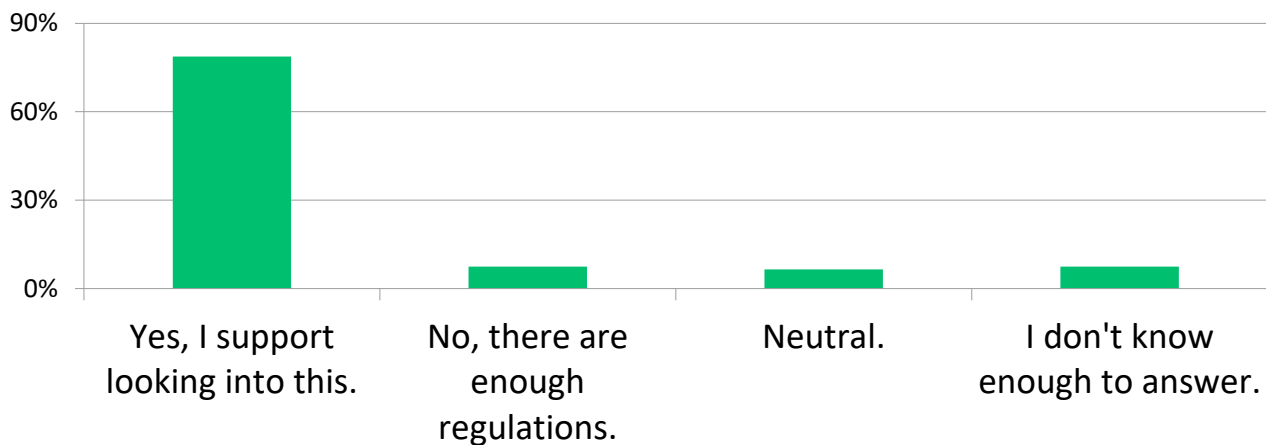
If located appropriately, should the Town allow increased height or density in order to reduce impervious surfaces and stormwater runoff from roofs and driveways in new development?



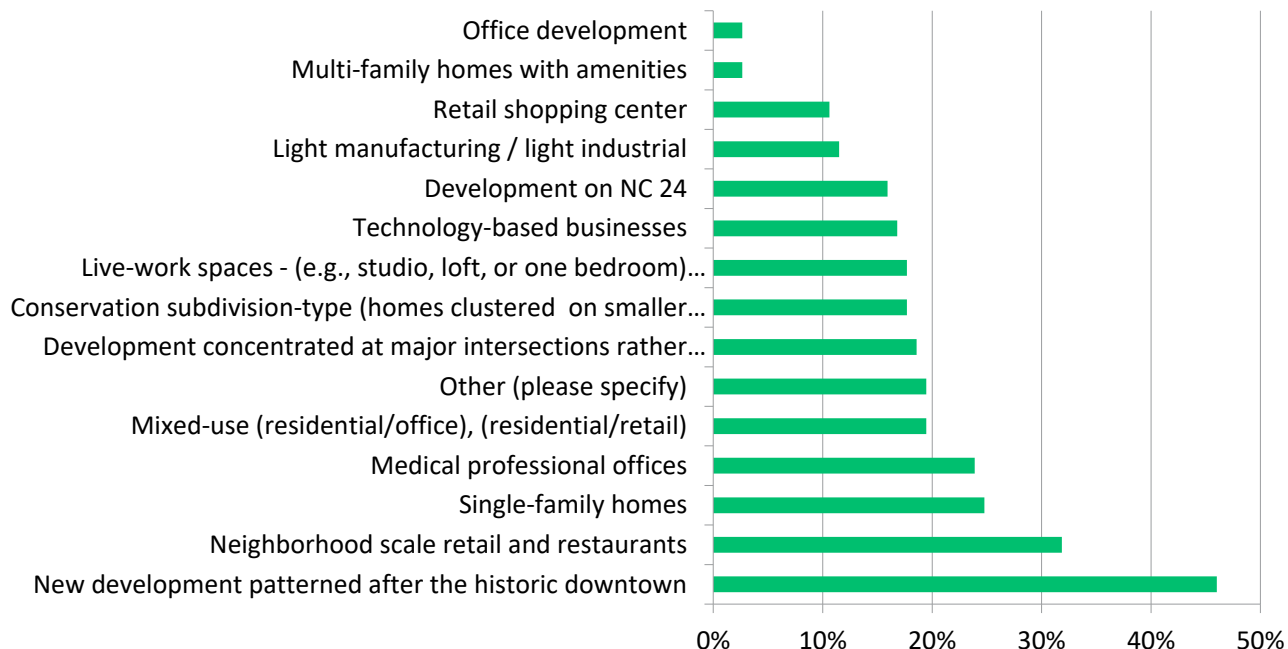
Which areas should be prioritized for open space preservation? (check all that apply)



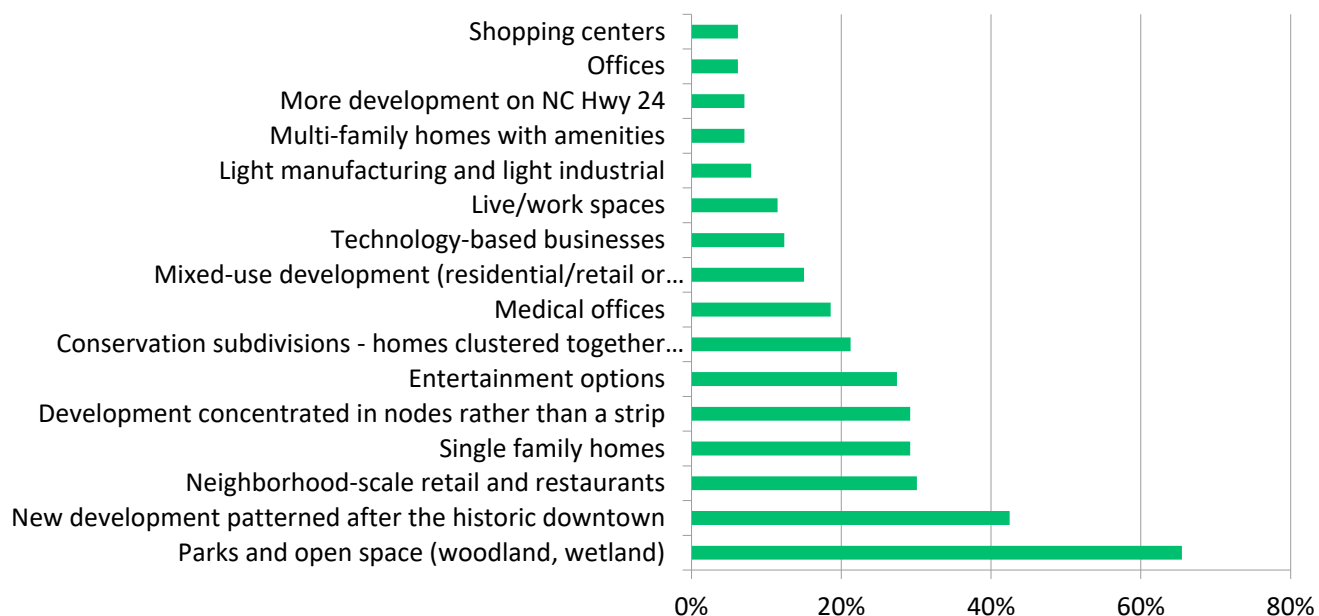
Should the town consider a conservation zone for environmentally sensitive land (wetlands and areas likely to be affected by flooding and storm surge now or in the future). The zone could restrict or discourage development.



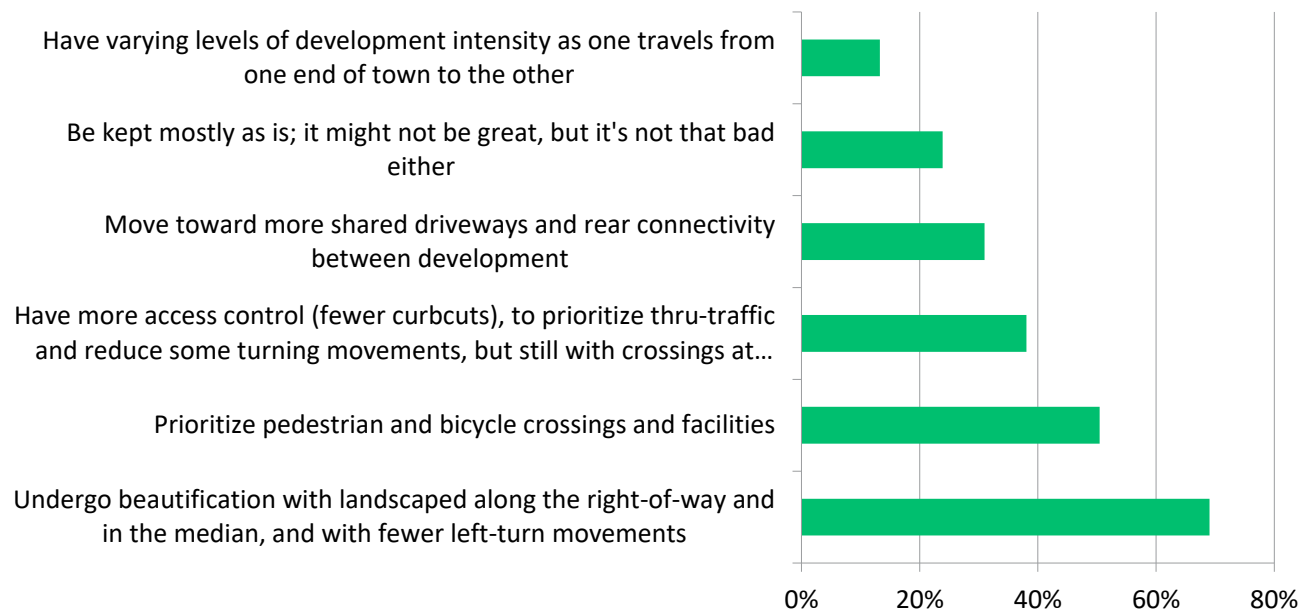
What would you like to see more of in Swansboro? Select up to five.



The Town should make sure that land is available for the following uses. (Check up to five)



The NC Hwy 24 corridor should... (Select up to three)



VCAPS SUMMARY

FINAL REPORT

Town of Swansboro Preliminary Asset Mapping & VCAPS Report December 17, 2018

Asset Mapping Summary

Key representatives from the Town of Swansboro and Onslow County met with a group of facilitators on July 10th to begin mapping the town's critical assets and areas known for frequent flooding. Present at this meeting were:

Participants

Scott Chase, Manager, Town of Swansboro
Paula Webb, Town Clerk, Town of Swansboro
Andrea Correll, Planner, Town of Swansboro
John Freshwater, Engineer
Angelia Hagopian, Onslow County GIS
Brent Hatlestad, Town of Swansboro, Commissioner
Brent Lanier, Surveyor
David Mohr, Engineer, ONWASA
Patricia Pike, Onslow County GIS
Frank Tursi, Mayor Pro Tem, Town of Swansboro

Facilitators

Mike Christenbury, N.C. Division of Coastal Management
Lora Eddy, The Nature Conservancy
Tancred Miller, N.C. Division of Coastal Management
B. Stevens, N.C. Coastal Federation Intern
Madeline Tripp, N.C. Coastal Federation Intern
Jessica Whitehead, N.C. Sea Grant

The purpose of this project was to identify and map important social and physical assets in Swansboro that may be vulnerable to current and future impacts from coastal hazards, including sea-level rise and storm surge. The planning process will help Swansboro identify hotspots where the town can prioritize resilience-building projects. Through the process, participants will also identify local government and community-specific needs in building resilience.

Local knowledge mapping helps the town identify the locations of physical and non-physical assets that are important to both the government and the community. Through this process, local government staff and officials explored their physical and social vulnerabilities. Participants used maps provided by Onslow County, pre-populated with many of the town's critical assets, and added knowledge of areas with known flooding problems or other vulnerabilities. The maps now identify specific areas, such as streets, intersections, and buildings, that the town can target for resilience work. The final map and guide for Swansboro can be used for resilience planning purposes, and to support future grant applications to fund projects in areas in need of adaptation or mitigation projects.

Although not included in this project, additional social vulnerability indicator data exists, such as census data on reported income and data on property tax value. Such indicators can be used to identify areas where financial resources for recovery post-disaster may be limited. Other social vulnerability indicators

such as concentrated areas of 65+ residents, and concentrated areas of non-English speakers, were not identified in Swansboro.

After the mapping meeting, Onslow County staff transferred the data that was collected onto a digital map through ArcGIS, and has provided a copy of this map to Swansboro.

The Nature Conservancy (TNC) will also host Swansboro's map data on their coastalresilience.org web portal, so that local government staff and the public can overlay sea level rise and coastal flooding models to the maps. TNC's Coastal Resilience mapper currently has both federal (NOAA) and state data for a variety of future scenarios; all federal data are readily available for download through the [NOAA Digital Coast's Coastal Flood Mapper](#). State data was acquired from [NC Emergency Management](#) through a public records request. For data or information on this project contact [NC Emergency Management](#). Potential datasets include:

1. Coastal Flood Hazard Composite - Provides a quick visual assessment of areas most prone to flood hazard events.
2. Shallow Coastal Flooding - Areas subject to shallow coastal flooding.
3. FEMA Flood Zones - Areas at risk from flooding.
4. Storm Surge - Areas at risk from storm surge.
5. Sea Level Rise - Areas likely to be inundated by sea level rise.
6. Sea Level Rise and Coastal Flooding

In Swansboro, current available flood data overlays include sea level rise and sea level rise with projected future flood conditions for storm surge from North Carolina's Division of Emergency Management's 2014 Sea Level Rise Impact Study. Scenarios that can be explored include the increase of relative sea level by 20, 40 and 100 cm over existing conditions as well as modeled coastal flooding with 20, 40 and 100 cm of sea level rise for a 10-year flood event, a 100-year flood event, and past flooding from Hurricane Fran (1996).

In the future, town staff can hold public workshops to better understand community priorities in the face of flooding, sea level rise, wetlands loss, storm surge, or other hazards.

Vulnerability, Consequences, and Adaptation Planning Scenarios (VCAPS) Summary

The facilitation team adapted the Vulnerability, Consequences, and Adaptation Planning Scenarios (VCAPS) process to help the Town of Swansboro use mapped assets and data to consider actions that could reduce the Town's overall vulnerability to multiple hazards of concern. The scope of this process was limited to actions that could be taken in the context of a land use plan and the related educational, informational, and planning actions necessary to set policy that reduces vulnerability and builds resilience. A group of stakeholders with professional knowledge related specifically to land use planning processes met on August 23, 2018:

Participants

Scott Chase, Manager, Town of Swansboro
 Andrea Correll, Planner, Town of Swansboro
 Paula Webb, Town Clerk, Town of Swansboro
 John Davis, Mayor, Town of Swansboro
 Phil Keagy, Commissioner, Town of Swansboro
 Brent Hatlestad, Commissioner, Town of Swansboro
 Roy Herrick, Commissioner, Town of Swansboro

Pat Turner, Commissioner, Town of Swansboro
 Frank Tursi, Mayor Pro Tem, Town of Swansboro
 Brent Lanier, Surveyor
 Jerry Seddon, Planning Commissioner, Town of Swansboro
 Ralph Kohlmann, Planning Commissioner, Town of Swansboro
 Larry Philpot, Planning Commissioner, Town of Swansboro
 Walter Hancock, Planning Commissioner, Town of Swansboro
 John Freshwater, Engineer
 David Mohr, Engineer, ONWASA
 Dave Newsom, Engineer

Facilitators

Jessica Whitehead, N.C. Sea Grant
 Jane Harrison, N.C. Sea Grant
 Tancred Miller, N.C. Division of Coastal Management
 Mike Christenbury, N.C. Division of Coastal Management
 Lora Eddy, The Nature Conservancy
 Sarah Watson, S.C. Sea Grant
 Gloria Putnam, NC Sea Grant
 Sarah Spiegler, NC Sea Grant

Results from initial scoping interviews were combined into input from two breakout groups to generate a synthesis diagram that tracks how hazards and stressors of concern relate to outcomes and consequences in the context of land use. Participants used this conversation to generate ideas about potential actions, as well as to note any contextual factors that may enhance or limit the effectiveness or desirability of any actions. Actions are also further separated into actions for both the public sector (Town, County, state, and federal government, including the academic sector) and private sector (residents, businesses, NGOs, and other organizations).

It is important to note at this phase these actions are conceptual, and all require further discussion, study, and vetting with the Town of Swansboro and the public before becoming policy. Given that these actions were suggested by a small local group, they need to be reviewed by this group to ensure they were captured accurately by the facilitation team. Additionally, because the group was limited in its participation due to the facilitation team's size, additional public input will be invaluable in capturing additional potential ideas as well as in prioritizing those actions that were suggested. The former point is key in the wake of Hurricane Florence – while impacts of sea level rise and extreme rainfall were discussed, it is likely that there are additional key lessons to be learned by infrastructure performance under those extreme storm surge, wind, and rainfall conditions.

The Town considered actions resulting from the impacts of multiple hazards: tropical storms and nor'easters, including heavy rainfall and the prevailing wind direction during the event, sea level rise, and king tides. Participants also noted additional stressors of boat traffic (primarily affecting erosion) as well as development (commercial and residential development inside the Town and outside its ETJ). Overall, through interviews and the meeting participants from the Town identified 60 public sector actions and 12 private sector actions that could be considered in either the land use plan or related activities to improve Swansboro's resilience to these hazards and stressors. Two of those public sector actions were actions enabled by other actions, and three of the private sector actions were direct results from other public sector actions. The VCAPS diagram provides a conceptual map of how these actions relate to specific outcomes and consequences from these hazards. Additionally, tables are included of all these actions and of actions specific to each category. Generally, actions fell into five categories:

1. Educational efforts, including needs to inform or educate both the public and other levels of government
2. Informational needs, encompassing key critical scientific, legal, policy, and engineering issues requiring further study, including areas where best practices are still evolving (e.g., how to develop stormwater design standards that can accommodate a range of sea level rise and extreme precipitation scenarios)
3. Planning needs, including obtaining funding for planning and project design and implementation
4. Policy needs, including new requirements, at the Town level and at other levels of County, state, and federal government impacting the abilities of the Town
5. Implementation actions, or decisions that must be made and put into effect to alter resilience

Some of the actions may be easily implemented in the land use plan. However, the Town should review these actions and consider which of these may be sequential – for example, digital maps of the stormwater system are needed to consider new stormwater plans and policies for retrofitted system upgrades as well as to develop incentives for stormwater controls. Additionally, the Town should prioritize some of these actions using locally agreed upon criteria. Past towns who have used the VCAPS process, like the Town of Nags Head, found this prioritization step valuable. Prioritizing will help the Town consider not only how to consider these sequential actions, but also help develop a strategy that allows Swansboro to pursue projects that are relatively simple to implement, like educating about living shorelines, as well as actions that may be more difficult to accomplish yet ultimately carry great benefit, such as how to incentivize buffers. Two ways past VCAPS communities have approached prioritizing actions have been through an additional review committee (as done in the Town of Nags Head, which established a Climate Change and Sea Level Rise Committee), or through public workshops with additional input (as done in Beaufort County, South Carolina).

On November 19, 2018 the Town of Swansboro hosted a public meeting to gather public input on the actions identified through the VCAPS Workshop. The meeting was advertised through the town's communication channels, media and direct mailing.

It was an open workshop format with 3 stations:

1. Informational station – The public could review posters with data and information from the National Climate Assessment and Southeast Regional Climate Center on potential climate change impacts including increased precipitation, heavy downpours and sea level rise.
2. Map station – The public was invited to add information to the Asset Map created as part of this planning process. Paper maps were provided for review and participants were encouraged to ground-truth the town's physical vulnerabilities.
3. Voting station – The public was asked to help prioritize the VCAPS Adaption Actions identified by the team as within the scope of what the Town of Swansboro could do in the land use plan update. Actions were broken into 5 categories education, studies/information, planning, policy, and implementation. Participants were asked to vote on their top 3 – 5 needs in each category. The complete results of the voting exercise are included in the report appendix, but the top 3 priorities for each category are included below:

Education: During the initial VCAPS the Town identified four potential educational needs that the Town of Swansboro could fill to help make local land use more resilient to challenges related to climate change and sea level rise. The top 3 public priorities were:

- Town works with state to allow streamlined low impact development permits to reduce pressures from increased stormwater volume

- Town develops an education plan for contractors on low impact development options to reduce pressures from increased stormwater volume
- Town develops education plan for residents on environmental hazards to reduce challenges to existing homes that are at risk of flood.

Informational needs: During the initial VCAPS the Town identified six potential needs for more information or studies that the Town of Swansboro needs to fill to help make local land use more resilient to challenges related to climate change and sea level rise. The top 3 public priorities were:

- Find (and expand upon) ways to preserve natural areas and green space to reduce pressures from increased stormwater volume
- Map older sections of existing stormwater system to reduce stress on infrastructure from increased stormwater volume
- Identify ways to use design standards that incorporate future conditions to improve development

Planning needs: During the initial VCAPS the Town identified five potential needs for more planning activities that the Town of Swansboro needs to fill to help make local land use more resilient to challenges related to climate change and sea level rise. The top 3 public priorities were:

- Town applies for, receives, and uses 319 funds to improve infrastructure to reduce stress on infrastructure from increased stormwater volume
- Town asks DOT to increase pipe size under DOT-owned roads to reduce stress on stormwater infrastructure for pipes that are too small to convey the larger stormwater volume
- Planning board considers how to control stormwater in activities to improve development

Policy needs: During the initial VCAPS the Town identified 24 potential needs for policies and approaches that the Town of Swansboro needs to fill to help make local land use more resilient to challenges related to climate change and sea level rise. Because there were so many additional needs identified as policies, public attendees were allowed up to 5 top votes. Due to a tie, the top 6 public priorities are listed here:

- Incentivize density on appropriate parcels to avoid developing ecologically sensitive lands to improve development
- Require, not just encourage, getting stormwater back to ground (will require engineering to review ways of doing this) to reduce pressures from increased stormwater volume
- Expand buffers on salt marsh to 50 feet to slow wetland loss
- Encourage low impact development to increase onsite holding in site design, especially the first flush of stormwater, early in process to reduce pressures from increased stormwater volume
- Require subdivisions in town to tie in to sewer and water to improve the resilience of residential development
- Pass a 2-3 foot freeboard ordinance to reduce the number of structures which flood

Policy needs: During the initial VCAPS the Town identified 13 potential needs for activities to implement on the ground that the Town of Swansboro needs to fill to help make local land use more resilient to challenges related to climate change and sea level rise. Due to a tie the top 4 public priorities were:

- Convert roads to one way (roads need less impervious surface and restore water via larger buffers) to reduce deterioration on roads
- Town preserves coastal wetlands to slow wetland loss

- Add greenway systems for habitat conservation to slow wetland loss (public notes this would require significant funding)

Town applies for funds to clear ditches, then clears ditches to improve stormwater flow. The Town's goal was to use the information collected through this integrated planning process to incorporate resilient actions into their Land Use Plan (LUP) update. By engaging the community of Swansboro in the process, town staff has started the dialogue about building community resilience in the face of increased precipitation and heavy downpours, sea level rise, and increased frequency and severity of storms.

Appendix: Charts of Full Public Voting Priority Results

During the meeting on November 19, participants voted to prioritize adaptation actions under the education, information needs, planning activities, policies needed, and implementation initiatives. Each participant was allowed to vote for their top 3 choices under each category, with the exception of policies needed (because of the large number of potential policies, participants could vote for their top 5 priorities). The full list of votes is included below. In each case, the challenge which each action is intended to address is also included. The listed challenges, along with each action, corresponds to those located within the VCAPS diagram. The top vote getting actions in each category are in bold type. Participants were also allowed to add their own actions to the charts; these added text are indicated in blue italic type.

Educational needs

CHALLENGE	EDUCATION NEED FOR TOWN TO FILL	PRIORITY
Increased stormwater volume	Education plan for contractors on low impact development options	24
	Town works with state to allow streamlined low impact development permits	25
Existing homes at risk of flood	Education plan for residents on environmental hazards	11
Development	Education plan for homeowners on higher density and stormwater control options	9

Information Needs

CHALLENGE	INFORMATION NEED FOR TOWN TO INVESTIGATE	PRIORITY
Sea level rise	Identify hot spots for development/roads in land use plan for 6 ft worst case scenario	7
Increased stormwater volume	Find ways to preserve natural areas and green space expand upon, <i>they exist</i>	21
Increased stormwater volume stresses infrastructure	Map older sections of existing stormwater system	10
Development	Develop uphill solutions to stormwater volume to reduce downstream pressure with sea level rise	7
	Identify existing areas to retrofit for sea level rise	6
	Identify ways to use design standards that incorporate future conditions -->	8
<i>Participant-added suggestions</i>	<i>Protect all sea life</i>	5
	<i>Control growth: commercial and residential</i>	3

Planning Activities

CHALLENGE	NEW TOWN PLANNING INITIATIVES NEEDED	PRIORITY
Sea level rise	Planning board considers sea level rise scenarios based on policy	0
Stormwater pipes too small	Town asks DOT to increase pipe size under DOT-owned roads	21
Stormwater volume stresses infrastructure	Town applies for, receives, and uses 319 funds to improve infrastructure	22
Development	Planning board considers how to control stormwater in activities	13
Structures flood	Town pursues mitigation funds for elevation	8

Implementation

CHALLENGE	NEW TOWN ACTIONS TO IMPLEMENT	PRIORITY
Heavy rainfall	Fire department re-uses roof water for truck washing (<i>More rain barrels?</i>)	4
Wetlands lost	Add greenway systems for habitat preservation (<i>significant funding required</i>)	9
	Town preserves coastal wetlands	10
Roads deteriorate	Convert roads to one way (roads need less impervious surface and restore water via larger buffers)	16
	Use Powell Bill, stormwater funds to cycle fixes to manage traffic and minimize damage	0
Ditches fill up	Apply for funds to clear ditches then clear ditches	9
Increased stormwater volume stresses infrastructure	When making stormwater system repairs elevate outfalls to be above higher tides and surges	3
Increased stormwater volume	Add catch basins, ponds w/ stormwater fees	4
	Town does demonstration LID projects	0
	Improve easements	1
	Town moves to local control (<i>requires engineering review</i>)	6
Structures flood	Assist with elevating homes	3
	Use tax (visitor occupancy) for flood control/infrastructure repair	0
<i>Stormwater runoff (Participant-added suggestion)</i>	<i>Work with ONWASA to provide monetary incentives to residential/commercial (via \$ credit on bill) to create onsite rainwater gardens</i>	5

Policies Needed

CHALLENGE	NEW TOWN POLICY INITIATIVES NEEDED	PRIORITY
Sea level rise	Require disclosure at land sale (flood, sea level rise, hurricanes, machine gun)	6
Wetlands lost	Expand buffers on saltmarsh to 50 ft	9
	Implement CAMA wetland conservation zone	6
	Incentivize wetland buffers with front yard depth requirement adjustment	3
Erosion	Incentivize living shorelines	4
Increased stormwater volume	Encourage low impact development to increase onsite holding in site design, especially first flush of stormwater, etc. early in process	7
	Incentivize developers for low impact development	4
	Require developers to build parks	3
	Require, not just encourage, getting stormwater back to ground (<i>will require engineering to review</i>)	9
Increased stormwater volume stresses infrastructure	Raise stormwater fee	0
Development	Pass stronger guidelines on design to make it more acceptable	1
	Incentivize density on appropriate parcels to avoid developing ecologically sensitive lands	11
	Use proposed floodplain in land use plan	4
	Enact stormwater control ordinances to include volume	
Development in adjacent areas	Town partners with County (+ <i>ONWASA</i>) on incentives in adjacent areas to encourage annexing in	3
Commercial development	Ask developers to reduce commercial parking spaces to reduce impervious	1
Residential development	Ask developers to reduce residential parking spaces to reduce impervious surface	1
	Encourage cluster development to avoid wetlands and not have to pay developer	2
	Require subdivisions in town to tie in to sewer/water	7
Homes built in flood zones	Make the Floodplain Administration board more powerful	
	Require special use permits to build in flood zones	5
Structures flood	Enact redevelopment ordinances to improve elevation after storms	2
	Increase sales tax and use funds for flood repairs	0
	Pass 2-3 ft freeboard ordinance	7

Existing Critical Asset/Facility Protections

Summary

Swansboro has identified its critical assets/facilities in both its Land Use Plan (LUP) and Hazard Mitigation Plan (which includes a map) and has prioritized the functions of each of these facilities in the case of an emergency/natural disaster. The biggest threat to the town, as identified by the Hazard Mitigation Plan, are hurricanes and the associated wind/flood damage. Several mitigation strategies were adopted in this plan, such as considering entry into FEMA's Community Rating System, or maintaining ditches and installing more lift stations.

In the LUP, there is zoning to discourage development in natural hazard areas or areas with low land suitability, and requirements for mitigation in developments in these areas (p.27, p.63). When determining land suitability, storm surge areas and flood zones are given considerable weight, and coastal wetlands are considered to have very low suitability. The LUP also has policies that support informing residents about sea level rise, flood mitigation strategies, and the dangers of development in natural hazard areas in collaboration with state or federal efforts (P.65, P.70).

In the Unified Development Ordinance (UDO), there is a Flood Damage Protection Ordinance, which addresses new development/redevelopment in the Special Flood Hazard Zone and establishes a stringent permitting process for these developments. There's also a Storm Water Management Ordinance, but this mostly addresses problems with polluted storm water runoff rather than flooding. However, it does suggest encouraging low impact development, decreasing impervious surfaces, and implementing storm water controls such as constructed wetlands, which would help mitigate flooding. In addition to this, there is a flexible development land use category which requires the use of Low Impact Development in site designs.

CAMA Land Use Plan:

- Identifies flood zones and potential hurricane scenarios (using SLOSH model, Section 5B1(c))
- In the Land Suitability Analysis Criteria, Storm Surge and Flood Zones each have 2 points of weight (the highest weight is 3 points); plots inside these zones have low suitability.
- Swansboro allows development in natural hazard areas (land susceptible to sea level rise, erosion, flooding, and/or wetland/conservation areas) if it complies with all local, state, and federal regulations, and implements mitigation strategies (P.18, P.27, P.28, P.63, P.66, P.68, P.71, P.73, I.43, I.44, I.45)
- Swansboro supports the installation of bulkheads to protect against erosion and sea level rise (P.67)
- Swansboro supports efforts to inform residents about sea level rise, flood mitigation strategies, and the dangers of development in natural hazard areas (P.65, P.70)

Unified Development Ordinance

- Flood Damage Protection Ordinance (Article 22, effective Aug. 2005, *now §152.400-.462*)
 - Objective: minimize potential for flood damage to new developments and to prevent developments from redirecting floodwaters to other properties
 - Identifies Special Flood Hazard Areas, based on FEMA maps (FIRM and FHBM)
 - Requires a **Floodplain Development Permit** before any construction within Special Flood Hazard Areas
 - Floodplain Administrator is in charge of reviewing permit applications
 - Establishes protocol for appeals and variances; decisions made by the Flood Management Appeals Board (4 members appointed by Board of Commissioners: general contractor, a surveyor, an architect, and/or an engineer)
- Flexible Lot Development
 - Allows for variety in development, so that uses take advantage of unique characteristics of location and environmental resources
 - **Requires LID** strategies to be incorporated in plan

Hazard Mitigation Plan:

- Identifies potential hazards, vulnerabilities, and mitigation strategies/goals for the town of Swansboro, maps critical facilities
- Natural hazards: hurricanes and associated wind and flood damage
- Swansboro considers critical facilities to be “those structures from which essential services and functions for the continuation of public safety actions and disaster recovery are performed or provided.”
 - Divides facilities into Level 1 (Must not lose operational capacity) and Level 2 (Must be operational within 24 hours following event)
 - Level 1: Swansboro Public Safety Headquarters/ EOC, EMS/ Police/ Fire Communications Tower, Water Tower (ONWASA), Wastewater Plant (ONWASA), Wastewater pump lift stations (ONWASA)
 - Level 2: Swansboro Town Hall, Major roads and bridges, Major government buildings, Emergency shelters (schools)
- Mitigation strategies:
 - Strategies include maintaining an evacuation route, flood/hazard education programs for residents, considering entry into FEMA CRS, maintaining ditches and installing more lift stations, and developing a Comprehensive Emergency Management Plan.
 - References policies in place in the CAMA Land Use Plan, the Unified Development Ordinance, Code of Ordinances, and NC State Building Codes

Note: Text in blue was added on 01/14/2019.

Recommendations:

- Evaluate efficacy/efficiency of existing stormwater systems and identify current and potential weaknesses (could complete a comprehensive assessment if resources are available)
- Create a Stormwater Management Plan, including strategies for increasing stormwater BMPs (like permeable streets/gutters/sidewalks, rain gardens, etc), as well as a plans to update/improve existing stormwater infrastructure to increase the town's stormwater capacity.
- Create an ordinance to allow construction of Living Shorelines where appropriate instead of bulkheads (which are encouraged in LUP)
- Participate in the Community Rating System
- Incorporate sea level rise scenarios (medium and high) into planning efforts
- Participate in the Red Cross Ready Rating Program, and encourage business owners to complete an emergency plan
 - Could also create emergency plans for historic buildings
- Consider participation in the National Weather Service's StormReady program
- Adopt an ordinance (or add to the existing Landscape Ordinance) to encourage the preservation of natural vegetation, especially trees
- Increase freeboard requirement within town limits (could have variance for historic district)
- Create incentive program (taxes, priority in permitting process) for using Low Impact Development methods/strategies when constructing new developments or for retrofitting existing properties with LID
- Consider flood mitigation strategies for flood prone areas of historic district (elevation, dry or wet flood-proofing, increasing stormwater drainage capacity, etc.)

Resources:

- [Swansboro Hazard Mitigation Plan](#) (Annex 5 to Onslow County Hazard Mitigation Plan)
- [CAMA Land Use Plan](#)
- [Unified Development Ordinance](#)
- [Town Zoning Map](#)
- [Looking to the Future: Alternatives for Reducing Flood-related Damage in Historic Communities, Milton, PA](#)
- [Keeping 74 Bridge Street Above Water: Lessons from the City of Newport and the Point Neighborhood on Protecting Historic Structures and Neighborhoods from the Impacts of Climate Change](#)

LUP Policies/Implementing Actions Referenced:

P.18 Swansboro does not support light industrial development within fragile areas and areas with low land suitability (see Section 5.B.1.g., pages 35 to 40).

P.27 The Town of Swansboro supports larger lots, decreased impervious surface areas, and cluster development in conservation classified areas and areas with low land suitability (see future land use map, Map 16) through enforcement of the Town's UDO.

P.28 Swansboro supports continuing preservation/protection of its flood hazard areas.

I.26 Swansboro will evaluate the need to revise its UDO to improve the requirements for reducing the areas covered during development by impervious surfaces. This will reduce storm water runoff.

P.63 Swansboro will allow development within areas susceptible to sea level rise, shoreline erosion, and/or wetland loss which takes into consideration such conditions in project design development.

P.66 Swansboro will support development which will minimize flooding and resulting damage to life and property during normal and significant rainfall events.

P.67 Swansboro supports the installation of properly engineered and permitted bulkheads to protect against erosion and sea level rise.

P.68 Swansboro supports the US Army Corps of Engineers' regulations, the applicable guidelines of the Coastal Area Management Act, and the use of local land use ordinances to regulate development of freshwater swamps, marshes, and 404 wetlands.

P.69 Swansboro supports relocation of structures endangered by erosion, if the relocated structure will be in compliance with all applicable policies and regulations.

P.71 Swansboro supports hazard mitigation planning. The Land Use Plan and the Hazard Mitigation Plan should be consistent with one another.

P.72 The Town supports the Onslow County Emergency Management Plan for evacuation procedures/policy for natural disasters or man-made disasters.

P.73 Swansboro will allow development in conservation and natural hazard areas which is consistent with local zoning and meets applicable state and federal regulations.

I.43 Swansboro will cooperate with the US Army Corps of Engineers in the regulation and enforcement of the 404 wetlands permit process. Schedule: Continuing Activity.

I.44 Swansboro will coordinate all development within the special flood hazard area with the Town's Planning and Inspections Department, North Carolina Division of Coastal Management, FEMA, and the US Corps of Engineers. Schedule: Continuing Activity.

I.45 Swansboro will continue to enforce its existing zoning and flood damage prevention regulations found in the UDO. Schedule: Continuing Activity.

Existing Protections of Isolated Wetlands

Key Points:

- Swansboro supports the policies and permitting processes under CAMA and Section 404 of the Clean Water Act.
- Due to changes in interpretation/legislation in the past few years, gaps have been created in the protection of coastal NC's small, isolated wetlands by federal and state programs.
- Swansboro does not have policies or ordinances specifically targeting and protecting isolated, non-coastal wetlands not protected under federal or state law.

Findings:

In the existing Land Use Plan (LUP), Swansboro complies with all state and federal laws regarding wetlands and environmentally sensitive areas, including section 404 of the Clean Water Act and all CAMA regulations. However, in 2008, a [statement by the EPA](#) asserted that wetlands not adjacent to traditional navigable waters are not under 404 jurisdiction. In 2015, changes were made to [15A NCAC 2H .1300](#) to regulate only 2 types of the 16 formerly identified isolated wetlands in NC, and to allow discharges that impact one acre or less of isolated wetlands in the coastal region without a permit (15A NCAC 02H .1305(3)). Combined, these changes create a gap in protection for small, non-adjacent/isolated wetlands and make it increasingly important that local municipalities adopt more stringent protections.

Currently, the town does not have many policies that go beyond protections under section 404 of the CWA. Most policies in regards to wetlands are statements of support for federal/state regulations. For example, policy 37 states that the town “supports coordinated efforts to preserve and protect the ecological and flood hazard benefits of freshwater wetlands, *as protected under Section 404 of the Clean Water act.*” Swansboro also has a CAMA-required Environmental Composite Map that incorporates areas of environmental concern into their land suitability analysis. In addition to this, there are a few policies could have indirect benefits to isolated wetlands. Policy 93 mentions a commitment to Low Impact Development (LID), which the UDO is required in Flexible Lot Developments. In implementing action 21 and policy 65, the town supports the education of the public about “environmentally sensitive areas” and the dangers of location development in natural hazard areas, which could be used to support an education campaign about isolated wetlands.

Recommendations

- **Educate residents** about the benefits (ecological, economic, public health/safety) of protecting wetlands. Incorporate wetland education efforts into Implementing Action 21 of the LUP.
- **Define wetlands** in the LUP and Unified Development Ordinance to include not only 404-regulated wetlands, but also isolated, freshwater wetlands.
- **Update policies** 25 (define environmentally sensitive areas to include isolated wetlands), 37, and 89 in the Land Use Ordinance to include wetlands not protected under CWA(404), according to the previously mentioned definition.
 - Also include a discussion of town protections/definitions in the Wetlands Section of Existing/Emerging Conditions: Fragile Areas.
 - In policy 63, amend to include more specific requirements for development susceptible to wetlands loss (instead of “consideration” in project development).
- **Change zoning** to either include isolated wetlands as a new, separate zone (overlay map of isolated wetlands), or incorporate isolated wetlands into the existing conservation zone.
 - Could commission maps of Swansboro wetlands, or use existing maps (FWS, NCRS, NOAA)
 - Allow appeals process for landowners to challenge delineations they feel are inaccurate
 - If not included in conservation zone, which is included in policy 27 of the LUP (about using increased lot sizes, decreased impervious surfaces, and cluster development), could include in large lot residential zoning to encourage building on uplands and not disturbing wetlands on lot.
- **Create a wetlands protection ordinance** specific to the needs of Swansboro:
 - Include: definition of a wetland, fact finding, intent/goals, definition of regulated activities, standards for issuance of permits (general: e.g. no net loss of wetlands, and specific: e.g. mitigation ratios), and conditions which may be attached to permits
 - [Model ordinance](#) from the Association of State Wetland Managers
 - [Wisconsin Model Ordinance](#)
 - [Study on Local Ordinance Effectiveness in NYS](#)
- **Create a Wetland Review Board** to help review permit applications under ordinance
- **Institute subdivision regulations** requiring wetlands protection, encourage use of wetlands as open space/stormwater management
- **Institute incentives** to encourage wetlands protection, such as:
 - Reduce local real estate taxes for preserved wetlands
 - Density bonuses or development right schemes
 - Work with local land trusts to provide wetland owners who donate wetlands or conservation easements with tax benefits

Current Policies/ Implementing Actions Referenced in this Summary

I.21 Swansboro will endeavor to educate the public about environmentally sensitive areas and what actions they can take to help do their part in preservation. Education may be accomplished through public service announcements or through the development of printed materials that are distributed through mailings and/or posted on the Town's website. Schedule: Continuing Activity.

P.25 The Town of Swansboro supports the preservation and maintenance of its environmentally sensitive areas while promoting and capitalizing on its natural resources

P.27 The Town of Swansboro supports larger lots, decreased impervious surface areas, and cluster development in conservation classified areas and areas with low land suitability (see future land use map, Map 16) through enforcement of the Town's UDO.

P.37 Swansboro supports coordinated efforts to preserve and protect the ecological and flood hazard benefits of freshwater wetlands, as protected under Section 404 of the Clean Water Act of 1972.

P.63 Swansboro will allow development within areas susceptible to sea level rise, shoreline erosion, and/or wetland loss which takes into consideration such conditions in project design development.

P.65 Swansboro supports educating the public concerning the problems/impacts of developing/locating in natural hazard areas.

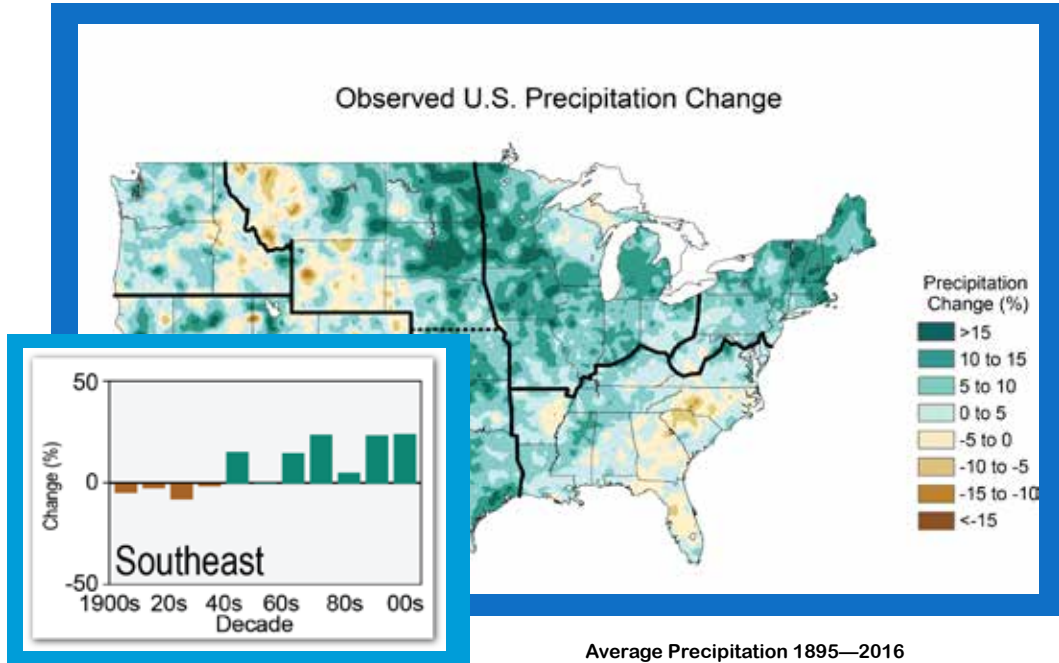
P.89 Swansboro opposes the installation of package treatment plants and septic tanks or discharge of waste in any areas classified as coastal wetlands, freshwater wetlands (404), or natural heritage areas. This policy does not apply to constructed wetlands.

P.93 Swansboro supports low impact development (LID). NOTE: LID is an ecologically friendly approach to site development and stormwater management that aims to minimize development impacts to land, water, and air. The approach emphasizes the integration of site design and planning techniques that conserve natural systems and hydrologic functions on a site. Low impact development is not a land use control, but a management and design strategy that is integrated into the proposed land use. It has also been shown to decrease costs to developers and to increase the desirability and value of the property.

TOWN MANAGEMENT CONCERN STORMWATER

AVERAGE U.S. PRECIPITATION HAS INCREASED SINCE 1900; THE
SOUTHEAST COAST IS EXPERIENCING INCREASES.

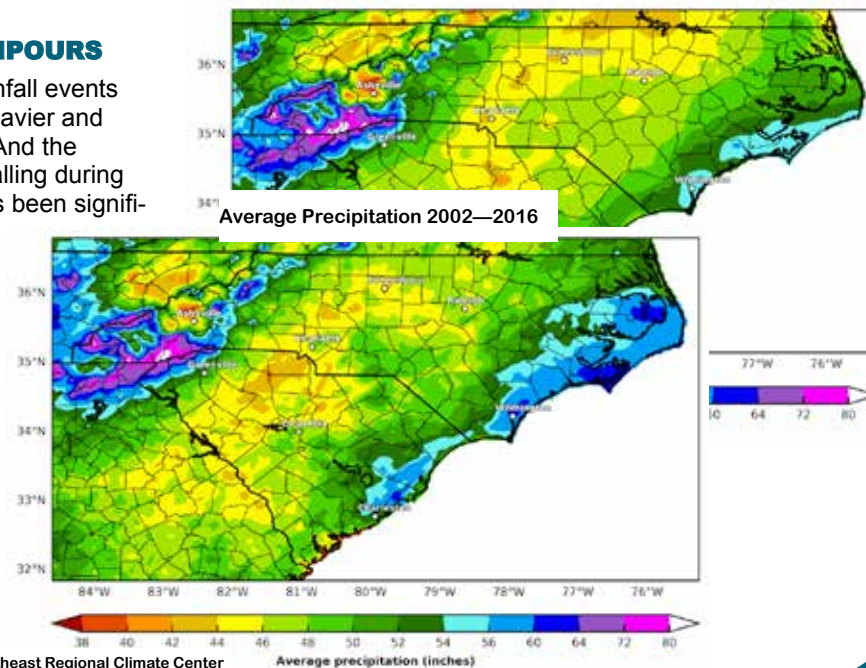
% Change in Precipitation amounts for 1991—2012 compared to 1901—1960
SOURCE: National Climate Assessment



Average Precipitation 1895—2016

HEAVY DOWNPOURS

Our heaviest rainfall events have become heavier and more frequent. And the amount of rain falling during these events has been significantly above average.

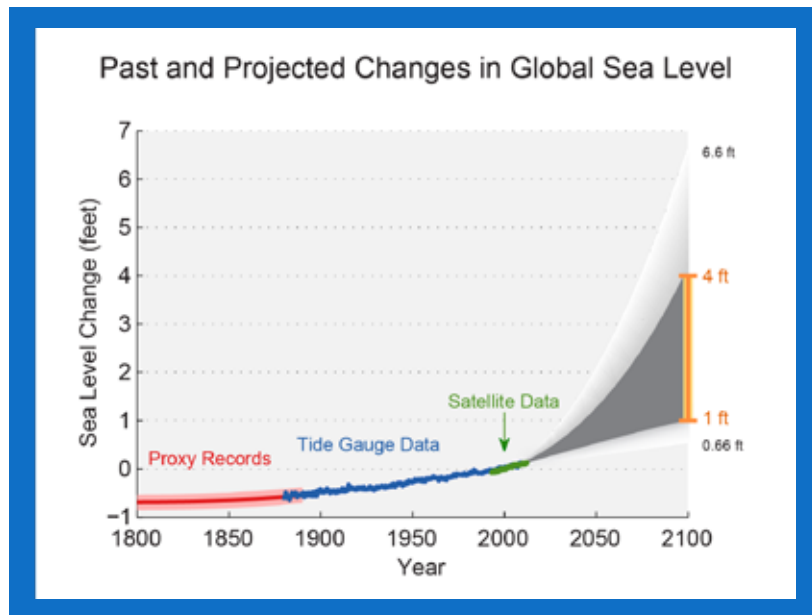


SOURCE: Southeast Regional Climate Center

TOWN MANAGEMENT CONCERN SEA LEVEL RISE

GLOBAL SEA LEVEL HAS RISEN BY ABOUT 8 INCHES SINCE 1880.
IT IS PROJECTED TO RISE ANOTHER 1 TO 4 FEET BY 2100.

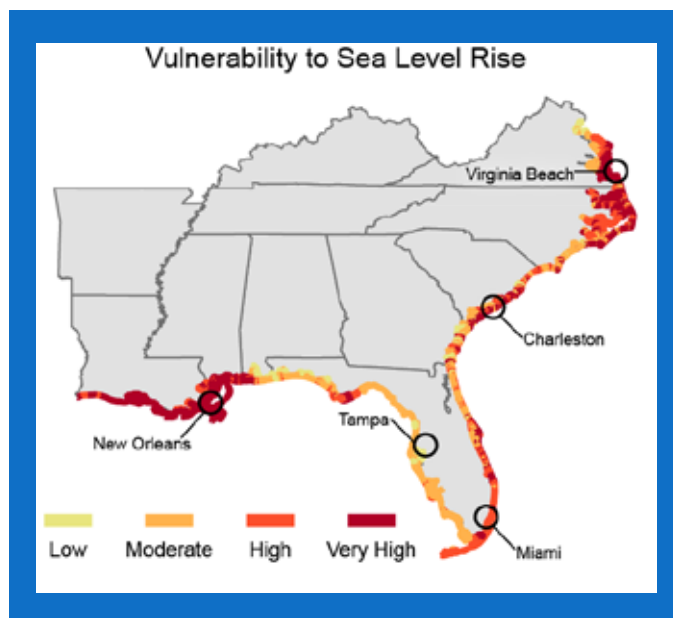
SOURCE: National Climate Assessment



WARMING OCEAN

The oceans are absorbing over 90% of the increased atmospheric heat associated with emissions from human activity. Like mercury in a thermometer, water expands as it warms up (this is referred to as “thermal expansion”) causing sea levels to rise.

Sea level rise poses widespread and continuing threats to both natural and built environments and to our waterfront and historic area.

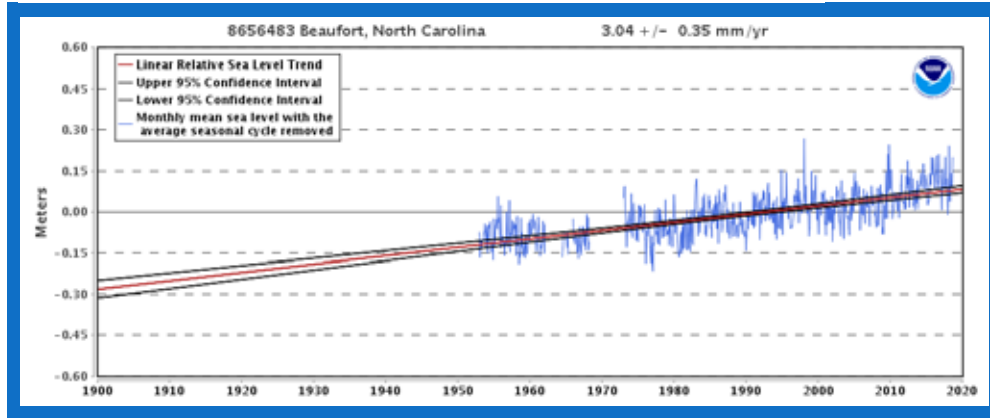


SOURCE: National Climate Assessment

TOWN MANAGEMENT CONCERN SEA LEVEL RISE

SEA LEVEL IS RISING ALONG THE NORTH CAROLINA COAST. IT IS PROJECTED TO RISE ANOTHER 1 TO 4 FEET BY 2100.

NOAA Tide Gauges Sea Level Rise
SOURCE: National Climate Assessment

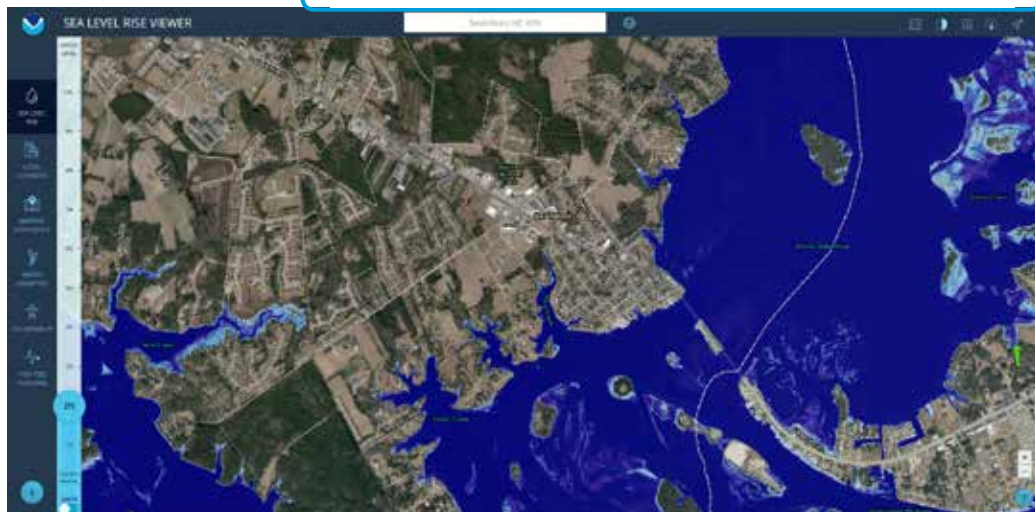


RIISING SEAS = INCREASED EROSION & GREATER STORM SURGE

Many of our coastal marshes will be inundated and the protection they provide to wave action will be lost allowing greater energy along our shorelines and increasing erosion.

Rising seas will increase flooding risk from storm surge.

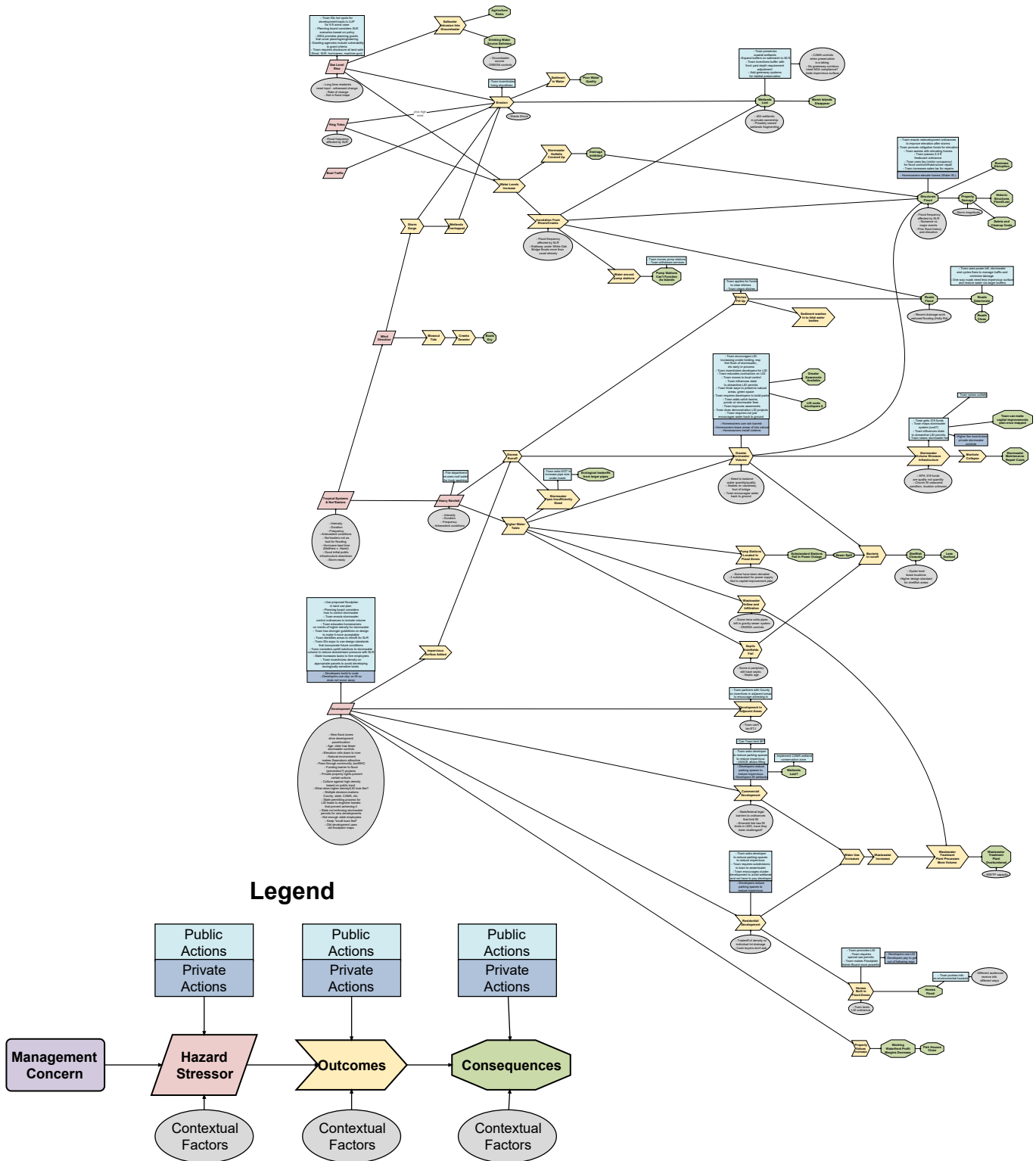
IN 30 YEARS THIS REGION MAY SEE <1 FT TO 2 FT OF SEA LEVEL RISE



SOURCE: NOAA Sea Level Rise Viewer

SWANSBORO VCAPS DIAGRAM

The VCAPS Diagram produced by North Carolina Sea Grant, shown below (but not included at full scale in this Appendix due to format sizing), shall be adopted by reference. The VCAPS Asset Map shall also be adopted by reference. See low-resolution version of the Asset Map below.



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