Existing Conditions

The Existing Conditions chapter captures a "snapshot" in time in the Town of Leland and the planning study area and takes a look at emerging issues and opportunities. This report is organized by the elements required by CAMA and reviews population growth, key demographics, housing stock, employment and job information, natural systems and environmental conditions, and information about current land use, community facilities, and the built environment.

Photo Credit: Town of Leland

POPULATION, HOUSING, AND ECONOMY

POPULATION

The Town of Leland has seen a rapid increase in its population growth in the last 20 years and is considered one of the fastest-growing municipalities in North Carolina.

Population change 2010-2019

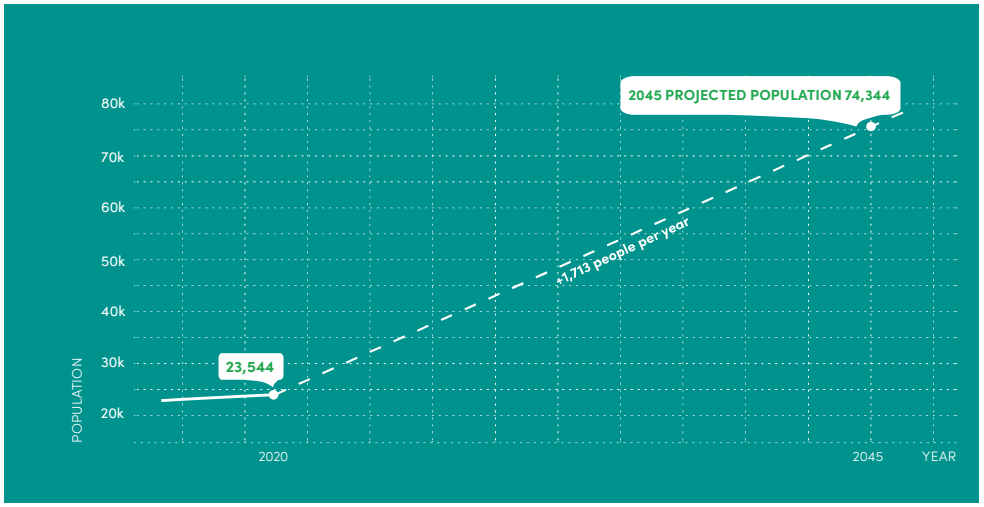
73% Leland

32.9% Brunswick County

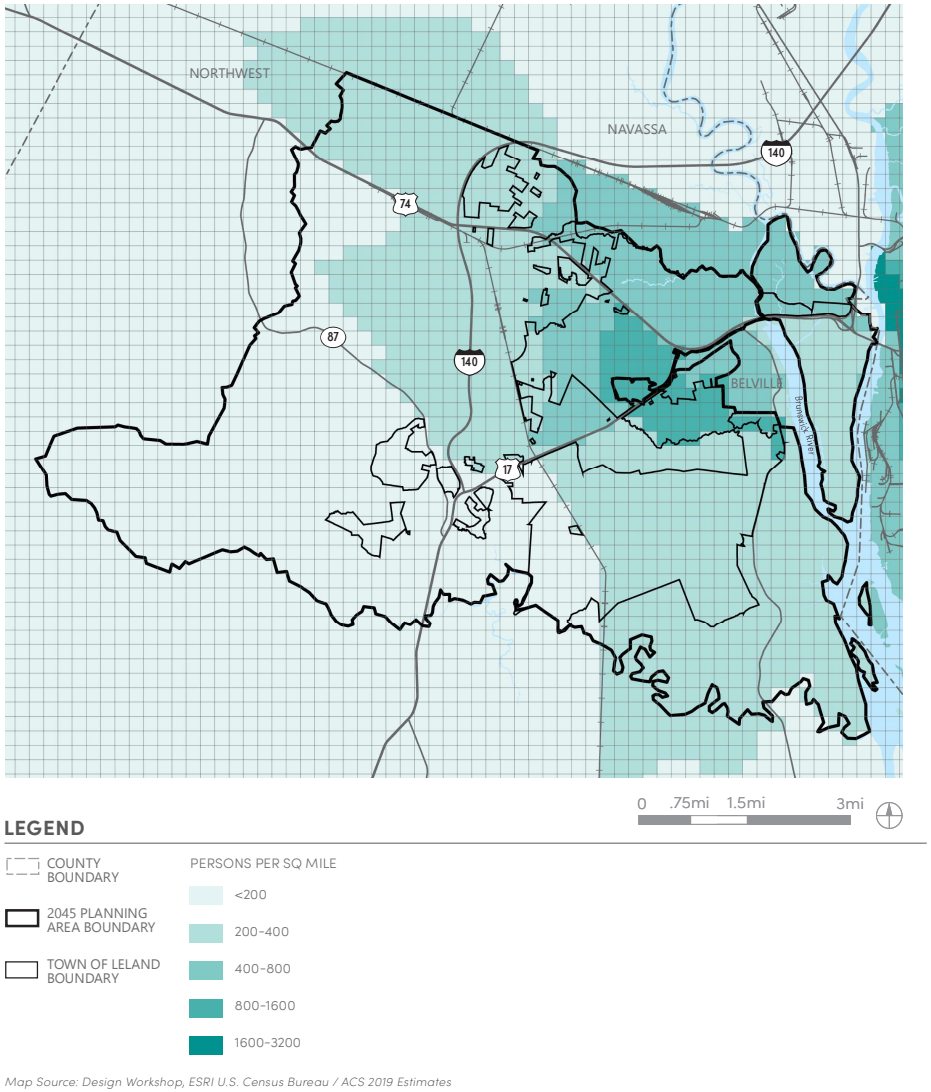
10% North Carolina

Brunswick County and the Wilmington region are some of the fastest-growing areas in the state. From 2000 to 2010 Leland jumped from a population of 1,938 to 13,614, according to Census data. Leland has continued to see growth since, with the latest estimate placed at 23,544 (U.S. Census Bureau, Population Estimates Program 2019), an increase of approximately 73 percent since 2010.

Leland's population growth is expected to continue with a projected population of 74,344 in 2045. As the State Data Center does not make population projections for municipalities, Leland's forecast is based on data collected within NCDOT's Transportation Analysis Zones and is consistent with the Town's 10-year strategic plan population estimates.



MAP 18: POPULATION DENSITY



Map Source: Design Workshop, ESRI U.S. Census Bureau / ACS 2019 Estimates

Note: Due to delays in the distributions of the 2020 United States Census data, this report is utilizing a combination of the latest American Community Survey estimates and population data from ESRI.

DEMOGRAPHICS

HOUSEHOLDS

The Town of Leland in 2019 had an estimated 8,366 total households, which has grown by about 43% since 2010 and is expected to continue increasing. Average household size has grown slightly from 2.37 in 2010 to 2.43 in 2020. Household size is slightly higher than Brunswick County (2.34) and slightly lower than North Carolina (2.52).

AGE

The median age in Leland is 46.2, higher than North Carolina's (38.7), but lower than Brunswick County's median age of 53.8. This increase in median age is in part due to an increase in population over the age of 65, which is estimated at 25.8% of the population, a trend across the state.

Leland also has a higher population under the age of 5 (6.5%) in comparison to both Brunswick County (3.7%) and North Carolina (5.8%). While higher in comparison, Leland has seen a decrease from 2010, which was around 10%.

Leland has approximately 19.5% population under 18 years, which is significantly higher than Brunswick County at 14.7%, but much more in line with North Carolina at 21.9%.

The age of the town's population has implications for future land use and policy development.

Table 2: Households

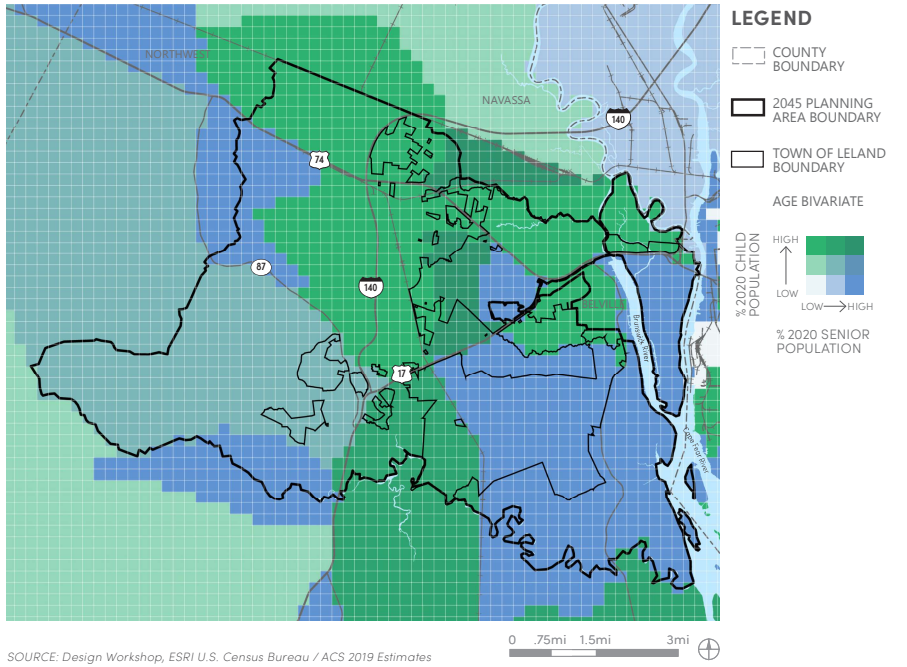
	2010	2019	% CHANGE
Leland	5,833	8,366	43%
Brunswick	46,409	58,385	25.8%
North Carolina	3,626,179	3,965,482	9.3%

Table 3: Median Age

	2010	2019	% CHANGE
Leland	38.6	46.2	19.6%
Brunswick	46.6	53.8	15.4%
North Carolina	37.1	38.7	4.3%

SOURCE: U.S. Census Bureau 2000, 2010, and ACS 2019 Estimates

MAP 19: PERCENT CHILD/SENIOR POPULATION



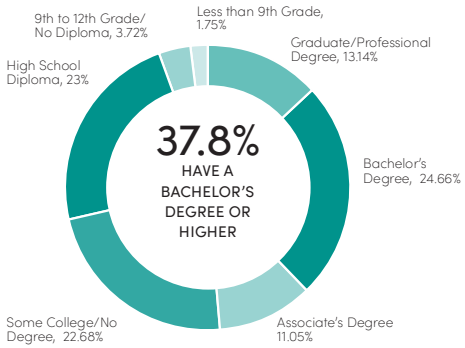
SOURCE: Design Workshop, ESRI U.S. Census Bureau / ACS 2019 Estimates

"Educational Opportunities" was one of the top three responses when the community was asked what items they feel most satisfied with related to Leland's quality of life.

EDUCATION

94.5% of Leland residents have a high-school degree or higher, and 37.8% have a bachelor's degree or higher. This indicates a more highly educated population compared to both the county (29.9%) and the state (32.3%).

Figure 10: Education Attainment in Leland

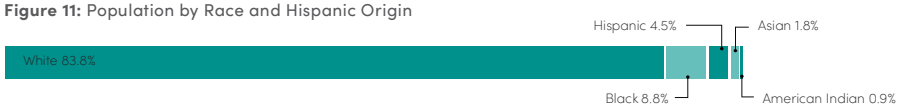


SOURCE: U.S. Census Bureau and ACS 2019 Estimates

RACE AND ETHNICITY

A majority of the population in Leland identifies as White Alone (83.8%), which is approximately the same percentage as in 2010 according to Census data.

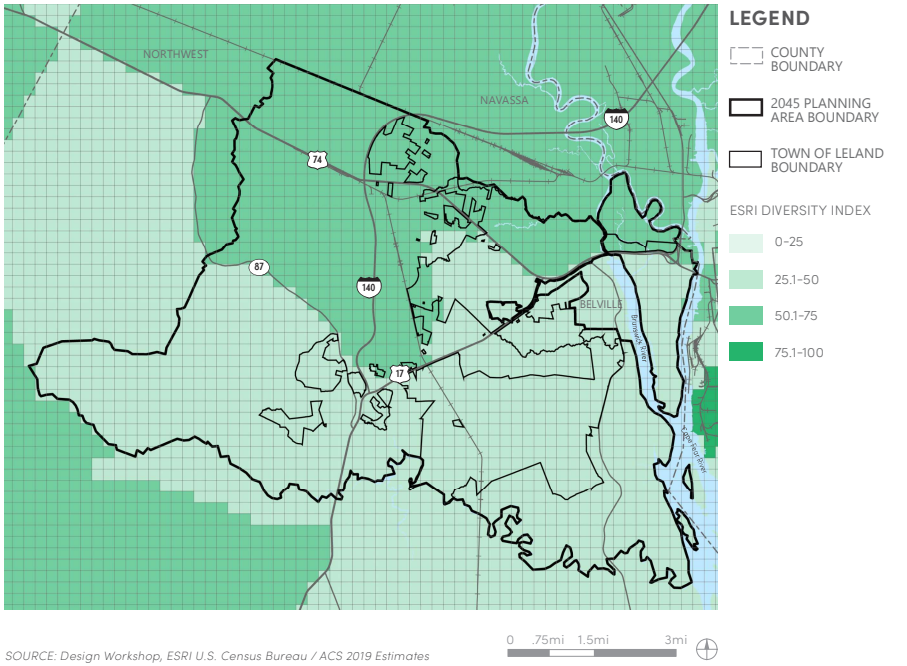
Figure 11: Population by Race and Hispanic Origin



SOURCE: U.S. Census Bureau 2000, 2010, and ACS 2019 Estimates

MAP 20: DIVERSITY INDEX

This map summarizes racial and ethnic diversity via ESRI's Diversity Index layer by census block. This shows the likelihood that two persons chosen at random from the same area belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity). Much of Leland and the planning area are in the score range of 0-25, with the north and northwest portions in the 50.1-75 score range.



SOURCE: Design Workshop, ESRI U.S. Census Bureau / ACS 2019 Estimates

SOCIAL VULNERABILITY INDEX

The Centers for Disease Control (CDC) provides insight into vulnerability at the Census Tract level. The Social Vulnerability Index provided by the CDC assembles composite data into 15 variables defined by the U.S. Census. The index was developed to assist in disaster planning, and when effectivity utilized, it can positively impact a community's resiliency. The variables are organized in four themes:

SOCIOECONOMIC STATUS

- below poverty
- unemployed
- income
- no high school diploma

HOUSEHOLD COMPOSITION AND DISABILITY:

- aged 65 or older
- aged 17 and younger
- older than age 5 with a disability
- single-parent households

As defined by the CDC, **social vulnerability** refers to the "potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss."

Leland can utilize this mapping to help planners meet the needs of socially vulnerable populations in emergency response and recovery efforts.

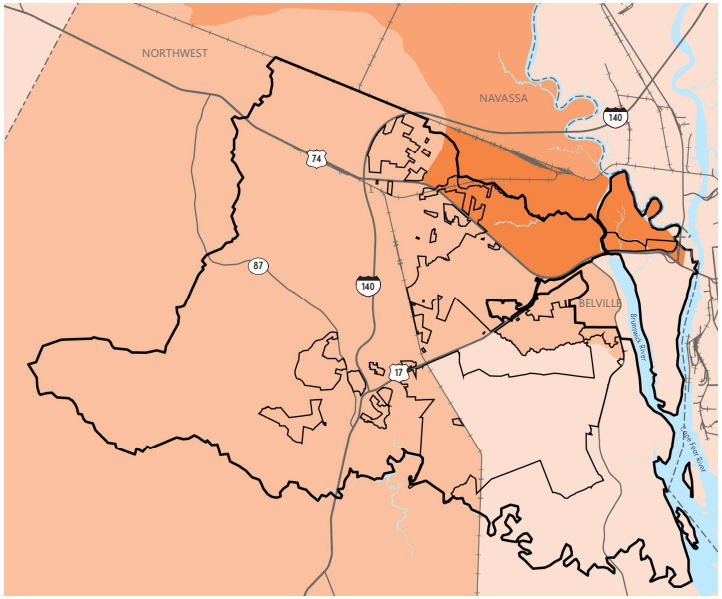
MINORITY STATUS AND LANGUAGE:

- minority
- speak English "less than well"

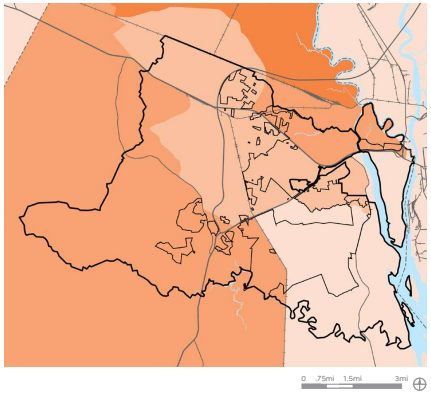
HOUSING TYPE AND TRANSPORTATION

- multi-unit structures
- mobile homes
- crowding
- no vehicle
- group quarters

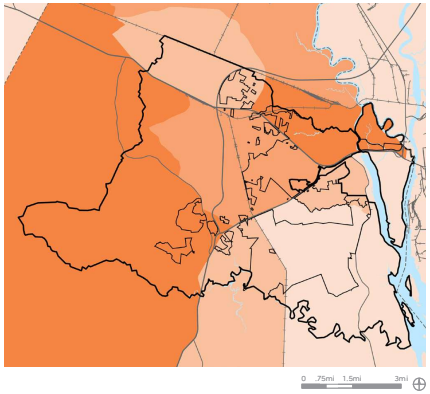
MAP 23: OVERALL SOCIAL VULNERABILITY INDEX



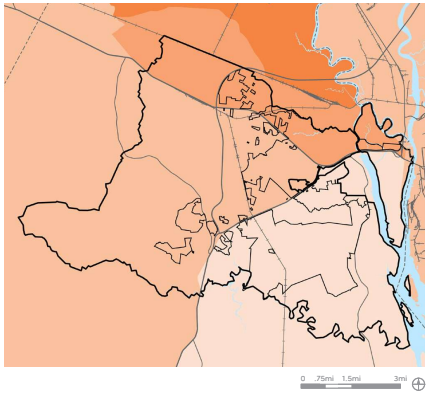
MAP 21: SOCIOECONOMIC STATUS



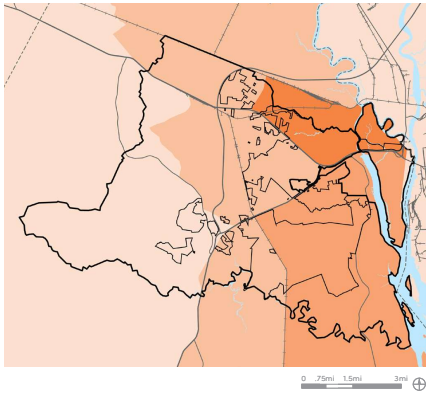
MAP 22: HOUSEHOLD COMPOSITION & DISABILITY



MAP 24: MINORITY STATUS & LANGUAGE



MAP 25: HOUSING & TRANSPORTATION

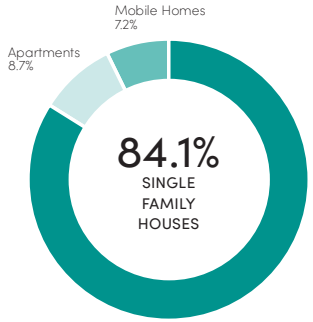


HOUSING

HOUSING MIX

Leland has an estimated 8,877 homes and expects to need a total of 21,689 housing units by 2045 to accommodate anticipated growth. Single-family detached homes account for 84.1% of Leland's housing stock. Leland will need to provide a diversity of housing choices to accommodate this expected growth.

Figure 12: Housing Mix in Leland



SOURCE: U.S. Census Bureau 2000, 2010, and ACS 2019 Estimates

PERMANENT AND SEASONAL UNITS

Seasonal population numbers in Leland are not substantially different than yearly population. There are a limited number of hotel rooms and short-term rentals/ Airbnbs.

HOUSING TENURE

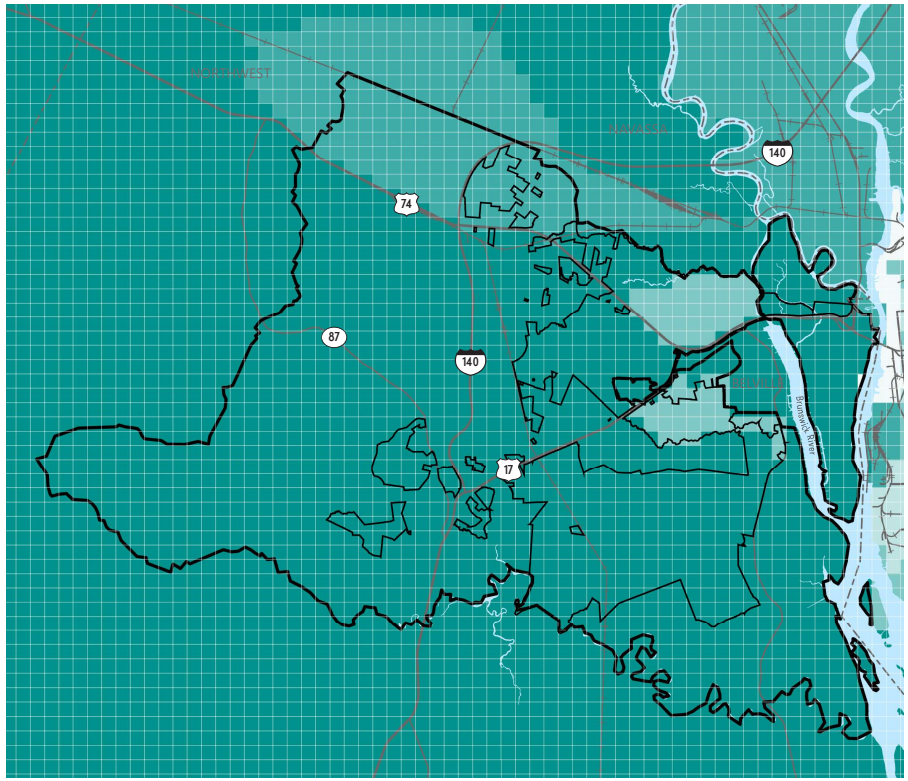
Table 8 details household tenure in Leland from 2000 to 2019. During this period, the owner-occupied household tenure increased while renter-occupied decreased. Vacant units account for just 8.9% of housing stock, lower than North Carolina's rate of 14.3%, and significantly lower than Brunswick County's vacant housing units, which account for 37.3% in the latest estimates.

Table 4: Town of Leland Housing Tenure

	2010 (TOTAL/%)	2019 (TOTAL/%)
Total Occupied HU	5,207 / 89.1%	9,184 / 91.1%
Owner-occupied	3,827 / 73.5%	6,727 / 80.4%
Renter-occupied	1,380 / 26.5%	1,639 / 19.6%
Vacant	634 / 10.9%	818 / 8.9%

SOURCE: U.S. Census Bureau 2000, 2010, and ACS 2019 Estimates

MAP 26: HOUSING OWNERSHIP



LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY

PERCENT HOMEOWNERS

- 20%-40%
- 40%-60%
- 60%-80%
- 80%-94%

DATA SOURCE: Design Workshop, ESRI U.S. Census Bureau / ACS 2019 Estimates

HOUSING AFFORDABILITY

Housing affordability is often used interchangeably with government-assisted or pubic housing; however, the term here is referring to the topic of home affordability in general. **Cost burdened** is generally defined as spending more than 30% of a family or individual's income on rent or mortgage payments, utilities, maintenance, taxes, and insurance. Map 27 (below) displays data from ESRI's Housing Affordability Index, which measures the financial ability of a typical household (defined by Area Median Income) to purchase an existing home in an area (based on Median Home Value). A Housing Affordability Index score of 100 suggests that on average the area has sufficient household income to afford a loan on a home valued at the median home price, and a score greater than 100 suggests that homes are easily affordable by the average area resident. Less than 100 means that homes are less affordable.

The data using this method suggests that Leland and the planning area are, on average, affordable or easily affordable. However, when taken in context to Brunswick County and vulnerable low-income populations, a different picture is presented.

According to the NCHC (North Carolina Housing Coalition), 32% of Brunswick County individuals and families are "cost-burdened." Over half (53%) are renters. Brunswick County's high Fair Market Rent (FMR) of $866 per month also impacts Leland's market. The average renter can only afford $563 per month.

Leland has an insufficient supply of affordable housing to accompany the increased demand that comes with the growth the municipality has been experiencing and is expected to experience going forward. The town's average rent of $1200 appears affordable in comparison to the median income; however, income is inflated by an influx of residents who are primarily retirees from higher-income areas.

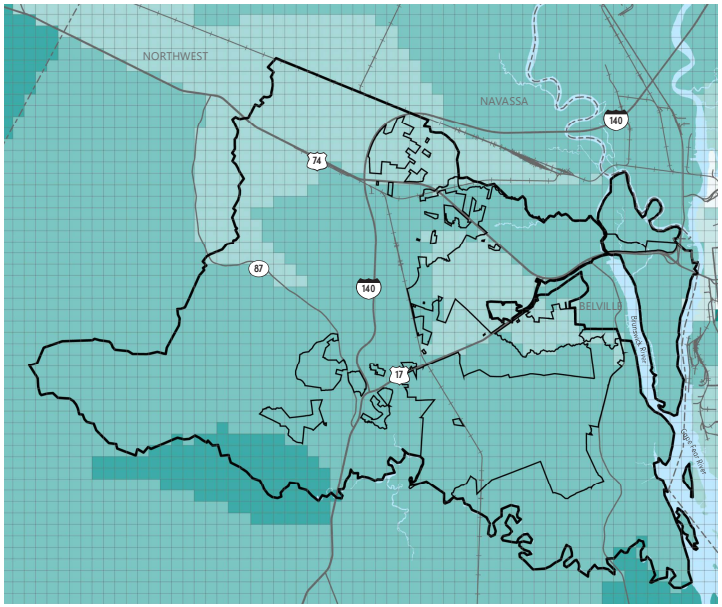
Several factors contribute to the rising prices of housing in Leland, including construction costs, low supply, and zoning restrictions. Affordable housing options are fundamental to supporting a growing economy, reducing intergenerational poverty, and increasing upward economic mobility.

Table 5: Median Home Value

	2010	2019	% CHANGE
Leland	198,900	$243,200	22%

SOURCE: U.S. Census Bureau 2000, 2010, and ACS 2019 Estimates

MAP 27: HOUSING AFFORDABILITY INDEX (HAI)



LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY

HAI SCORE

- 100-150
- 150-200
- 200-250

The Location Affordability Index map displays housing costs as a percent of income for median-income family households. A Housing Affordability Index score of 100 suggests that on average the area has sufficient household income to afford a loan on a home valued at the median home price and a score greater than 100 suggests that homes are easily affordable by the average area resident. Less than 100 means that homes are less affordable.

SOURCE: Design Workshop, Esri Updated Demographics, U.S. Census Bureau, Esri Data Development

MAP 28: LOCATION AFFORDABILITY INDEX (LAI)

How much people spend on housing and transportation depends on their household type:

38.0% of income for **Single Professional**

46.9% of income for **Dual-Professional Family**

57.5% of income for **Retired Couple**

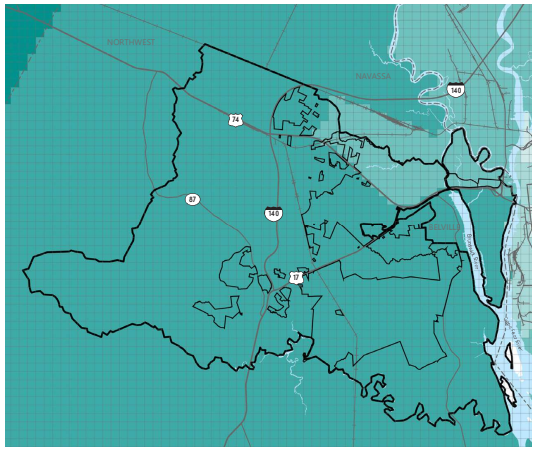
61.7% of income for **Median-Income Family**

64.2% of income for **Moderate Income Family**

74.5% of income for **Working Individual**

88.6% of income for **Single-Parent Family**

116.3% of income for **Very Low-Income Individual**



The Location Affordability Index map displays housing & transportation costs as a percent of income for Median-income family households. When you add transportation costs, you can see that most of the planning area is in the 65-70% range. This data set also includes information based on eight household profiles (see left).

(for full comparison of household profiles and methodology, visit https://services1.arcgis.com/4yjifSiIG17X0gW4/arcgis/rest/services/Location_Affordability_Index/FeatureServer)

SOURCE: Design Workshop, Esri Updated Demographics, U.S. Census Bureau, Esri Data Development

LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY

LAI SCORE

- <50 %
- 50-55 %
- 55-65 %
- 65-70 %
- 70-75%

ECONOMY

INCOME & JOB SECTORS

Leland's Median Household Income (MHI) of $68,924 is higher than both Brunswick County ($58,236) and the State of North Carolina ($54,602). In addition, MHI in Leland has significantly increased just in the last ten years, up from $57,569.

While Leland's family poverty rate is lower in comparison to both the State and the County at 5.9%, the percentage of families in poverty with children under the age of 5 is quite high at 26.3%. While this is only slightly higher than Brunswick County, this is almost double that of North Carolina.

Figure 14: Percent by Industry/Occupation

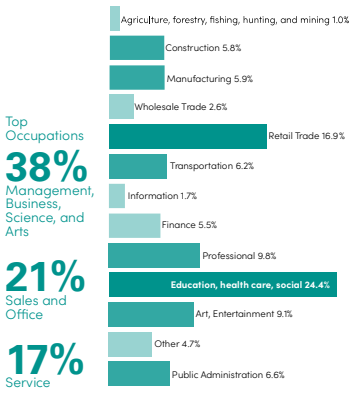
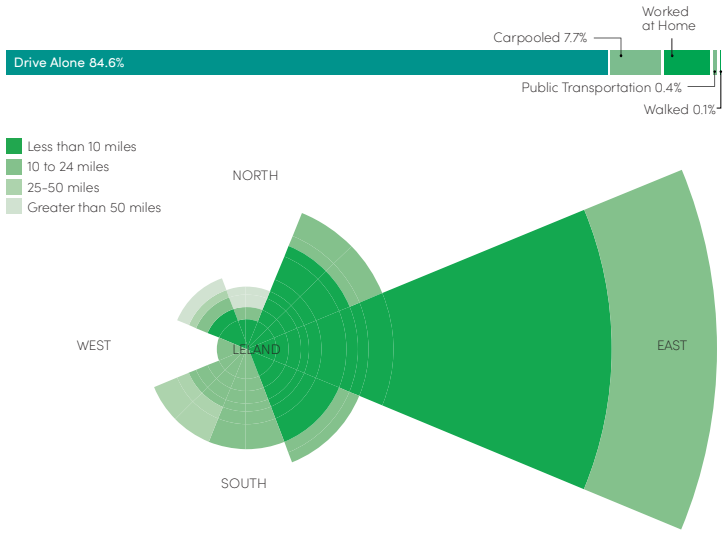
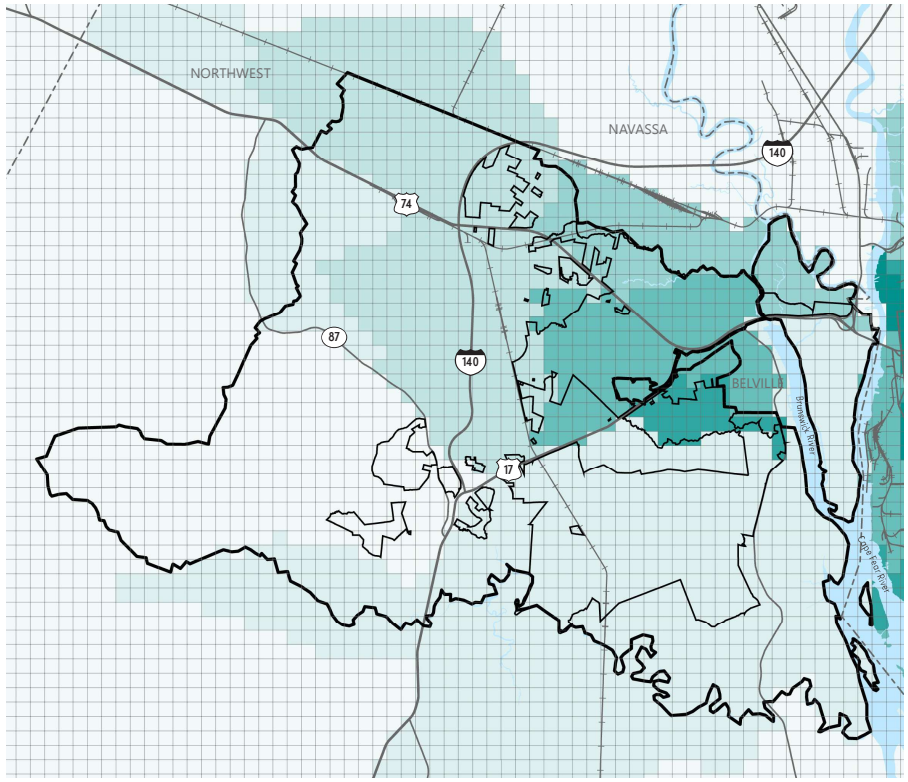


Figure 13: Commuting-to-work Patterns in Leland



SOURCE: Design Workshop, Esri, U.S. Census Bureau and ACS 2019

MAP 29: JOB DENSITY



LEGEND

COUNTY BOUNDARY

2045 PLANNING AREA BOUNDARY

TOWN OF LELAND BOUNDARY

JOBS PER SQUARE MILE

- <500
- 500-1000
- 1000-2000
- 2000-4000
- 4000-8000
- 8000-16000
- >16000

SOURCE: Design Workshop, Esri, U.S. Census Bureau and ACS 2019

NATURAL SYSTEMS AND ENVIRONMENTAL CONDITIONS

Leland's natural systems are critical to the community's vision and lifestyle, providing a key framework for land use plan development, and leveraging existing assets.

AREAS OF ENVIRONMENTAL CONCERN

Areas of Environmental Concern (AEC) are natural areas, land or water, designated as important to protect from uncontrolled or incompatible development. In Leland, there are four categories of AECs as defined by the Coastal Area Management Act (CAMA) Subchapter 15A NCAC 07H .0209. These are coastal wetlands, estuarine waters, public trust areas, and coastal shorelines.

COASTAL WETLANDS

Coastal Wetlands are defined as any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (even if the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides. Coastal wetlands are characterized by the presence of marsh plant species that are detailed in Subchapter 15A NCAC 07H .0205.

ESTUARINE WATERS

Estuarine waters include all the waters of the rivers and streams seaward of the dividing line between coastal fishing waters and inland fishing waters. The boundaries between inland and coastal fishing waters are set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environment Quality and Natural Resources and in the most current revision of the North Carolina Marine Fisheries Regulations for Coastal Waters. In Leland, the Brunswick River for its entire length next to the town is the only water body classified as an estuarine water. The Brunswick River is in a joint water by agreement between Marine Fisheries and the Wildlife Resources Commission. The rest of the major creek systems in the town are classed as inland waters.

PUBLIC TRUST AREAS

Public trust areas applicable to Leland are described in the Coastal Resources Commission (CRC) rules as follows:

- Natural bodies of water subject to measurable lunar tides and lands thereunder to the normal high water or normal water level;
- Navigable natural bodies of water and lands thereunder to normal high water;
- Normal water level as the case may be, except privately-owned lakes to which the public has no right of access;
- Waters in artificially created bodies of water containing public fishing resources or other public resources which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and
- Waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means.

COASTAL SHORELINES

Coastal shorelines include estuarine shorelines and public trust shorelines.

The estuarine shoreline AEC includes non-ocean shorelines extending from the normal high water level or normal water level along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public trust areas for a distance of 75 feet landward. The shoreline of the Brunswick River is the only estuarine shore in the town.

Public trust shorelines AECs are non-ocean shorelines immediately contiguous to public trust areas located inland of the dividing line between coastal fishing waters and inland fishing waters and extending 30 feet landward of the normal high water level or normal water level. The shorelines of the major creek systems — Town Creek, Mallory Creek, Jackeys Creek, and Sturgeon Creek — are classified as public trust shorelines.

Photo Credit: Town of Leland

SOILS

The characteristics of the soils in the planning area have an important link with stormwater runoff quantity and quality and ultimately suitability related to development.

HYDRIC SOILS

Per the USDA National Resources Conservation Service (NRCS), the definition of a hydric soil is a "soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part."

Hydrologic soil groups, defined by the NRCS, are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. The soils are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D).

The Town of Leland and the planning area contain soils in groups, A, B, C, D, A/D, and C/D, with Group A and A/D as the top two.

Definitions from the NRCS:

Group A soils have a "high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission."

Group B soils have a "moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission."

Group C soils have a "slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission."

Group D soils have a "very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission."

For groups A/D, and C/D, the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

FARMLAND SOIL CLASS

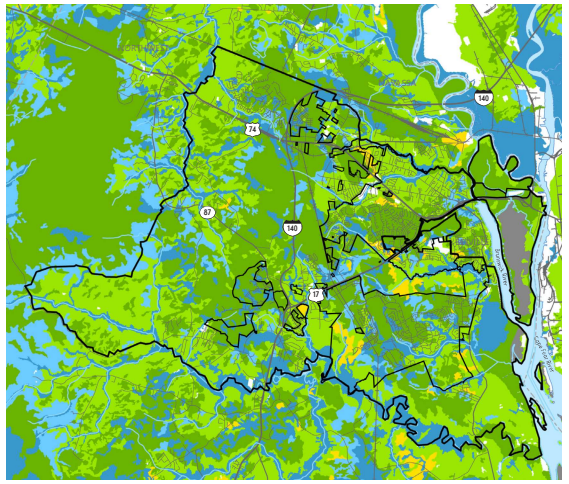
Prime farmland, as defined by the U.S. Department of Agriculture, "is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas."

Farmland of statewide importance is defined as land that includes "areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods."

While the USDA data shows much of Leland and the planning area as having soils for prime farmland or statewide importance, the Agricultural Lands assessment done by the NCNHP which includes government policy, agribusiness infrastructure and soils, rates much of the area as Tier IV or Tier V (the lowest priority tiers for conservation of working farmland).

Source: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/

MAP 30: HYDROLOGIC SOIL GROUPS

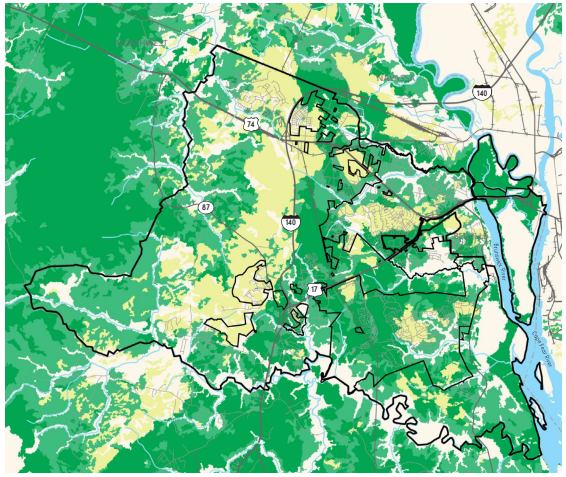


LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY
- GROUP A
- GROUP B
- GROUP C
- GROUP D
- GROUP A/D
- GROUP C/D

SOURCE: Design Workshop, USDA NRCS, ESRI

MAP 31: FARMLAND SOIL CLASS



LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY
- PRIME FARMLAND
- FARMLAND OF STATEWIDE IMPORTANCE
- FARMLAND OF UNIQUE IMPORTANCE
- NOT PRIME FARMLAND

SOURCE: Design Workshop, USDA NRCS, ESRI

WATER QUALITY

CAMA planning guidelines require a land use planning assessment of water quality to inform the identification of limitations and opportunities for development. Water quality is a core environmental condition for Leland and the 2045 planning area.

SURFACE WATER CLASSIFICATIONS

Surface water classifications are designated by the North Carolina Department of Environmental Quality (NCDEQ) and are applied to all surface water bodies, such as streams, rivers, and lakes. These classifications define the best uses to be protected within these waters (such as for recreation, fishing, or drinking water supply) as well as water quality standards.

The main creeks in Leland and the planning area are Sturgeon Creek, Jackeys Creek, Mallory Creek, and Town Creek. These are all designated as C and Sw, meaning it is fresh swamp water with best uses including aquatic life and secondary recreation.

The Brunswick River is classified as SC meaning it is saltwater, and suited for aquatic life and secondary recreation.

IMPAIRED WATERS & POINT/ NON-POINT SOURCE POLLUTION

The Brunswick River is the only water body in the planning area identified as being "impaired" on the NCDEQ Division of Water Quality Impaired Waters List. This means that water quality samples exceed water quality standards for a particular parameter.

Discharge permits (NPDES) establish effluent limitations on the maximum level of wastes or pollutants that may be discharged into surface waters. There are currently two NPDES permits within the planning area. These are considered point source pollution.

Non-point source (NPS) pollution is caused mainly by rainfall moving over and through the ground, picking up natural and human-made pollutants and depositing them into waterways. While no specific non-point sources are identified as being associated with the impaired condition of the Brunswick River, it is reasonable to assume that water quality in the river is impacted by non-point source pollution.

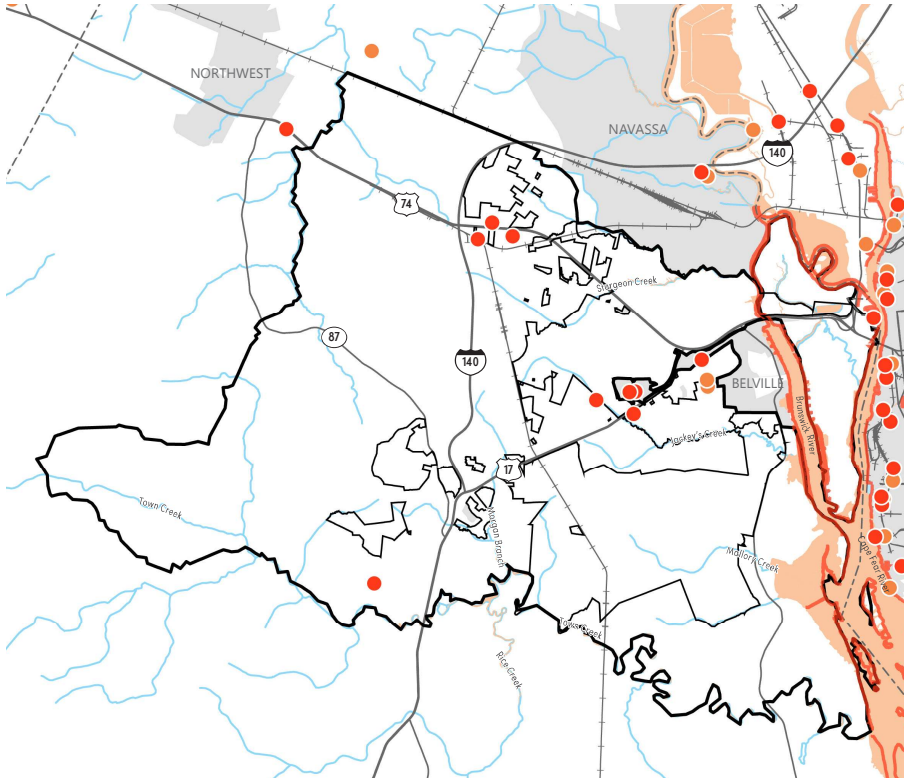
SHELLFISH GROWING AREAS

The Brunswick River is also the only delineated shellfish harvesting area and is classified as "prohibited."

The North Carolina Division of Marine Fisheries is responsible for classifying all coastal waters as to their suitability for shellfish harvesting for human consumption. Shellfish growing waters can be classified as "Approved," "Conditionally Approved," "Restricted," or "Prohibited."

Approved areas are consistently open to harvest, while Prohibited areas are off-limits for shellfish harvest.

MAP 32: WATER QUALITY INDICATORS



LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY
- SHELLFISH GROWING AREA CLASSIFCATION - PROHIBITED
- NPDES SITES
- HAZARDOUS WASTE SITES
- IMPAIRED WATERS (DWR)

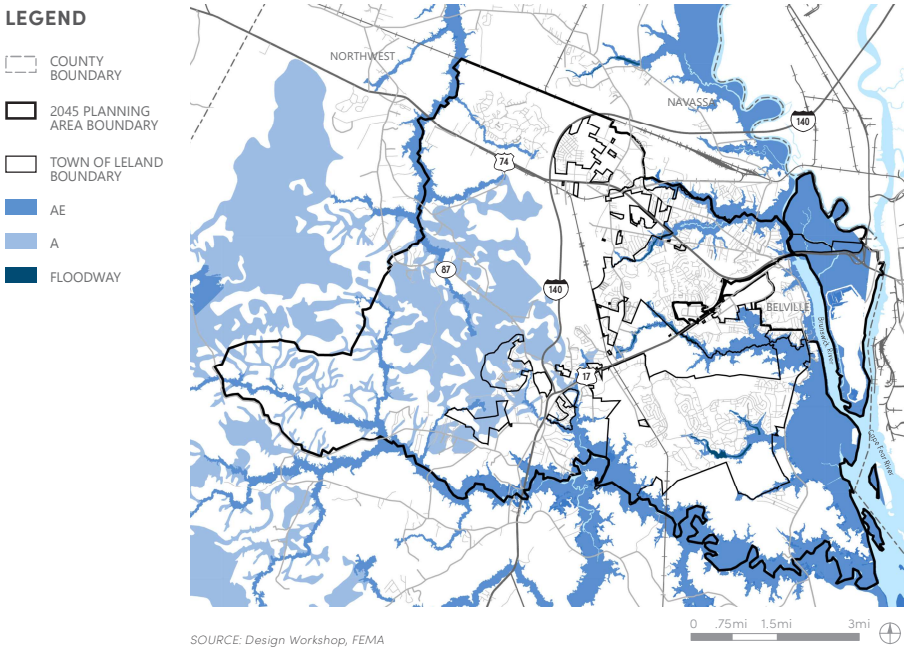
SOURCE: Design Workshop, NCDEQ, DWR, ESRI

FLOOD & NATURAL HAZARD AREAS

FLOOD HAZARD AREAS

The planning area's highest-priority natural hazard is flooding caused by rain events and storm surge from coastal storms. The flooding is concentrated in the stream margins along Sturgeon Creek, Jackey's Creek, Mallory Creek, Town Creek, Brunswick River, and Cape Fear River. These areas are either Zone A or Zone AE (see Map 33). The maps for storm surge from both fast- and slow-moving hurricanes overlay the A and AE flood zones. The Town has policies and ordinances in place to address development in these flood-prone areas.

MAP 33: FLOOD HAZARD AREAS

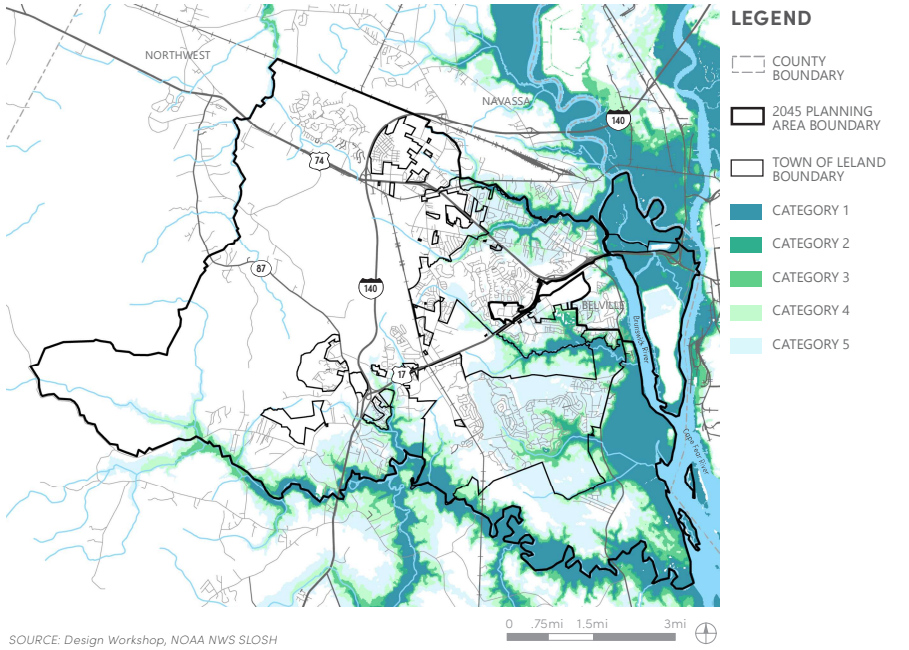


SOURCE: Design Workshop, FEMA

STORM SURGE AREAS

The SLOSH (Sea, Lake, and Overland Surges from Hurricanes) model is a numerical model used by the National Weather Service to compute storm surge. Storm surge is defined as the abnormal rise of water generated by a storm, over and above the predicted astronomical tides. Flooding from storm surge depends on many factors, such as the track, intensity, size, and forward speed of the hurricane and the characteristics of the coastline where it comes ashore or passes nearby. For planning purposes, the National Hurricane Center uses a representative sample of hypothetical storms to estimate the near worst-case scenario of flooding for each hurricane category.

MAP 34: STORM SURGE (SLOSH)



SOURCE: Design Workshop, NOAA NWS SLOSH

NON-COASTAL WETLANDS

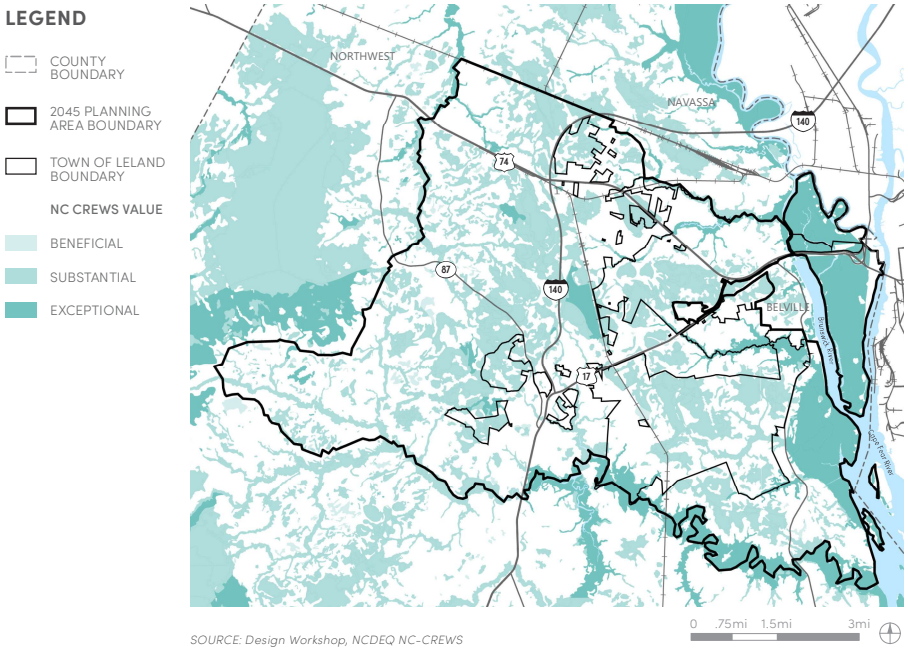
NC-CREWS

NC-CREWS, or the North Carolina Coastal Region Evaluation of Wetland Significance, is a watershed-based wetland functional assessment model that uses Geographic Information Systems (GIS) software and data to assess the level of water quality, wildlife habitat, and hydrologic functions of individual wetlands. This assessment is intended to provide information about the relative ecological importance of wetlands in particular for use in planning.

The NC-CREWS produces three possible overall wetland rating scores: Exceptional Significance (highest), Substantial Significance, or Beneficial Significance (lowest).

Source: NCDEQ - NC-CREWS Wetland Functional Assessment

MAP 35: NC-CREWS WETLAND FUNCTIONAL ASSESSMENT



SOURCE: Design Workshop, NCDEQ NC-CREWS

ENVIRONMENTALLY FRAGILE AREAS

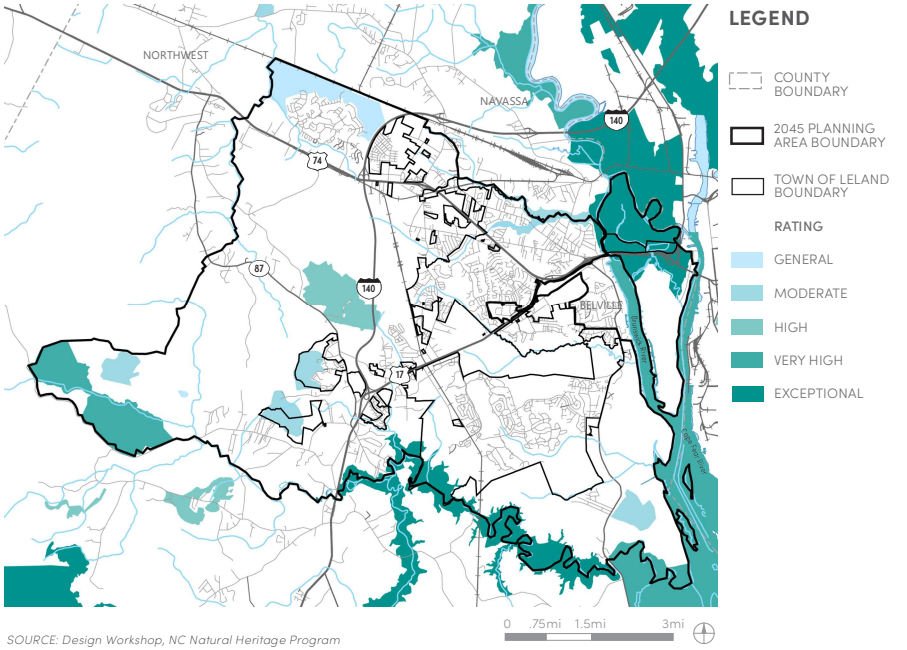
NATURAL HERITAGE PROGRAM

The North Carolina Natural Heritage Program (NCNHP) is a program of the Division of Land and Water Stewardship within the North Carolina Department of Natural and Cultural Resources.

A natural area is defined as "a site (terrestrial or aquatic) of special biodiversity significance due to the presence of rare species, unique natural communities, important animal assemblages, or other ecological features." These natural areas are not necessarily open to the public; sometimes they are located on private land. The NCNHP works with state and federal conservation agencies, national conservation groups, and the land trust community to implement protection for these areas.

Map 36 depicts the natural areas identified in the planning area and their relative score/rating, with Exceptional being the highest score for natural area significance. More details on the procedure for rating can be found at ncnhp.org.

MAP 36: NATURAL AREAS



SOURCE: Design Workshop, NC Natural Heritage Program

BIODIVERSITY & WILDLIFE HABITAT

BIODIVERSITY & WILDLIFE HABITAT ASSESSMENT

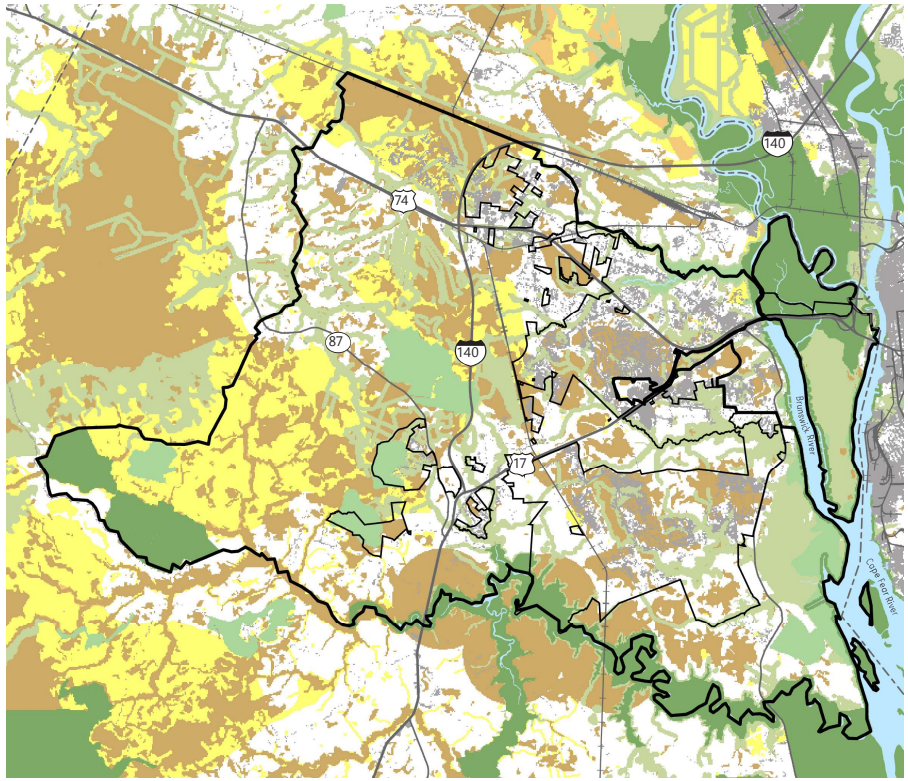
The Green Growth Toolbox project is a cooperative, non-regulatory effort led by the Habitat Conservation Division of the North Carolina Wildlife Resources Commission and is intended as a guide for planners. (Source: ncwildlife.org)

The Biodiversity and Wildlife Habitat Assessment is a map that represents the highest-priority areas for conservation of wildlife habitat and biodiversity in North Carolina.

Specific recommendations and guidance from this tool have been incorporated into the suitability analysis for development and is based on the following guidance:

"If your conservation options are limited to only the highest priority areas, we recommend that the greatest conservation measures are placed in areas that rank from 10 to 7 in the BWHA. High priority areas can be connected by maintaining low density but clustered development in or outside low ranking areas. All areas with a value equal to or greater than 1 are very important to maintaining a healthy natural environment. Major development or major roads in these areas should be kept to a minimum as much as possible."

MAP 37: BIODIVERSITY & WILDLIFE HABITAT ASSESSMENT



LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY

RELATIVE CONSERVATION VALUE

- 10
- 8-9
- 7
- 6
- 5
- 2-4
- 1
- 0 (UNRATED)
- IMPERVIOUS SURFACES (>20%)

SOURCE: Design Workshop, NC Wildlife Green Growth Toolbox

EXISTING LAND USE AND DEVELOPMENT

This section provides an overview of current development in the Leland planning area, existing land use patterns, and emergent development trends. This information offers a foundation for projecting future development patterns and land use needs.

EXISTING LAND USE

Over the past two decades, Leland has experienced rapid growth and expansion due to expansion of water and sewer services along with an influx of migration (particularly retirement age) moving into the region because of lifestyle choices, weather, amenities, and cost of living.

LAND USE PATTERNS & TRENDS

The existing land use map (Map 38) depicts the current land uses by land use code provided by the latest parcel data available from Brunswick County. Table 6 further breaks down these land uses by acreage within the Town boundaries and within the planning area for comparison.

Rural Residential and low-density Single Family land uses are the predominant land uses in both Leland and the planning area, reflective of the development trends in this area in the past 20 years.

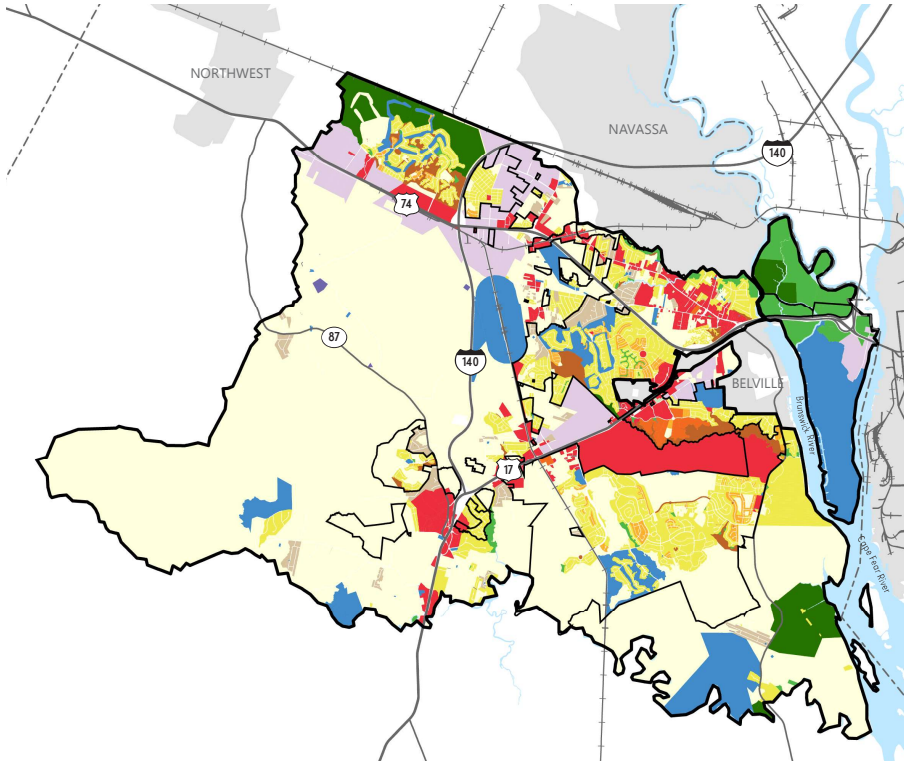
Trends that will continue to influence the land use include:

- Missing middle/higher densities: Residential development is trending towards higher densities, including what is considered the "missing middle," typically townhomes and duplexes.
- Amenity-oriented: High value continues to be placed on access to open space and pedestrian- and bike-oriented amenities that allow residents to meet daily needs within a close proximity to their homes, while providing additional recreation oportunities for all generations.
- Commercial development: Small-box development along transporation cooridors has seen an increase over the last 20 years and is expected to continue.

Table 6: Existing Land Use (acres)

LAND USE CODE	LELAND	PLANNING AREA
Commercial	2,695	3,628
Light Industrial	1,168	3,923
Community/ Civic	863	4,779
Office	<1	<1
Multifamily	219	219
Single Family (Mid-density)	416	455
Single Family (Low-density)	3,534	6,058
Rural Residential	9,293	69,538
Mobile Home	347	893
Natural Open Space	613	1,488
Conservation	23	2,704
Brownfield	526	764
Utility	2	34
Right of Way	9	12
Vacant	41	41

MAP 38: EXISTING LAND USE IN PLANNING AREA



SOURCE: Design Workshop, Brunswick County GIS

HISTORIC, CULTURAL, & SCENIC AREAS

Leland, a relatively young town incorporated in just 1989, does not currently have historic structures or scenic areas designated by any state, federal, or local agency. However, Leland's roots go back to the mid-1890s, when it was settled at the same time as the earliest plantations along the Cape Fear and Brunswick rivers. As such, Leland served as an early transportation hub, with ferries in place for travelers going north and south.

EAGLES ISLAND

The town recognizes the importance of Eagles Island to the region's maritime industry and to the history of the rice plantations that are part of the Gullah Geechee heritage. Many organizations and individuals are interested in committing to a vision for the island where economic and ecological interests are properly balanced. These organizations have recognized the importance of coordination to avoid duplication of effort and missed opportunities, leading to the formation of the Eagles Island Coalition. The town actively supports these efforts.

GULLAH GEECHEE CULTURAL HERITAGE CORRIDOR

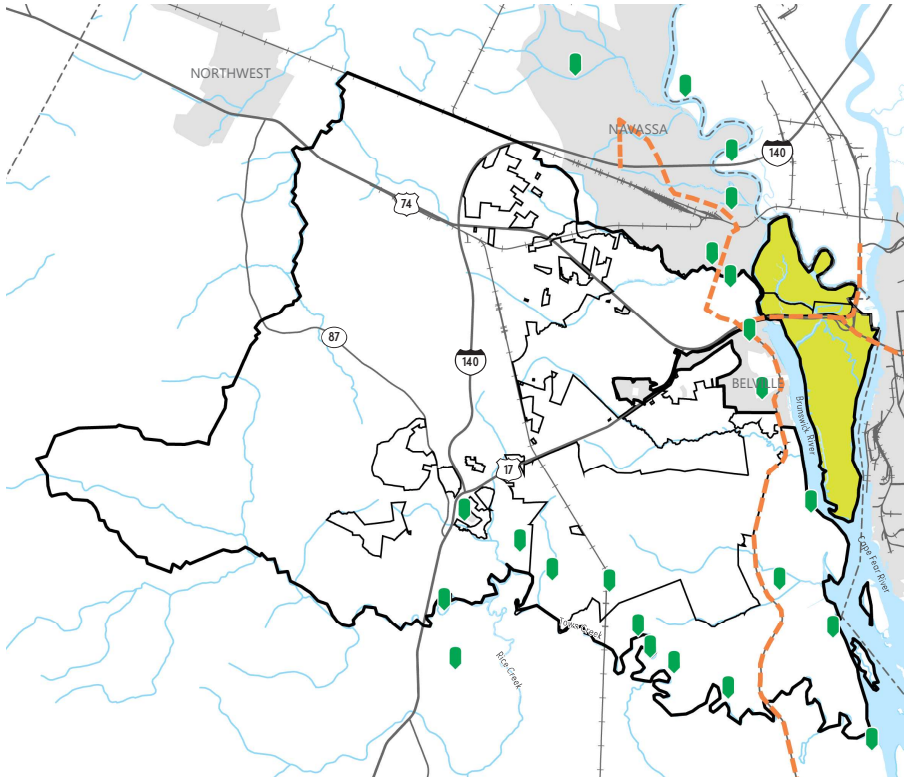
The Gullah Geechee Cultural Heritage Corridor is a National Heritage area established by the U.S. Congress in 2006 to recognize the unique culture of the Gullah Geechee people, who traditionally have lived in the coastal areas of North Carolina, South Carolina, Georgia and Florida. (Gullahgeecheecorridor.org). The corridor is made of many historically and culturally significant places to the Gullah Geechee people.

A proposed greenway and blueway trail commemorating the culture and history of the Gullah Geechee people in Brunswick County has been championed by the Brunswick County chapter of the NAACP and would connect Navassa to Southport with a link to the existing East Coast Greenway. This effort was selected in 2021 by the National Park Service, which will provide consultation services to amplify recreational (land and water-based trails), conservation, and historical components. This proposed trail is along Highway 133, one of the more scenic drives through Leland.

Along with landmarks in Navassa, Leland's N.C. Rice Festival event and former locations of historic rice plantations are a part of this history. Rice was an important crop in southeastern North Carolina and the Cape Fear region, in particular, with more than 40 rice plantations in Brunswick County up until 1865. The N.C. Rice Festival was founded in 2014 to provide locals with an increased understanding of this history and the ties to the rice coast of Africa.

Source: https://coastalreview.org/2021/07/park-service-to-support-gullah-geechee-corridor-project/

MAP 39: CULTURAL RESOURCES



LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY

CULTURAL RESOURCES

- EAGLES ISLAND
- FUTURE GULLAH GEECHEE HERITAGE TRAIL
- HISTORICAL RICE FIELD LOCATIONS

SOURCE: Design Workshop in reference to the Draft plan for the proposed Gullah Geechee Heritage trail

COMMUNITY FACILITIES

Community facilities — sewer, water, roads/ infrastructure, parks and trails — have a substantial impact on future growth and land use.

SEWER & WATER SERVICE

Water and sewer service in Leland has historically been complicated with the incorporated area served by multiple providers. In 2021, Brunswick Regional Water and Sewer H2GO and the Town of Leland consolidated utilities.

Table 7: 2020 Brunswick Regional Water and Sewer: Average Daily Water Use by Month

MONTH	AVERAGE DAILY DISCHARGE (MGD)
January	0.3860
February	0.3924
March	0.3996
April	0.3820
May	0.3997
June	0.4005
July	0.4069
August	0.4134
September	0.4255
October	0.4184
November	0.4363
December	0.4245

SOURCE: Data from Brunswick Regional WSD 2020 Local Water Supply Plan (LWSP)

WATER

SUPPLY, TREATMENT, CAPACITY

The North Carolina Department of Environmental Quality (DEQ), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducts assessments for drinking water quality to determine susceptibility of drinking water source to Potential Contaminant Sources (PCSs). The Cape Fear River (Brunswick County's source) rating was summarized as "moderate." This does not refer to poor water quality, but rather the potential to become contaminated by PCSs in the assessment area.

The following are key highlights from the Brunswick Regional WSD 2020 Local Water Supply Plan report:

- Estimated total miles of distribution system lines: 178 miles
- Distribution lines replaced during 2020: 0 feet
- New water mains added in 2020: 14,831 feet
- Meters replaced in 2020: 12,000
- Oldest meters in the system: 1 year
- Finished water storage capacity: 1.5 million gallons

Table 8: 2020 Water System Annual Daily Water Use by Type (MGD)

TYPE OF USE	METERED	AVERAGE DAILY DISCHARGE (MGD)
Residential	11,361	1.4105
Commercial	440	0.1561
Industrial	0	0.000
Institutional	43	0.0315

SOURCE: Data from Brunswick Regional WSD 2020 Local Water Supply Plan (LWSP)

SEWER

TREATMENT CAPACITY

The Brunswick Regional WSD 2020 Local Water Supply Plan reports that there were 8,362 sewer service connections countywide. There were zero water service connections with septic systems and one wastewater discharge interconnection with another system. There was one NPDES permit held by the system with Brunswick River (Cape Fear River basin 02-3) receiving the discharge. Table 9 provides a list of the average daily wastewater discharge by month.

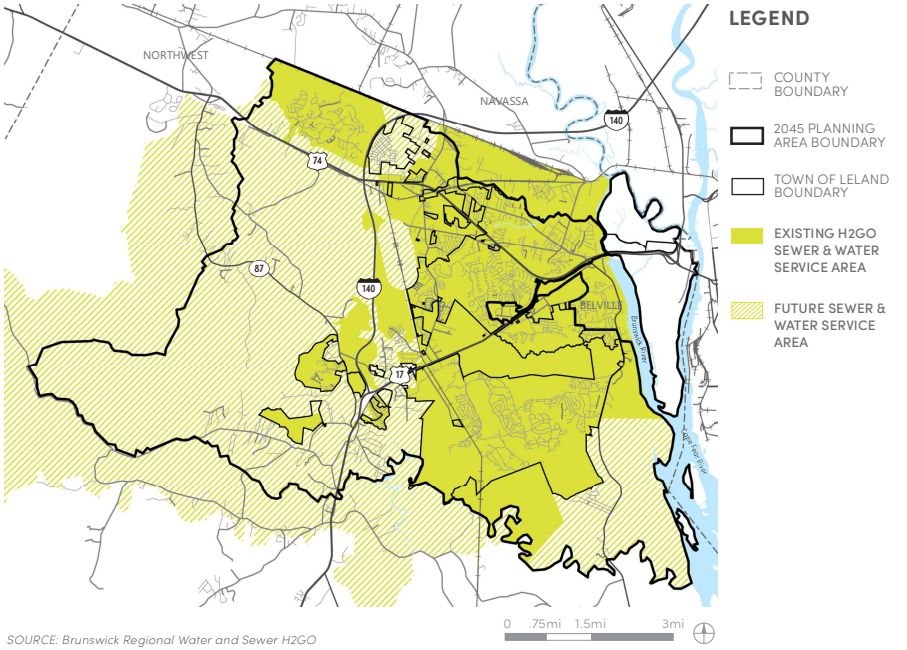
There are no current plans to build or expand wastewater treatment facilities in the next 10 years.

Table 9: 2020 Brunswick Regional Water and Sewer: Wasterwater Monthy Discharges

MONTH	AVERAGE DAILY DISCHARGE (MGD)
January	0.3860
February	0.3924
March	0.3996
April	0.3820
May	0.3997
June	0.4005
July	0.4069
August	0.4134
September	0.4255
October	0.4184
November	0.4363
December	0.4245

SOURCE: Data from Brunswick Regional WSD 2020 Local Water Supply Plan (LWSP)

MAP 40: WATER AND SEWER SERVICE AREA



SOURCE: Brunswick Regional Water and Sewer H2GO

STORMWATER SYSTEMS

STORMWATER CONVEYANCE SYSTEM

As described in the 2020 Town of Leland Stormwater Program Narrative, "in the original Town limits, stormwater is carried through a mixture of roadside ditches and piping. In most of these areas, stormwater sheet flows across the shoulder into these ditches and drain into smaller tributaries. Newer developments in the Town, under NCDENR stormwater regulations, use curb and gutter with catch basins, grassed swales, retention ponds and other appropriate devices; which are privately owned by the developer or homeowners association. These devices then drain to local tributaries and streams."

WATER QUALITY

The 2020 Town of Leland Stormwater Program Narrative identifies the following impaired streams:

- The Cape Fear River [18-(71)a] from upstream mouth of Toomers Creek to Snows (Cut: Low Dissolved Oxygen, Low pH)
- The Brunswick River [18-77] from source to the Cape Fear River (Low Dissolved Oxygen, Low pH)
- Town Creek [18-81] from source to the Cape Fear River (Mercury)

Table 10: Receiving Streams from 2020 Town of Leland Stormwater Program Narrative

RECEIVING STREAM NAME	WATER CLASSIFICATION	STREAM SEGMENT	AQUATIC LIFE USE SUPPORT RATING	RECREATION USE SUPPORT RATING	FISH CONSUMPTION USE SUPPORT RATING
Cape Fear River	SC	18-(71)a	I	S	I
Brunswick River	SC	18-77	I	S	I
Sturgeon Creek	C;Sw	18-77-1	ND	ND	I
Mill Creek	C;Sw	18-77-1-1	ND	ND	I
Banton Branch	C;Sw	18-77-1-1-2	ND	ND	I
Jackeys Creek	C;Sw	18-77-3	ND	ND	I
Piney Branch	C;Sw	18-77-3-1	ND	ND	I
Mallory Creek	C;Sw	18-78	ND	ND	I
Little Mallory Creek (Beaverdam Branch)	C;Sw	18-78-1	ND	ND	I
Town Creek (Rattlesnake Branch)	C;Sw	18-81	S	ND	I
Morgan Branch	C;Sw	18-81-7	ND	ND	I
Bishop Branch	C;Sw	18-81-7-1	ND	ND	I
Goodland Branch	C;Sw	18-81-8	ND	ND	I

Source: https://www.townofleland.com/sites/default/files/uploads/program_narrative_2020.pdf

PARKS AND RECREATION

PARKS

The Town of Leland's 2018 Parks, Recreation, and Open Space (PROS) Master Plan provides a detailed inventory and Level of Service (LOS) study of passive and active parks and recreation of both public and private facilities within the Town.

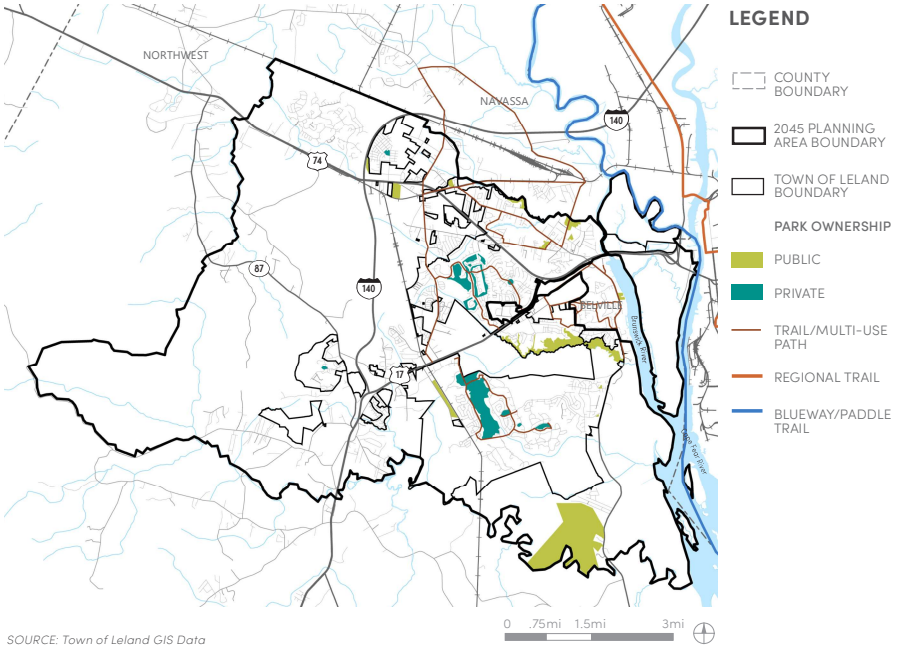
Parks provided by the Town are primarily passive with most active recreation and neighborhood-based services supplied by other service providers and private services within in planned communities.

The Town of Leland operates three parks: Cypress Cove Park, Leland Municipal Park, and Westgate Nature Park. The Town has also acquired property and developed a master plan for Sturgeon Creek Park.

According to the 2018 PROS Master Plan Level of Service (LOS) summary, when acreage for wetlands are included, "Leland is currently serving more residents per park than the State and National average." As the Town grows, the plan recommends seeking additional partnerships and resources to provide more priority park features internally.

Source: https://www.townofleland.com/sites/default/files/uploads/pros_master_plan_final-leland_8_13_18.pdf

MAP 41: PARKS BY OWNERSHIP



SOURCE: Town of Leland GIS Data