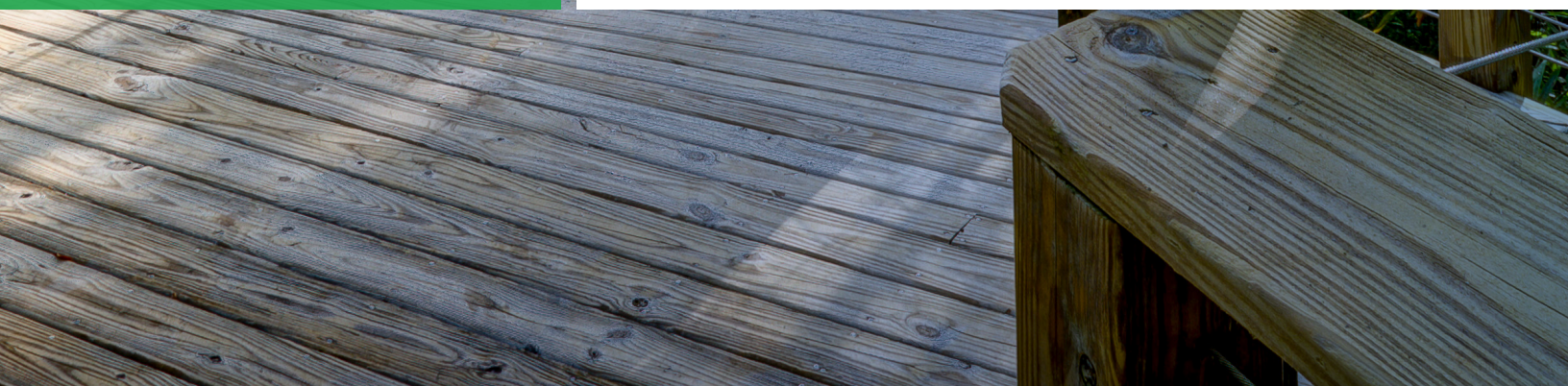
# Town of Leland Comprehensive Land Use Plan

# Leland 2045

planning for generations



**DRAFT FOR ADOPTION**
**LAST REVISED: NOVEMBER 11, 2021**

Town of Leland
Growing our future. Nourishing our roots.



# ACKNOWLEDGMENTS

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**THANK YOU TO ALL OF THE COMMUNITY MEMBERS, BUSINESSES, PROPERTY OWNERS, AND VISITORS FOR YOUR PARTICIPATION, TIME AND CONTRIBUTION!**

Photo credit: Design Workshop

# CONTENTS

# Introduction

This chapter provides an overview of the plan, how to use this document, a summary of previous plans and the community process that informed this plan, as well as the vision statement, goals, and plan themes that shape the document.

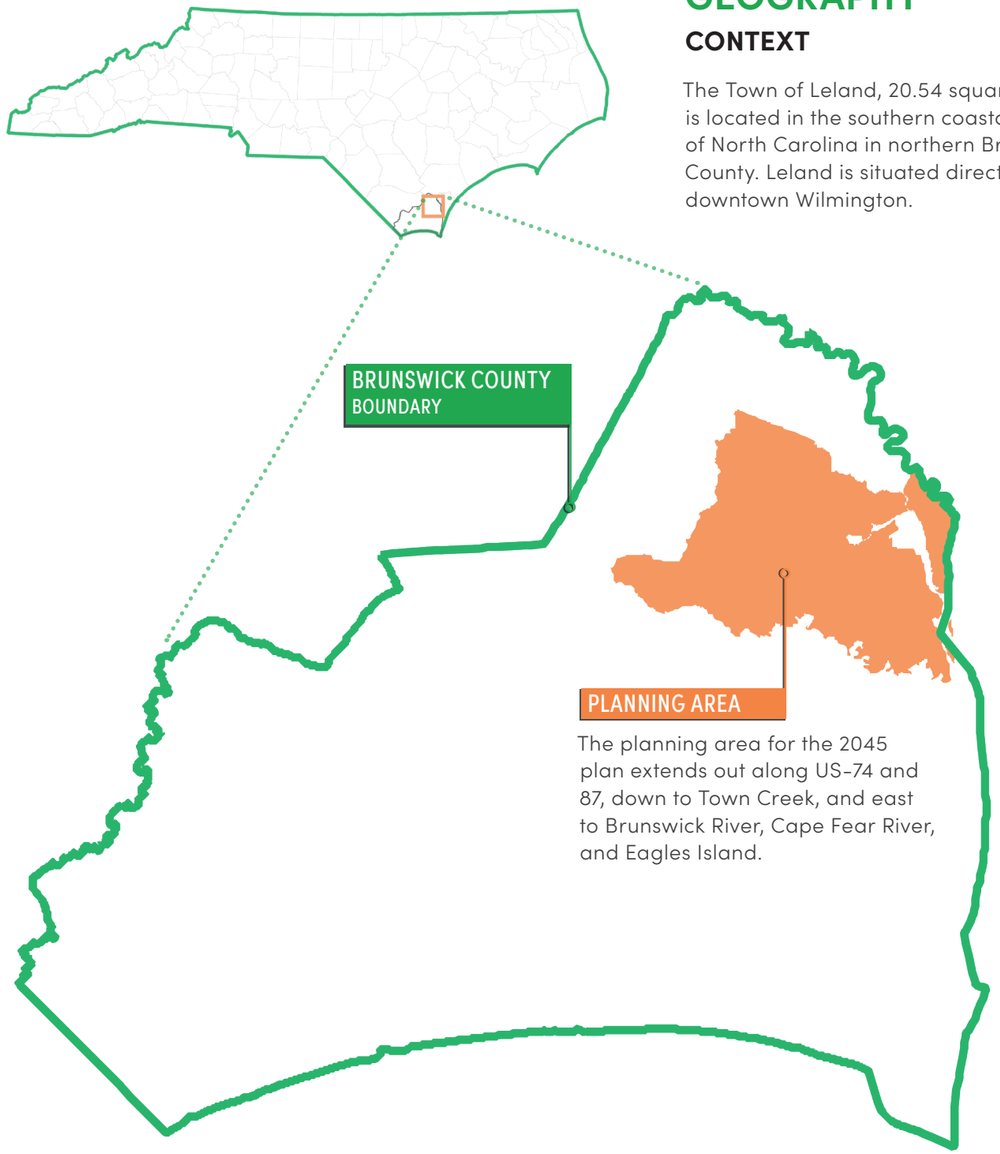
Photo credit: Design Workshop

# OVERVIEW AND CONTEXT

## GEOGRAPHY

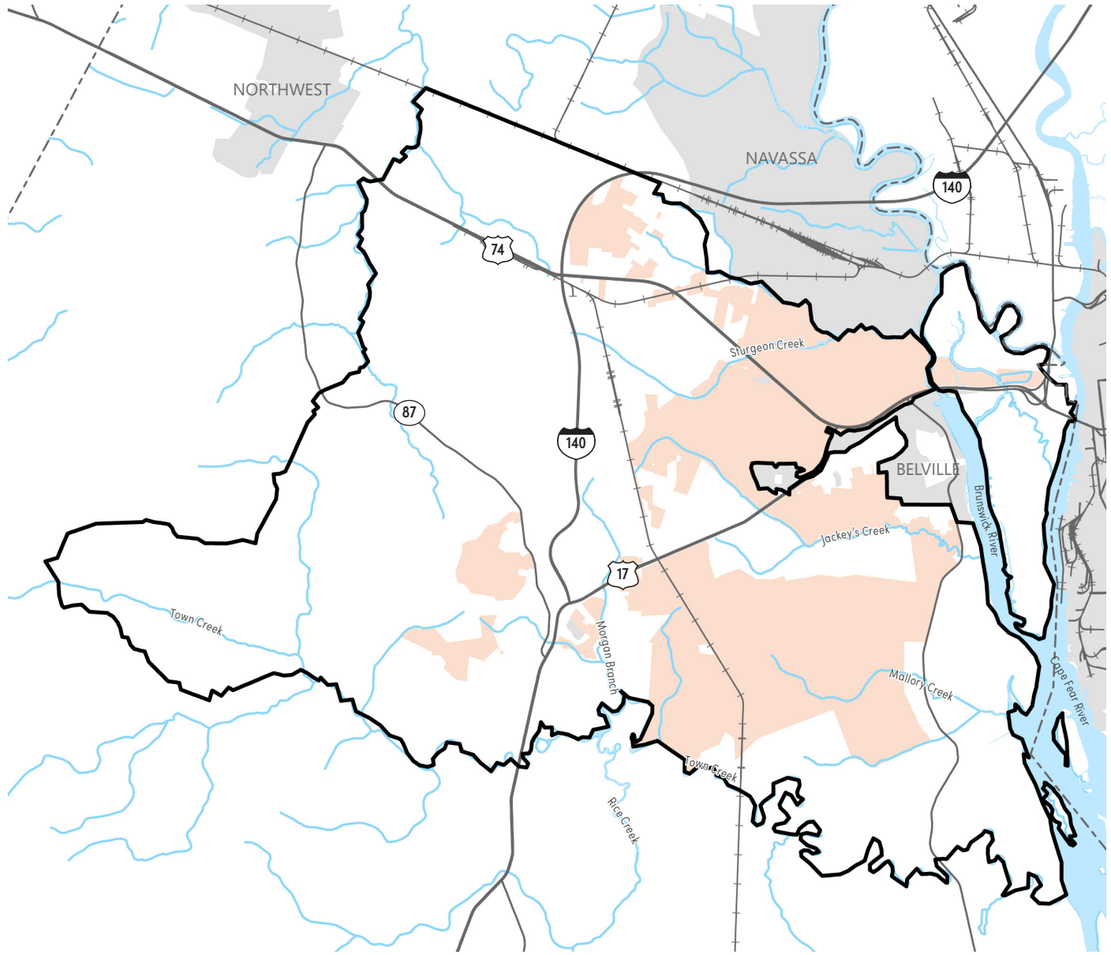
### CONTEXT

The Town of Leland, 20.54 square miles, is located in the southern coastal plain of North Carolina in northern Brunswick County. Leland is situated directly west of downtown Wilmington.




The planning area for the 2045 plan extends out along US-74 and 87, down to Town Creek, and east to Brunswick River, Cape Fear River, and Eagles Island.

**MAP 1:** CONTEXT MAP




### LEGEND

- COUNTY BOUNDARY
- 2045 PLANNING AREA BOUNDARY
- TOWN OF LELAND BOUNDARY
- MUNICIPALITIES
- MAJOR WATER BODIES
- STREAMS
- RAILROAD
- ROADS

*Map Source: Design Workshop, existing conditions from Town of Leland GIS and ESRI*

# THE LELAND 2045 COMPREHENSIVE LAND USE PLAN

The Leland 2045 Comprehensive Plan ("Leland 2045") is a planning document that outlines goals, policies, and implementation strategies that were developed through a robust public engagement process. The purpose of the Leland 2045 Comprehensive Plan is to enable Leland officials and citizens to anticipate and constructively respond to growth and change, and to encourage the development of safe and healthy, built and natural environments that create opportunities for all.

## OBJECTIVES OF THE PLAN

1. **Integrate existing plans and initiatives into a community-wide vision for the future**
2. **Create a resource to inform policy decisions**
3. **Set priorities and responsibilities for land use planning and community development**
4. **Outline specific goals and strategies to achieve the plan's vision**
5. **Align Strategic Plans, Capital Improvement Plans (CIP), Budgets, and Department Action Plans**
6. **Help Leland staff, leadership, and officials initiate tasks and make decisions**
7. **Outline a strategic and manageable process to accommodate growth and expansion**

## WHY IS THE PLAN NEEDED?

Leland 2045 is needed to link together existing and forward-looking planning with future efforts and investments to ensure that Leland grows and expands toward a community-derived vision rather than in a way that detracts from those things that make it a special place to live. This linkage will facilitate sustainable growth; create a unique sense of place and character that is Leland's own; foster a high quality of life and sense of community; protect Leland's unique landscape and access to nature; and expand economic opportunities for all. When acted on, Leland 2045 will enable the Town to continue to build a place that attracts people to live, create, do business, and recreate here for generations.

## WHAT DOES THE PLAN INCLUDE?

Leland 2045 provides a vision, goals, strategies, and actions derived through a collaborative community-based planning process. It includes Implementation and Action Planning, which allows for Town departments, leadership, private sector interests, and citizens to hold each other accountable to act in harmony. It brings focus and priority to the capital investment, human capacity, collaboration, and shared commitment that is needed for the Town to realize its vision and manage its growth toward an even more viable and sustainable future.

Consistent with The Coastal Area Management Act (CAMA), Leland 2045 consists of five elements that analyze existing and emerging conditions, determine future growth, and project future land uses, and also includes tools to guide future development within Leland's existing boundaries and areas that may become part of the Town. Because of the unique approach undertaken by the Town in the adoption of Leland 2045, the standard elements of CAMA are not always segregated into individual chapters. Rather, they are packaged into integrative themes that better articulate Leland's priorities for achieving economic, social, and environmental sustainability.

## HOW TO USE THIS DOCUMENT

Each of the principles, strategies, and actions included in this document are important for the Town to achieve its vision. In that sense, Leland 2045 is a living document that needs to be worked with and updated regularly. To be effective, the plan needs to influence the actions of the Town's departments and encourage collaboration and cooperation between them.

Leland 2045 should be used as a reference tool that is referred to often and regularly and should be the impetus for the ongoing decisions and focus of the Town's internal and external interactions.

Leland 2045 is a step toward the future of the Town, where vision is articulated, themes are established, strategies are identified, and action items are defined. It lays the framework for future action, but purposefully does not resolve all its goals, principles, and strategies.

The plan describes actions in terms of immediate activities that begin with adoption of the plan and are typically completed or realized within the first year; short-term activities that start within one to three years of the plan's adoption; mid-term activities that begin three to ten years after the plan's adoption; and long-term activities that extend beyond ten years and may overlap into the next comprehensive plan effort.

# REFERENCE TO OTHER PLANS AND DOCUMENTS

The Leland 2045 Comprehensive Plan integrates existing plans that were created to advance the quality of Leland's growth. Each plan was analyzed to determine the key actions that are ongoing, and those that are completed, to avoid unnecessary duplication or confusion amongst the plans. Several key action items remain important for Leland to continue to work on:

## LAND USE & COMMUNITY DEVELOPMENT

- Pursue the implementation of the Gateway Infill Plan
- Encourage infill development

## ECONOMIC DEVELOPMENT

- Leverage the Cape Fear region's economic role in the global economy
- Nurture existing industries to create a diversified economy
- Grow the job base in Leland with development patterns that have a high General Fund contribution per acre
- Position Leland as an important partner for both residential and office support for this technical cluster in the Cape Fear region
- Provide knowledge to encourage redevelopment of the Gateway District as a town center and to develop the US HWY 17 corridor as an economic development hub
- Seek to reduce the number of people who must commute out of Leland for work every day
- Promote business and strengthen tourism

## ENVIRONMENTAL, OPEN SPACE, & RECREATION OPPORTUNITIES

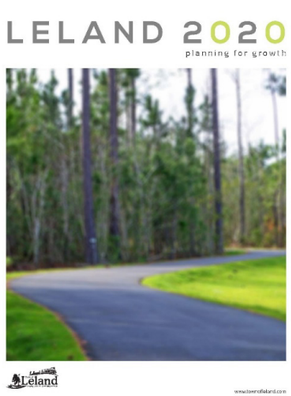
- Increase environmental buffers around sensitive waterways
- Limit development within the 100-year floodplain
- Expand open space requirements and define park requirements

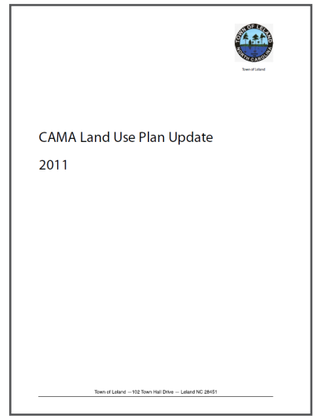
## TRANSPORTATION

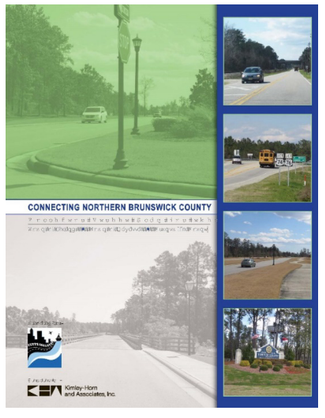
- Implement the recommendations of the Collector Street Plan
- Pursue complete streets designs for all new streets
- Continue to improve connectivity
- Implement traffic management and traffic calming techniques

## BICYCLE AND PEDESTRIAN

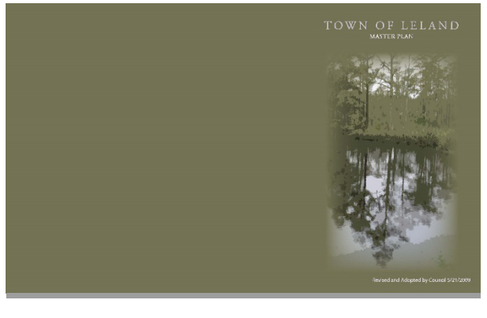
- Plan for and implement bike and pedestrian infrastructure
- Become designated as a Walk-Friendly Community
- Integrate bicycle facilities into all new developments and roadway planning, design and construction projects
- Encourage walkable, compact neighborhood forms that increase quality of life, and access to Leland's rich natural resources




# SUMMARY OF COMMUNITY INVOLVEMENT PROCESS


## ENGAGING THE COMMUNITY

The plan was prepared during the Covid-19 pandemic, which required a combination of social distancing and virtual community workshops. Regardless of these obstacles, it was shaped around a continuous and multi-faceted cycle of input with stakeholders and the public, designed to aggregate feedback from a diverse group of voices within the Town. Over the course of the plan's development, there were multiple opportunities for the public to provide input, voice concerns, and comment on and shape in-progress plan materials.

## FOCUS GROUP, PLANNING BOARD, AND TOWN COUNCIL

The consultants and planning staff met with the Focus Group, Planning Board, and Town Council to solicit feedback throughout the process and during the development of the draft plan.

## WEB AND MEDIA PRESENCE

The comprehensive plan was developed alongside a 24/7 web presence via the Town website that allowed free and open access to key plan documents as well as a platform for the public to interface with and react to the plan's development. The plan was advertised and reported on in a variety of local media, including press releases, email, and the Town's social media platforms.

## PUBLIC ONLINE SURVEYS

The plan was influenced by two online public surveys. The surveys evaluated citizen satisfaction with existing Town services and qualities and offered a glimpse into public preferences for prioritizing future investment.



## PUBLIC MEETINGS

Two virtual public workshops were conducted with the community. The first focused on framing the background of the plan, vision, and themes. The second focused on growth scenarios. Both virtual meetings offered the community the chance to share ideas and priorities through live polling and through live chat function.

A third public community meeting was held in Town Hall, where exhibit boards were set up to reveal the draft Future Land Use Map (FLUM), focal area maps, and plan vision and themes that were shaped by the first two meetings.

All workshop recordings and exhibit materials were published online and translated into a user-friendly format for viewers to navigate and respond to survey questions or provide comments at their own pace.


**Figure 2:** Advertising the plan website via a moveable road sign proved to be an effective strategy in reaching communities across Leland and boosting engagement.

## PUBLIC ENGAGEMENT HUB

Throughout the planning process, a physical engagement "hub" was set up in Town Hall for community members to schedule time to view presentation


**Figure 1:** Photos from the final community meeting where exhibit boards revealed the draft Future Land Use Map (FLUM), focal area maps, and plan vision and themes.

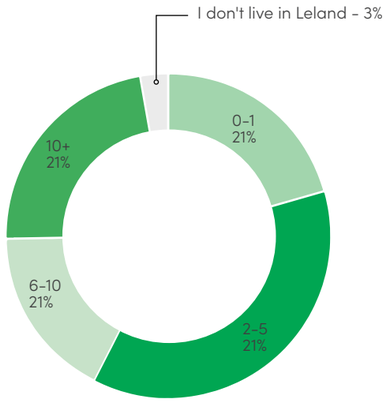
# SURVEY RESULTS SUMMARY

**673**
Total Survey Responses

The first public survey helped to frame the plans vision and goals and gauge priorities. This survey was live on the website from January 19, 2021 through March 21, 2021. Responses were also collected from the Public Engagement Hub set up at Leland Town Hall.

THIS PAGE SUMMARIZES SOME OF THE KEY TAKEAWAYS FROM THE COMMUNITY SURVEY. ADDITIONAL FINDINGS ARE FOUND THROUGHOUT THE DOCUMENT AND FOR THE FULL SURVEY RESPONSES, PLEASE VISIT THE PROJECT WEBSITE: WWW.LELAND2045.COM

## HOW LONG HAVE YOU LIVED IN LELAND (YEARS)?




## PLEASE INDICATE IN WHICH AREA OF THE TOWN YOU LIVE:

- 3% Windsor Park/Hwy 74
- 7% Village Road/Old Fayetteville
- 12% Waterford / Magnolia Greens
- 9% Westgate
- 9% 133/Mallory Creek
- **Brunswick Forest 31%**
- 12% Grayson Park
- 11% None of the above, but within the planning area
- 4% Elsewhere within Brunswick County
- Wilmington 2%

## THE MOST IMPORTANT TOPICS TO FOCUS ON IN A COMPREHENSIVE PLAN ARE:

- 8% Improving Transportation Options
- 5% Quality and Quantity of Parks and Open Space
- **18% Housing Choices and Affordability**
- **14% Regional Cooperation**
- 12% Expansion and Quality of Town Services
- 7% Economic Development
- 8% Policies for Orderly Growth
- **15% Coastal Resilience**
- 13% Environmental Stewardship

## AS THE TOWN CONTINUES TO GROW, THE BIGGEST CHALLENGES WE FACE ARE:

- **16% Loss or Degradation of Natural Resources**
- 9% Flooding and Environmental Impacts
- 6% Providing Town Services Economically
- 12% Image and Character
- **Traffic Congestion 22%**
- 4% Continued Economic Development
- 11% Aging Population
- 8% Declining Longtime Residents
- 12% Sprawling Development

## THE ITEMS I FEEL MOST SATISFIED WITH RELATED TO LELAND'S QUALITY OF LIFE ARE:

- **Affordability/Cost of Living 24%**
- 5% Art and Culture
- 7% Relationship to Nature
- 4% A Strong Stable Economy
- 4% Demographic Diversity
- 5% Feeling of Safety and Security
- 14% Accessible Public Services
- **Educational Opportunities 20%**
- 16% **Feeling of Community**

## THE ITEMS I WOULD LIKE TO IMPROVE UPON ARE:

- 3% Housing Choices
- **Employment Opportunities 22%**
- 8% Sprawling Development
- 10% Entertainment and Food Choices
- 14% **Traffic/Limited Transportation Options**
- 10% Access to Job Training
- 9% Educational Opportunities
- 3% Neighborhood Parks
- **Anticipating Population Growth 22%**


**Figure 3:** Community survey response word cloud describing vision for the Town in one word. The larger and bolder words are representative of the most common responses.

# FUTURE VISION, GOALS, AND PLAN THEMES

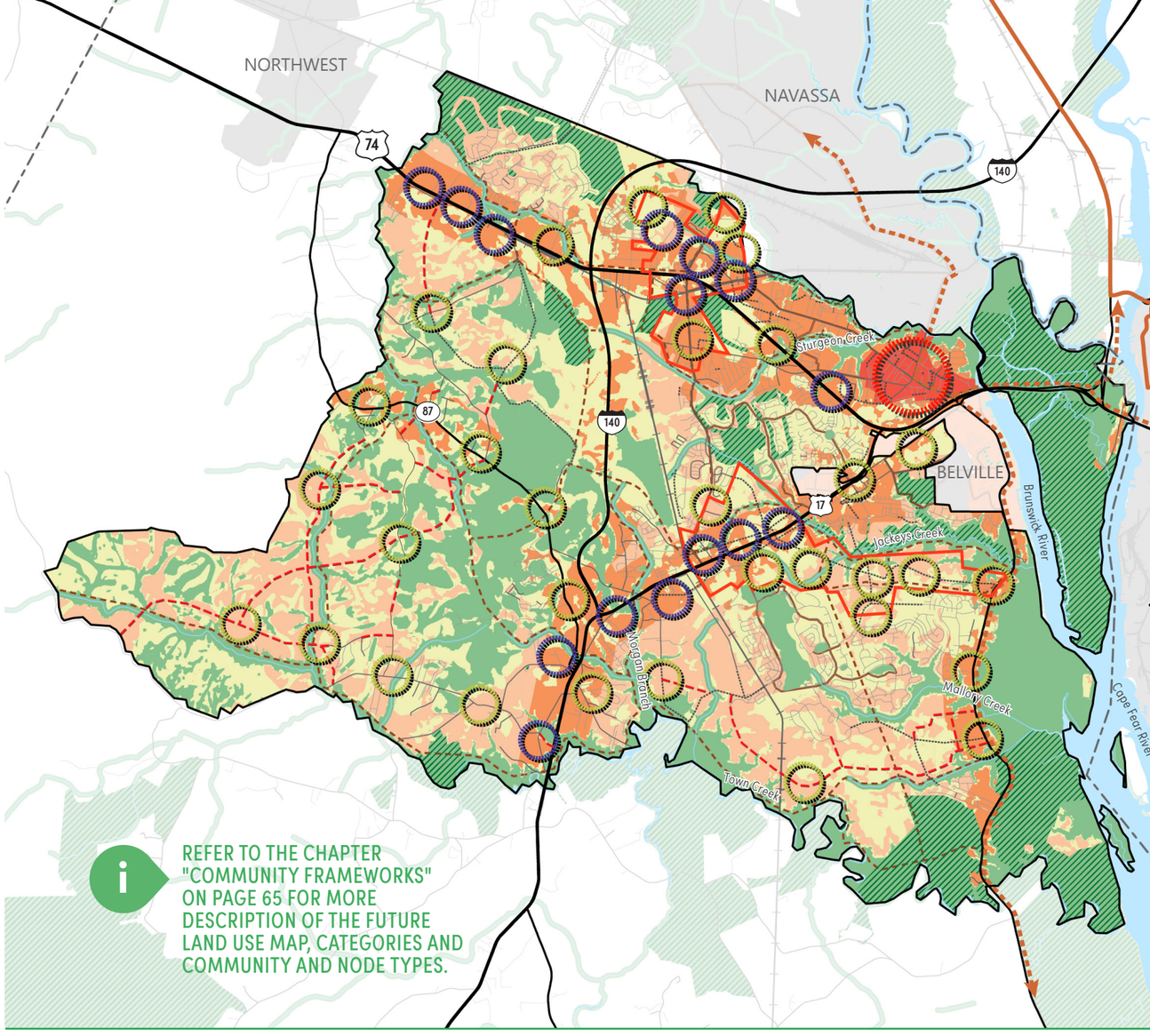
## LELAND 2045 VISION

Leland is prosperous, inclusive, and resilient. It is a healthy, safe, equitable, and accessible community built upon our strong values for the natural environment; inclusivity; walking and biking; social, economic, and physical connectivity; the quality of our neighborhoods; access to services, facilities, and places to gather; and the unique image and sense of place we have nurtured together as a community.

## CRITICAL GOALS OF THE PLAN

1. Leland has a high quality of life shared by all residents
2. Leland promotes a sense of belonging, inclusivity, fairness, and equity
3. Leland values and protects natural and cultural resources
4. Leland has principled and sustainable economic growth
5. Leland has accessible community facilities, parks, schools, and open spaces
6. Leland has high-quality neighborhoods with diverse housing opportunities
7. Leland is attractive to people of all income levels, life stages, and personal abilities
8. Leland has high levels of social, environmental, economic, and cultural connectivity
9. Leland has safety, security, health, and wellbeing for all its citizens
10. Leland has identifiable, central gathering places that bring us together
11. Leland uses smart, progressive planning that anticipates and stays ahead of growth






REFER TO THE CHAPTER "COMMUNITY FRAMEWORKS" ON PAGE 65 FOR MORE DESCRIPTION OF THE FUTURE LAND USE MAP, CATEGORIES AND COMMUNITY AND NODE TYPES.

**MAP 2:** FUTURE LAND USE MAP (FLUM)

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### LEGEND

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)
- EXISTING TRIALS
- EXISTING REGIONAL TRAILS
- TRAILS (INCLUDES ALREADY PLANNED)
- NEIGHBORHOOD NODE
- VILLAGE NODE
- URBAN CENTER NODE
- FOCAL AREA
- FUTURE GULLAH GEECHEE HERITAGE TRAIL

### FUTURE LAND USE CATEGORIES

- ALREADY PROTECTED/MANAGED AREAS (NCNHP)
- IDEAL CONSERVATION/PRESERVATION AREAS
- NATURAL RESOURCE ORIENTED DEVELOPMENT POTENTIAL
- MODERATE DEVELOPMENT POTENTIAL
- HIGH DEVELOPMENT POTENTIAL
- GATEWAY DISTRICT

*Map Source:*

Leland is a town that has prospered by responding to growth opportunities within current Town boundaries and through expansion of Town boundaries. Its growth has responded to the real estate market's opportunities and has generally been accommodated in large Planned Unit Developments (PUDs) that focus primarily on the active retiree. These developments, along with Leland's cost of living, provide an amenity-based community that is attractive to the older demographic moving into the region because of lifestyle choices, weather, amenities, and cost of living.  Joining that growth is more traffic congestion, more pressures on the natural environment, more demands for services, and a feeling of separation between residents that have historically lived in Leland and residents that are relatively new to the Town. There is a growing sense that Leland must define and establish a vision of its sense of place and character before accelerated growth overruns the opportunity to do so.

Efforts have been made to consider the importance of income and racial diversity, connectivity, gathering, and an identifiable sense of place for Leland. Vision statements from previous plans, the Gateway Infill Plan , the Flexcode, the street connectivity plan, and other measures were adopted to manage suburban sprawl, protect the natural environment, promote place-based development, create a central gathering place, and establish the networks that connect people to each other and to the Town's amenities.

Creating a collaborative vision and committing to an organized and holistic strategic plan for growth and expansion based on The Town's core values is a bold step the Leland 2045 plan takes. Leland 2045 considers that accelerated growth will continue, and that Leland will expand its boundaries to accommodate and benefit from projected growth.

The questions that this plan poses and focuses on answering are:

"In what form, location, and character will this expansion take place?"

"How will it support and strengthen our values?"

"What additional efforts have to be made to ensure that we achieve our vision and honor our values?"

"How can we best accommodate growth while also creating a place that will be economically and environmentally sustainable and resilient for generations to come?"

With this plan, and the ongoing work that flows from it, Leland can continue to be a leader within the region on how to plan optimistically for growth while also protecting the very reasons why Leland and the region are such an attractive and desirable place to live. This plan considers that the hallmarks of great and lasting places include protecting the natural assets that define it, promoting cultural and economic diversity, ensuring inclusion, and establishing the physical and social infrastructure and frameworks that enable people to share, prosper, gather, work, recreate, walk, bike, and connect freely with one another. It is from these hallmarks that Leland has committed itself to achieving and from which its sense of place and identity is defined.

## PLAN THEMES

A comprehensive plan is guided by a compelling vision that is reflective of what the community aspires to become. The American Planning Association (APA) in its Sustaining Places Initiative describes themes that can work collaboratively to advance economy, society, culture and the environment. Through collaboration with planning staff, the community, and the Leland 2045 Focus Group, these were adapted and refined to the following six themes:

Photo credit: Design Workshop

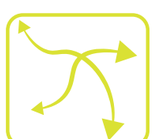
**HIGHLY VALUED AND PROTECTED NATURAL AND CULTURAL RESOURCES**

**LIVABLE, DIVERSE, AND CONNECTED NEIGHBORHOODS THAT ACCOMMODATE GROWTH**

**A RESILIENT AND STABLE ECONOMY**

**AN INCLUSIVE, SUPPORTED, HEALTHY, SAFE, AND EDUCATED COMMUNITY**

**INFRASTRUCTURE THAT SUPPORTS COMMUNITY LIFE**



**AN ACTIVE PARTICIPANT IN A COOPERATIVE REGION**

# The Plan Themes

In this chapter, the Leland 2045 vision, opportunity, principles and strategies have been organized into six themes derived from engagement with the community.

Photo Credit: Design Workshop

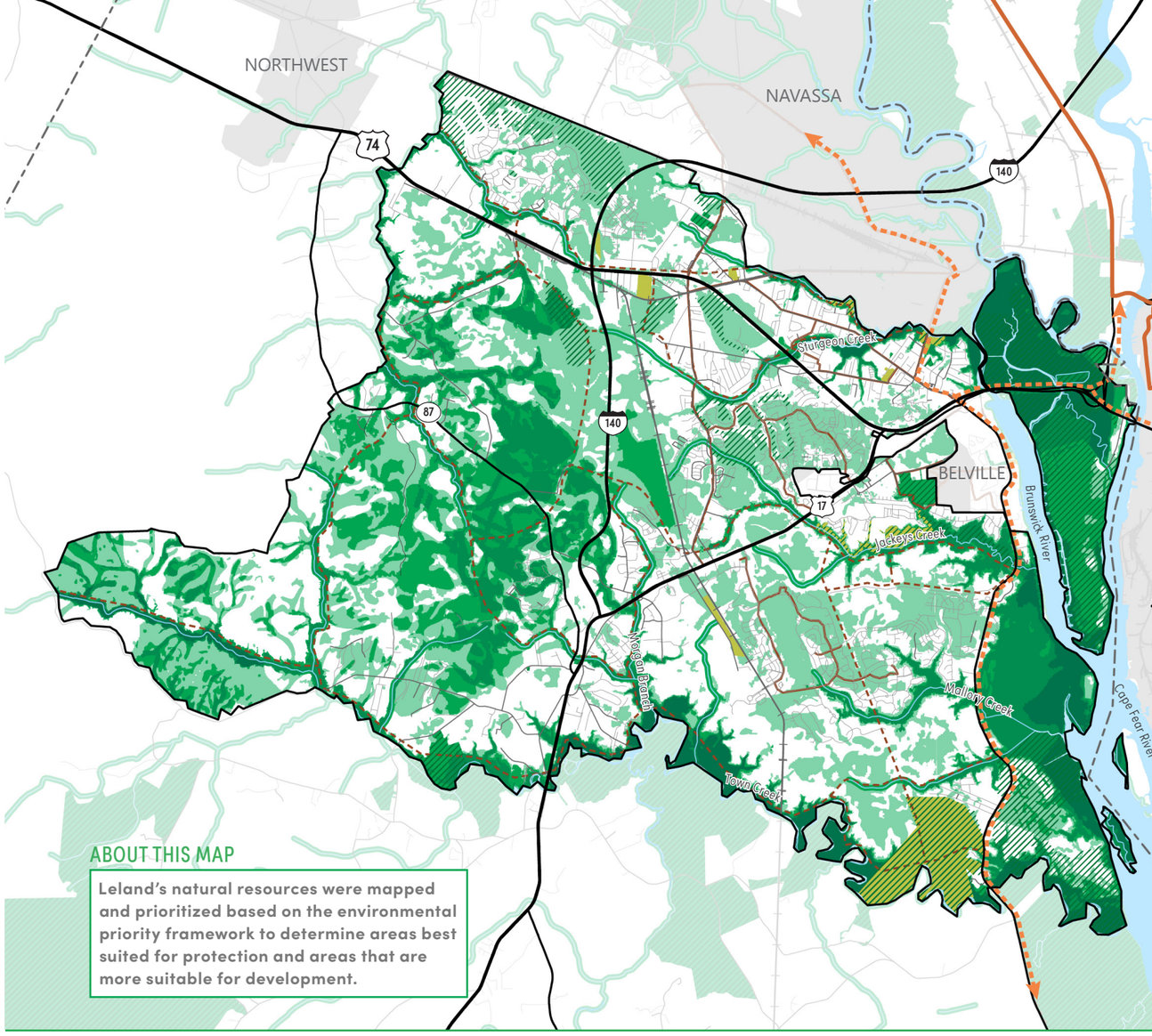
# HIGHLY VALUED AND PROTECTED NATURAL AND CULTURAL RESOURCES

VISION STATEMENT

Leland's natural resources are fundamental to our lifestyle, economy, well-being, and resilience. Protecting and maintaining its health and ecological function are a primary objective within planning for growth.

OPPORTUNITY

1. **Protect and augment the components of Leland's natural environment that will keep people and investments more safe from flooding, provide recreation and access to nature, enhance the tourism economy, and protect valuable natural resources.**
2. **Link environmental planning with zoning, growth management, land use planning, and hazard mitigation planning.**
3. **Create strategies for future conservation / protection efforts that preserve critical natural environments.**
4. **Promote green building and development techniques as a part of Leland's image, character, and brand.**
5. **Create a linked open space network that supports environmental connectivity, trails, and blueways.**
6. **Maximize public access to public trust waters.**
7. **Maintain, protect, and where possible enhance water quality in all coastal wetlands, rivers, streams, and estuaries.**




ABOUT THIS MAP

**Leland's natural resources were mapped and prioritized based on the environmental priority framework to determine areas best suited for protection and areas that are more suitable for development.**

**MAP 3:** ENVIRONMENTAL COMPOSITE FRAMEWORK

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LEGEND

- ALREADY PROTECTED/MANAGED AREAS (NCNHP)
- EXISTING PARKS
- EXISTING TRAILS
- EXISTING REGIONAL TRAILS
- PROPOSED TRAILS
- FUTURE GULLAH GEECHEE HERITAGE TRAIL

ENVIRONMENTAL PRIORITY

- HIGHEST PRIORITY
- LOWEST PRIORITY

REFER TO "TABLE 1: ENVIRONMENTAL COMPOSITE FRAMEWORK" ON PAGE 70 IN THE COMMUNITY FRAMEWORKS CHAPTER FOR BREAKDOWN OF THE ENVIRONMENTAL LAYERS AND INPUTS THAT MAKE UP THIS COMPOSITE MAP.

*Map Source: Design Workshop*

## PRINCIPLES

- We value our unique and complex natural environment as a source of life, recreation, economy, culture, and sense of place.
- Our natural environment supports and defines the location of our built environment and is essential to our economy and way of life.
- Our development is done in balance with preserving our natural systems.
- We leverage environmental preservation and conservation to build resiliency and hazard mitigation.
- We take efforts to preserve our critical natural environments so that future generations can enjoy them.
- We protect our air and water quality.
- We promote safe and sensitive access to our open spaces and waterways.
- We value our cultural history and respectfully promote it whenever we can.
- We are leaders in the region and pursue environmentally responsible development.

Photo: Sturgeon Creek Park, Leland



## STRATEGIES

### CREATE A STRATEGIC PLAN TO CONSERVE, CONNECT, AND PROTECT VULNERABLE LANDS.

- **Develop a masterplan for a Green Network that will connect existing and proposed conservation areas, neighborhoods, riparian corridors, and sensitive natural environments.**
- **Create a plan to put more land in conservation through open space requirements based on a regularly updated land / environmental suitability analysis.**
- **Consider open space requirements for all development types based on best practices.**
- **Create requirements for developments to connect open spaces designated on the Green Network plan through their projects where feasible.**
- **Establish and maintain partnerships with entities able to fund conservation efforts.**
- **Work with organizations ,such as a Land Trust, to manage the funding and efforts to conserve environmentally and culturally sensitive land.**
- **Incentivize land purchases and development restrictions in flood-prone areas for open space preservation.**
- **Implement tools to enable land conservation such as:**
  1. Conservation easements
  2. Transfer of development rights
  3. Purchase of development rights

### RESILIENT GROWTH MANAGEMENT PLANNING

- **Rank land suitability associated with risk of vulnerability associated with flooding events.**
- **Overlay future land use plans and/or zoning to determine vulnerability and areas of inconsistency between zoning, environmental conditions, and potential risk of flooding.**
- **Systematically review Leland's Comprehensive Plan, land use and zoning policies, building and engineering standards, transportation plans, housing plans, park plans, etc. and incorporate measures and create policies that negate or minimize effects associated with enhanced flooding.**
- **Coordinate enhanced flooding resiliency strategies, planning, design, and engineering standards across all codes, plans and policies.**
- **Within growth management planning and zoning, create long-term plans to direct new development and critical infrastructure to be less vulnerable from flooding.**
- **Consider development forms that are more resilient to environmental hazards, while accommodating future growth.**
- **Transform less-intense uses into a denser, mixed-use pattern in low-risk areas.**
- **Outline a transit-centric land use and infrastructure pattern to support new urban centers in low-risk areas and build the infrastructure necessary to support new urban centers.**
- **Promote resiliency and sustainability as a necessary growth and economic development strategy.**
- **Create policies to limit growth or reduce impact of development in 100-year and 500-year flood plains.**
- **Create awareness with the public of potential impacts of development within areas prone to flooding.**

STRATEGIES

- Identify areas critical for flood and natural resource protection, as well as higher ground that may be more suitable for development.
- Update environmental systems mapping to reflect ongoing research and actual conditions of flooding.
- Review proposed development and land use plans, infrastructure plans, parks and recreation plans, and transportation plans against the environmental framework.

### PROMOTE THE USE OF ENVIRONMENTALLY FRIENDLY DEVELOPMENT AND OPERATIONS PRACTICES

- Monitor effectiveness of existing ordinances and programs and update as necessary to protect water quality and natural resources.
- Implement use of green building and Low Impact Development (LID) techniques for new home, commercial, and institutional developments.
- Protect mature and specimen trees when property is developed or redeveloped.
- Plant new trees when property is developed or redeveloped.
- Continually reevaluate and update the Stormwater Regulations to add Best Management Practices (BMPs) that increase the use of Low Impact Development (LID) techniques, such as, but not limited to bioretention, green roofs, pervious paving, and cisterns that promote water conservation and groundwater recharge.

### INTEGRATE FUTURE LAND USE PLANNING, ZONING, AND SUBDIVISION REGULATIONS WITH ENVIRONMENTAL SYSTEMS MAPPING

- Zone land areas and base their development standards with their natural environmental condition.
- Use the Environmental Composite Framework, created in this Comprehensive Plan, that designates areas of environmental importance, such as the floodplain, wetlands, critical habitat, etc. to craft development standards that protect the natural environment and to review all development and land use proposals for their compatibility with the natural environment.
- Use regulatory tools such as lower-density zoning, conservation-based planning, Low Impact Development (LID) standards, open space set-aside requirements and buffers, and natural resource protection standards, as the primary tools to protect areas of environmental importance. Use land purchases and the purchase of conservation easements for the most critical properties.
- Coordinate park plans, future land use plans, zoning, conservation plans, scenic corridor plans, and greenway plans with environmental systems mapping to create a consolidated green network plan that expands green/open space connectivity.
- Create a strategic and prioritized open space acquisition plan that targets lands that will aid in resiliency planning and mitigation efforts.

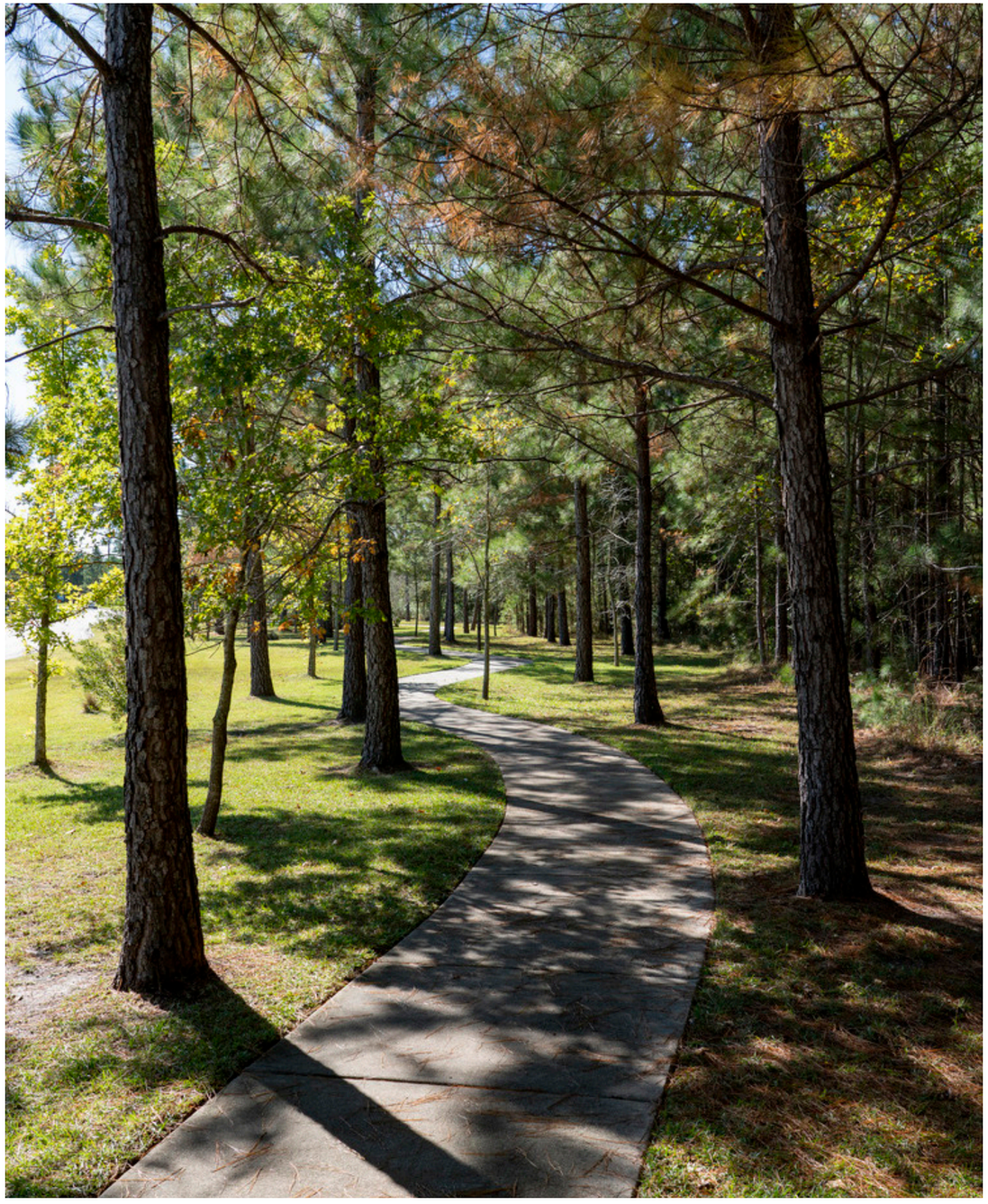


Photo Credit: Design Workshop

# LIVABLE, DIVERSE, AND CONNECTED NEIGHBORHOODS THAT ACCOMMODATE GROWTH

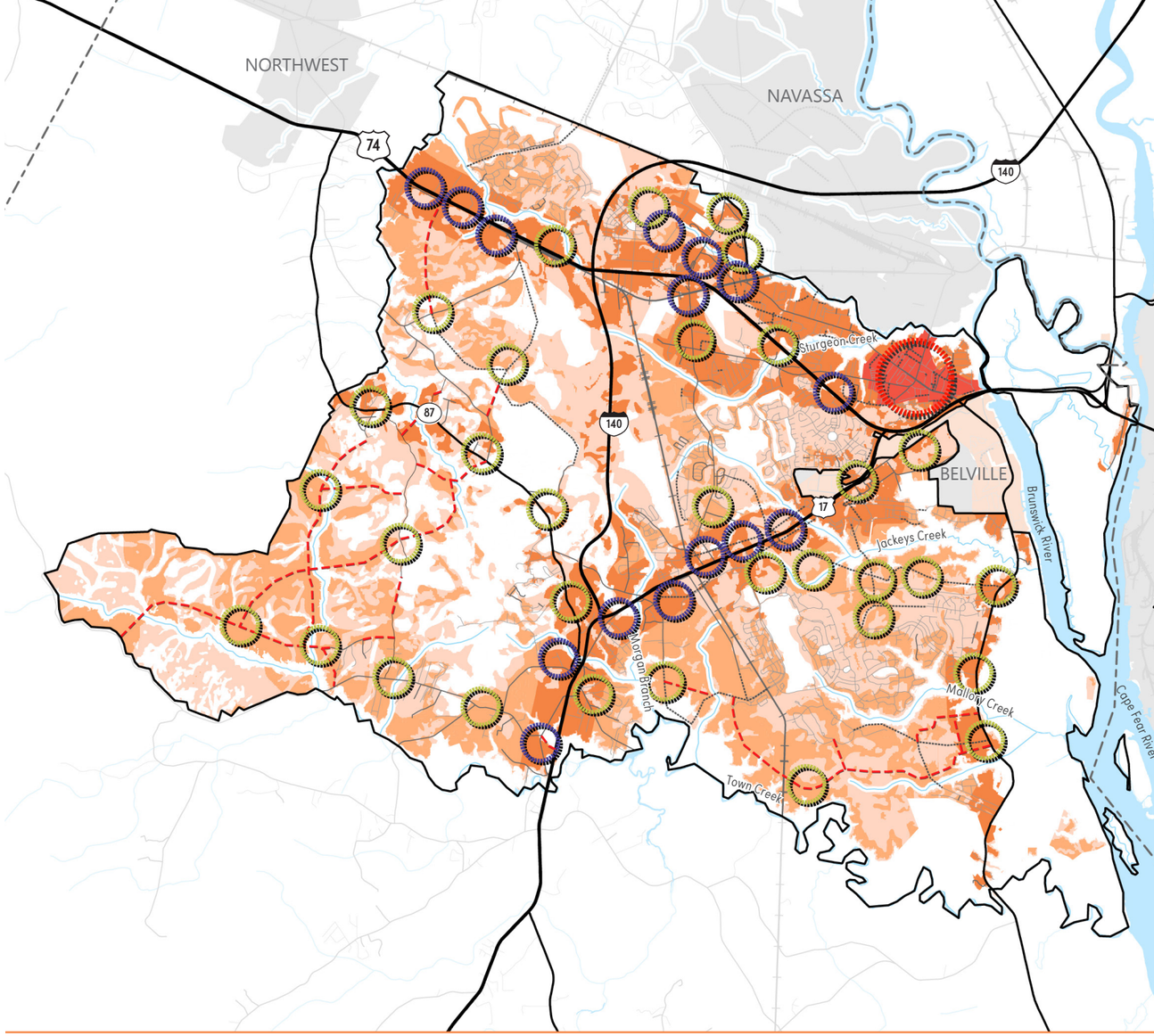
VISION STATEMENT

Leland's neighborhoods and communities promote connectivity, sense of place, character, and quality of life. This is done by providing walkable and bikeable places for living, working, shopping, recreation, and interacting for diverse age groups, income levels, and abilities.

OPPORTUNITY

1. **Resiliency and open space planning linked with growth management planning – grow where it is suitable to do so from an environmental and economic standpoint.**
2. **Growth accommodated toward a community-derived vision of the character, form, density, location, and development principles.**
3. **An organized strategy for town expansion based on nodal town planning principles.**
4. **Planning frameworks that create a complete community:**
   - » Connectivity (multimodal)
   - » Access to parks and open space
   - » Access to community services
   - » Access to employment opportunities
   - » Centers and edges
   - » Mix of uses
   - » Housing diversity
5. **Infill and redevelopment equally encouraged with new community development.**
6. **A more consistently recognizable sense of place and identity for the Town of Leland and individual communities and areas within it.**
7. **Reducing sprawling, auto-dependent development.**
8. **Protecting and enhancing real property values.**






**MAP 4:** DEVELOPMENT POTENTIAL

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LEGEND

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)
- NEIGHBORHOOD NODE
- VILLAGE NODE
- URBAN CENTER NODE

DEVELOPMENT SUITABILITY

- GATEWAY DISTRICT
- HIGHEST SUITABILITY
- LOWEST SUITABILITY (WHITE AREAS)

ABOUT THIS MAP

**Land most suitable for development was mapped and prioritized to best position new development on the most suitable land.**

**Potential additional roadway connections and the locations of nodes provides the framework for new community development within the planning area.**

*Map Source: Design Workshop, Leland GIS Department, ESRI*

PRINCIPLES

- Our neighborhoods express our identity, promote our character, and exemplify our commitment to a high quality of life.
- We value walkable and bikeable connections between neighborhoods to promote a sense of community and belonging.
- We support housing-diverse neighborhoods with a variety of housing choices and prices that are attractive and open to all segments of the market.
- Our neighborhoods have accessible parks, open spaces, and places to gather, which provides a place of neighborhood identity.
- We support small, walkable commercial nodes within our neighborhoods that create places to shop, work, or start a business.
- We ensure the realization of our vision by creating plans and policies that support it.
- We collaborate regionally to coordinate the development of the built environment and the protection of our natural environment.

STRATEGIES

## LOCATE OR ACCOMMODATE GROWTH WITHIN LOGICAL LOCATIONS IN THE PLANNING AREA TO ENHANCE RETURN ON INVESTMENT AND FEASIBILITY

- Promote growth where there is an existing, planned, or funded roadway and utility infrastructure to reduce costs to the Town.
- Make development and completion of existing approved PUDs and subdivisions a priority to accommodate projected growth within areas already approved for it.
- Continue to promote the Village Road Gateway redevelopment plan.
- Incrementally expand Town boundaries based on infrastructure, adjacencies with existing development, economic opportunity, the availability of community services, and need.

## PROMOTE GROWTH THAT IS GEARED TOWARD A VISION AND CHARACTER THAT THE COMMUNITY SUPPORTS

- Promote development that is consistent with Leland's vision for itself and for various areas of the Town and Planning Area, based on community input.
- Promote development patterns that support safe, effective, and multi-modal transportation options, including auto, pedestrian, bicycle, and transit. This will minimize vehicle traffic by providing for a mix of land uses, walkability, and compact community form.
- Locate jobs and commercial areas near where people live in nodes that promote a mix of uses in a walkable pattern.



STRATEGIES

## CREATE THE TOOLS NEEDED TO REALIZE COMMUNITY-SUPPORTED TYPES OF GROWTH

- Create Small Area Plans for key focal growth areas to guide their development vision.
- Expand use of FlexCode within areas of new development, areas to be annexed, and proposed nodes.
- Update FlexCode as necessary to ensure it is promoting its established vision and principles.
- Consolidate zoning and subdivision regulations into a Land Development Code that incentivizes the use of the FlexCode.
- Simplify the application processes and encourage form-based building with the neighborhood and pedestrian shed model.
- Consider the use of "Node Types" that define mixed-use nodes and centers of varying scales located along major roadways and the Green Network.
- Define Community Types for key areas of the Planning Area that describe a clear vision, mix of land use types, community form, density, and character for how they should be developed.

## PLAN FOR AND INTEGRATE COMMUNITY BUILDING INFRASTRUCTURE THAT WILL SUPPORT LONG-TERM GROWTH

- Plan for Transit Ready Nodes along US 17, US 74, Village Rd, Lanvale Rd, and Old Fayetteville Rd.
- Plan for Trail Ready Nodes along the Green Network.
- Require infrastructure service concurrency for new developments.
- Require adequate road, bike, and pedestrian connectivity between adjacent community developments.
- Consider the requirement to make parks and open spaces internal to a development open and accessible to the public and not for private use.
- Create and implement signage and wayfinding that links areas of town into a whole.

## INTEGRATE FLOOD RISK MITIGATION EFFORTS INTO CODES AND ORDINANCES

- Systematically review comprehensive plan, land use and zoning policies, building and engineering standards, transportation plans, housing plans, park plans, etc. and incorporate measures and create policies that negate or minimize effects on public infrastructure associated with enhanced flooding.
- Coordinate enhanced flooding resiliency strategies, planning, design, and engineering standards across all codes, plans, and policies.
- Consider designating areas of environmental importance, such as the floodplain, as areas that have unique development standards that protect the natural environment they are within or adjacent to.

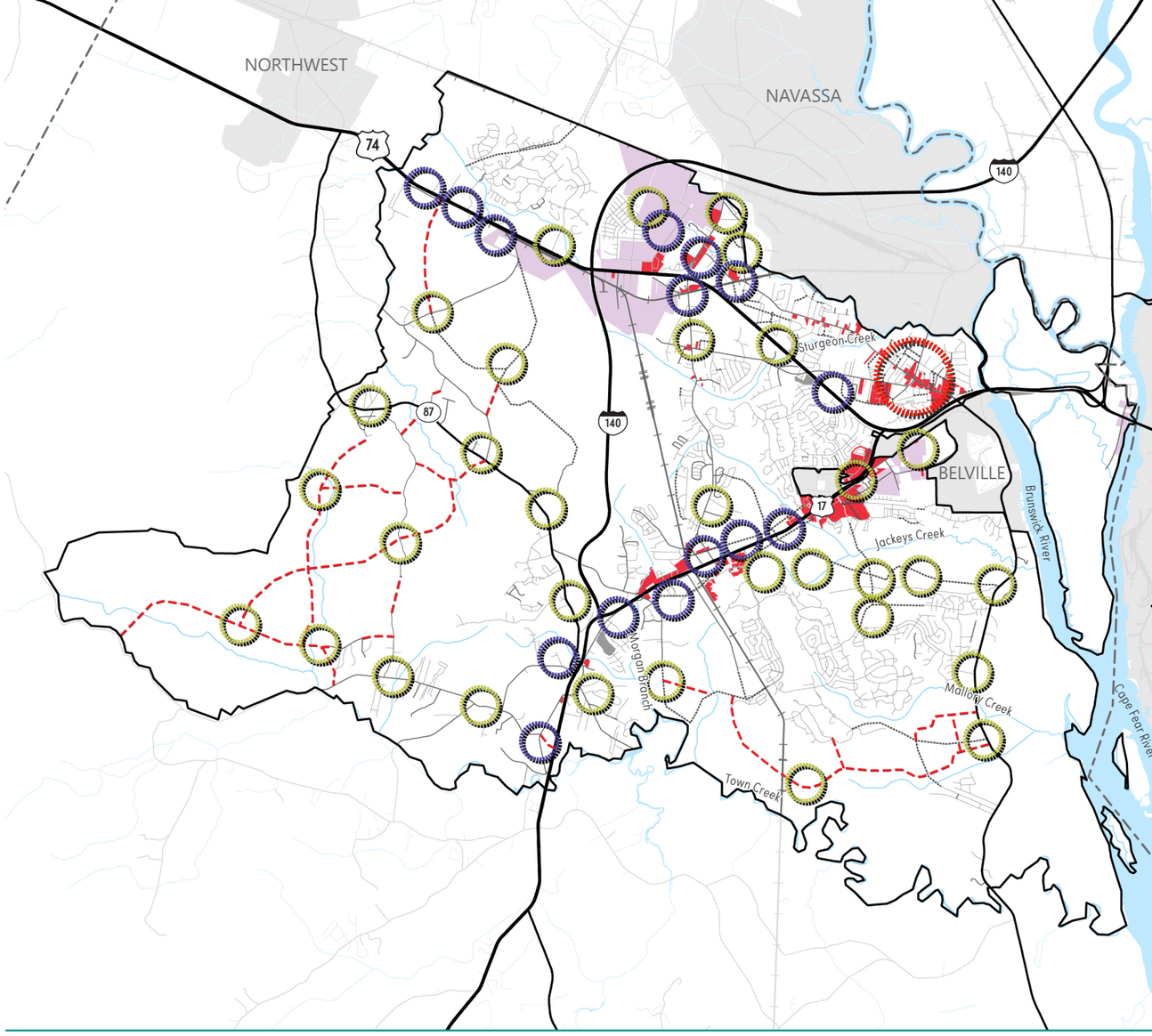
# A RESILIENT AND STABLE ECONOMY

VISION STATEMENT

Leland has the programs, plans, strategies, and a workforce that is prepared to capitalize on regional opportunities that diversify and expand its tax base and stabilize its vulnerability to economic cycles.

OPPORTUNITY

1. Diversify the economy and tax base.
2. Identify suitable land area for job-creating development.
3. Support the efforts of the Leland Innovation Park, Inc.
4. Expand agricultural industries that convert agricultural products by value-added manufacturing operations from the point of view of proximity to the Port of Wilmington, Highway 17, Highway 74-76, I-140 and I-40.
5. Determine how Leland can best leverage the Town's proximity to the Port of Wilmington.
6. Weave workforce training into primary and secondary education.
7. Continue to capitalize on Leland's reputation as a retirement community destination.
8. Collaborate with Leland Tourism Development Authority to increase travel and tourism.




**MAP 5:** ECONOMIC CENTERS

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LEGEND

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)
- NEIGHBORHOOD NODE
- VILLAGE NODE
- URBAN CENTER NODE

EXISTING LAND USE

- COMMERCIAL
- LIGHT INDUSTRIAL

*Map Source: Design Workshop, Leland GIS Department, ESRI*

ABOUT THIS MAP

**Existing commercial and light industrial land uses create the opportunity for economic development.**

**The potential nodes that form the centers of neighborhoods and villages provide future locations for various sizes and scales of businesses.**

PRINCIPLES

- We work to provide diverse and stable employment opportunities for our citizens.
- We value cultural diversity and seek economic opportunities for all our citizens.
- We prepare our workforce with the skills needed to meet the needs of existing and emerging opportunities.
- Leland's sense of place and quality of life are essential to our economy.
- Our natural and cultural resources support our tourism industry.
- We are business-friendly and create the incentives and resources needed to attract new businesses that support our principles.
- Leland is forward-looking and is positioned to take advantage of evolving innovative economic opportunities.
- We recognize the need to locate jobs nearer to where people live to reduce time spent commuting.
- Leland supports industries that are clean and environmentally friendly.
- We recognize that the Town is made up of unique natural and social environments and we position economic development opportunities that fit those locations.
- We recognize that regional cooperation and coordination will expand opportunities for us all.

STRATEGIES

## DIVERSIFY AND EXPAND POTENTIAL

- **Target job-creating uses that build on the region's existing strengths and provide economic opportunities to Leland's residents.**
- **Diversify the local tax base with job-creating uses that include high-tech manufacturing and industry; tourism and hospitality supply chain; agriculture; health and bio-related fields; knowledge-based industries; and green industries.**
- **Ensure that there is enough appropriately located, zoned, and environmentally suitable land for non-retail commercial uses, such as business parks, research and development centers, product assembly, distribution centers, cottage industries, and light to moderate industrial uses.**
- **Locate jobs close to centers and nodes and close to the highest concentrations of households to reduce impacts on traffic and commute times.**
- **Continue to promote and leverage Leland Innovation Park.**

## PREPARE WORKFORCE

- **Work with educational partners, both within and outside of Leland and Brunswick County, including universities, colleges, and trade schools, to tailor their educational programs to the area's unique economic opportunities.**

## CREATE INCENTIVES AND STREAMLINE PROCESSES

- **Identify properties that are currently under municipal control, and/or properties that can be land banked, that can be offered to relocating businesses.**
- **Review and update state and local incentives on a regular basis to attract the right industries for the region as well as keep pace with the changing face of business and industry.**
- **Support green and sustainable development projects that meet economic development requirements, by streamlining the review processes, as well as creating fee reductions and waivers, and building height or density bonuses.**



STRATEGIES

## EXPAND UPON AND PROMOTE LELAND'S ASSETS

- **Recognize the importance of the visual and performing arts community as a key component of quality of life and source of economic development.**
- **Support the development of a visual and cultural arts community, which is essential to attracting and retaining young professionals and enhancing quality of life.**
- **Consider financial support for art education programs, and local arts organizations.**
- **Continue to support the creation of venues, classrooms, and galleries to showcase new and emerging local artists.**
- **Continue to provide space in libraries and other civic buildings to display the work of local artists.**
- **Promote the outdoors and recreational tourism.**
- **Promote Leland's quality of life.**


Photo Credit: Design Workshop, Leland Cultural Arts Center (LCAC)

# AN INCLUSIVE, SUPPORTED, HEALTHY, SAFE, AND EDUCATED COMMUNITY

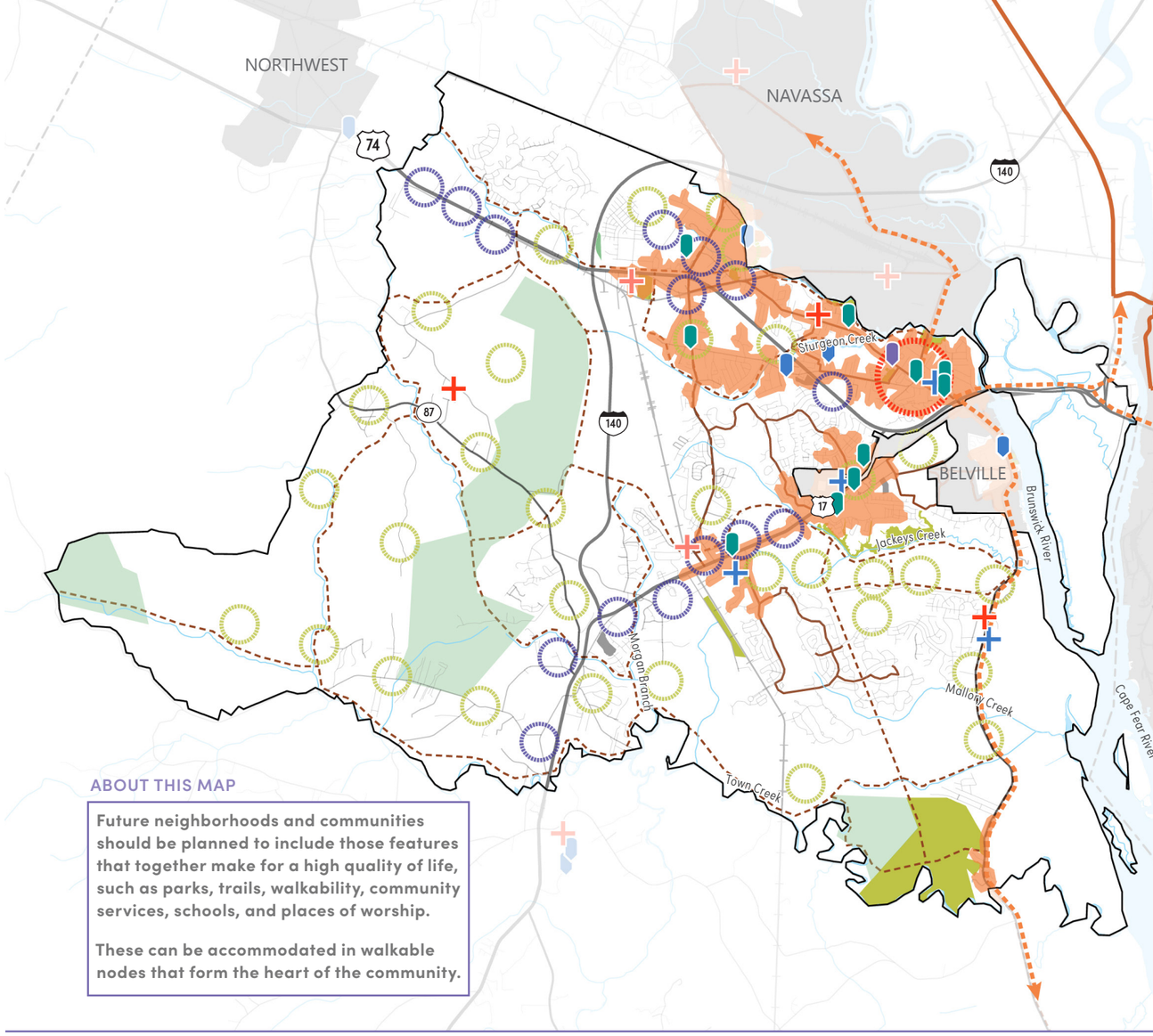
VISION STATEMENT

Public health, safety, and education are valued and provided for with access to housing choices, high quality schools, libraries, healthy foods, parks and recreation, health care, safe neighborhoods, art, and culture.

OPPORTUNITY

1. **Equitable and easy access to a healthy lifestyle, quality health care, community services, good education, and attainable housing.**
2. **Housing diversity supported by codes and ordinances.**
3. **High levels of multimodal connectivity to reduce time spent in the car.**
4. **Access to broadband internet.**
5. **Support for arts and culture and local artists.**
6. **Public infrastructure systems that are sized, located, and managed to protect or restore the quality and productivity of Areas of Environmental Concern (AEC) and other fragile areas.**






ABOUT THIS MAP

Future neighborhoods and communities should be planned to include those features that together make for a high quality of life, such as parks, trails, walkability, community services, schools, and places of worship.

These can be accommodated in walkable nodes that form the heart of the community.

## MAP 6: COMMUNITY SERVICES

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### LEGEND

- EXISTING TRIAL/MULTI-USE PATH
- EXISTING REGIONAL TRAILS
- PROPOSED TRAILS
- FUTURE GULLAH GEECHEE HERITAGE TRAIL
- EXISTING SERVICES WALK SHED (15-MINUTE WALK)
- EXISTING PARKS

**EXISTING SERVICE LOCATIONS**

- HOSPITALS/MEDICAL CENTERS
- FIRE STATIONS
- NEW FIRE STATIONS
- SCHOOLS
- LIBRARIES
- GROCERY STORES

**POTENTIAL FUTURE COMMUNITY SERVICE LOCATIONS**

- NEIGHBORHOOD NODE
- VILLAGE NODE
- URBAN CENTER NODE
- POTENTIAL FUTURE PARK LOCATIONS

*Map Source: Design Workshop, Leland GIS Department, ESRI*

PRINCIPLES

- Health, safety, equity, and inclusivity are woven into our community and neighborhood plans.
- We support and encourage housing choices that are affordable for our residents.
- Our communities are served by great schools, libraries, arts and cultural facilities, health care, parks, and open spaces.
- Access to healthy food options is a component of our community and neighborhood plans.
- We value access to community elements via multiple modes of transportation such as walking, biking, transit, and the automobile.
- Our neighborhoods, parks, and open spaces are designed with public safety in mind.
- We meet the needs of our aging population and support the growth of our younger generations.
- We strive to support the needs of our citizens to access a happy and successful life.
- We understand that health, wellness, and recreation are marketable investments.

STRATEGIES

## EXPAND AWARENESS AND SUPPORT AROUND HEALTH

- **Make health and wellness a Town priority.**
- **Partner with local and regional community resources, educational programs, and activities that address healthy living and healthy diets.**
- **Encourage Town-supported health and wellness programs within Town government and for private businesses.**

## CREATE THE INFRASTRUCTURE TO SUPPORT COMMUNITY HEALTH

- **Promote walking and biking as a form of exercise, and commuting, through the greenways and complete streets planning and incentivize complete networks for walking and biking.**
- **Promote health and wellness activities and programs in parks, open spaces, and recreational facilities.**
- **Ensure access to affordable healthy foods, goods, and services that support the health and wellness needs of community residents.**
- **When creating small area plans for new growth areas, include provisions for parks, open spaces, gathering places, food choices, daily needs for shopping, libraries, day care, community services, and community-building elements.**
- **Incentivize the development of grocery stores in or near underserved neighborhoods.**
- **Support and promote the use of locally grown produce to expand healthy food options and adopt a local food purchasing program.**
- **Allow and promote community gardens and small vegetable farms in urban and suburban areas.**
- **Develop plans and programs to support our aging population.**
- **Support the creation of venues to showcase new and emerging local artists.**

## SUPPORT HIGHER LEVELS OF EDUCATION AND QUALITY SCHOOLS

- **Coordinate future land use planning and small area planning with school facility planning.**



STRATEGIES

- **Promote a Cradle-to-Career approach to education and create the infrastructure to support it.**
- **Work with Brunswick County School System to raise the quality and standard of schools.**
- **Coordinate the timing and siting of future school facilities through Intergovernmental Agreement, coordinated funding, coordinated growth projections, and coordinated land use planning to project future facility needs.**
- **Encourage cooperation between the School System and other community facility providers (parks, libraries, fire protection) to coordinate future land purchases to serve mutual needs.**
- **Maintain and expand coordination with the school district to ensure that major development proposals do not have an adverse impact on current school capacity.**
- **Seek future school sites that are in close proximity or within residential areas so that more children can walk to school.**

## PROVIDE EQUAL ACCESS TO COMMUNITY FACILITIES, HOUSING AND INFRASTRUCTURE

- **Ensure zoning accommodates modern small-scale medical facilities, including walk-in clinics, within every neighborhood or within a ½ mile walking distance to the largest population centers.**
- **Ensure safe multimodal access to adequate neighborhood and community park space, open space and trails, good schools, health care, healthy food choices and community services are woven into the planning of each new neighborhood or community.**
- **Plan to create equal access to broadband service.**
- **Provide a mix of housing and housing price points within each new development.**
- **Create plans to reduce social vulnerability in areas that are designated as being susceptible to health issues, crime, pollution, poverty, vehicle accessibility, etc.**


Photo Credit: Design Workshop

# INFRASTRUCTURE THAT SUPPORTS COMMUNITY LIFE

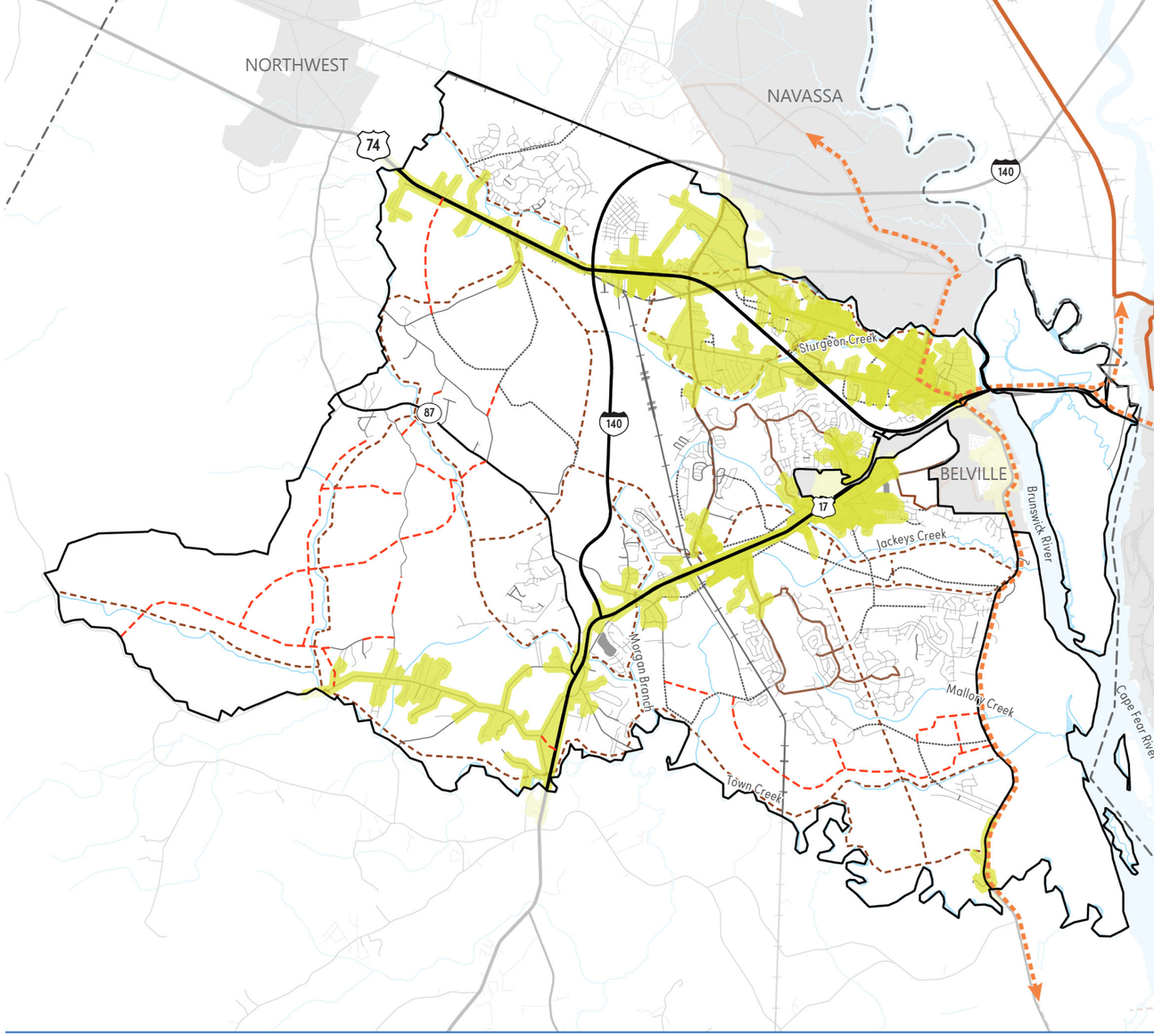
VISION STATEMENT

Leland plans and provides for efficient, cost-effective, and environmentally friendly infrastructure service, walking and biking, safe and complete streets, and opportunities for potential future transit connectivity.

OPPORTUNITY

1. **Connectivity with complete and multimodal streets.**
2. **Connectivity through trails and greenways.**
3. **Street designs and travel speeds that match community and node types.**
4. **Expansion of transit use town-wide.**
5. **Transit to and from Wilmington to reduce time spent in the car.**
6. **Access management techniques on major roadways.**
7. **Nodal commercial development along major roadways.**
8. **Becoming a place known as a "trails, biking, and walking community."**
9. **Expansion of green infrastructure usage.**
10. **Reduced energy and water use.**






## MAP 7: TRANSIT POTENTIAL

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### LEGEND

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)
- EXISTING TRAIL/MULTI-USE PATH
- EXISTING REGIONAL TRAILS
- PROPOSED TRAILS
- FUTURE GULLAH GEECHEE HERITAGE TRAIL
- POTENTIAL TRANSIT SERVICE AREA (15-MINUTE WALK)

*Map Source: Design Workshop, Leland GIS Department, ESRI*

### ABOUT THIS MAP

**Future planning considers that transit use may be more desirable and convenient over time, as habits change and more people move to Leland.**

**Planning for "transit ready" nodes along major roadways will set Leland up for the potential to take advantage of transit opportunities.**

PRINCIPLES

- Our infrastructure is planned for the efficient servicing of our neighborhoods and developments.
- We value cost-effective and efficient development and maintenance of our public infrastructure.
- We support the growth of environmentally friendly infrastructure that protects our air, water, comfort, and landscape.
- We make efforts to be good stewards of our resources.
- We support complete streets that value all modes of transit.
- Our streets are part of our identity and quality of life, and they are contextual for the places they travel through.
- We consider the impact that traffic and congestion have on our quality of life, air quality, and health, and how our built environment affects the time spent in the car.

STRATEGIES

## A NETWORK OF CONNECTED, CONTEXT-SENSITIVE, AND COMPLETE STREETS

- **Ongoing coordination with WMPO.**
- **Update and consolidate the Street Design Manual, Bike Plan, Pedestrian Plan and Collector Street Plan.**
- **Create and adopt a "Complete Streets" policy.**
- **Requirements for bike connectivity within PUDs and all new developments.**
- **Create access management plans for all major roadways and roadways supporting commercial land uses.**
- **Coordinate signage, landscape, and streetscape standards for roads that cross jurisdictional boundaries.**
- **Explore design standards and innovative road construction techniques to link wildlife habitat and preserve wetlands.**
- **Plan for bus routes as part of long-range planning into growth areas.**
- **Include transit-ready nodes of varying scales as part of growth planning.**
- **Use context-sensitive design principles in the development and redesign of all streets and roads.**
- **Create plans for water access, blueways and greenways in coordination with the Green Network plan.**
- **Develop a funding strategy and anticipated annual revenue for trail projects that includes Occupancy Tax, dedicated local funding, and state and federal grants.**
- **Partner with a non-profit to advocate for greenway, blueway, and trails projects and raise private donations.**
- **Support the development of Bus Rapid Transit features in high-demand corridors, such as off-board fare collection, platform level boarding, and dedicated lanes and stops sheltered from automobile traffic.**

## REDUCE NEED FOR AUTOMOBILE

- **Adopt land use regulations that encourage internal trip capture and promote development whose location and density are suitable to support public transit and other alternative modes of transportation.**



STRATEGIES

## ENVIRONMENTALLY RESPONSIBLE UTILITIES AND INFRASTRUCTURE

- **Water/sewer service planning that supports the growth management plan in an environmentally supportive way.**
- **Concurrent utility service planning that supports the growth management plan in an environmentally supportive way.**
- **Cooperate with service providers in their efforts to shift to more environmentally responsible infrastructure.**
- **Implement green infrastructure strategies on public property and evaluate incentives for private property.**
- **Expand the use of green building, development and operations best practices to reduce consumption of natural resources, promote energy efficiency, and reduce pollution.**
- **Integration of LEED design principles into policies, codes and ordinances.**

## STORMWATER AND WATER QUALITY

- **Encourage best practices for hardscape and landscape features that absorb, sustain, cleanse, and release water.**
- **Apply market-based incentives, including stormwater credits, green infrastructure implementation credits, enhanced permitting, green roofs, and conservation and stormwater easements, to promote use of green infrastructure tools.**
- **Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood barriers.**
- **In areas of new development occurring in flood zones, marshy, intertidal or otherwise low-lying areas, eliminate, or substantially reduce, the placement of fill or other structures that decrease the infiltration and absorption performance of these areas.**
- **Assess existing stormwater plans for future effectiveness and prioritize and evaluate individual stormwater drainage basins, particularly those that are prime for future development.**
- **Coordinate regional, district or basin area stormwater management planning with open space planning, park planning, scenic area planning, schools planning, transportation planning and public facilities planning to consider holistic use of available property for storm water management.**

# AN ACTIVE PARTICIPANT IN A COOPERATIVE REGION

VISION STATEMENT

Leland's plans and the plans of adjacent jurisdictions complement each other's vision, goals, and opportunities for success. We collaborate with our neighbors to elevate both Leland and the region.

OPPORTUNITY

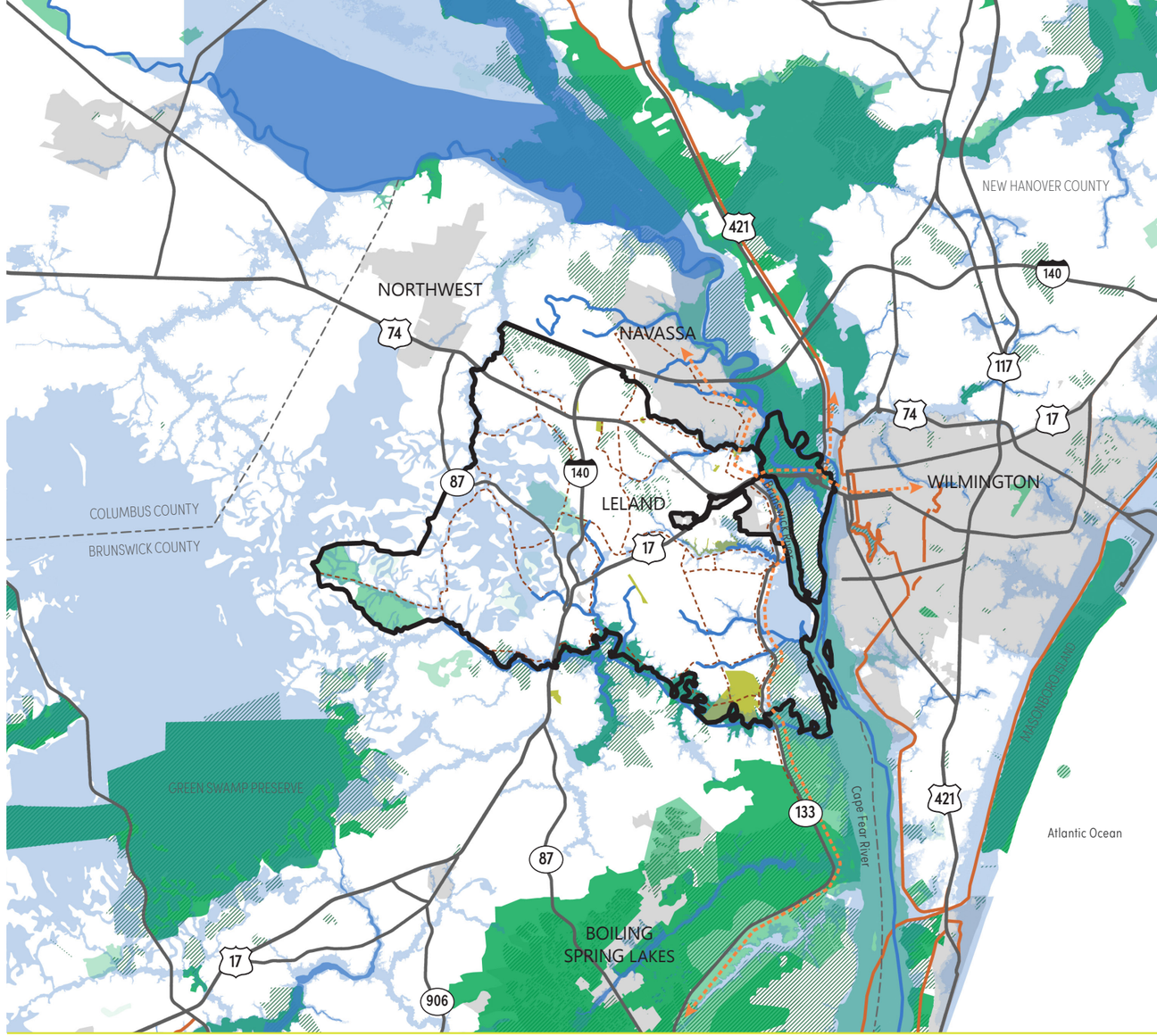
1. **Regional cooperation and collaboration on growth.**
2. **Regional open space connectivity.**
3. **Regional trail connectivity.**
4. **Regional cooperation on limits, growth boundaries, and edges.**
5. **Regional promotion and economic development.**

PRINCIPLES

- We work to coordinate our growth plans with our neighbors and collaborate on shared values and visions.
- We recognize that natural environments don't follow jurisdictional boundaries and work with our neighbors to protect our natural resources and open space connectivity.
- We collaborate regionally on promotion and economic development so that our collective efforts create more opportunity for all.
- We assume a leadership role in creating regional participation and collaboration.

STRATEGIES

- **Improve regional governmental coordination.**
- **Work with Brunswick County and adjacent municipalities on compatible land use policies across boundaries that are based on the same principles of channeling growth into acceptable lands.**
- **Work with WMPO on context-sensitive multimodal transportation options that fit with the community and node types.**
- **Work with other organizations on regional promotion and economic development.**




## MAP 8: REGIONAL SYSTEMS

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### LEGEND

- EXISTING REGIONAL TRAILS
- FUTURE GULLAH GEECHEE HERITAGE TRAIL
- BLUEWAY
- PROPOSED TRAIL
- LELAND PLANNING AREA
- ADJACENT MUNICIPALITIES
- EXISTING PARKS
- ALREADY PROTECTED/MANAGED AREAS (NCNHP)

**NATURAL AREA VALUE (NCNHP)**

- EXCEPTIONAL
- MODERATE

**FLOODPLAIN (FEMA)**

- REGULATORY FLOODWAY
- 1% ANNUAL FLOOD CHANCE
- 0.2% ANNUAL FLOOD CHANCE

### ABOUT THIS MAP

**Leland can work with the region to share principles, values, and policies around natural resource and open space preservation, positioning development on suitable lands, trail linkages, and connectivity and development principles.**

*Map Source: Design Workshop, Leland GIS Department, NCNHP, ESRI*

# The Action Playbook

The action playbook chapter covers implementation, priority investment and organizes specific actions into a matrix action plan by theme establishing timing, level of investment, and assigning responsibility.

Photo Credit: Design Workshop

# IMPLEMENTATION AND PRIORITY INVESTMENT

## OVERVIEW

Leland 2045 conveys a vision, goals, strategies and actions derived through a collaborative "community based" planning process to ensure Leland maintains and promotes its high quality of life, its unique landscape and access to nature, its low country aesthetic and expanded economic opportunities. To realize this vision, implementation should be viewed as a shared opportunity and commitment for the Town's departments, leadership, private sector interests, and citizens to hold each other accountable to act on the comprehensive plan and provide the capital investment, human capacity, collaboration and shared commitment that is needed for the Town to realize its vision and manage its growth toward an even more viable and sustainable future.

Each of the strategies and actions included in this document have been determined to be important to accomplish if the Town wants to achieve its aspirations and visions. In that sense, this comprehensive plan is a living document that needs to be worked with regularly. It describes actions to be taken to local government to implement policies that meet the Coastal Resources Commission (CRC) management topic goals and objectives. The first steps include prioritizing the items that are the most critical and creating work plans, identifying responsibilities, identifying partnerships, determining the time frame for completion and establishing funding.

It is also helpful to consider actions in terms of immediate activities that begin with adoption of the plan, typically completed or realized within the first year, short-term activities that start within one to three years of the plan's adoption, mid-term activities that begin three to 10 years after the plan's adoption and long-term activities that extend beyond 10 years and may overlap into the next comprehensive plan update.

Finally, the comprehensive plan should be a reference tool that is referred to often and regularly and should be the impetus for the ongoing decisions and focus of the Town's internal interactions and interactions with its citizens.

## FUNDING PRIORITY INVESTMENTS

The following list provides the most common sources of funds that the Town may use in the funding of its capital needs:

- Property Tax
- Stormwater Fees
- Tax Increment Financing
- Revenue Bonds
- General Obligation Bonds
- State and Federal Grant Funding
- Accommodation Fees
- Hospitality Fees

## PRIORITY INVESTMENT ACTIONS TO ACCOMMODATE GROWTH & DELIVERY OF SERVICES

1. Consider the use of development agreements, tax increment financing, and similar instruments to finance necessary infrastructure improvements that accommodate acceptable growth while limiting the financial impact on the Town.
2. Seek innovative and creative funding sources (federal and state) to support investment in needed infrastructure.
3. Collaboratively work with property owners and interested developers within key growth areas to develop plans for public/private partnerships for investing in infrastructure to facilitate development.
4. Annually review, revise and adopt a capital improvement plan as part of the Town's budget to ensure that both municipal infrastructure and major departmental equipment needs are identified, planned for and funded each fiscal year.
5. Utilize regular, recurring, sources of funding to finance anticipated infrastructure maintenance and capital investment needs.
6. Prepare regular assessments of municipal infrastructure to utilize in adjusting the capital improvement plan.
7. Seek partnerships with community groups, educational institutions, governmental agencies and commercial ventures to leverage the planned investments by outside groups to support the Town's infrastructure needs, such as recreational facilities.
8. Provide funding support at a level that is requisite with the departments' needs for continuing to provide high quality and efficient services to the Town.
9. Actively participate in regional planning and financing initiatives to ensure that regionally-funded projects reflect the needs of Leland.

## REQUIRED PERIODIC IMPLEMENTATION STATUS REPORTS

Jurisdictions with a locally adopted and certified land use plan are required to submit an Implementation Status Report to the Division of Coastal Management every two years from the date of initial certification by the CRC. This report shall be based on implementation actions that meet the CRC's Management Topic goals and objectives. The Implementation Status Report shall also identify:

1. All local, state, federal, and joint actions that have been undertaken successfully to implement its certified land use plan;
2. Any actions that have been delayed and the reasons for the delays;
3. Any unforeseen land use issues that have arisen since certification of the land use plan; and
4. Consistency of existing land use and development ordinances with current land use plan policies.

# 2045 ACTION PLAN: ACT ON THE ACTION PLAN

| ACTION | A-1 | A-2 | A-3 | A-4 |
|---|---|---|---|---|
| | Provide an update on the Action Plan quarterly to Department Heads, Planning Board, and Council. | Create a simple and user-friendly dashboard of the Action Plan and put on Town website. | Use the Action Plan when making annual budgets and department plans | Revise the Action Plan annually should any items become irrelevant or if new actions become a higher priority |
| **INVESTMENT** | Low | Low | Low | Low |
| **TIMING** | Ongoing | Near | Ongoing | Ongoing |
| **ENTITY RESPONSIBLE** | Planning and Inspections | Planning and Inspections, Communications and Outreach | All Departments | Planning and Inspections |
| **INITIATED** | ☐ | ☐ | ☐ | ☐ |
| **COMPLETED** | ☐ | ☐ | ☐ | ☐ |



# 2045 ACTION PLAN: NATURAL RESOURCES

| ACTION | N-1 | N-2 | N-3 | N-4 |
|---|---|---|---|---|
| | Coordinate existing and new development standards with the environmental and cultural resource mapping created for the comprehensive plan by overlaying the existing zoning map to see where there are conflicts and use this information to evaluate zoning ordinance changes. | Share environmental resource mapping with organizations focused on land conservation, to assist them with organizing their conservation. | Evaluate the Flood Damage Prevention Ordinance every five years to determine if it is effective at avoiding flood damages and is reducing flood damages. | Promote and expand the integration of Low Impact Development (LID) and Green Infrastructure (GI) into normal development standards and practices. |
| **INVESTMENT** | Low | Low | Low | Medium/High |
| **TIMING** | Medium | Near | Near | Near |
| **ENTITY RESPONSIBLE** | Planning and Inspections | Planning and Inspections | Planning and Inspections | Planning and Inspections |
| **INITIATED** | ☐ | ☐ | ☐ | ☐ |
| **COMPLETED** | ☐ | ☐ | ☐ | ☐ |

# 2045 ACTION PLAN: LIVABLE, DIVERSE, AND CONNECTED NEIGHBORHOODS

| ACTION | B-1<br>Catalyze development investment in the Gateway District by targeting public investment towards improvement that will support future development. | B-2<br>Expand the use of FlexCode into appropriate areas such as identified nodes and other areas with higher development opportunities based on low environmental constraints and proximity to existing or planned infrastructure. | B-3<br>Create detailed small area plans for the Jackeys Creek and 76/74 Interchange areas (Focal Areas) that include connectivity, parks and open spaces, community services, land uses, housing diversity, active nodes, and community health elements. | B-4<br>Create a Land Development Code that reflects the Future Land Use Map, principles, and strategies in the comprehensive plan to refine zoning regulations, the FlexCode, current zoning districts, new zoning districts, street design standards, and subdivision regulations into one clear and easy to use document. | B-5<br>Revise street connectivity requirements to improve connectivity within and between developments. | B-6<br>Create a Town signage and wayfinding plan that is reflective of Leland's vision, brand, and sense of place. | B-7<br>Coordinate with MOTSU Intergovernmental Council to explore preferred use, density, and setback allowances for areas adjacent to the MOTSU rail corridor. |
|---|---|---|---|---|---|---|---|
| INVESTMENT | Medium/High | Low | Medium | Medium | Low | Medium | Low |
| TIMING | Near | Medium | Near | Near | Near | Long | Long |
| ENTITY RESPONSIBLE | Economic and Community Development | Planning and Inspections, Economic and Community Development | Planning and Inspections, Economic and Community Development | Planning and Inspections | Planning and Inspections, Public Services | Planning and Inspections,Public Services, Operation Services, Economic and Community Development | Planning and Inspections |
| INITIATED | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| COMPLETED | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

# 2045 ACTION PLAN: A RESILIENT AND STABLE ECONOMY

| ACTION | E-1<br>Research ways to expand diversity in job opportunities, housing, and economic development. | E-2<br>Promote the Leland Innovation Park as the preferred location for high tech, well-paying employers. | E-3<br>Coordinate the plan for the Leland Innovation Park with the Focal Area Plan and subsequent small area plan to create a complete community within and around it. | E-4<br>Promote business and development opportunities in the Gateway District by creating incentive programs for development and job-creating uses. | E-5<br>Grow and educate the workforce to be prepared for emerging and trending industries anticipated to located in the region by partnering with high schools, colleges, and universities on vocational assessment and skill development. | E-6<br>Work with regional partners to coordinate promotion the area's economic assets to further economic development. |
|---|---|---|---|---|---|---|
| **INVESTMENT** | Low | Low | Low | Medium | Medium | Low/Medium |
| **TIMING** | Medium | Near | Near | Near | Medium | Medium |
| **ENTITY RESPONSIBLE** | Economic and Community Development | Economic and Community Development | Planning and Inspections, Economic and Community Development, Public Services | Economic and Community Development | Economic and Community Developmen, Human Resources | Economic and Community Development |
| **INITIATED** | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **COMPLETED** | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

# 2045 ACTION PLAN: AN INCLUSIVE, SUPPORTED, HEALTHY, SAFE, AND EDUCATED COMMUNITY

| ACTION | H-1<br>Coordinate with area education providers to develop criteria to help determine the timing and location of schools. | H-2<br>Create a plan to support aging in place. | H-3<br>Update the Parks, Recreation, and Open Space Plan to reflect the Future Land Use Map and consideration for new community centers and programs that are inclusive for all community residents. | H-4<br>Revisit the allowance of gated communities to ensure that the transportation and multimodal facilities are connected when possible. | H-5<br>Evaluate land use regulations and the zoning map during the Land Development Code project to ensure equitable opportunities for residents in all areas and of all socioeconomic and demographic groups. |
|---|---|---|---|---|---|
| INVESTMENT | Low | Medium | Medium | Low | Low/Medium |
| TIMING | Near | Long | Near | Near | Near |
| ENTITY RESPONSIBLE | Planning and Inspections, Economic and Community Development, Management | Planning and Inspections, Economic and Community Development, Operations Services | Operations Services | Planning and Inspections | Planning and Inspections |
| INITIATED | ☐ | ☐ | ☐ | ☐ | ☐ |
| COMPLETED | ☐ | ☐ | ☐ | ☐ | ☐ |

# 2045 ACTION PLAN: INFRASTRUCTURE THAT SUPPORTS COMMUNITY LIFE

| ACTION | I-1<br>Create horizontal street cross sections that meet standards for complete streets for all street types. | I-2<br>Update and consolidate the bicycle and pedestrian plans to reflect the FLUM and Focal Area Plans. | I-3<br>Create a blueways, greenways, and water access plan in collaboration with partners to assist with funding, design, and development. | I-4<br>Coordinate recommendations for new streets, roads, trails, sidewalks, multi-use paths, streetscapes, and other improvements to public spaces in Capital Improvement Plan. | I-5<br>Update and consolidate the collector street plan and street infill plans to reflect the FLUM and Focal Area Plans. |
|---|---|---|---|---|---|
| **INVESTMENT** | Low/Medium | Low/Medium | Medium | Low | Low/Medium |
| **TIMING** | Near | Medium | Long | Near | Medium |
| **ENTITY RESPONSIBLE** | Planning and Inspections, Public Services | Planning and Inspections, Public Services, Operations Services | Planning and Inspections, Public Services, Operations Services | Planning and Inspections, Public Services, Operations Services | Planning and Inspections, Public Services |
| **INITIATED** | ☐ | ☐ | ☐ | ☐ | ☐ |
| **COMPLETED** | ☐ | ☐ | ☐ | ☐ | ☐ |

# 2045 ACTION PLAN: AN ACTIVE PARTICIPANT IN A COOPERATIVE REGION

| | R-1 | R-2 | R-3 |
|---|---|---|---|
| **ACTION** | When transportation and recreation plans, including those for trails, streets, multi-use paths, blueways, greenways, transit, and other regionally significant linkages, are being prepared, coordinate with surrounding jurisdictions to create high levels of integration and linkages. | Collaborate regionally to promote economic development opportunities. | Work collaboratively with surrounding jurisdictions to protect natural resource and improve open space connectivity. |
| **INVESTMENT** | Low | Low | Low |
| **TIMING** | Long | Medium | Medium |
| **ENTITY RESPONSIBLE** | Planning and Inspections, Public Services, Operations Services, Administration | Economic and Community Development, Administration | Planning and Inspections, Public Services, Operations Services, Administration |
| **INITIATED** | ☐ | ☐ | ☐ |
| **COMPLETED** | ☐ | ☐ | ☐ |

# Community Frameworks

This chapter focuses on the key principles guiding urban and community frameworks, the Future Land Use Map (FLUM), and focal area studies. These frameworks will guide the town on establishing policy direction and principles for planning the built environment with consideration for locating future parks, schools, community services, and street and trail improvements.

Photo Credit: Design Workshop

# PRINCIPLES AND PROCESS

With this Comprehensive Plan, Leland has made a choice on how it can support growth in a way that also supports the natural environment and the vision it has articulated for itself within this plan.

Photo Credit: Design Workshop

This comes through balancing the location of development with protection of critical natural environments; matching development types and intensities with their underlying environmental conditions; anticipating where new centers of commerce, employment, gathering, and recreation may be best located; anticipating potential future roadway and trail connections; matching a menu of community and node types with transportation types and the natural environment; and establishing policy direction and principles for key urban frameworks such as the location of parks, schools, community services, road design, access management, trails, and urban design features.

## KEY POLICIES AND PRINCIPLES FOR URBAN FRAMEWORKS

Several specific policies and principles can work together to best ensure that the vision described by the community is met over time. This includes:

- **Creating neighborhoods that are walkable with pedestrian-scaled streets and blocks.**
- **Creating roadway and trail connectivity in a connected street pattern adapted to the natural environment and land use type.**
- **Establishing access management designs on major roadways that avoid multiple curb cuts and lengthy turning lanes, establish back street connectivity, and promote parking lot connectivity.**
- **Locating buildings so that they frame the public realm.**
- **Locating parking so that it does not visually impact the public realm.**
- **Defining open space networks based on connecting the natural environment together.**
- **Developing amenities through the use of the open space network with trails, signage, education, and recreational elements.**
- **Requiring parks and open spaces that are within walking distances of neighborhoods.**
- **Locating community types and nodes so there are identifiable centers and a transition of land uses from more compact to less compact as you radiate away from the center.**
- **Growing in an organized fashion that takes advantage of existing and phased investment of infrastructure.**
- **Locating schools, places of worship, parks, and community services within mixed-use nodes that are scaled to the neighborhood types they support.**
- **Avoiding lining major commercial roadways with linear shopping centers or other single use land uses.**
- **Locating jobs close to where people live to avoid excessive commuting times.**
- **Using complete streets and context-sensitive street designs that include sidewalks, bike facilities, street trees, and attractive signage that are scaled to the environments they pass through.**

Meeting the goals of the plan will require considerations for the most appropriate type of regulatory tools to manage and support new growth and development. This may include:

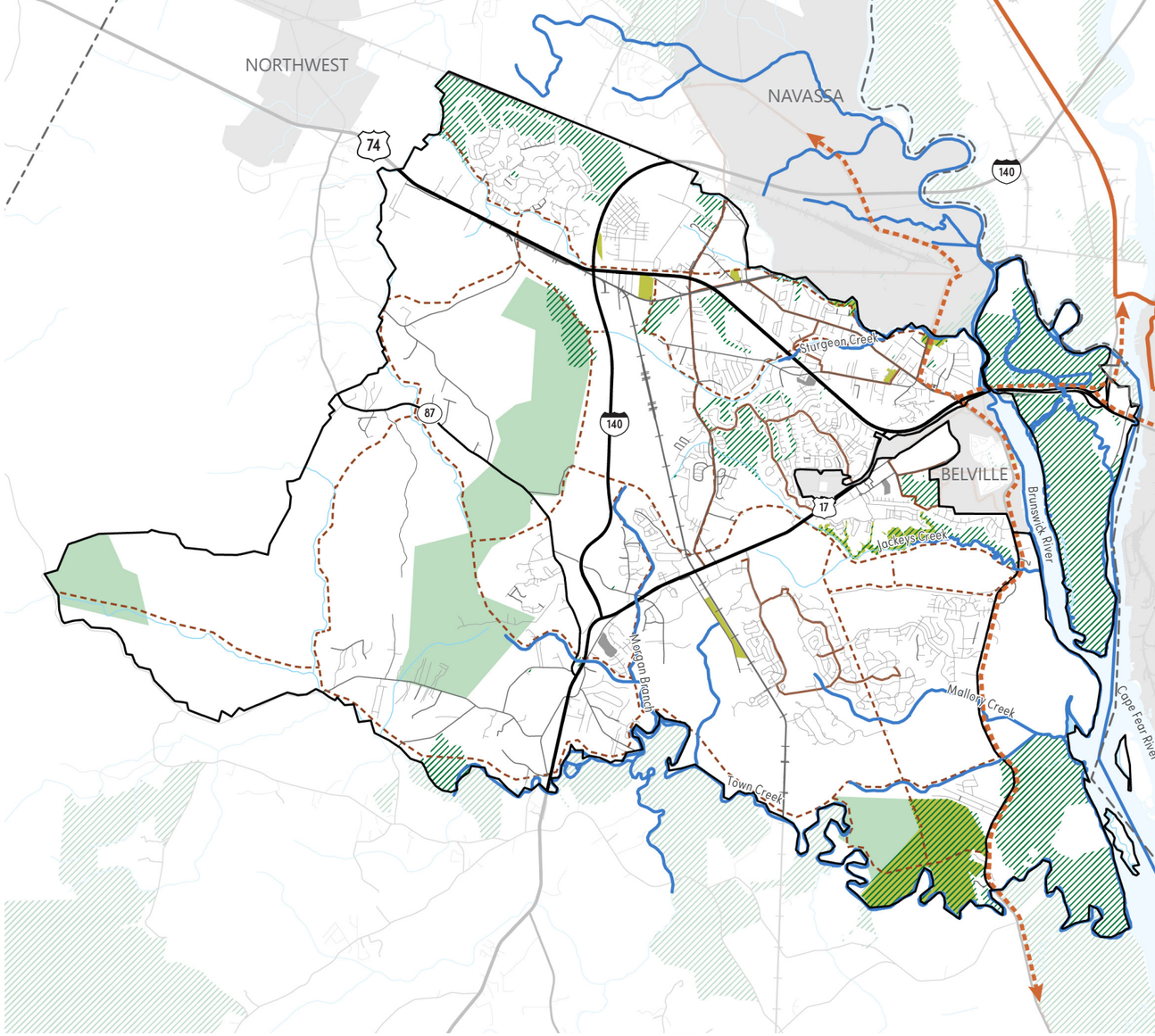
- **Utilizing form-based or zoning codes similar to the FlexCode.**
- **Reviewing and updating existing ordinances and regulations to provide clarity, improve organization, and support the vision and goals of the Leland 2045 plan.**
- **Overlays or special considerations within the zoning code for critical areas of the natural environment that need to be protected.**
- **The expansion of green infrastructure and green development and building techniques to enable development to sit within sensitive environments more harmoniously.**
- **Land conservation strategies like conservation easements, clustering, buffering, and lower densities.**
- **Design standards and design guidelines that support zoning and articulate requirements for aesthetic, technical items, and character.**
- **Streamlining permitting and review processes, creating education, and promoting clarity within the review process so that implementation isn't slowed down or made confusing and time-consuming.**
- **Accommodating the development of affordable housing to meet demand.**
- **Small area planning that anticipates new areas of growth, establishes guidelines and policies, and graphically describes how new areas should be organized spatially.**
- **Coordinating new growth areas and small area plans with planning for transportation, parks and recreation, schools, utility services, affordable housing, jobs, and community services.**
- **Creating complete streets design standards.**

# OPEN SPACE/ENVIRONMENTAL FRAMEWORK

Leland and Brunswick County have large areas of protected open space, along with plans for more land conservation. As shown on the open space framework map, a comprehensive open space and greenway / blueway network (the Green Network) can link new and existing neighborhoods across the Town with its surrounding natural environment and recreational assets to:

Expand recreation tourism opportunities, enhance Leland's brand and image, elevate quality of life, and provide a catalytic economic development tool.

Photo Credit: Town of Leland




**MAP 9:** POTENTIAL OPEN SPACE FRAMEWORK

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## LEGEND

- EXISTING TRAIL/MULTI-USE PATH
- EXISTING REGIONAL TRAILS
- BLUEWAYS
- PROPOSED TRAILS
- FUTURE GULLAH GEECHEE HERITAGE TRAIL
- ALREADY PROTECTED/MANAGED AREA (NCNHP)
- EXISTING PARK
- POTENTIAL FUTURE PARK LOCATIONS

*Map Source: Design Workshop, Leland GIS Department, ESRI*

**Table 1: Environmental Composite Framework**

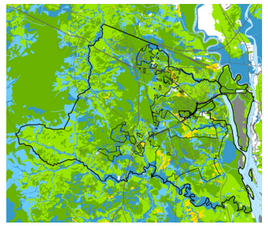
| INPUT CATEGORIES/ LAYERS | ASSIGNED VALUE | WEIGHT |
|---|---|---|
| **HYDROLOGIC SOIL GROUPS** | | **5%** |
| *Source: USDA NRCS, ESRI* | | |
| Group A | 2 | |
| Group B | 3 | |
| Group C | 7 | |
| Group D | 10 | |
| **WETLAND FUNCTIONAL ASSESSMENT** | | **20%** |
| *Source: NCDEQ - NC CREWS)* | | |
| Beneficial | 5 | |
| Substantial | 8 | |
| Exceptional | 10 | |
| **FLOOD HAZARD ZONES** | | **30%** |
| *Source: FEMA Flood Insurance Rate Map (FIRM) Effective 8/28/2018* | | |
| .2% Annual Chance | 5 | |
| Zones A and A99 | 8 | |
| Zones AE, AH, AO, and AE Floodway | 10 | |
| **STORM SURGE (SLOSH)** | | **15%** |
| *Source: NOAA Sea Lake and Overland Surge from Hurricanes (SLOSH)* | | |
| Category 5 | 1 | |
| Category 4 | 3 | |
| Category 3 | 7 | |
| Category 2 | 9 | |
| Category 1 | 10 | |
| **NATURAL AREAS** | | **15%** |
| *Source: North Carolina Natural Heritage Program (NCNHP)* | | |
| General | 2 | |
| Moderate | 4 | |
| High | 6 | |
| Very High | 8 | |
| Exceptional | 10 | |
| **BIODIVERSITY AND WILDLIFE HABITAT ASSESSMENT SCORE** | | **15%** |
| *Source: NC One Map/Green Growth Tool Box* | | |
| 0 | 0 | |
| 1 | 1 | |
| 2-4 | 3 | |
| 5 | 5 | |
| 6 | 6 | |
| 7 | 7 | |
| 8 | 8 | |
| 9-10 | 10 | |

## ENVIRONMENTAL COMPOSITE

# Protecting environmentally sensitive areas is an essential framework for future land use planning in Leland and the planning area.

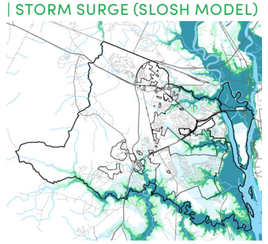
Leland's natural resources were mapped and prioritized based on the environmental composite framework (Table 1; left) to determine areas best suited for protection and areas that are more available for development. The framework was established based on CAMA requirements and community priorities.

| HYDROLOGIC SOIL GROUPS

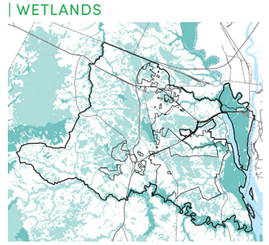


| FLOOD HAZARD ZONES (FEMA)

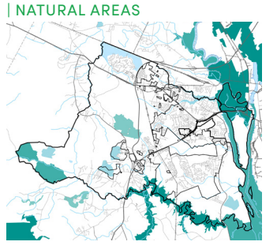
| STORM SURGE (SLOSH MODEL)



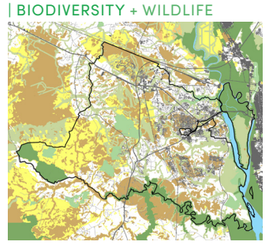
| WETLANDS

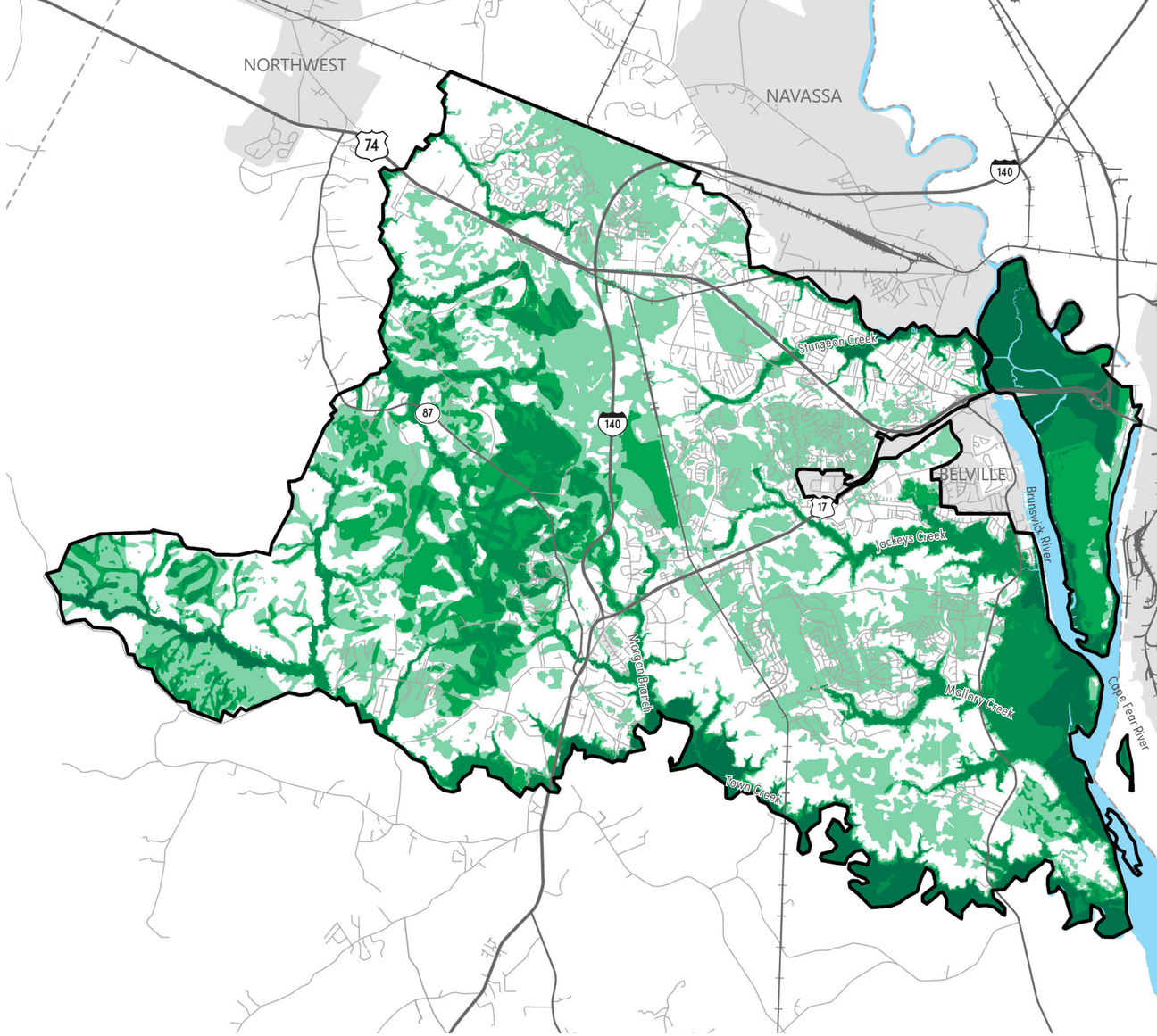


| NATURAL AREAS



| BIODIVERSITY + WILDLIFE






**MAP 10:** ENVIRONMENTAL COMPOSITE FRAMEWORK

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## LEGEND

- 2045 PLANNING AREA BOUNDARY
- WHITE - LOWER ENVIRONMENTAL RISKS
- DARK GREEN - HIGHER ENVIRONMENTAL RISKS

*Map Source: Design Workshop, NCNHP, NC One Map Green Grwoth Tool Box, NOAA SLOSH, NCDEQ, NRCS, Leland GIS Department, ESRI*

# TRANSPORTATION CONNECTIVITY

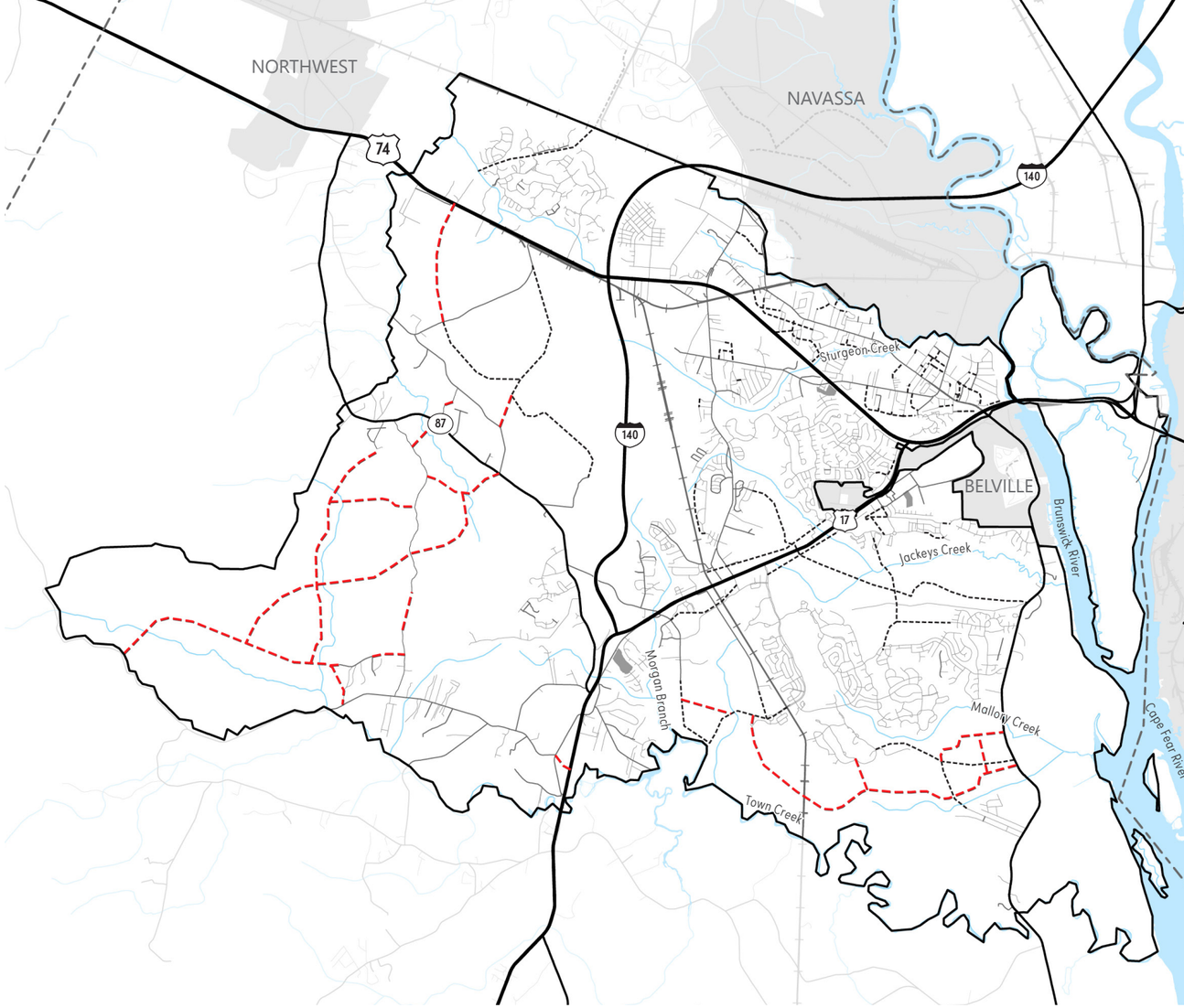
With its Collector Street Plan, Pedestrian Plan, Street Design Manual, Comprehensive Bicycle Plan, and Street Infill Plan,

**Leland has committed itself to planning for higher levels of multimodal connectivity as well as designing complete streets that fit with their surrounding character and context.**

Principles that are guiding the advancement of Leland's connectivity include:

- Re-designed major roadways and state highways that make them more safe, multimodal, and livable, which includes multipurpose paths, access management, streetscape, crosswalks, signalization, reduced travel speeds, and reduced travel lane dimensions.
- Context-sensitive design principles applied to the design or redesign of all streets and roadways.
- Higher levels of connectivity and multimodal transportation options that connect people across the town, planning area, and county to places of employment and regional destinations.
- Exploring ways to make Leland and Brunswick County more feasible for public transportation by establishing transit ready routes and transit ready nodes along major roadways that connect residents and visitors to their workplace, the beach, or major commercial areas.
- Working cooperatively with the municipalities, neighboring counties, and NCDOT to identify, fund, and implement needed road improvements.
- Preserving road capacity by adopting, applying, and enforcing policies to manage access and reduce vehicle miles traveled (VMTs).
- Land use policies that encourage internal trip capture and promote development whose location and density are suitable to support public transportation and other alternative modes of transportation.
- Requiring new road projects to minimize their adverse environmental impacts and enhance the Town's aesthetic qualities.
- Pursuing transportation alternatives that are aligned with land preservation and land use decisions.
- Investing in transportation options that consider all users and all modes and that support Leland's economic opportunity, access, environment, sense of place, and quality of life.

Photo Credit: Design Workshop




**MAP 11:** EXPANDED STREET NETWORK

## EXPANSION OF COLLECTOR ROAD NETWORK

As shown on the Future Land Use Map and Focal Area Plans, expanding upon the Collector Street Plan to plan for enhanced connectivity within the Planning Area will enable Leland to grow more connected. This includes a broad network of streets and trails that connect nodes together, as well as provisions for pedestrian-oriented block sizes in more urbanized areas.

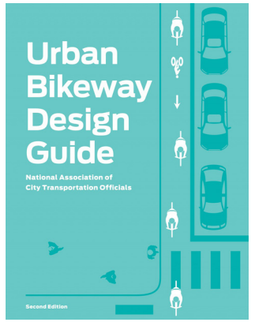
**LEGEND**

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)

0 .75mi 1.5mi 3mi

*Map Source: Design Workshop, Leland GIS Department, ESRI*






## CONTEXT-SENSITIVE AND COMPLETE STREET DESIGN

According to North Carolina Department of Transportation (NCDOT), "complete streets are designed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists, and individuals of all ages and capabilities. These streets generally include sidewalks, bicycle lanes, transit stops, appropriate street widths and speeds, and are well-integrated with surrounding land uses. Complete Street design elements that emphasize safety, mobility and accessibility for multiple modes may include crosswalks, bus lanes, landscaping, lighting, signaling systems, and adequate separation between sidewalks and streets."

The Town of Leland should reference standards from the NACTO (National Association of City Transportation Officials) Urban Street Guide and Urban Bikeway Design Guide as well as the NCDOT Complete Streets and Design Guidelines in preparing and adopting a complete street design manual calibrated for Leland's unique context. This manual should be used when considering the design of future streets in Leland's planning area to ensure that complete and context-sensitive streets promote Leland's sense of place and quality of life, while providing safe multimodal connectivity.

*Source: https://www.completestreetsnc.org/wp-content/themes/CompleteStreets_Custom/pdfs/NCDOT-Complete-Streets-Planning-Design-Guidelines.pdf*

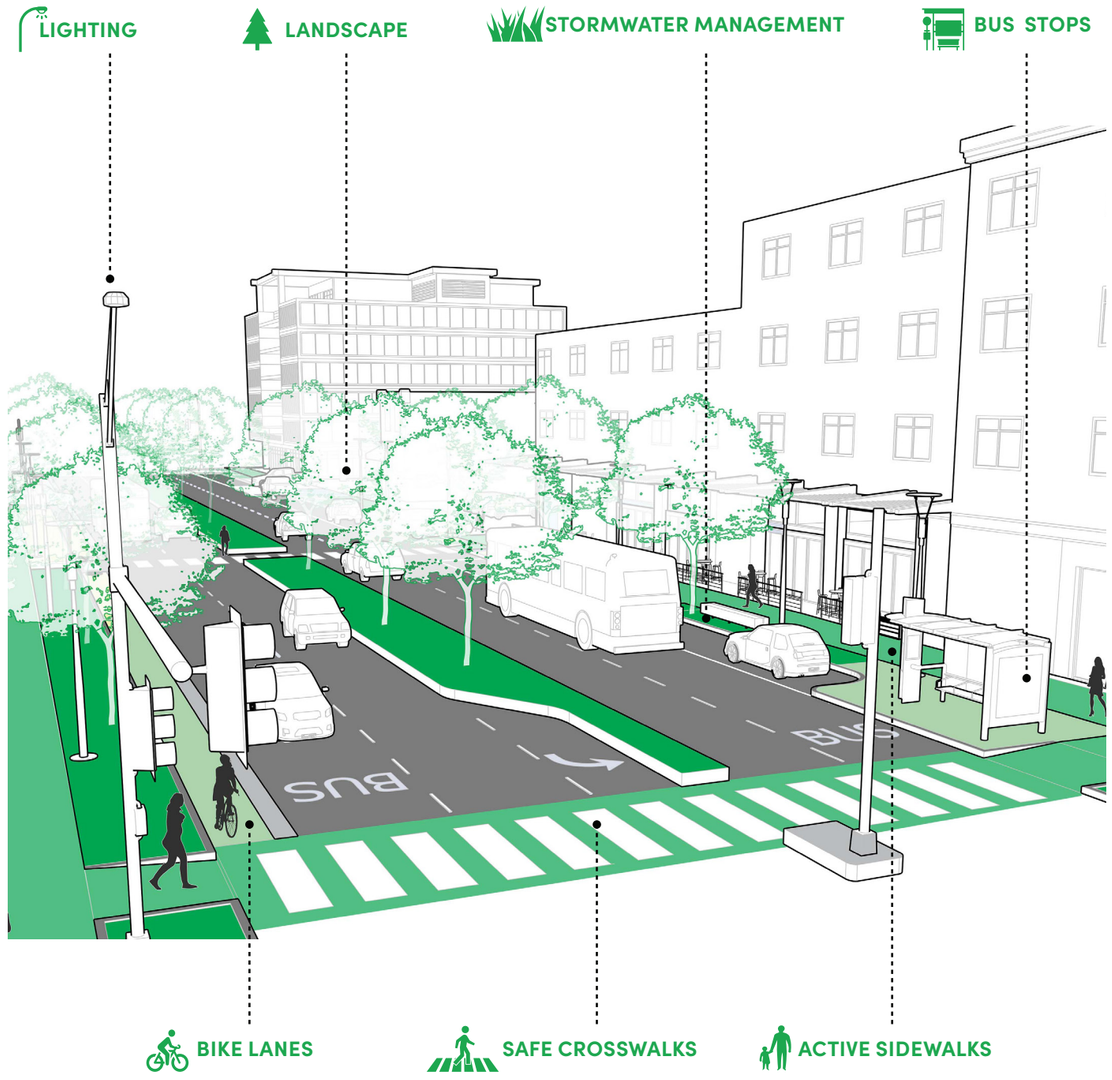


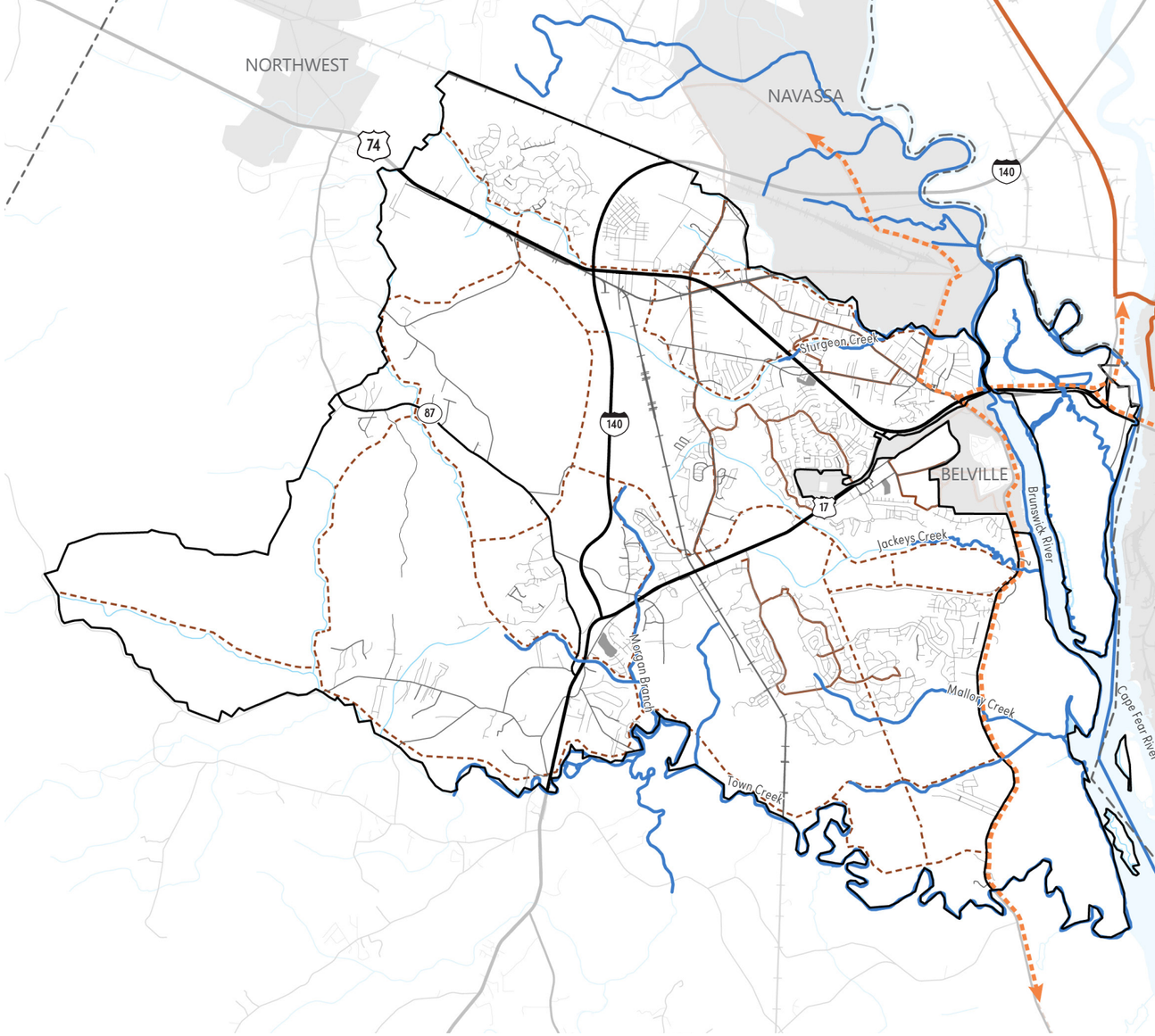

**Figure 4:** Example of typical principles and components considered in complete streets with the ultimate goal of safety, mobility and accessibility for all users including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. These components will look different depending on their context, whether that is rural, urban, or suburban.

Photo Credit: Design Workshop

## EXPANSION OF TRAILS NETWORK

As Leland grows and expands, its identity can include biking and walking as a major component of day to day living, mobility, and recreation. Leland can become a major destination for hiking and biking in all forms, and a comprehensive and accessible trail network can link Leland's neighborhoods with its natural areas and gathering places. Trails can be built into future land use planning and become a primary framework from which to create neighborhoods and communities.

The trail system will provide cyclists and pedestrians numerous ways of moving through and around Leland safely, for both active transportation and recreation, to create a truly connected town — one that is connected to the Cape Fear River, regional trails and the proposed Gullah Geechee Heritage Trail. Blueway trails can also be envisioned and planned for to expand access to Leland's waterways.




**MAP 12:** EXPANDED TRAIL NETWORK

### LEGEND

- EXISTING TRAIL/MULTI-USE PATH
- EXISTING REGIONAL TRAILS
- BLUEWAYS
- PROPOSED TRAILS
- FUTURE GULLAH GEECHEE HERITAGE TRAIL

0 .75mi 1.5mi 3mi

*Map Source: Design Workshop, Leland GIS Department, ESRI*

## TRANSIT READINESS

Future planning considers that transit use may be more desirable and convenient over time, as habits change and more people move to Leland. Planning for "transit ready" nodes, that correspond to planned nodes within the Future Land Use Map, along major roadways at half-mile spacing, will set Leland up for the potential to take advantage of transit opportunities as they arise.

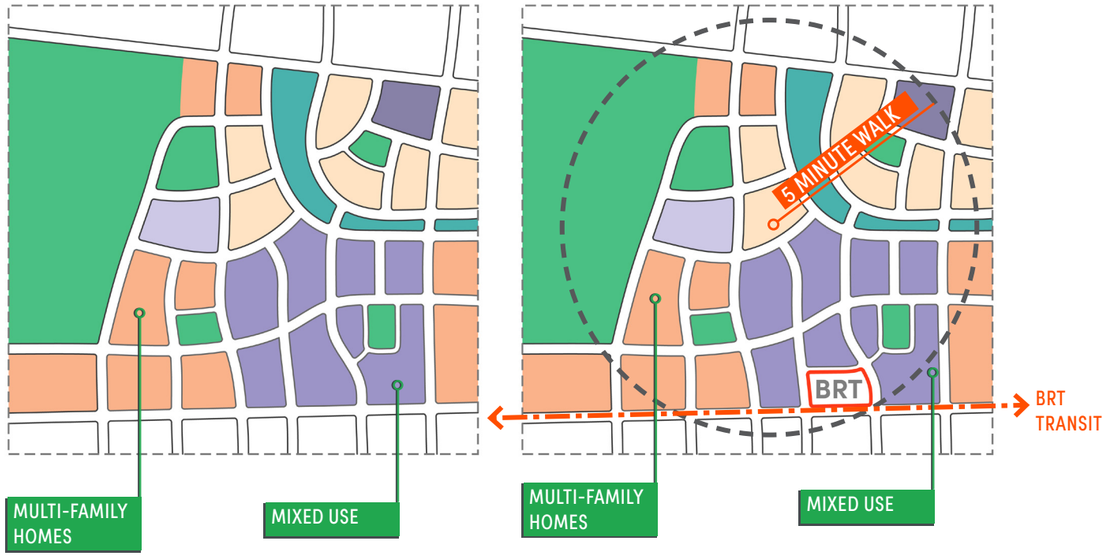
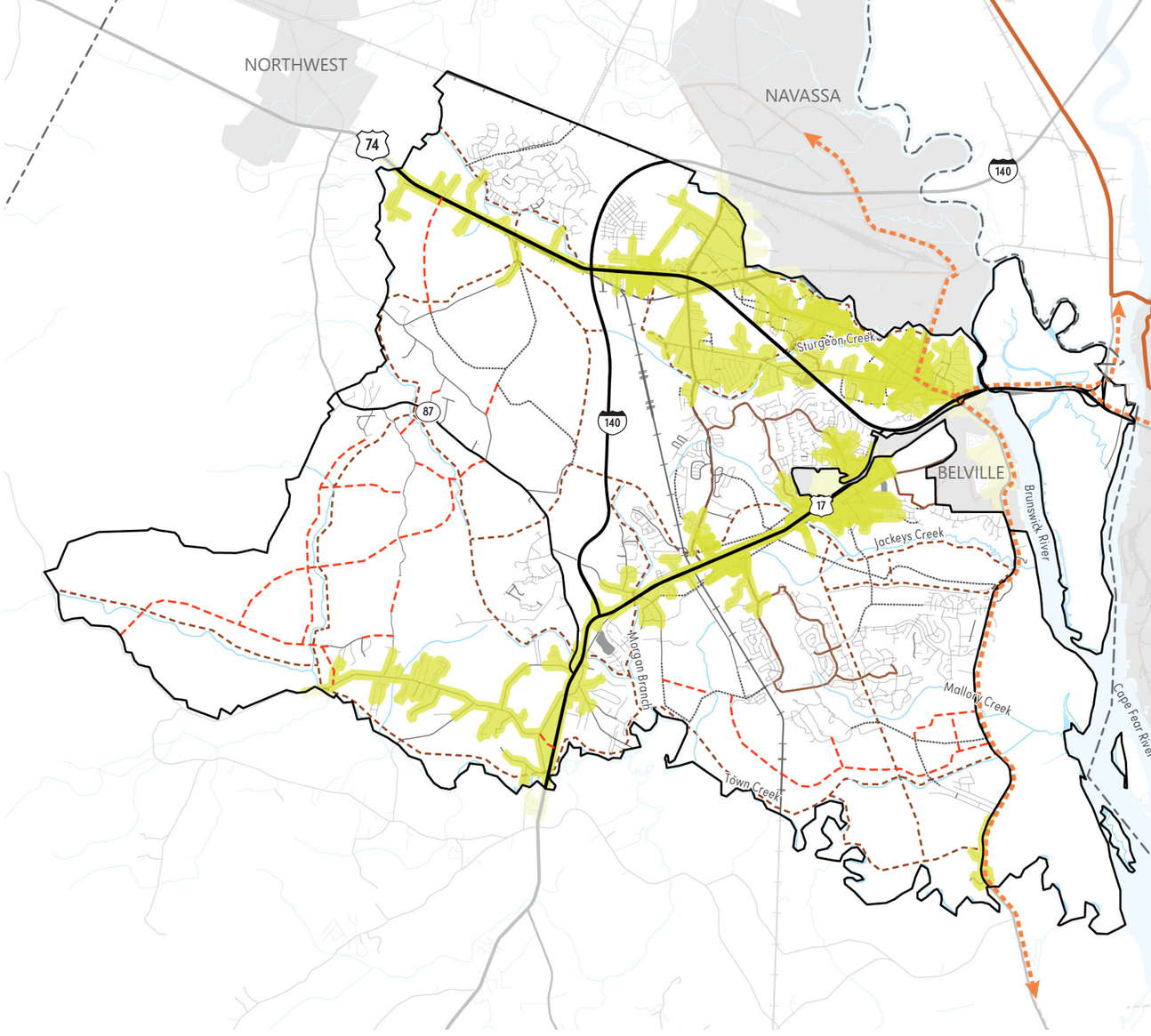



**Figure 5:** "Transit ready" nodes




## MAP 13: POTENTIAL TRANSIT CORRIDORS

### LEGEND

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)
- EXISTING TRAIL/MULTI-USE PATH
- EXISTING REGIONAL TRAILS
- PROPOSED TRAILS
- FUTURE GULLAH GEECHEE HERITAGE TRAIL
- POTENTIAL TRANSIT SERVICE AREA (15-MINUTE WALK)

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*Map Source: Design Workshop, Leland GIS Department, ESRI*

# PROCESS - CHOOSING FROM SCENARIOS

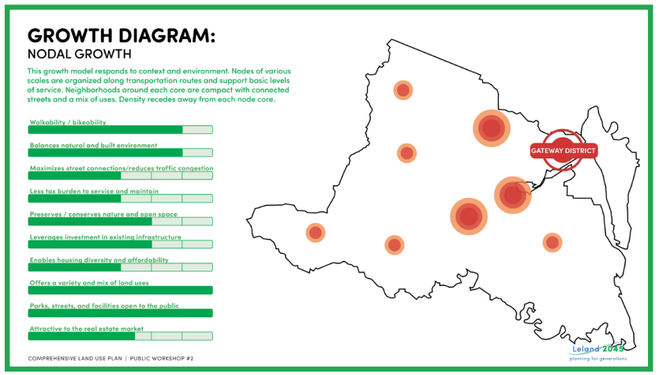



**Figure 6:** Growth typology diagrams.

The Future Land Use Map and Focal Area Plans were created based upon input from the community, stakeholders, and prior planning efforts. As part of the process, the community provided its preferred type of growth based on the trade-offs associated with three alternative scenarios of nodal growth, binary growth, and concentric growth.

The majority of participants chose the nodal growth scenario, which includes identifiable activity nodes organized along major transportation routes. This was preferred over binary growth, which would limit growth in the planning area to lower density and maximize growth within Leland's core.

Nodal growth was also preferred over concentric growth, which suggested that Leland's current growth patterns would be continued out into the planning area.

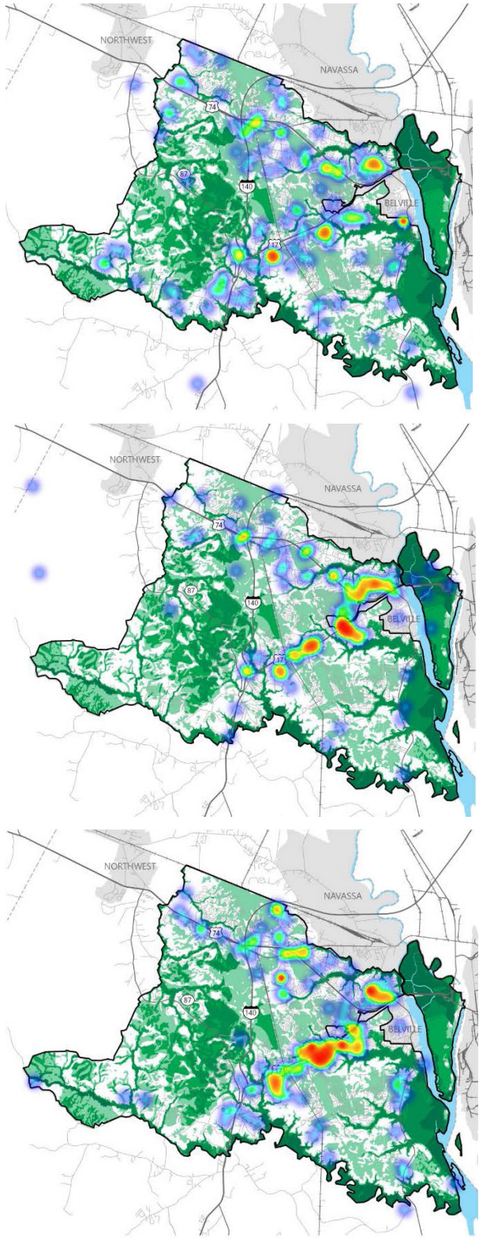



**Figure 7:** Survey results showing heatmap of node location preferences.

In a community survey, participants were asked to indicate where they thought various node types would be best located throughout the planning area. This resulted in the heat maps displayed in Figure 13 that helped to guide and inform the conversation around future growth and land uses.

Three versions of nodal growth were then modeled for further discussion and evaluation as it related to scale, frequency, mix of uses, and orientation. This resulted in a preferred direction about how the community desires to manage its growth.

## THE ECONOMIC CASE FOR SMART, NODAL GROWTH

The cost of sprawl has been documented for over 40 years in city after city. Jurisdictions that understand this have benefited their bottom lines by promoting development and redevelopment in more compact, walkable forms – ideally where infrastructure, human capital, housing and services already exist. As desire for smarter growth has grown, more and more studies have been prepared in cities across the country that compare the cost / revenue benefits of developing smartly over sprawl.

In support of this growing knowledge, Smart Growth America conducted a national survey to compare smart growth development principles over conventional suburban development methods to understand their impact on municipal finances. The studies compared two development types. The first type, defined as Smart Growth Development, which "includes buildings located closer to each other; more walkable neighborhoods; streets with better connections among destinations; a greater mix of home types; and more transportation options." The second type is Conventional Suburban Development, which "includes siting buildings farther away from each other; designing neighborhoods primarily for driving; creating a less-connected street system with longer distances between destinations; and providing fewer public transportation options."

In summary, the national study concluded that:

1. **In general, smart growth development costs one-third less for upfront infrastructure, and saves an average of 38% on upfront costs for new construction of roads, sewers, water lines, and other infrastructure. Many studies have concluded that this number is as high as 50%. Smart growth development patterns require less infrastructure, meaning upfront capital costs and long-term operations and maintenance costs, and, presumably, lower costs for eventual replacement. Smart growth development also often uses existing infrastructure, lowering upfront capital costs even more.**

2. **Smart growth development saves an average of 10% on ongoing delivery of services such as police, ambulance, and fire. Smart growth patterns can reduce costs simply by reducing the distances service vehicles must drive. In some cases, the actual number of vehicles and facilities can also be reduced, along with the personnel required.**

3. **Smart growth development generates 10 times more tax revenue per acre on an average per-acre basis than conventional suburban development. This number includes property tax.**

*Source: Building Better Budgets: A National Examination of the Fiscal Benefits of Smart Growth Development; Smart Growth America: Making Neighborhoods Great Together*


## PRINCIPLES OF SMART GROWTH

Smart growth looks different from place to place, but in essense, it is an overall approach to development that encourages a mix of building types and uses, diverse housing options, and walkable development within existing neighborhoods.

The Smart Growth Network has developed a set of 10 basic principles based on communities around the nation:

1. **Mix land uses**
2. **Take advantage of compact design**
3. **Create a range of housing opportunities and choices**
4. **Create walkable neighborhoods**
5. **Foster distinctive, attractive communities with a strong sense of place**
6. **Preserve open space, farmland, natural beauty, and critical environmental areas**
7. **Direct development towards existing communities**
8. **Provide a variety of transportation choices**
9. **Make development decisions predictable, fair, and cost effective**
10. **Encourage community and stakeholder collaboration in development decisions**

*Source: https://www.epa.gov/sites/default/files/2017-06/documents/sm_growth_guide.pdf*

# COMMUNITY AND NODE TYPES

Community and node types were envisioned to help the community visualize and choose the most appropriate scale, type, density, and form of growth for Leland's future. These community and node types can also influence future zoning, zoning overlays, small area plans, and policies that will ensure that Leland grows in alignment with the vision of this comprehensive plan.

Describing Leland's future growth with the use of Community Types and Node Types will help accomplish the community's vision of achieving balance between the built and natural environment, as well as:

- Improve the performance and quality of the built environment.
- Promote development patterns that support safe, effective, and multi-modal transportation options, including auto, pedestrian, bicycle, and transit. This will minimize vehicle traffic by providing for a mix of land uses, walkability, and compact community form.
- Provide neighborhoods with a variety of housing types to serve a diverse population.
- Promote the greater health benefits of a pedestrian-oriented environment.
- Reduce sprawling, auto-dependent development.
- Reinforce the unique identity of Leland that builds upon great neighborhoods, amenities, quality of life, access to nature, inclusiveness, and affordability.

The Future Land Use Map and Focal Area Plans that follow utilize Community Types and Node Types, and promote their use across the Planning Area.

## COMMUNITY TYPES

NATURAL / PRESERVE

CONSERVATION COMMUNITY

AMENITY COMMUNITY

TRADITIONAL NEIGHBORHOOD

COMMERCIAL/ EMPLOYMENT

URBAN MIXED-USE NEIGHBORHOOD

More Preservation — Density and character can range from preserved nature to more compact and urban — More Urban

## NODE TYPES

NEIGHBORHOOD NODE

VILLAGE NODE

URBAN CENTER NODE



## CONSERVATION COMMUNITY

- Conservation easements
- Environmental buffers along waterways
- Very low-density residential or rural
- Variety of housing types and price points
- Clustered homesites on small footprint
- Single family homesites
- Rural streets with bike lanes
- Context-sensitive street design
- Greenways and trails along environmental buffers
- Low Impact Development (LID) principles

## AMENITY COMMUNITY

- Primarily single-family with medium-density townhouses and multifamily
- Variety of home types and price points
- Open space, parks and amenities provided
- Connected internal streets and greenways
- Suburban street networks / limited use cul-de-sacs
- Residential street designs with sidewalks and street trees
- Low Impact Development (LID) principles

## TRADITIONAL NEIGHBORHOOD

- Medium density / mixed density
- Variety of housing types and price points
- Single-family homes, townhouses and multifamily
- Open space, parks, schools, services, neighborhood retail, small-scale employment, small office, institutions
- Connected / gridded street network and greenways
- Suburban and urban block patterns and sizes
- Complete streets design with narrow traffic lanes, sidewalks, street trees, walkable block sizes
- Traditional neighborhood designs
- Low Impact Development (LID) principles

## COMMERCIAL/EMPLOYMENT

- Allocation of land for employment uses of all types including high-tech, green industry, light industry, office and commercial, service and institutional
- Buildings fronting streets with parking in the rear
- Bus and Bus Rapid Transit (BRT) transit locations
- Access management on fronting streets
- Urban street patterns and block sizes
- Green building and development principles
- Parking management solutions to reduce parking
- Complete streets

## URBAN MIXED-USE NEIGHBORHOOD

- Mixed-use
- Higher density / range of densities
- Townhouses and multifamily
- Variety of housing types and price points
- Allocation of land for employment uses of all types including incubator spaces, entrepreneur's space, office, commercial businesses
- Street-oriented commercial
- Parking in rear of buildings
- Complete streets
- Transit nodes
- Open space, parks, schools, services, neighborhood retail, employment, institutions
- Urban block patterns and sizes – highly pedestrian

## NEIGHBORHOOD NODE

- Mixed-use
- Variety of housing types and price points
- Small traditional neighborhoods
- Neighborhood-scaled retail
- Small office
- Gridded walkable streets
- Parking in rear of buildings
- Bus transit locations
- Parks, services, institutions
- Greenway and trail access

## VILLAGE NODE

- Mixed-use
- Variety of housing types and price points
- Small Traditional Neighborhoods
- Regional scaled retail and employment centers, small office and other employment uses
- Open space, parks, schools, services
- Gridded walkable streets
- Bus Rapid Transit (BRT) locations
- Parking in rear of buildings
- Greenways and trail access

## URBAN CENTER NODE

- High Density mixed use
- Variety of housing types and price points
- BRT transit locations
- Parking management solutions
- Regional scaled retail and commercial centers, office and other employment uses
- Open space, parks, schools, services
- Gridded walkable streets
- Parking in rear of buildings
- Parks, parklets, services, institutions
- Greenways and trail access

# FUTURE LAND USE MAP (FLUM)

## Citizen and Town leadership want Leland to grow into an even more sustainable, healthy, equitable, responsible, and highly livable place that elevates the lives of those who live here, while protecting the attributes and assets that make it unique.

The Future Land Use Map will help preserve and promote the character and quality of Leland for generations. It describes in concept how the town can manage anticipated population growth over the next 25 years. It includes the creation of Community Types, promoting different types of living, anticipating a transit ready future, and supporting living and working near each other to reduce traffic congestion and commuting times. It directs development, over time, to land that is more suitable for development and protects critical environmental systems.

Nodes of various scales are located along major transportation routes to create identifiable and walkable centers and to support quality-of-life elements such as parks, shopping, jobs, gathering, worship, and support.

### FUTURE LAND USE CATEGORIES

ALREADY PROTECTED/MANAGED AREAS (NCNHP)

IDEAL CONSERVATION/PRESERVATION AREAS

- Protected/Open Space

NATURAL RESOURCE ORIENTED DEVELOPMENT POTENTIAL

- Protected/Open Space
- Conservation Community
- Low Impact Development

MODERATE DEVELOPMENT POTENTIAL

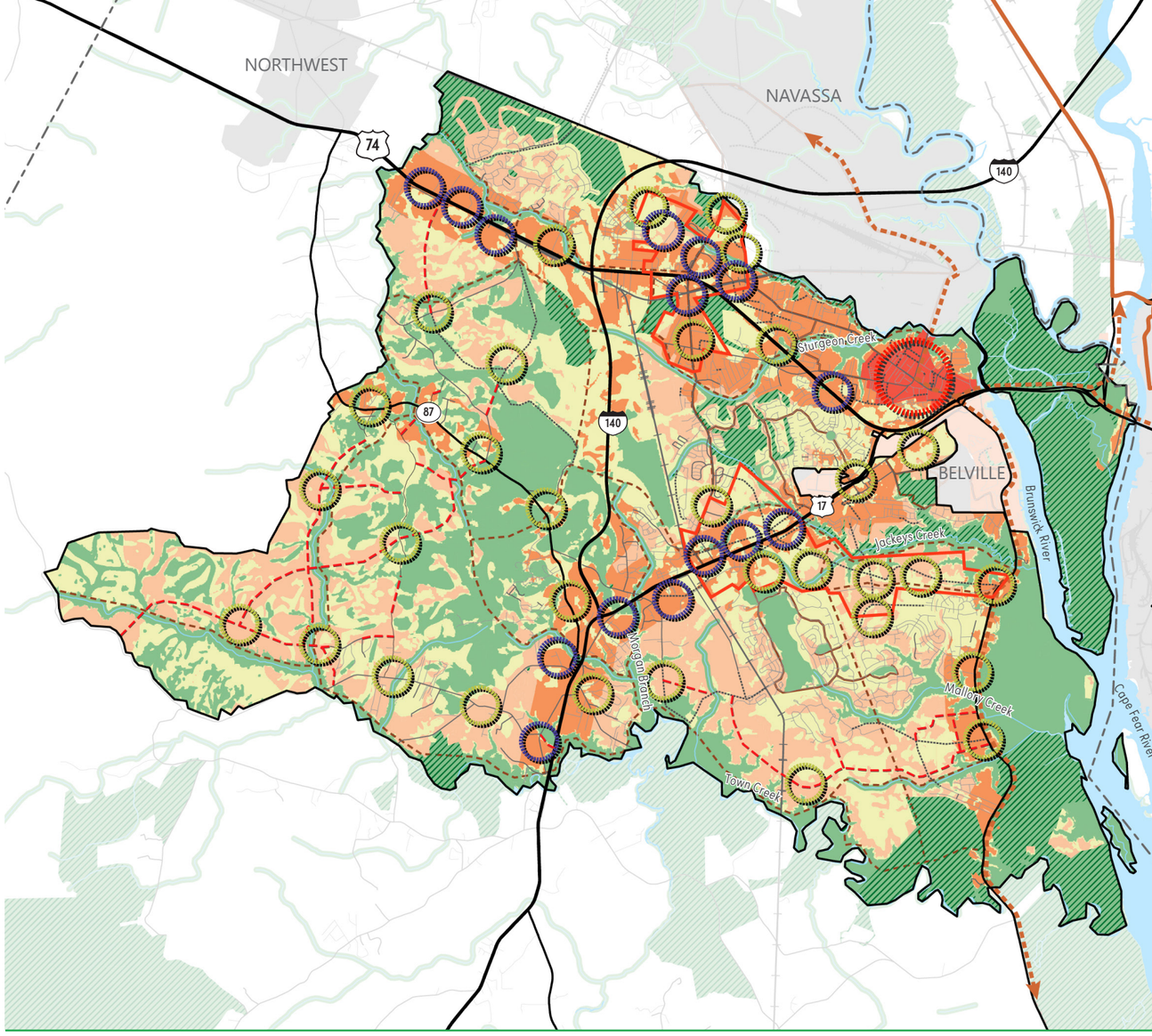
- Conservation Community
- Amenity Community
- Traditional Neighborhood

HIGH DEVELOPMENT POTENTIAL

- Conservation Community
- Amenity Community
- Traditional Neighborhood
- Urban Mixed-Use Neighborhood
- Commercial Employment

GATEWAY DISTRICT

The area west of the Village Road interchange with US 74/76 that includes much of the historic origins of Leland. This area has been referred to as the gateway to Leland, and was identified as the Gateway District in the 2009 Master Plan. The area forms the nucleus of the community's vision of a town center and a discernible "downtown."




**MAP 14:** FUTURE LAND USE MAP (FLUM)

0 .75mi 1.5mi 3mi

### LEGEND

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)
- EXISTING TRAIL/MULTI-USE PATH
- EXISTING REGIONAL TRAILS
- PROPOSED TRAILS (INCLUDES ALREADY PLANNED)
- NEIGHBORHOOD NODE
- VILLAGE NODE
- URBAN CENTER NODE
- FOCAL AREA
- FUTURE GULLAH GEECHEE HERITAGE TRAIL

*Map Source: Design Workshop, Leland GIS Department, ESRI*

### ABOUT THIS MAP

**The Future Land Use Map (FLUM) describes how Leland can continue to grow and prosper, while also protecting its valuable natural resources. The Future Land Use Map considers how community types and nodes can be selected to work in harmony with the underlying environmental conditions.**

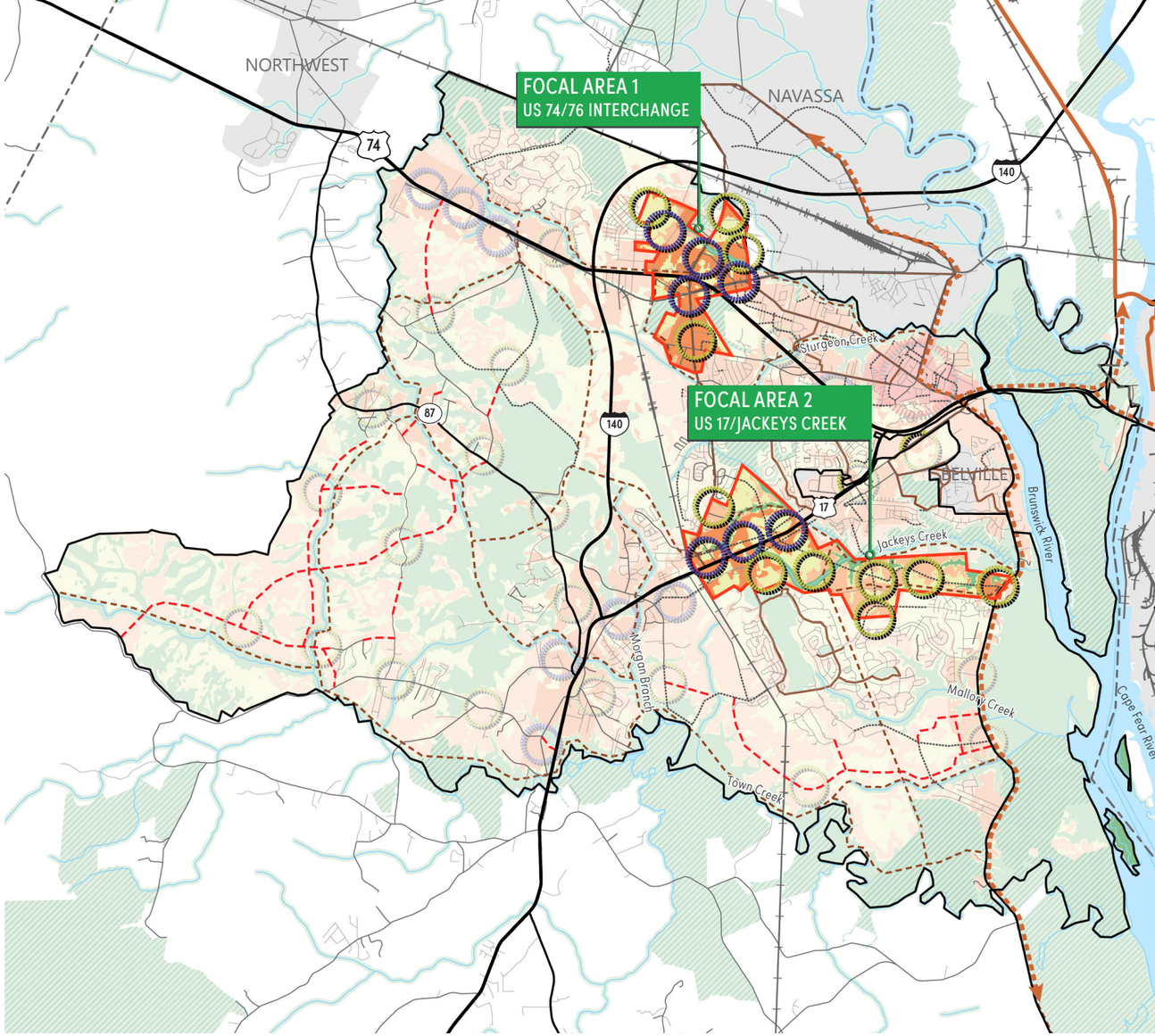
# FOCAL AREA PLANNING

## Two areas of Leland have been studied to demonstrate, in concept, how they might be developed to meet with Leland's vision, principles, and policies.

These areas are generally considered to be more immediate growth areas. They are both located along existing infrastructure, adjacent to existing development, and are located on sizable roadways. Each of these areas has the potential to define by example how Leland can create places, neighborhoods, and communities that perform at a high level related to quality-of-life indicators.

It is important to note, however, that these concepts have not been created based on market research, development feasibility, or other considerations, and should be looked at only as inspiration for how connectivity, nodes, community types and trails can be established within these areas. In that regard, they are illustrative only and do not indicate any proposed plan for implementation. That will happen with community-based small area planning and working with developers and landowners to create the most balanced and highest-performing plan.

**Figure 8:** Aerial of Focal Area 2.




**MAP 15:** FOCAL AREA KEY MAP

0 .75mi 1.5mi 3mi

### LEGEND

- EXISTING ROADS
- POSSIBLE FUTURE ROADWAY CONNECTIONS
- PROPOSED COLLECTOR ROADS (FROM COLLECTOR PLAN)
- EXISTING TRAIL/MULTI-USE PATH
- EXISTING REGIONAL TRAILS
- PROPOSED TRAILS (INCLUDES ALREADY PLANNED)
- NEIGHBORHOOD NODE
- VILLAGE NODE
- URBAN CENTER NODE
- FOCAL AREA
- FUTURE GULLAH GEECHEE HERITAGE TRAIL

*Map Source: Design Workshop, Leland GIS Department, ESRI*

## VISION:

Focal Area 1 supports urbanizing development forms and promotes a medium to high density and mix of uses that enable people to live, work, and recreate within a compact footprint. Every quality-of-life element, such as employment, education, recreation, and safety, is considered within this Focal Area and planned so that they are located within accessible nodes along pedestrian- and bike-friendly streets.

These areas are located along Highway 74, also named Andrew Jackson Highway, which is a primary access into Leland from the west. The area benefits from being planned and zoned as an industrial and innovation park to support employment. It is also zoned for commercial use to take advantage of the car traffic that is within this area.

**Figure 9:** Aerial looking west towards Windsor Park neighborhood from plan north of Focal Area 1.

**Key planning considerations:**

- Retain and support job-creating land uses.
- Promote job creation of all types including office, light industrial, commercial, lodging, entertainment, incubator, and others while discouraging heavy industrial uses.
- Support the employment uses with medium- to high-density housing that enable employees to walk or bike to work.
- Create a grid of streets that allow for multiple circulation routes, and smaller pedestrian-oriented streets.
- Preserve sensitive open spaces, natural drainage ways, and floodplains within a connected corridor that also provides opportunities for multipurpose trail connectivity.
- Locate higher densities, mixed uses, parks, schools, gathering areas and community services within mixed-use nodes that range from neighborhood nodes to village nodes to urban nodes.
- Concentrate higher-density housing within and around these nodes.
- Provide for a variety of housing types from conservation communities to amenity communities, traditional neighborhoods and urban neighborhoods depending upon locations along transportation corridors, open spaces and natural areas, and existing land uses.
- Connect open space areas with greenways that flank pedestrian-friendly streets.
- Consider locating consolidated or districted stormwater management systems in appropriate locations to serve more than one development or neighborhood and enable higher usage of land within the neighborhoods or developments.
- Transition the scale, height, and intensity of development to the focal area's perimeter to create compatibility with existing neighborhoods.

## MAP 16: FOCAL AREA 1

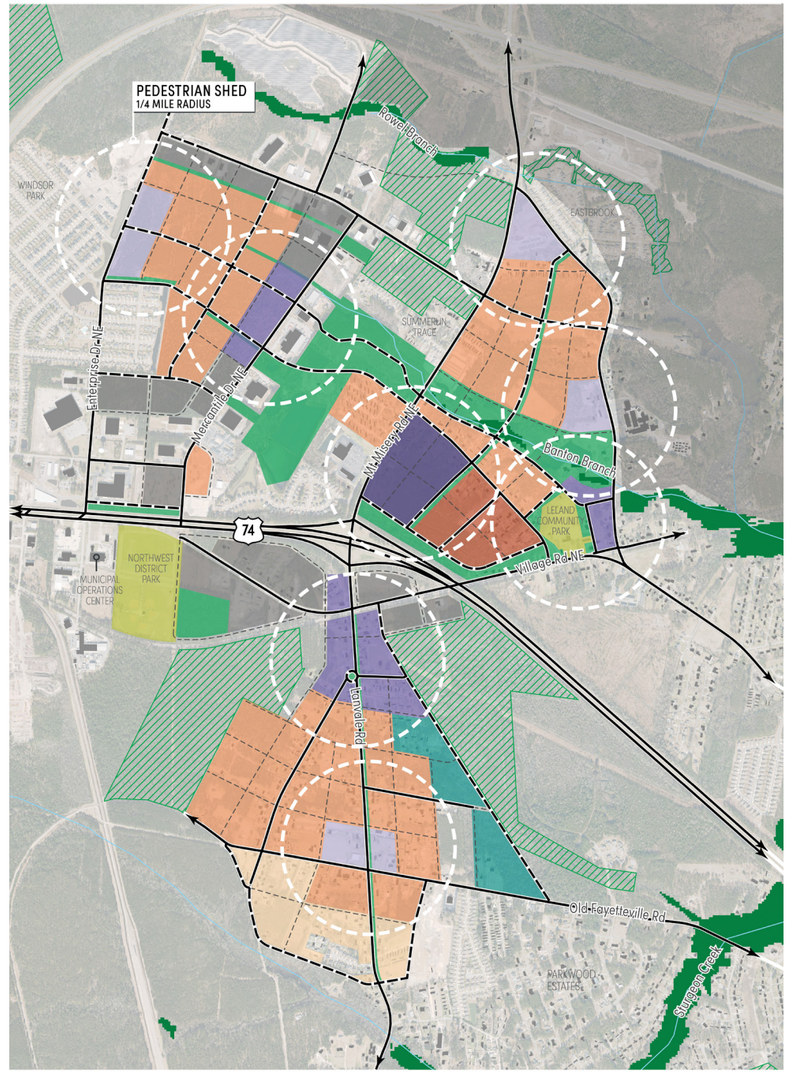
This map describes how Leland's principles and values associated with creating great neighborhoods, connectivity, protection of open space, and walkability can be applied to new growth areas.

### LEGEND

- EXISTING ROADS
- PROPOSED PRIMARY ROADS
- PROPOSED SECONDARY ROADS

**FUTURE LAND USE**

- POTENTIAL OPEN SPACE
- CONSERVATION COMMUNITY
- AMENITY COMMUNITY
- COMMERCIAL/EMPLOYMENT
- TRADITIONAL NEIGHBORHOOD
- URBAN MIXED-USED NEIGHBORHOOD
- NEIGHBORHOOD NODE
- VILLAGE NODE
- URBAN CENTER NODE
- IDEAL CONSERVATION/ PRESERVATION AREA
- ALREADY PROTECTED/ MANAGED AREA (NCNHP)
- EXISTING PARK




*Map Source: Design Workshop*

## VISION:

Focal Area 2 supports urbanizing development forms and promotes a medium to high density and mix of uses that enable people to live, work and recreate within a compact footprint. Quality-of-life elements, such as employment, education, recreation and safety, is considered within this Focal Area and planned so that they are located within accessible nodes along pedestrian- and bike-friendly streets.

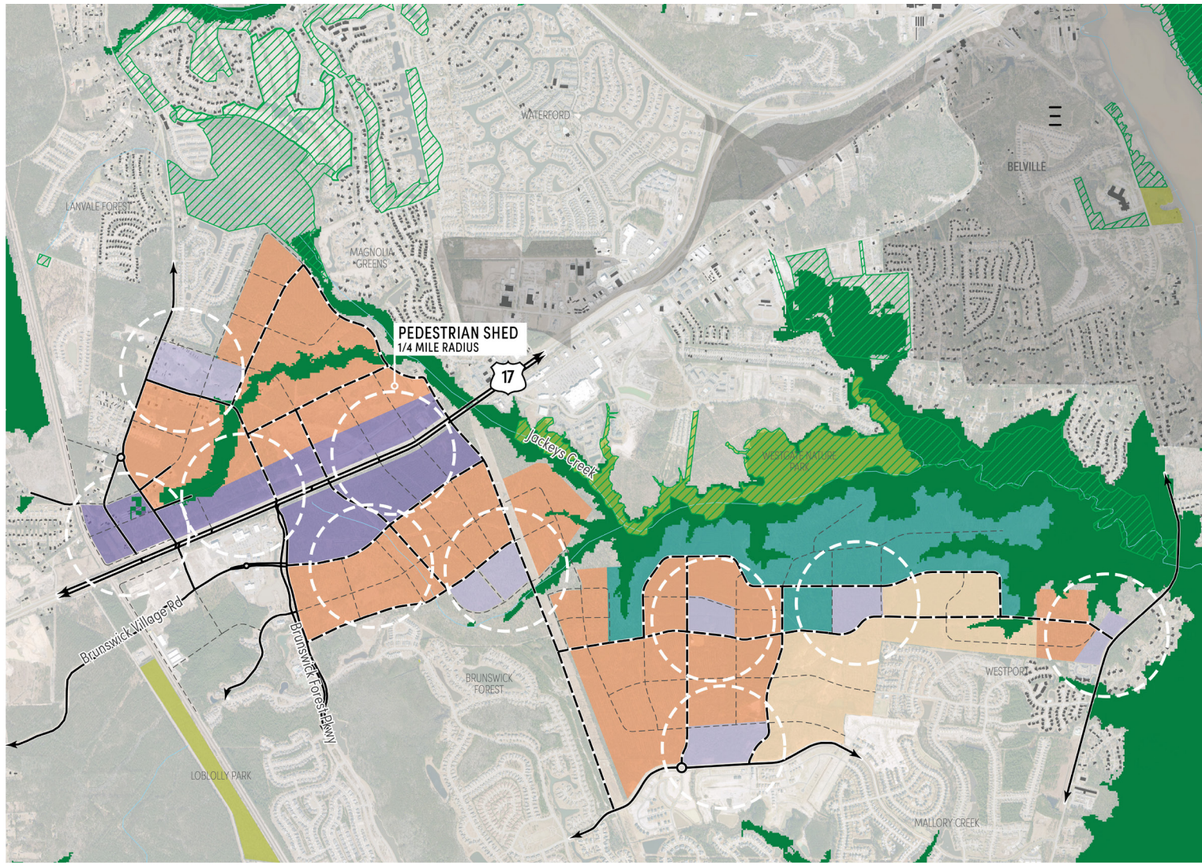
This area is located along US Highway 17 (Ocean Highway E), which is a primary access into Leland from the south. It also has access from NC Highway 133 (River Rd SE), which is a roadway with scenic qualities with future plans for improvements as part of the conceptual Gullah Geechee Heritage Trail that will connect to larger regional trail systems. The area benefits from being planned and zoned as commercial and residential. Its commercial zoning takes advantage of the car traffic along Highway 17. Existing commercial centers already support the area, along with large, planned developments such as Brunswick Forest. The eastern portion of the focal area has more sensitive environmental conditions and is adjacent to Highway 133 (River Rd SE). A major drainage flows along the north boundary to Jackeys Creek, which flows to Brunswick River and Cape Fear River and ultimately the Atlantic Ocean.

**Key planning considerations:**

- Locate village centers along Highway 17 (Ocean Highway E) to take advantage of commercial and retail opportunities within mixed-use destinations.
- Create a grid of streets that allow for multiple circulation routes, and smaller pedestrian-oriented streets.
- Preserve sensitive open spaces and natural drainage ways and floodplains within a connected corridor that also provides opportunities for multipurpose trail connectivity.
- Locate higher densities, mixed uses, parks, schools, gathering areas and community services within mixed-use nodes that range from neighborhood nodes to village nodes.
- Concentrate higher-density housing within and around these nodes.
- Provide for a variety of housing types from conservation communities to amenity communities and traditional neighborhoods depending upon locations along transportation corridors, open spaces and natural areas, and existing land uses.
- Connect open space areas with greenways that flank pedestrian-friendly streets.
- Consider locating consolidated or districted stormwater management systems in appropriate locations to serve more than one development or neighborhood and enable higher usage of land within the neighborhoods or developments.
- Transition the scale, height, and intensity of development to the focal area's perimeter to create compatibility with existing neighborhoods.
- Connect to existing large developments to promote higher levels of connectivity within the area.

## MAP 17: FOCAL AREA 2

This map describes how Leland's principles and values associated with creating great neighborhoods, connectivity, protection of open space, and walkability can be applied to new growth areas.




### LEGEND

- EXISTING ROADS
- PROPOSED PRIMARY ROADS
- PROPOSED SECONDARY ROADS

**FUTURE LAND USE**

- CONSERVATION COMMUNITY
- AMENITY COMMUNITY
- TRADITIONAL NEIGHBORHOOD
- NEIGHBORHOOD NODE
- VILLAGE NODE
- IDEAL CONSERVATION/PRESERVATION AREA
- ALREADY PROTECTED/MANAGED AREA (NCNHP)
- EXISTING PARK

*Map Source: Design Workshop*

# 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

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

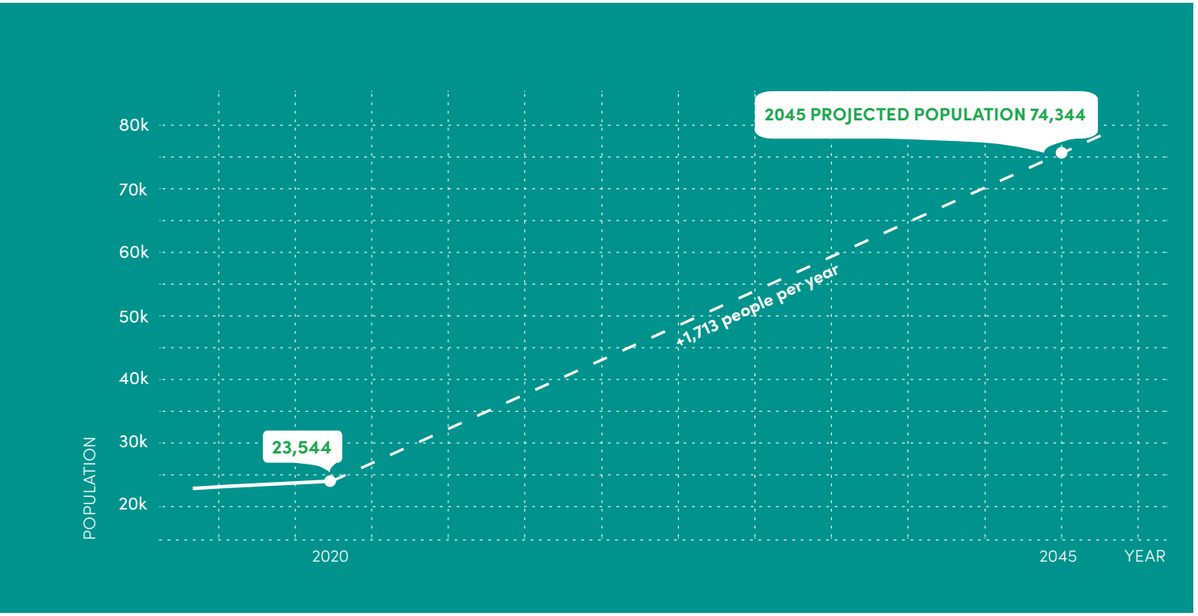
**32.9%** Brunswick County

**10%** North Carolina

## POPULATION

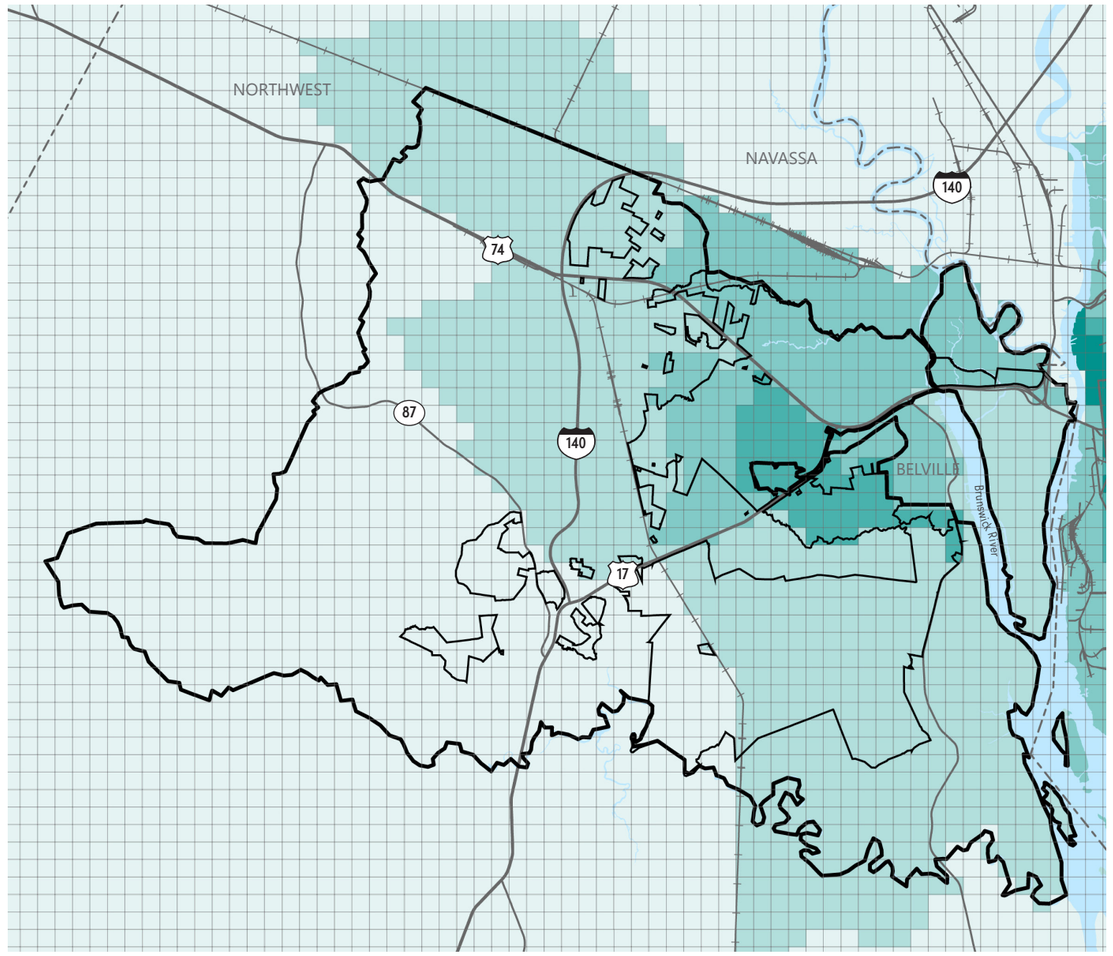
Brunswick County and the Wilmington region are some of the fastest-growing areas in the state. From 2000 to 2010 Leland jumped from a population of 1,938 to 13,614, according to Census data. Leland has continued to see growth since, with the latest estimate placed at 23,544 (U.S. Census Bureau, Population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




## LEGEND

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

PERSONS PER SQ MILE

- <200
- 200-400
- 400-800
- 800-1600
- 1600-3200

*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**

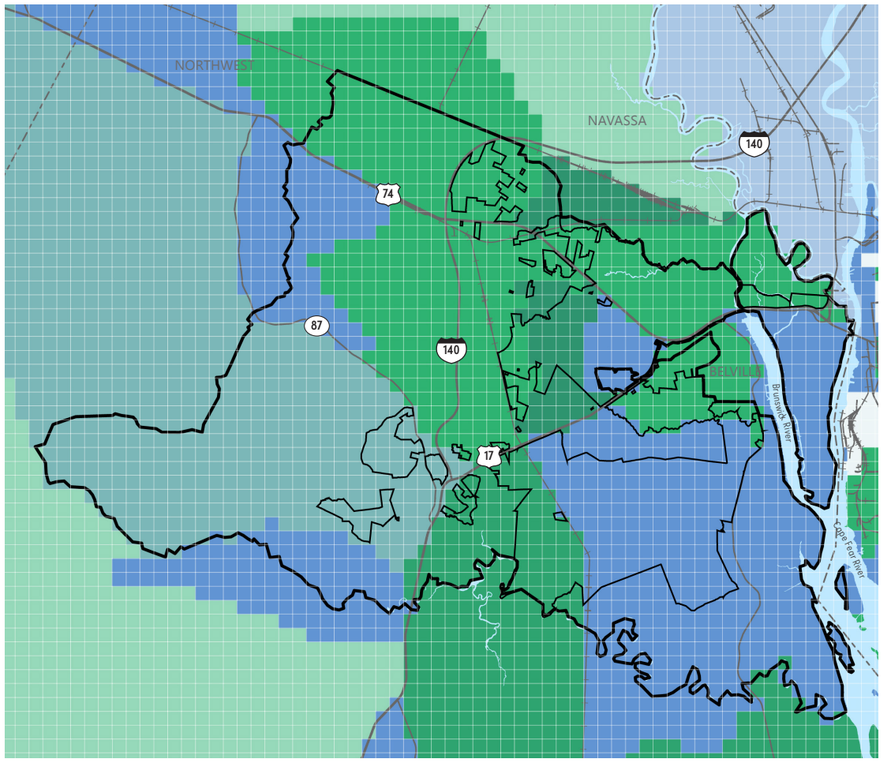
| | 2010 | 2019 | % CHANGE |
|---|---|---|---|
| Leland | 5,833 | 8,366 | 43% |
| Brunswick | 46,409 | 58,385 | 25.8% |
| North Carolina | 3,626,179 | 3,965,482 | 9.3% |

**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



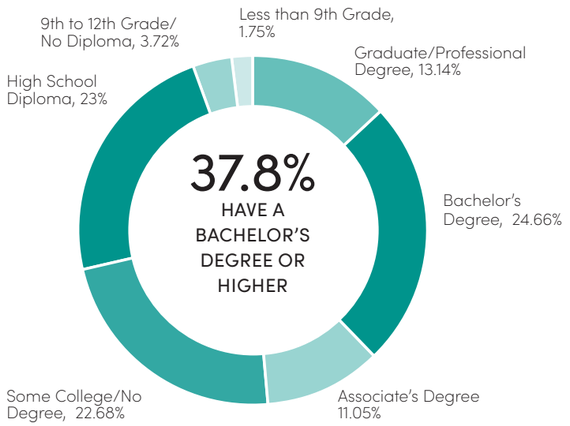

*SOURCE: Design Workshop, ESRI U.S. Census Bureau / ACS 2019 Estimates*

**"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



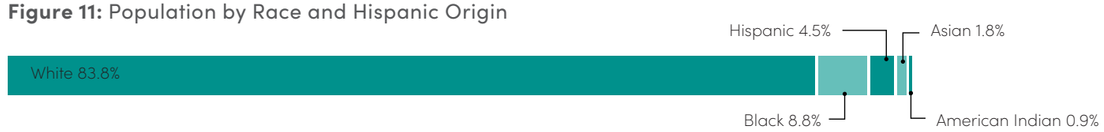

*SOURCE: U.S. Census Bureau and ACS 2019 Estimates*



## 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.

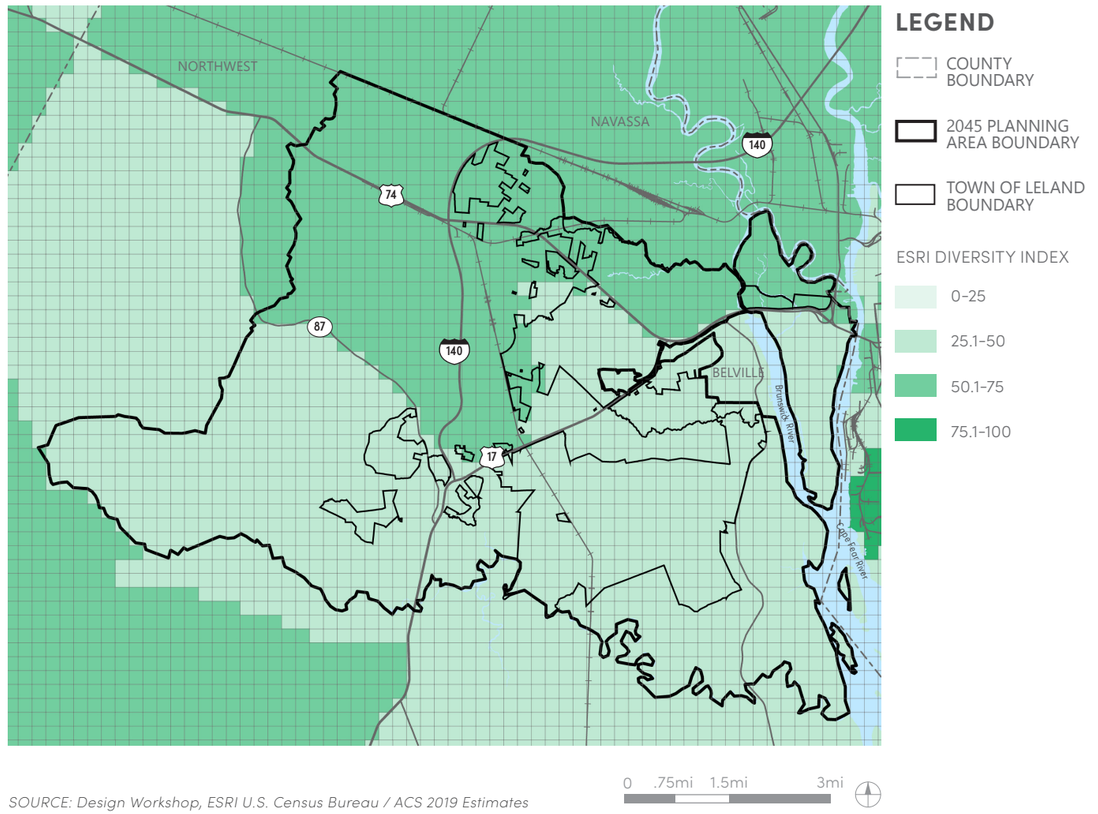
**Figure 11:** Population by Race and Hispanic Origin




*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.

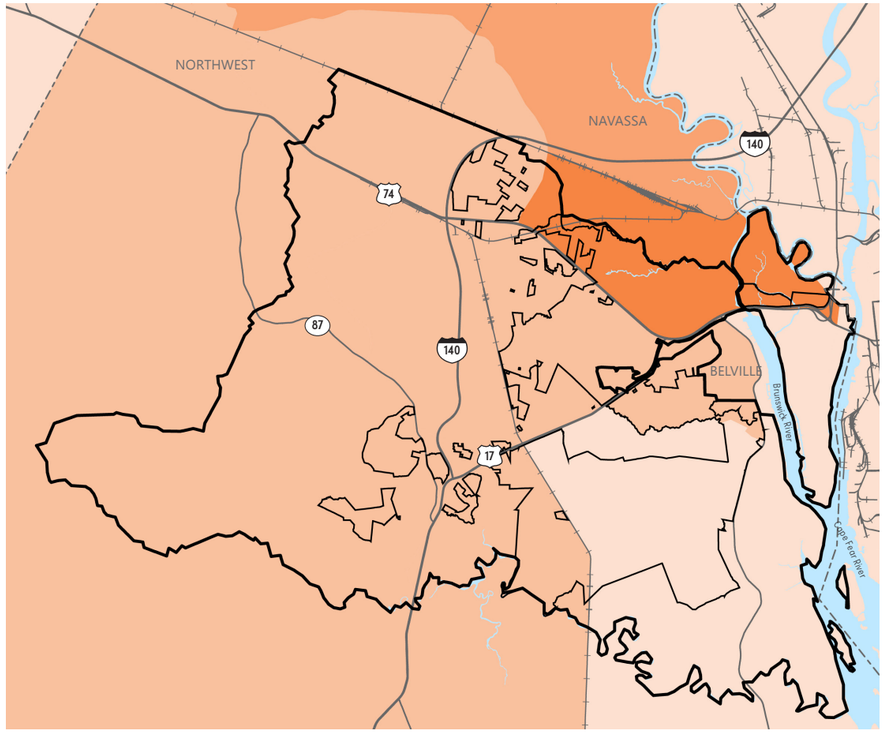
## MINORITY STATUS AND LANGUAGE:

- minority
- speak English "less than well"

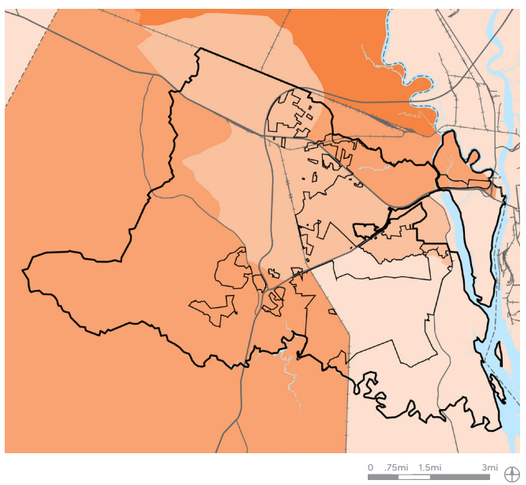
## HOUSING TYPE AND TRANSPORTATION

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

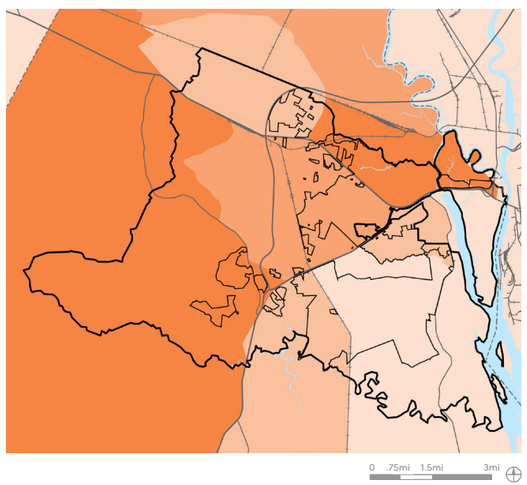
## MAP 23: OVERALL SOCIAL VULNERABILITY INDEX



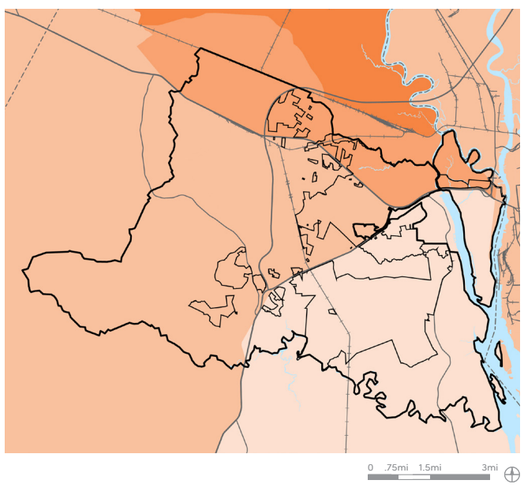

## MAP 21: SOCIOECONOMIC STATUS



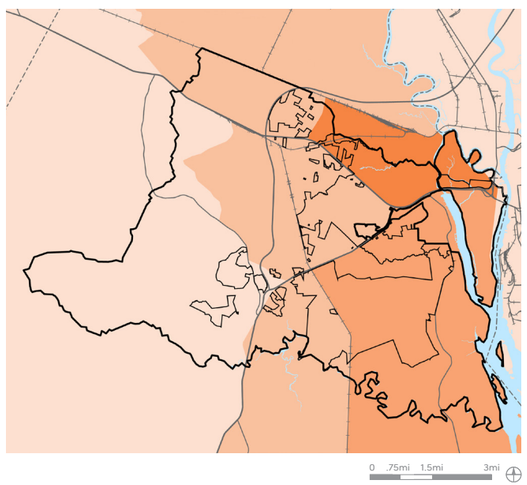

## MAP 22: HOUSEHOLD COMPOSITION & DISABILITY




## 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.

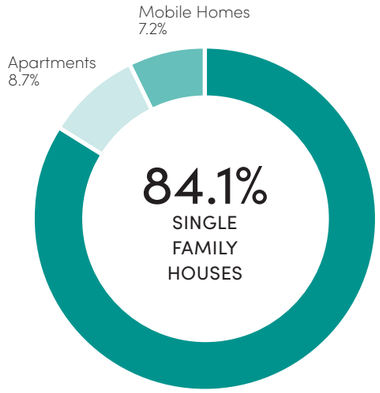
### PERMANENT AND SEASONAL UNITS

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.

**Figure 12:** Housing Mix in Leland




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

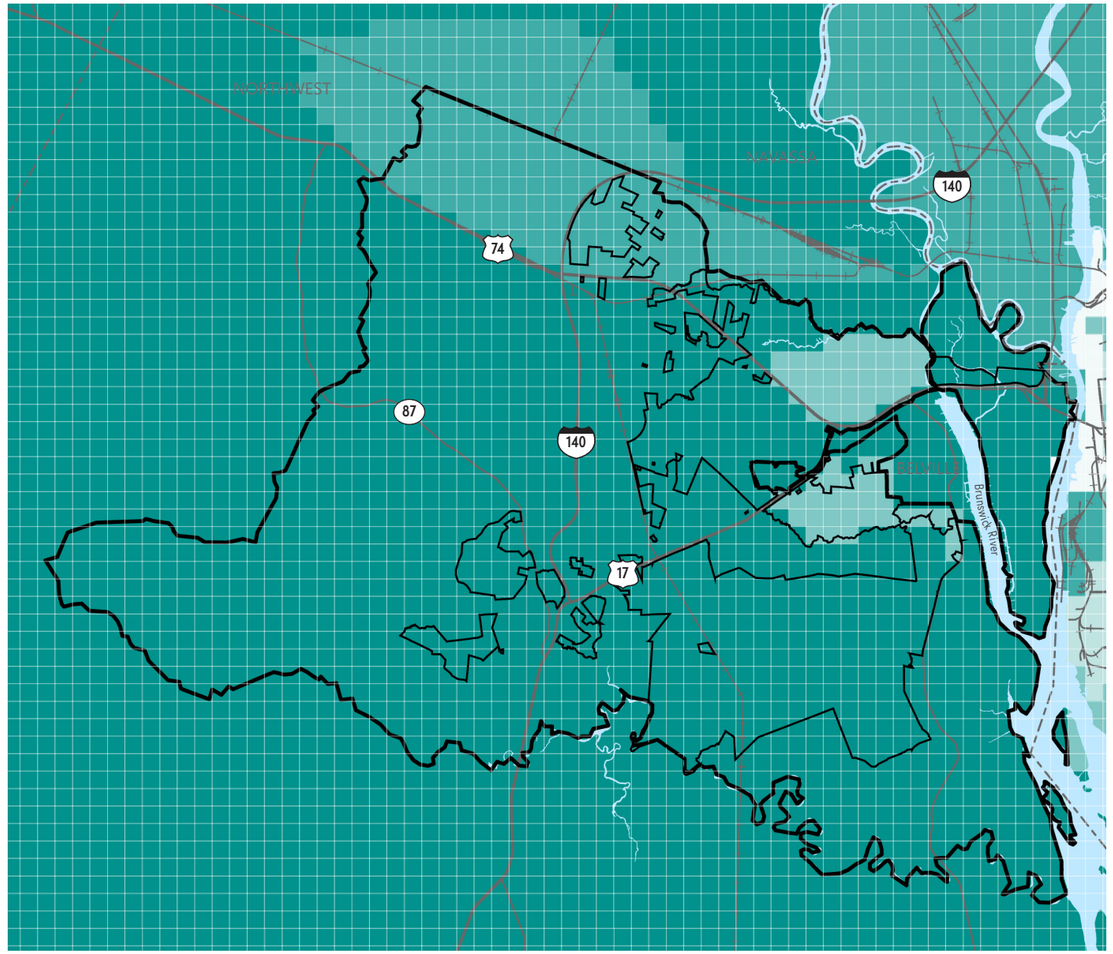
**Table 4: Town of Leland Housing Tenure**

| | 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.

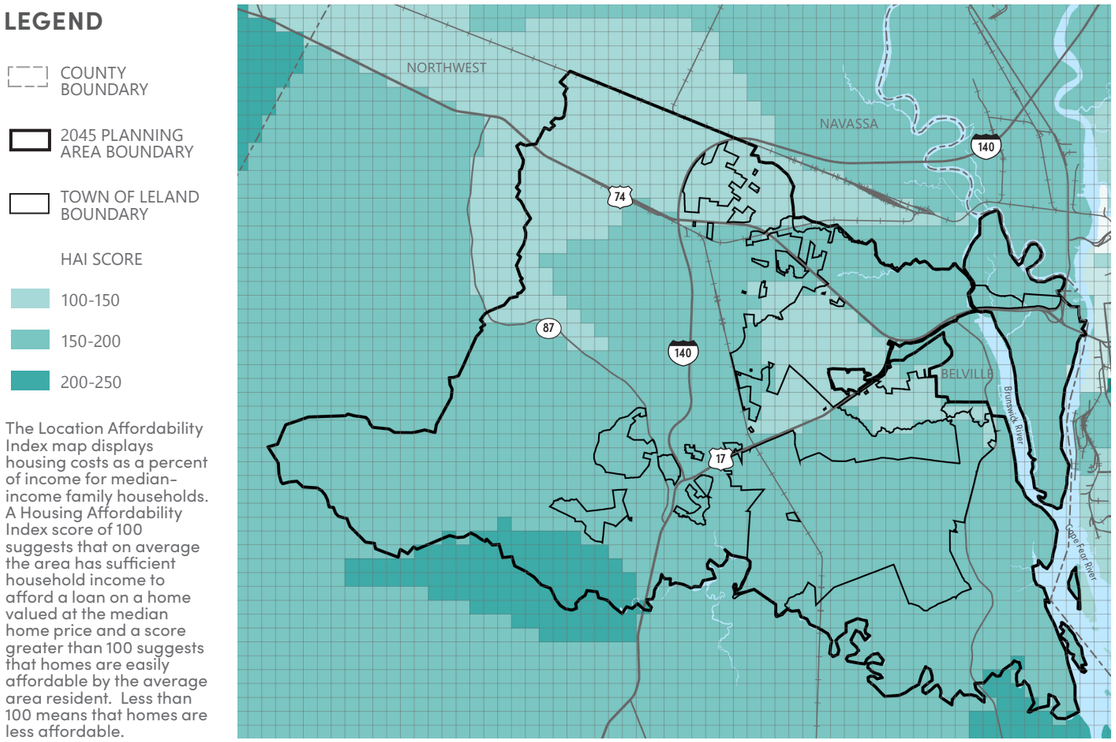
Several factors contribute to the rising prices of housing in Leland, including construction costs, low supply, and zoning restrictions. Affordable housing options are fundamental to supporting a growing economy, reducing intergenerational poverty, and increasing upward economic mobility.

**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)




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**

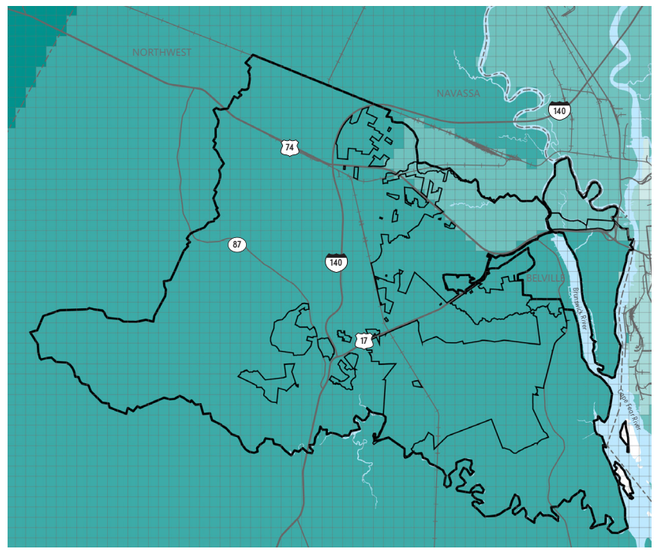
**61.7%** of income for **Median-Income Family**

**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*

# 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

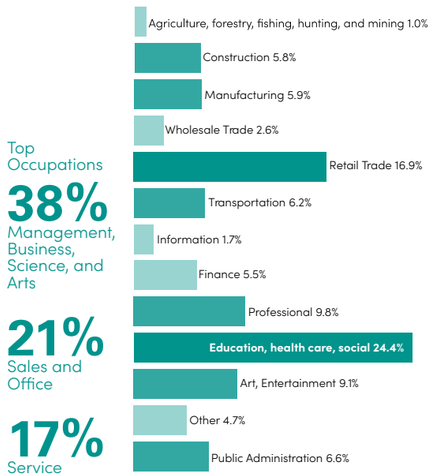
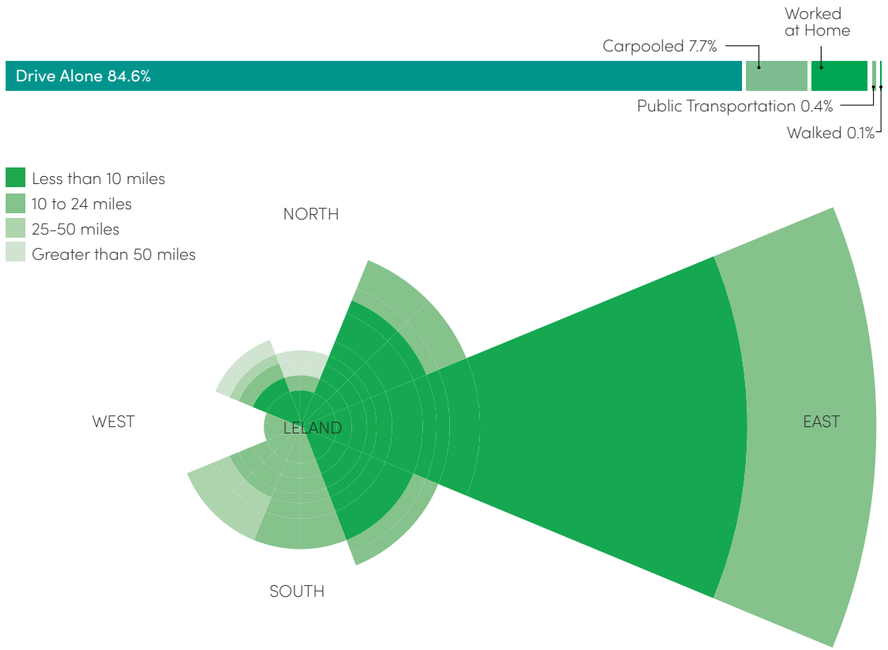


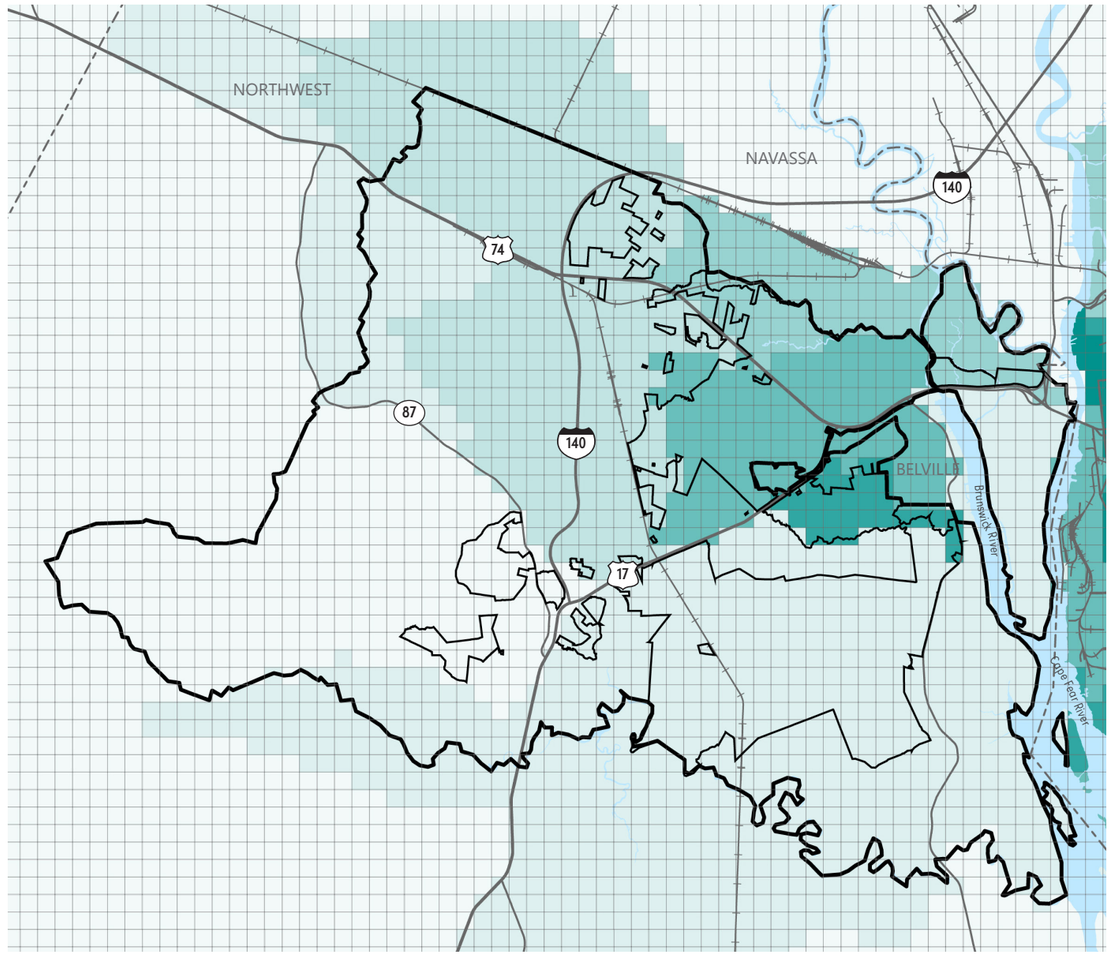

**Figure 13:** Commuting-to-work Patterns in Leland




*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."

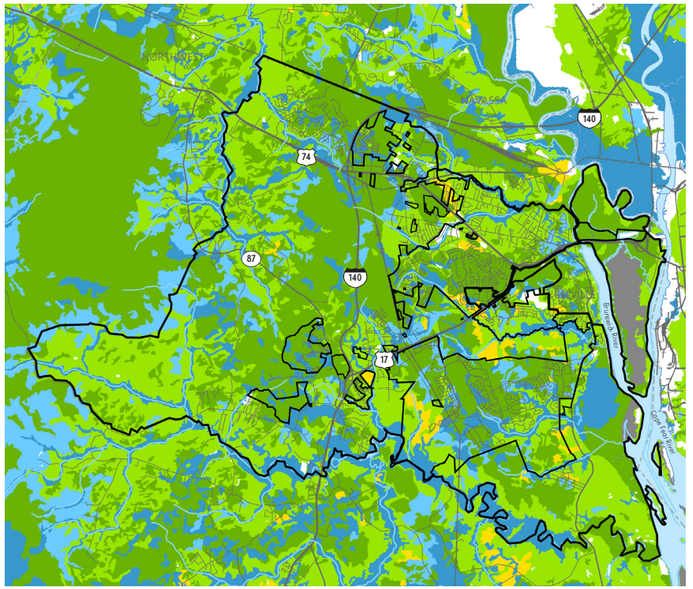
**Farmland of statewide importance** is defined as land that includes "areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods."

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



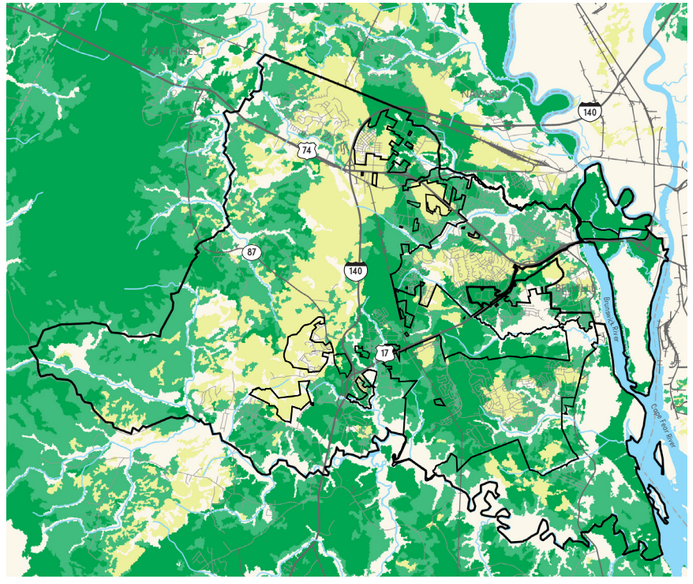

LEGEND

- 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*

0 .75mi 1.5mi 3mi

## 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*

0 .75mi 1.5mi 3mi

# 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.

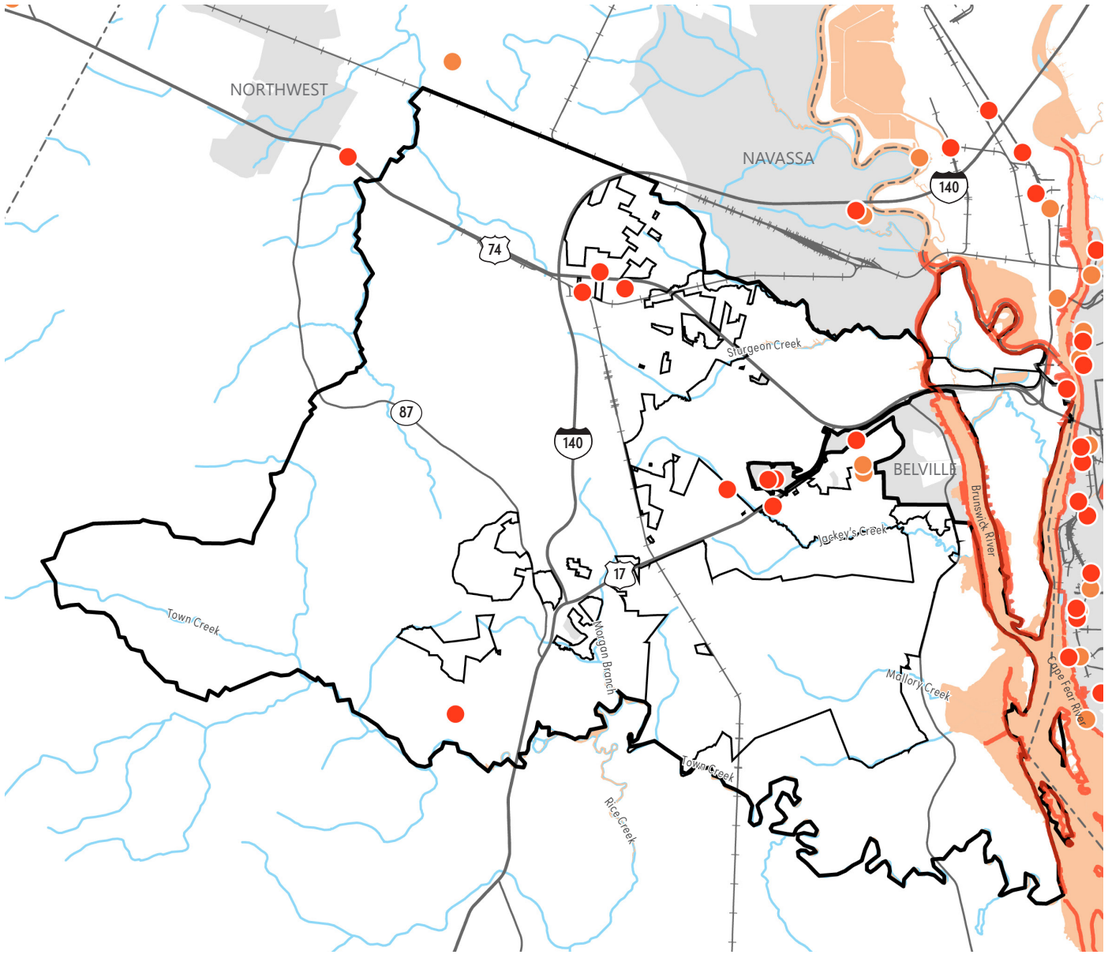
## SHELLFISH GROWING AREAS

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)

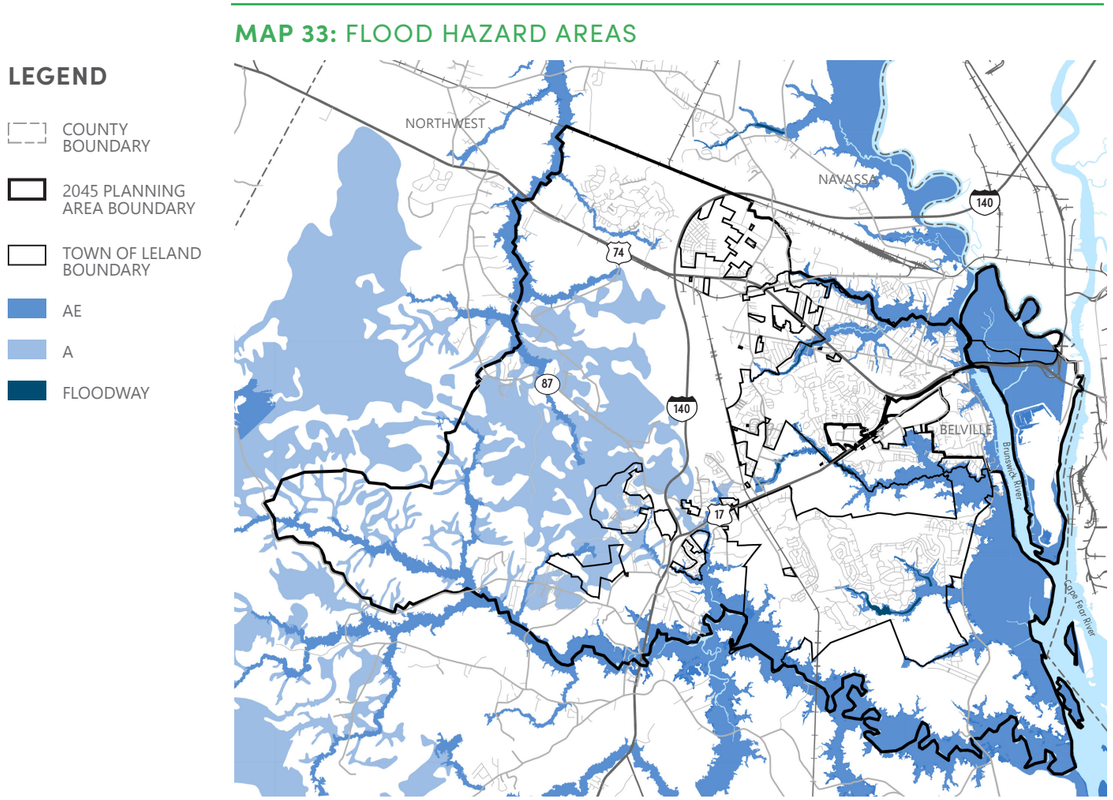
*SOURCE: Design Workshop, NCDEQ, DWR, ESRI*

# 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

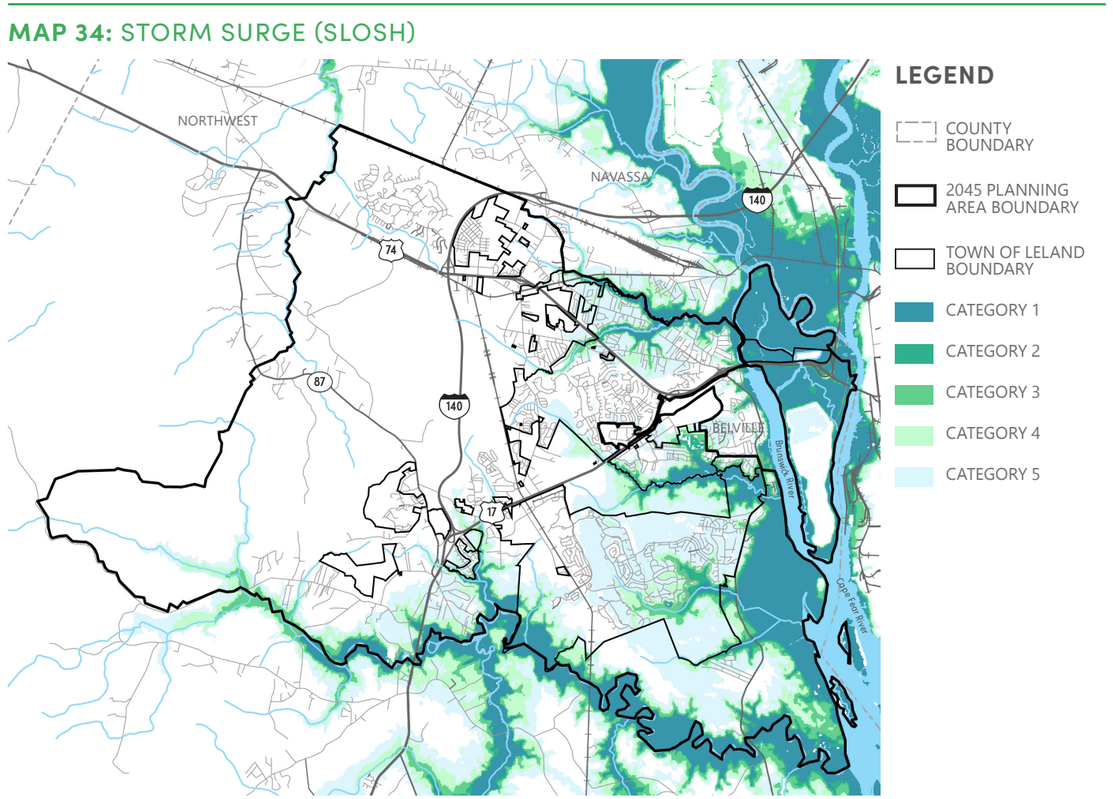



*SOURCE: Design Workshop, FEMA*

## 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

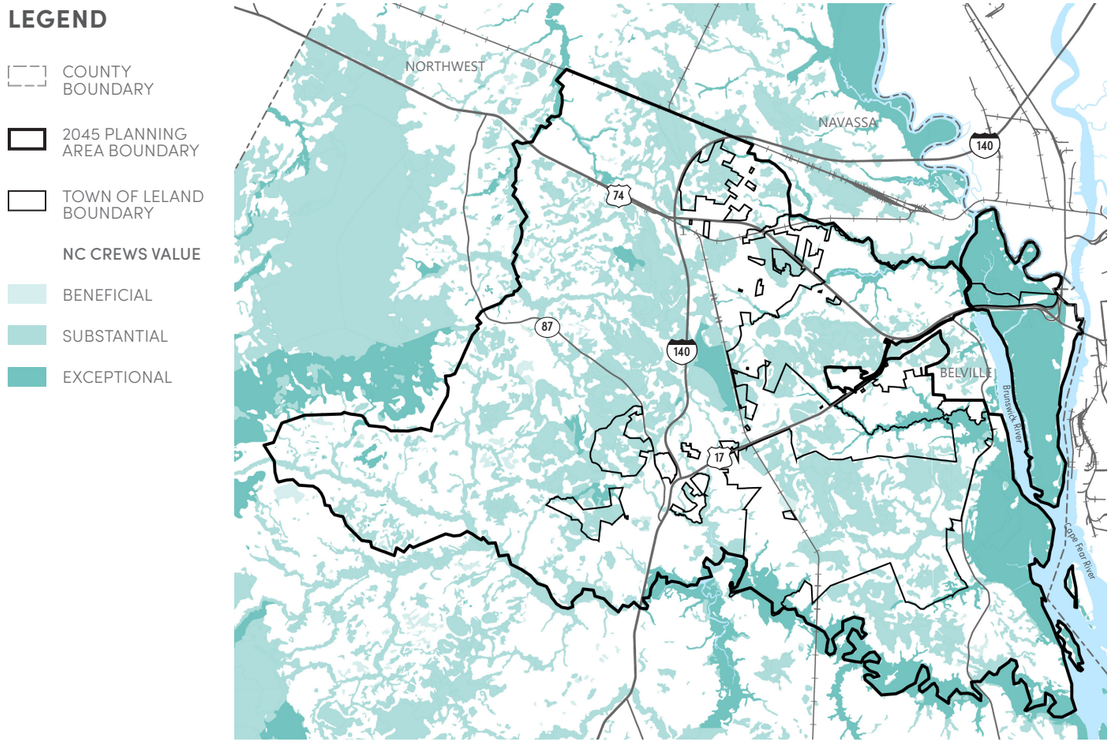
## NC-CREWS

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

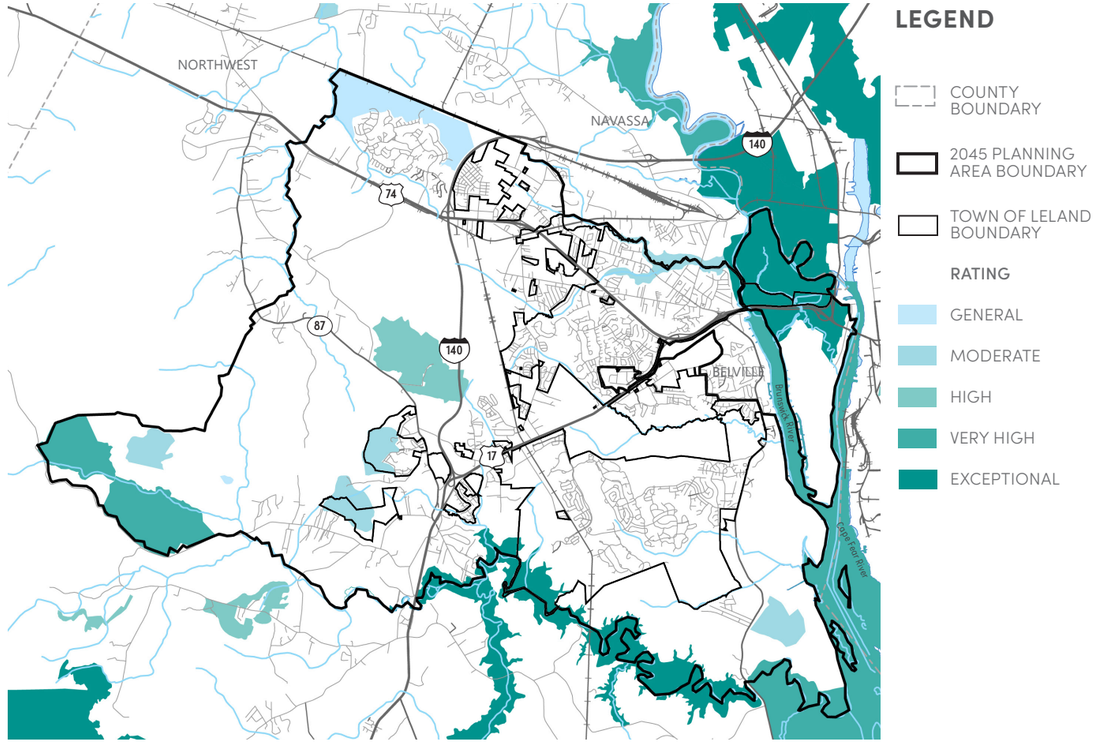
## NATURAL HERITAGE PROGRAM

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)

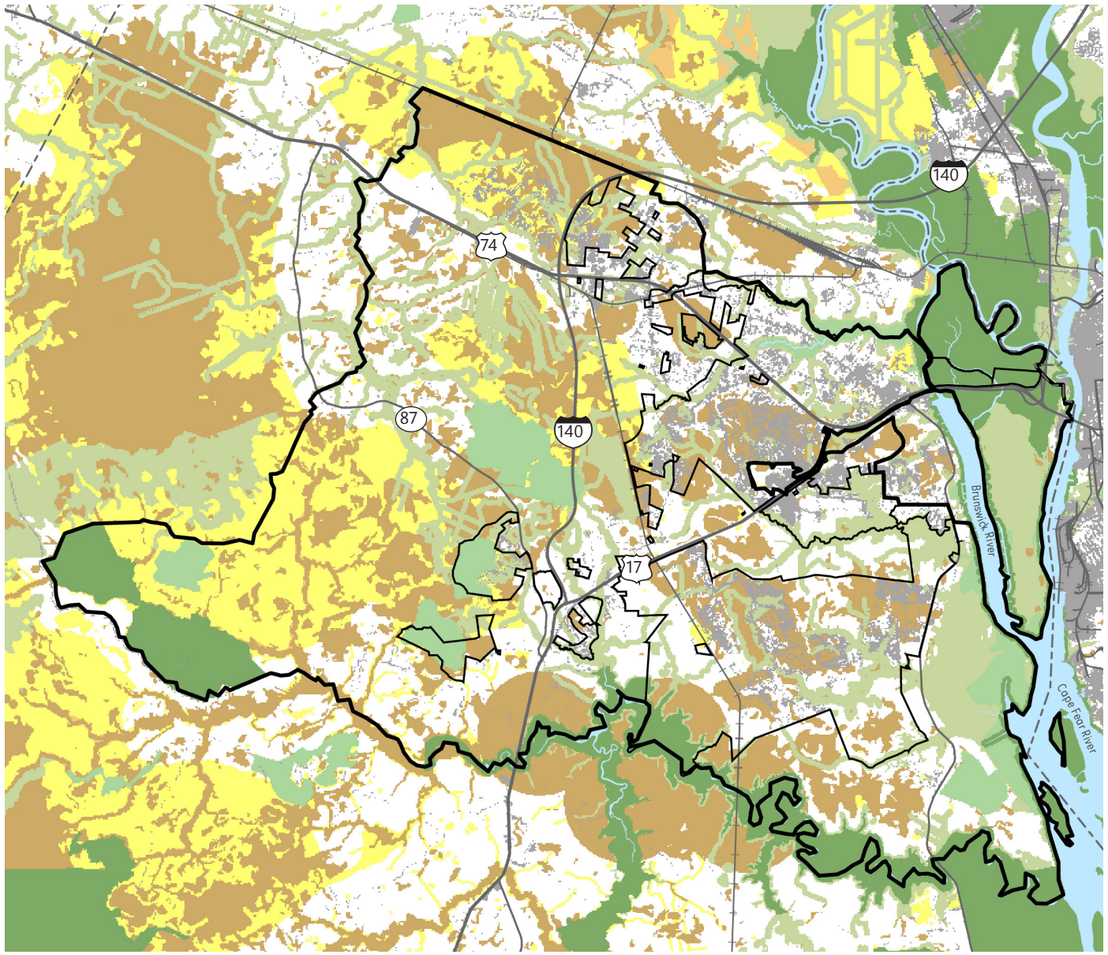
The Biodiversity and Wildlife Habitat Assessment is a map that represents the highest-priority areas for conservation of wildlife habitat and biodiversity in North Carolina.

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.

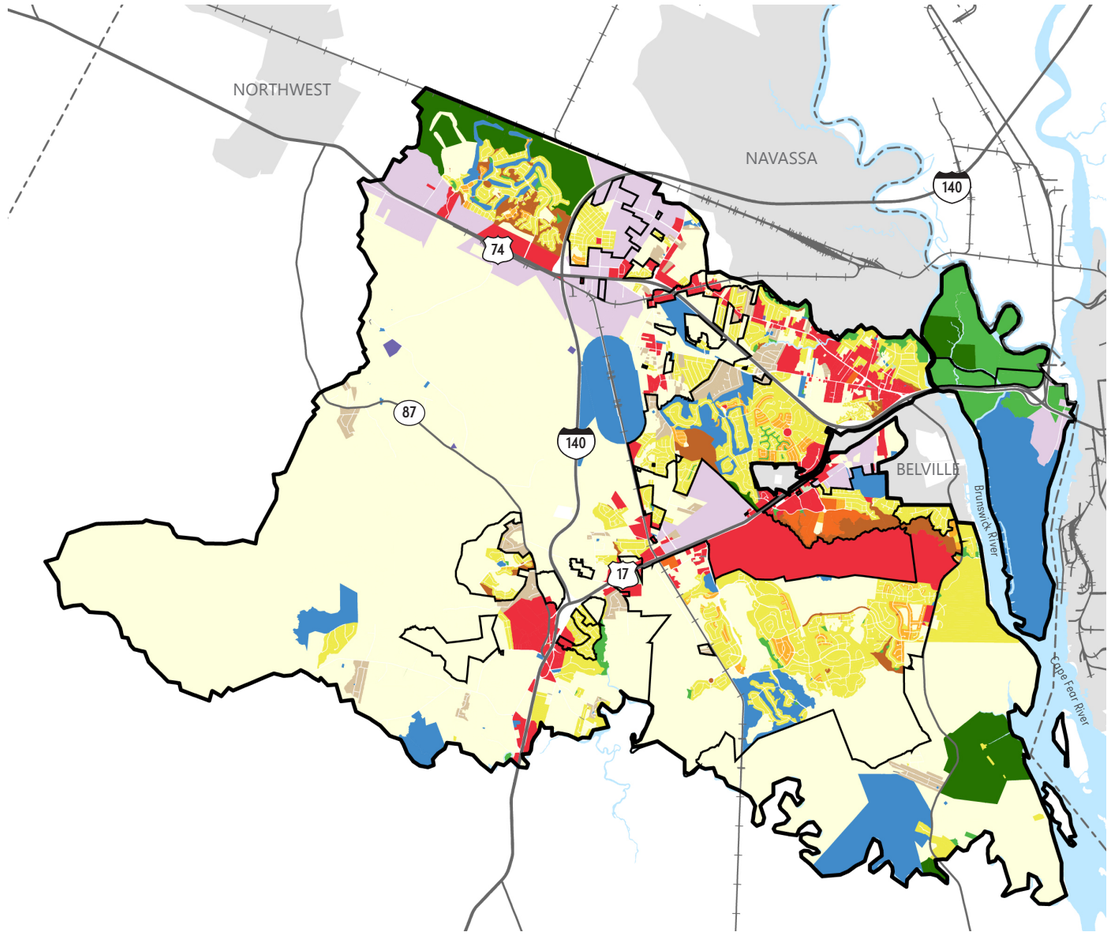
Trends that will continue to influence the land use include:

- 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




LEGEND

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

LAND USE CODE

- COMMERCIAL
- LIGHT INDUSTRIAL
- COMMUNITY/CIVIC
- OFFICE
- MULTIFAMILY
- SINGLE FAMILY (MID DENSITY)
- SINGLE FAMILY (LOW DENSITY)
- RURAL RESIDENTIAL
- MOBILE HOME
- NATURAL OPEN SPACE
- CONSERVATION
- BROWNFIELD
- UTILITY
- RIGHT OF WAY
- VACANT

*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

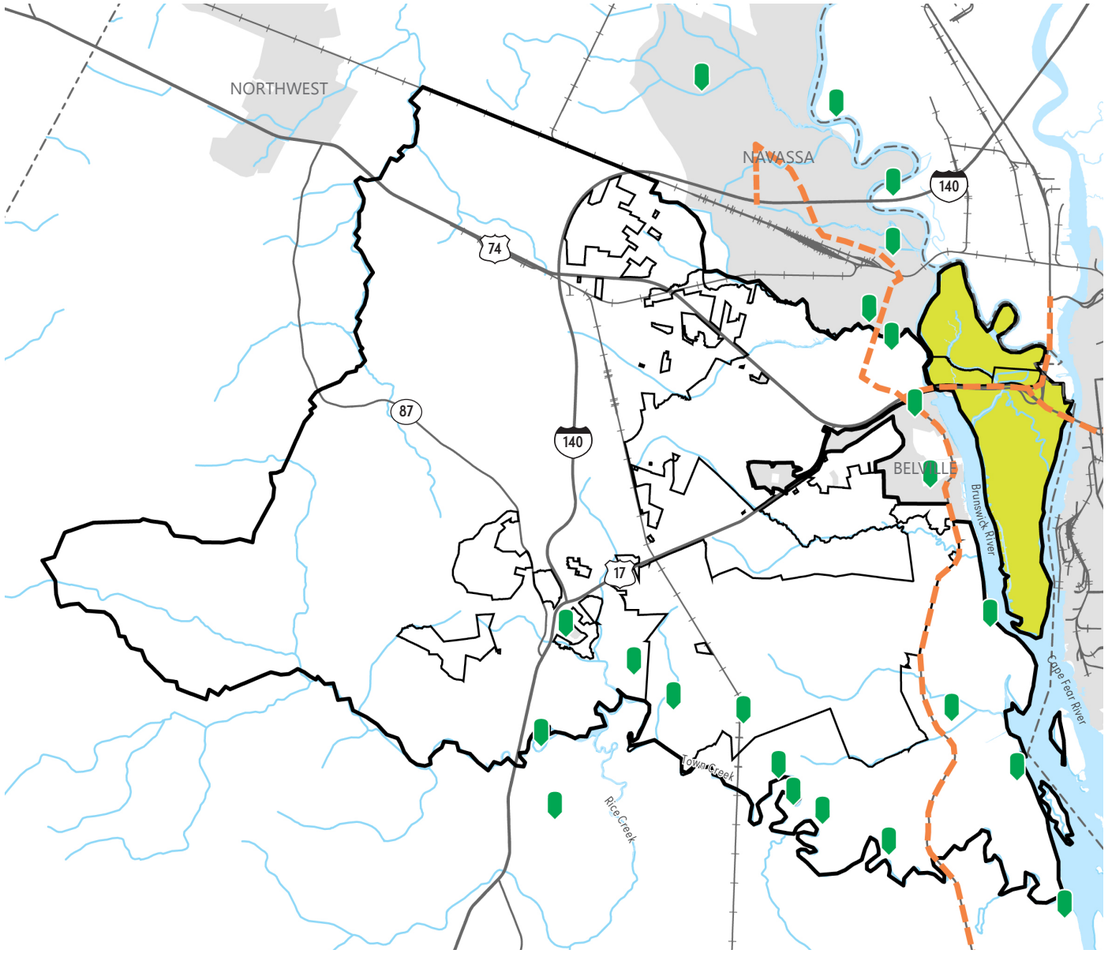
The Gullah Geechee Cultural Heritage Corridor is a National Heritage area established by the U.S. Congress in 2006 to recognize the unique culture of the Gullah Geechee people, who traditionally have lived in the coastal areas of North Carolina, South Carolina, Georgia and Florida. (Gullahgeecheecorridor.org).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

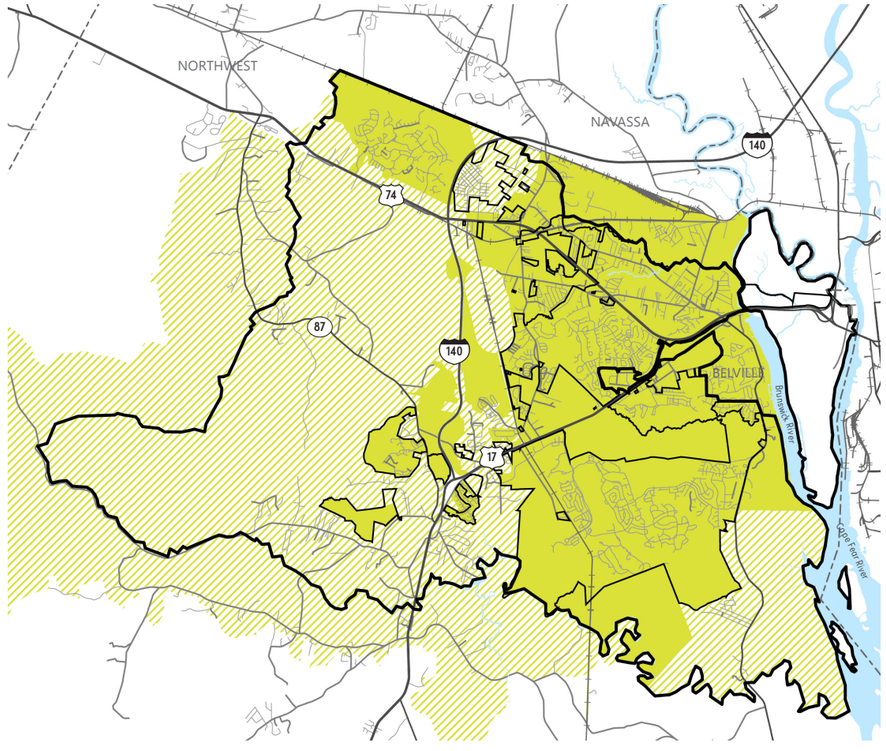
There are no current plans to build or expand wastewater treatment facilities in the next 10 years.

**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.

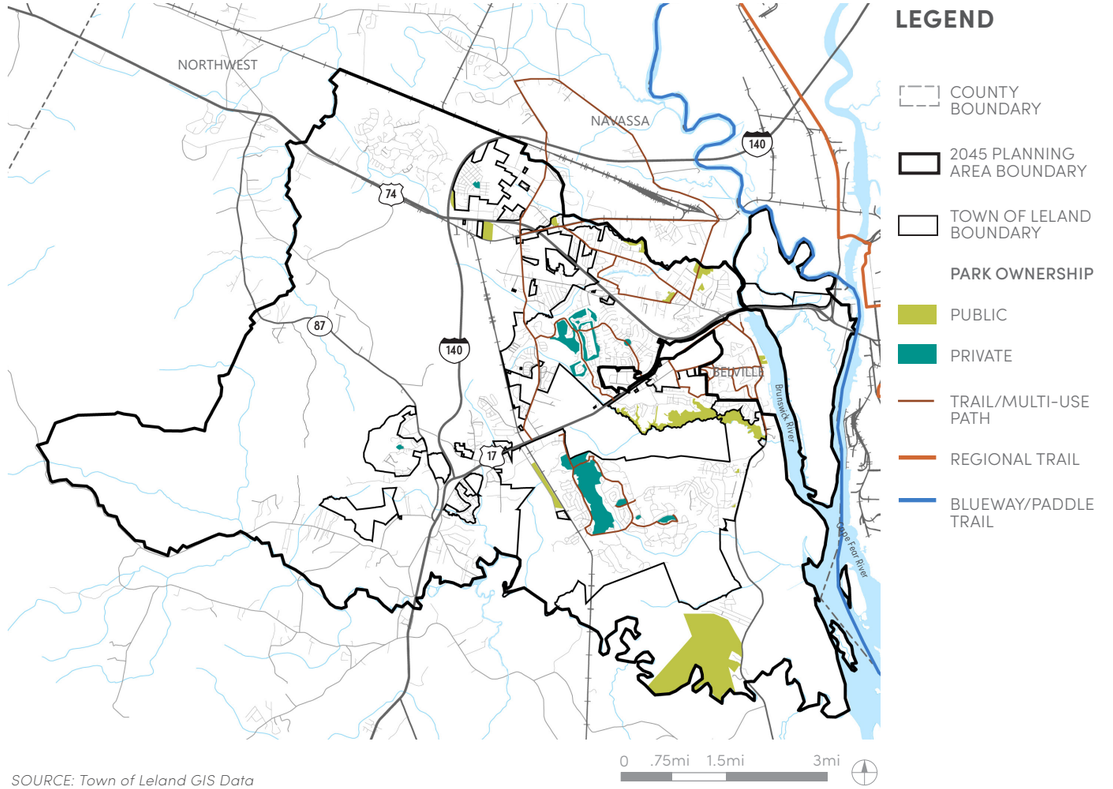
Parks provided by the Town are primarily passive with most active recreation and neighborhood-based services supplied by other service providers and private services within in planned communities.

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*

# APPENDIX

Photo Credit: Design Workshop

# GLOSSARY OF TERMS

**Accessibility/accessible:** Capable of being used or accessed by people of different abilities and backgrounds. Accessibility is often used within the context and definitions determined by the Americans with Disabilities Act (ADA) requirements. Accessible is not the same as inclusive, however, accessibility of public spaces is an important first step and is often followed by looking at how to make those spaces more equitable and inclusive.

**Blueway:** A designated water trail designed with launch points – and occasionally camp sites and other points of interest along the route – for recreational use with canoes, kayaks and paddle boards.

**Community Engagement:** The process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people. It is a powerful vehicle for bringing about environmental and behavioral changes that will improve the health of the community and its members. It often involves partnerships and coalitions that help mobilize resources and influence systems, change relationships among partners, and serve as catalysts for changing policies, programs, and practices. (The Centers for Disease Control and Prevention [CDC], NRPA)

**Connectivity:** The state of being connected or interconnected, and enables movement among otherwise disparate elements. Connectivity, in the context of this comprehensive plan, relates to transportation, ecology, culture, and community. From an ecological standpoint, connected landscapes are better able to protect biodiversity and accommodate species and ecosystem adaptation to threats. From a transportation and community standpoint, connectivity refers to how easily people can travel by way of a system of greenways, blueways, sidewalks, and roads. Generally speaking, the better connected the built and natural landscape, the more responsive it is to human and ecological needs and functions.

**Conservation Development:** Communities or subdivisions designed and managed to preserve landscapes with some combination of environmental, cultural, agricultural, historical or aesthetic values. Conservation development begins with the delineation of conservation land – ideally 30 to 70 percent of a site's buildable area – that is set aside for permanent protection under a conservation easement. This open space should be connected and typically occurs along drainage ways. In the land area beyond the conservation areas, new development is often tightly clustered, resulting in a development that accommodates growth while strategically preserving open space.

**Conservation Easement:** A restrictive easement that is specific to the property and describes how the land must be protected and managed over time. Private landowners can donate conservation easements to a land trust or similar organization, guaranteeing specific land protections in return for individual tax benefits. The land continues to be owned and managed by the private landowners, and the land is permanently protected. Easements can allow for public access and for limited development – for example, so that future generations can continue to live on the property.

**Cultural Landscape:** Historically and culturally significant places that are the result of human interaction with the physical environment.

**Diversity:** Differences in racial and ethnic, socioeconomic, geographic and academic/professional backgrounds; people with different opinions, backgrounds (degrees and social experience), religious beliefs, political beliefs, sexual orientations, heritage, mental or physical ability, learning style, gender identity and life experience. (NRPA)



**Equity:** The absence of avoidable, unfair or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically, or by other means of stratification. Equity = Fairness and Justice. (The World Health Organization)

**FlexCode:** A form-based code written and adopted to implement the 2009 Master Plan. The Gateway District was rezoned to the FlexCode in 2013 and FlexCode zoning is an option for other areas of Leland at the discretion of the landowner.

**Floodplain:** Any land area susceptible to being inundated by floodwaters.

**Flood Zone:** Special Flood Hazard Areas as defined by the most recently adopted FEMA maps. The 100-year flood zone is defined as an area that has a 1% or greater chance of being inundated in any given year.

**Gateway District:** The area west of the Village Road interchange with US 74/76 that includes much of the historic origins of Leland. This area has been referred to as the gateway to Leland, and was identified as the Gateway District in the 2013 Gateway Infill Plan which is a direct implementation of the 2009 Master Plan. The area forms the nucleus of the community's vision of a town center and a discernible "downtown."

**Green Stormwater Infrastructure:** Measures that use plant or soil systems; landscaping; stormwater harvest and reuse; or permeable surfaces to store, infiltrate or evapotranspirate stormwater and reduce flows to sewer systems and surface waters. Green infrastructure reduces and treats stormwater at its source, reducing the chance of local flooding, while delivering environmental, social and economic benefits.

**Greenway:** Typically a shared-use path set aside for recreational use and environmental protection, often along stream and river corridors.

**Green Network:** A holistic system that connects parks and natural resources with safe, accessible routes for both people and wildlife.

**Habitat:** Land and water that provides food, shelter, nesting grounds and migration corridors for local wildlife.

**Health Equity:** Fair and just opportunities afforded to everyone, so that all people can attain their highest level of health; valuing everyone equally with sustained efforts and resources heavily focused on addressing unjust, unfair and avoidable historical, social and political injustices, and eliminating health disparities. Allocating resources on the basis of need. (The Root Cause Coalition, NRPA)

**Impaired Waters:** An impaired waterbody is one that does not meet water quality uses, such as water supply, fishing or propagation of aquatic life. Results from state water quality monitoring determine whether waterbodies meet standards or are impaired. If impaired, the sections of waterway are placed on a 303(d) list and will have requirements placed on the governing jurisdiction for improving the water quality. (EPA)

**Inclusion:** Authentically bringing traditionally excluded individuals and/or groups into the processes, activities and decisions/policymaking in a way that shares power, recognizes and celebrates differences, ensures people feel welcome, and makes sure everyone has equitable access to opportunities. (Racial Equity Tools)

**Land Trust:** Private non-profit organizations working to conserve land with open space value by securing conservation easements, advocating for strategic land conservation and overseeing or supporting long-term land stewardship.

**Low Impact Development (LID):** Systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat. EPA currently uses the term green infrastructure (GI) to refer to the management of wet weather flows that use these processes, and to refer to the patchwork of natural areas that provide habitat, flood protection, cleaner air and cleaner water. (EPA)

**NPDES (National Pollutant Discharge Elimination System):** The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. Created in 1972 by the Clean Water Act, the NPDES permit program is authorized to state governments by EPA to perform many permitting, administrative, and enforcement aspects of the program. The Clean Water Act prohibits anybody from discharging "pollutants" through a "point source" into a "water of the United States" unless they have an NPDES permit. The permit will contain limits on what you can discharge, monitoring and reporting requirements, and other provisions to ensure that the discharge does not hurt water quality or people's health. In essence, the permit translates general requirements of the Clean Water Act into specific provisions tailored to the operations of each person discharging pollutants. (EPA)

**Open Space:** Undeveloped land that is designated and is suitable for environmental, scenic, recreation, cultural or conservation uses.

**Park Access:** The just and fair quantity, proximity and connections to quality parks and green spaces, recreation facilities, as well as programs that are safe, inclusive, culturally relevant and welcoming to everyone. When people have just and fair access, our health and social well-being improve, and our communities can protect and better recover from environmental, social and economic challenges. (NRPA)

**Passive Recreation:** Recreational programming – such as hiking trails and wildlife overlooks – that is relatively light on the land. This protects the habitat and stormwater functions of open space while allowing for public access and benefit.

**Pedestrian Shed:** An area that defines the limits of a mixed use neighborhood. Its size is related to a five minute walk at a leisurely pace. This is roughly a 1/4 mile radius or 1,320 feet. The walkability of an area including infrastructure such as sidewalks will impact wheather this radius is actually a five minute walk.

**Planning Area:** The area considered within the Future Land Use Map (FLUM). This includes areas outside the Town limits that could be considered for annexation. Providing future policies for these areas may encourage landowners to consider annexation.

**Planning Transect:** An urban-to-rural transect that allows planners to define different development patterns for different parts of the jurisdiction, with the highest development density expected in the urban core, progressively lower densities in suburban and rural areas, and very limited to no development in surrounding natural areas.

**Point Source:** Any discernible, confined and discrete conveyance, such as a pipe, ditch, channel, tunnel, conduit, discrete fissure, or container. It also includes vessels or other floating craft from which pollutants are or may be discharged. By law, the term "point source" also includes concentrated animal feeding operations, which are places where animals are confined and fed. By law, agricultural stormwater discharges and return flows from irrigated agriculture are not "point sources." (EPA)

**Purchase of Development Rights:** The owner of land in a priority conservation area can sell their land's development rights, maintaining ownership while guaranteeing some permanent level of protection for the land.

**Resiliency:** The ability of a landscape to recover, adapt and thrive in the face of extreme weather events, climate change and other disruptions.

**Riparian Buffer:** A protected, vegetated area near a stream that promotes water quality by helping to protect the stream from the impacts of adjacent land uses.



**Transfer of Development Rights:** A market is created whereby the owner of land in a priority conservation area can transfer their land's development rights to someone with land in a non-priority area. Establishing this type of program begins with careful analysis of a development market to define "sending" and "receiving" areas and gauge whether such a program could be supported.

**Watershed:** The total land area that drains to a specific waterbody.

**Zoning:** A planning method whereby governments divide land into areas called zones, each of which has its own set of regulations for new development.

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# Leland 2045

## planning for generations

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