HARNETT COUNTY NORTHWEST AREA PLAN



ACKNOWLEDGMENTS

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ADOPTED BY HARNETT COUNTY BOARD OF COMMISSIONERS APRIL 15, 2019



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PREPARED FOR HARNETT COUNTY BY



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ABOUT THE PLAN

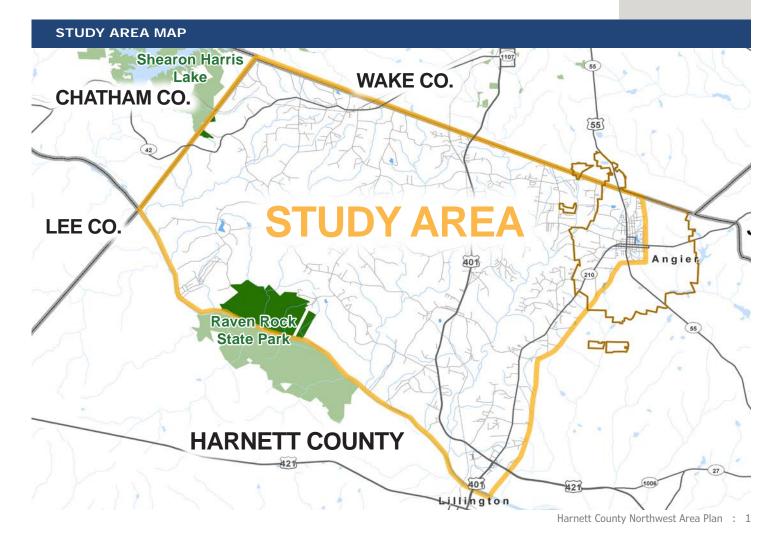
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PLAN PURPOSE

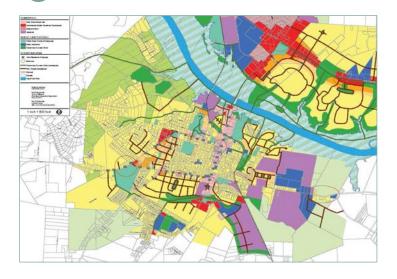
In 2015, Harnett County undertook a Comprehensive Growth Plan that established goals and strategies to improve Harnett County's quality of life and competitive position in the region. The purpose of the Harnett County Northwest Area Plan is to build on the Comprehensive Growth Plan (*Grow Harnett County*) and create a more detailed guide for the northwestern portion of the county, including the northern portion of Lillington and western portion of Angier, even though these areas are incorporated. This plan will serve as a framework for accommodating growth and development while maintaining rural character, environmental quality, and the livability of the area.

The study area is predominantly rural in character, with many working farms and timber lands, historic crossroads communities and small scale residential, industrial, and commercial development. However, this rural character is under pressure from the residential growth emanating from communities to the north, specifically the rapid growth of Wake County and Fuquay-Varina. Northwest Harnett County has experienced unprecedented growth over the past five years and will continue to for the foreseeable future. The Northwest Area Plan provides a roadmap for how to manage that growth so that the community benefits from change while also protecting the characteristics and qualities that the community values.

Northwest Harnett County has grown by 50% since 2000

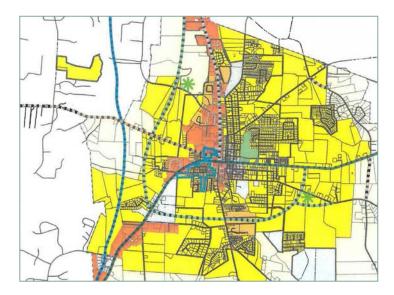


RELEVANT PLANS



TOWN OF LILLINGTON

The northern part of the Town of Lillington is in the study area boundaries. Lillington's Comprehensive Plan anticipates commercial and institutional growth north of the Cape Fear River centered on the intersection of NC 210 and US 401 and Brightwater a mixed-use business center that currently houses Central Harnett Hospital. In addition, the plan shows planned green spaces located on both sides of the Cape Fear River and potential residential development north and south of US 401 east of NC 210.



TOWN OF ANGIER

The western portion of the Town of Angier is located within the study area boundaries. Angier's Comprehensive Plan includes the following future land uses that could impact the study area:

- Medium density residential growth (R-10 zoning (10,000 square foot lots) with water + sewer)
- Commercial corridor along NC 55
- High density residential (R-6 zoning (6,000 square foot lots) with water + sewer)
- Planned new connector road on west side of town

TOWN OF FUQUAY-VARINA

Fuquay-Varina's Comprehensive Plan projects that the Town's population will **triple** if current growth trends continue. In anticipation of this growth, the Town is expanding its Extra Territorial Jurisdiction south to the Wake-Harnett County line, directly adjacent to the study area. Planned land uses impacting the study area include:

- Large Lot: 2 dwelling units per acre
- Small Lot: 2-6 dwelling units per acre
- Mixed-Density: 4-8 dwelling units per acre

RELEVANT PLANS

COMPREHENSIVE GROWTH PLAN

Harnett County's Comprehensive Growth Plan, adopted in 2015, established a vision and goals for County-wide issues. The plan focuses on five themes: Land Use, Economic Development, Utilities, Natural Resources, and Transportation. The Northwest Area Plan builds on and refines the county-wide goals as it relates to this portion of the County. The Future Land Use Map that is included in this plan is meant to clarify and refine some of the recommendations in the Comprehensive Growth Plan based on further study and public input in the Northwest Area.

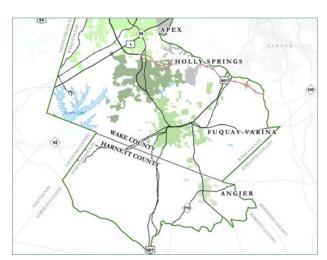


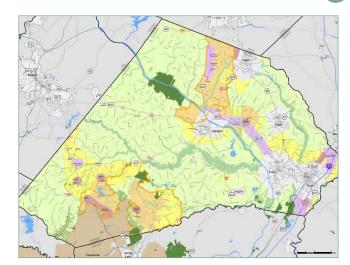
ORDINANCE

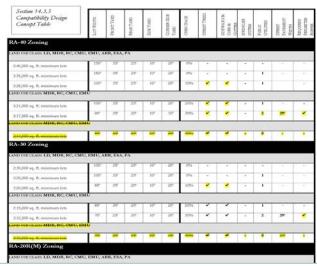
Harnett County's Unified Development Ordinance (UDO) sets the regulations for development in the county. Recently, the County has updated their standards for certain types of residential development to require curb and gutter, sidewalks, and street trees in more situations. These changes are intended to promote high quality development and ensure future pedestrian connections.



Harnett County is one of multiple counties and municipalities included in the Capital Area Metropolitan Planning Organization's (CAMPO) study of regional growth and transportation networks. As part of this ongoing study, CAMPO will project future growth and put forth recommendations of how the transportation system can accommodate this growth. This regional look will be critical to understanding the cross-county travel patterns and transportation needs of study area residents.







PROJECT PHASES

The planning process that led to the development of the Harnett County Northwest Area Plan was divided into four phases. The first phase began in May of 2018 and focused on project initiation including data collection, review of existing plans for both the County and neighboring municipalities, a kick-off meeting with County staff, and interviews with key stakeholders. The second phase included steering committee meetings, a tour of the study area, analysis of constraints, economic opportunities and infrastructure needs, as well a public meeting and online survey. During the third phase a draft future land use map was created along with concepts for small areas and draft strategies, which were reviewed and adjusted through two steering committee meetings. All information was stored and shared on the Development Services's website to encourage participation and understanding. The adoption phase of the process occurred during the Spring of 2019 and included developing implementation steps and review and adoption of the plan by the Planning Board and County Commission.



SCHEDULE

PLANNING PROCESS





Sept. - Jan. 2018

eb. - April 2019-



FRAMING THE PLAN



Over the past year there has been an increase in new residential development in the study area.

The Northwest Area Plan is informed by both quantitative analysis and qualitative input from the community. There is a common theme in all of the information collected during this planning process: change. Northwest Harnett County has experienced tremendous growth over the past decade, and will continue to change in the future. This chapter includes information on changes to the area's population and demographics, economic and land use trends, and infrastructure and natural resources. It includes community input gathered throughout the plan development process. It outlines recent accomplishments and identifies key issues that need to be addressed through county-led initiatives and through cooperation with municipalities and private entities.

POPULATION AND DEMOGRAPHICS

2,000 1,000 0

2000

Households in the study area are mostly composed of families and older people living in a mix of highervalue and affordable homes

DEMOGRAPHICS

Proximity to Raleigh, the Research Triangle Park via US 401, and the new Triangle Expressway are driving a rapid expansion of residential demand in Northwest Harnett County, bringing with it both opportunities and challenges.

The population of the study area has grown by 50% between 2000 and 2017. This is a net increase of 743 homes and 1,775 people. The area's current population is 16,252 (Source: Esri) and is projected to grow by over 18,000 people by 2038 according to population projections produced by the Triangle J Council of Governments.

The population of the study area is older than Harnett County on average, but in line with North Carolina and US median age, and has roughly half the poverty rate of the county as a whole (9.9% v 18.3%). The study area is attractive to families looking for a semi-rural setting close to the job centers in Wake County and RTP. It is also home to older people living in a mix of higher-value and affordable homes.

2010

2017

Source: Esri



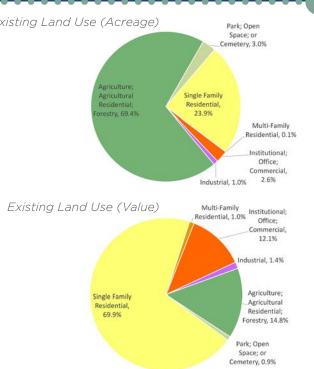
LAND USE AND ECONOMIC TRENDS

Existing Land Use (Acreage)

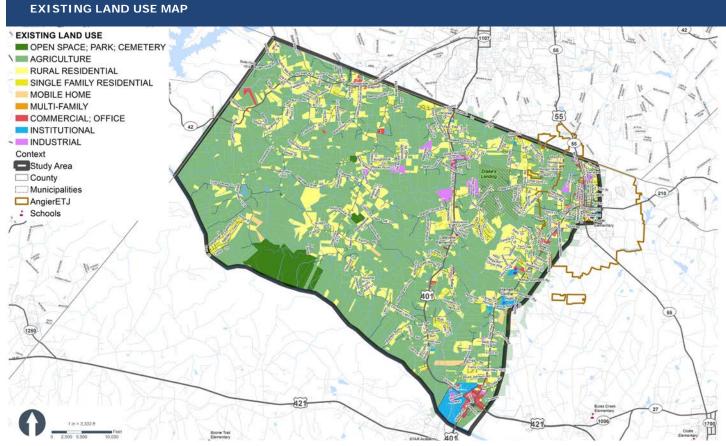
LAND USE

The majority of land in Northwest Harnett County is used for agriculture or silviculture, and lends the area a rural character that is valued by the community. However, a substantial majority of land value is derived from single family residential land uses. Balancing these two uses - agriculture and residential - is one of the defining challenges of future growth in the area.

Commercial and industrial land uses make up only 2.2% of the land area in Northwest Harnett County, yet they make up over 10% of the property value. In addition, a 2011 Cost of Land Use Fiscal Analysis conducted for the Fort Bragg Regional Alliance showed that retail, office and industrial land uses result in more net fiscal benefits than average or low value residential land uses.



Source: Harnett County Tax Parcel Records



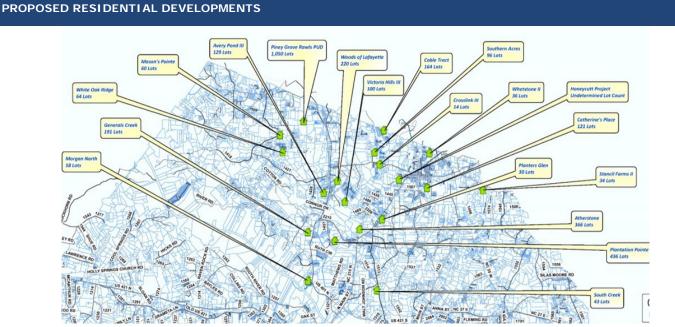
LAND USE AND ECONOMIC TRENDS

Countv Development for over 00 lots

HOUSING AND RETAIL MARKET

Residential closings in Northwest Harnett County have increased steadily over the last three years. In 2015 there were 290 residential closings. In 2017 there were 419. And 2018 closings are on pace to met or exceed the 2017 figure. The scale of residential developments is also increasing. Smaller subdivisions were common in the past, but more recently the developments being proposed include larger tracts of land and hundreds of homes. Median sales price of homes in the study area has increased to nearly \$240,000 in the first half of 2018. The median sales price in the study area has increased more rapidly than in the county as a whole. The types of housing in demand is also changing. Since 2015 homes sold in the study area have been overwhelmingly single family detached homes, although many recent proposals include smaller lots that are meant to meet market demand and capitalize on available sewer in the Neills Creek basin. There is an emerging demand for rental options, especially from Campbell University which has over 2,000 graduate students. Many of these students currently live in Fuguay-Varina due to apartment availability.

Even with more people living in Northwest Harnett County retail and restaurant options are limited. There is substantial retail leakage especially in General Merchandise Stores, Gas Stations, and Restaurants & Bars. Many residents travel north into Wake County to access shopping and dining options. The thoughtful development of commercial centers close to clusters of current and future residential development could provide amenities to Harnett County residents, shorten trips, and strengthen the tax base.

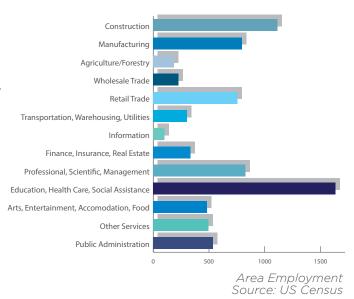


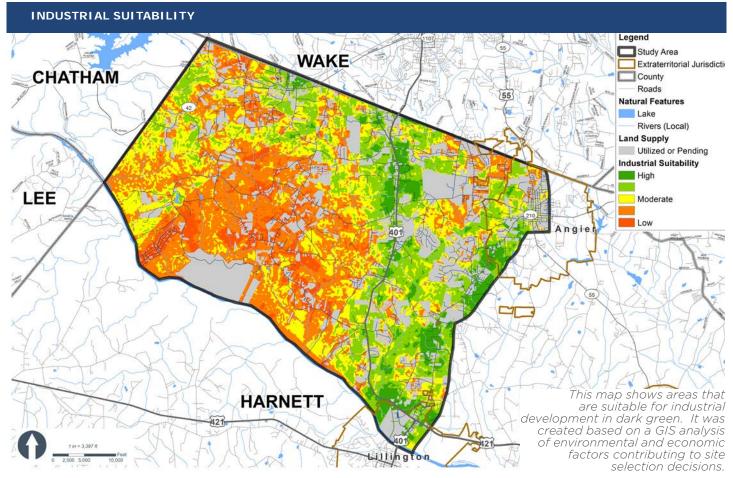
Planned Subdivisions as of summer 2018 Source: Harnett Co Development Services

LAND USE AND ECONOMIC TRENDS

EMPLOYMENT

There are over 2,600 jobs within the Northwest Harnett County study area, with Healthcare/Educational Services, Construction, Manufacturing, and Professional/ Management sectors being the largest employers (Source: Census on the Map, 2015). Campbell University is just to the east of the study area and has 850 full time faculty and staff. Smart investments in transportation and utility services could encourage new industrial uses and a more diverse spectrum of commercial uses and bolster the employment base in the community. Sections of the study area, particularly along the US 401 corridor, are suitable for industrial development as shown on the Industrial Suitability map below. Access to US 401, a railroad, the Triangle Expressway, Research Triangle Park, RDU Airport, Raleigh, Durham, and Chatham County's Moncure Megasite are factors that could lead to more businesses in the area.





INFRASTRUCTURE



Planned alignment of Angier Shallow Bypass

TRANSPORTATION

The study area is served by a sparse network of rural roads and a few state highways. Primary routes are US 401 and NC 210; both running roughly northsouth into Wake County. NC 55 passes through the Town of Angier on the east side of the study area and NC 42 travels through the Duncan community in the northwest. These larger roads are supplemented by smaller local eastwest routes (Rawls Church Road, Chalybeate Springs Road, Harnett Central Road and others), and a series of "farm to market" roads built on ridge-lines that form large areas without road connections. Many of these "country blocks" have road connections 1 or 2 miles apart. As the population of the study area increases and more people use existing roads for commuting and fulfilling everyday needs road connections and enhancements will be needed to maintain mobility and emergency access. Creation of a secondary network of local, interconnected streets through cooperation with the private development community and pursuance of improvements on state maintained roads will be necessary to help ameliorate congestion and improve access to services.

Several transportation studies and planned investments will impact the study area:

Angier Shallow Bypass- this at-grade limited access road is planned on the western edge of Angier as a funded State Transportation Improvement Project and will provide additional north-south capacity in the vicinity of Angier.

Southwest Area Study- The Capital Area Metropolitan Planning Organization (CAMPO) is studying southern Wake County and northern Harnett County to anticipate future transportation improvements needed in this rapidly growing area.

Sandhills Regional Bike Plan- The Fayetteville Area Metropolitan Planning Organization (FAMPO) in coordination with NCDOT and local governments is studying ways to enhance bicycling options in a five-county region, including Harnett County.



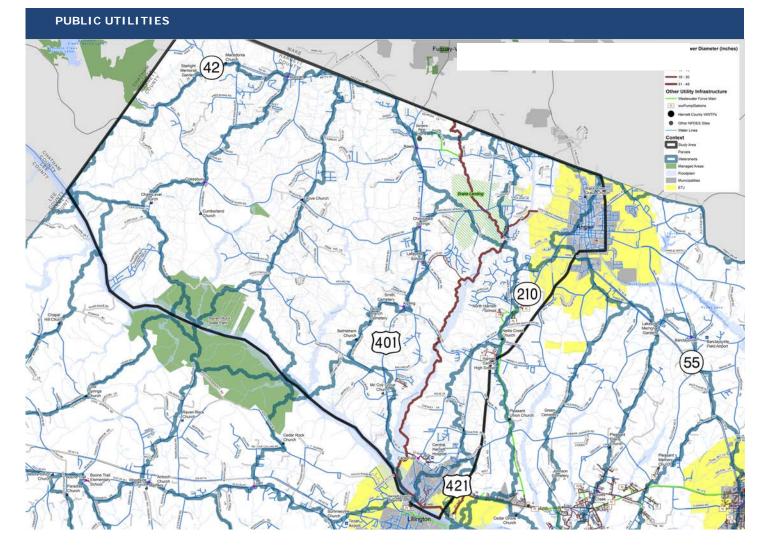
Nearly **94%** of residents that live inside the NW Harnett County Area work outside of the area.

INFRASTRUCTURE

PUBLIC UTILITIES

Harnett County operates as the primary water and sewer provider in the study area. The Town of Angier and the Town of Lillington also provide water and sewer to customers within their respective city limits. County water service is widespread with significant capacity along US 401 and NC 210. Many of the more rural areas of the county have water service, but limited capacity in lines.

County owned gravity-fed sewer service extends up the Neills Creek basin, and capacity exists to serve areas anticipated for development along US 401 and east to NC 210. Care must be taken to ensure that the development requirements in the portion of Harnett County served by utilities anticipate smaller lots from larger area subdivisions. Cooperation is needed on the border with Angier to support a growth pattern via utility policies that is mutually beneficial to the county and the town. The extension of utilities can also be viewed as an economic development tool, and serve industrial and commercial development. There are industrial opportunities along US 401 and historic railroad stops, such as Chalybeate Springs, where the extension of utilities can support job creation as well as more compact development in a tight node.

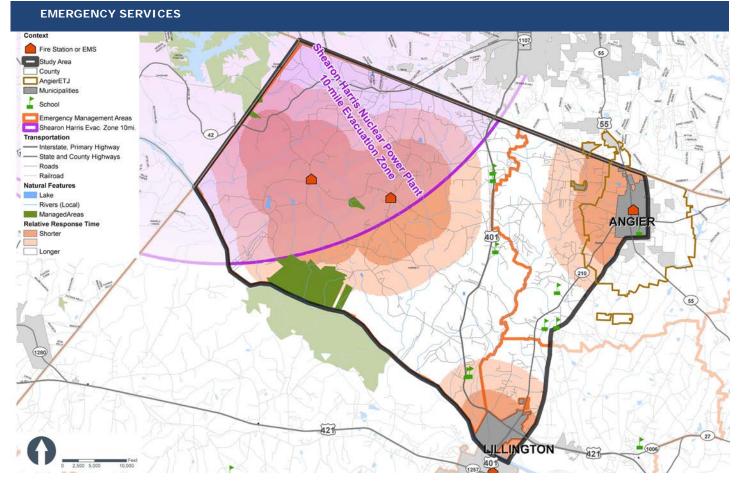


PUBLIC SERVICES

SCHOOLS AND EMERGENCY SERVICES

There are 5 public schools in the study area. Lafayette Elementary has exceeded the capacity of the main buildings and is relying on mobile classrooms (based on 2016 data). Harnett Central High and Middle are over capacity as well. New housing and increasing population will lead to more demand for schools. For every 1,000 new households that move to Harnett County, roughly 470 new students may need to be accommodated in the school system (based on a student generation rate of 0.47 students per household). School capacities in the study area vary but understanding implications of residential growth and reserving land for schools in advance will be a need in the near- to mid-term in the study area.

The study area is covered by fire and EMS stations near the crossroads of Christian Light Road and Revels Road, Angier and Lillington. Response times and corresponding insurance rates are lower along US 401 and west of NC 210. Call volume has been increasing and there will likely be a need for additional fire-fighting capacity as the area along US 401 increases in population. The railroad and sparse road network is a barrier to improved response times. An additional fire station in the vicinity of Chalybeate Springs at some point in the future would improve coverage, especially on the west side of Neills Creek. Maintaining roadway capacity on US 401 will also be important as it is an evacuation route for the Shearon Harris Nuclear Power Plant 10-mile Evacuation Zone.





PARKS AND OPEN SPACE

There are three existing parks in the study area. Jack Marley Park, owned by the Town of Angier is a 33acre park with a pond, walking trail, two playgrounds, basketball court, tennis court, and three sports fields. Neills Creek Park is owned and maintained by Harnett County and occupies 25 acres adjacent to Harnett Central High School. The park includes six tennis courts, two softball fields, a concession building with a storage room and restrooms, and an open/activity field. The northern portion of Raven Rock State Park is also located in the study area which includes 1,426 acres, a parking area, and hiking and equestrian trails.

The Harnett County Parks Master Plan identified the need for land acquisition for additional parks in underserved areas. The plan called for the creation of two district parks in the northwest Harnett County study area. Government Complex Park is a proposed Harnett County park that is to be built within the Town limits of Lillington near the Cape Fear River on the northwest side of US 401 / NC 210. Phase One of the master plan includes a parking area, paved walking trail, fishing pier, soccer field, multi-purpose fields, boardwalk, and wildlife observation deck. The County has also acquired land near the intersection of Revels Road and Oakridge River Road that could be used for a park and/or a convenience/recycling center. The Parks Master Plan also recommends the construction of 36 miles of greenway trails by 2030 and five blueway access points on the Cape Fear River.

The recently completed Harnett County Parks Master Plan has six overarching goals: 1. Develop the Cape Fear River as a blueway / river walk to stimulate economic vitality. 2. Connect communities, parks, attractions, destinations, and civil facilities through a greenway trail system. 3. Enhance recreation opportunities in under-served areas of Harnett County. 4. Accommodate a balance of passive and active recreational opportunities that enhance quality of place and target users of all ages and ability levels. 5. Grow the types and frequency of recreational programs offered to Harnett County citizens. 6. Manage existing facilities efficiently and propose new facilities with few barriers to entry (financial, environmental, social).

NATURAL RESOURCES

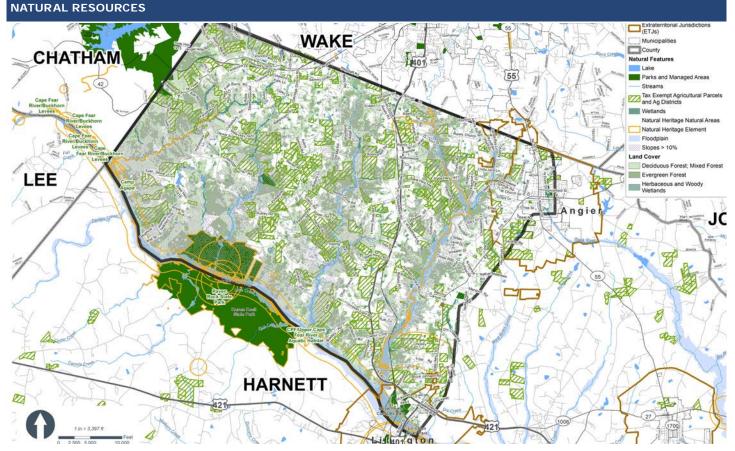


River view from the cliffs at Raven Rock State Park

NATURAL RESOURCES

Northwestern Harnett County features rolling hills covered in forests and fields. It marks the transition between the piedmont region and the sandhills, and features the topography of the former and the sandy soils of the latter. Traditionally the area has had a small, dispersed population. The flatter uplands have been utilized for agriculture and the more steeply sloped hillsides that lead to streams have been utilized for forestry. Streams flow from north to south, flowing into the Cape Fear River, a drinking water source for the region and a planned blueway. Many of the streams in the study area are designated as High Quality Waters. These waterways are designated in order to protect rare examples of excellent macro-invertebrate and fish communities. The High Quality Waters designation by the State of North Carolina adds restrictions to development in an effort to protect water quality. These restrictions include limiting density and requiring additional stormwater control measures.

There are many designated Natural Heritage Natural Areas and documented Natural Heritage Element Occurrences in the study area. Many are located along the Cape Fear River. Large, forested floodplains extend like green fingers northward, help protect water quality, and could be part of a network of green space and trails if preserved in tandem with development.

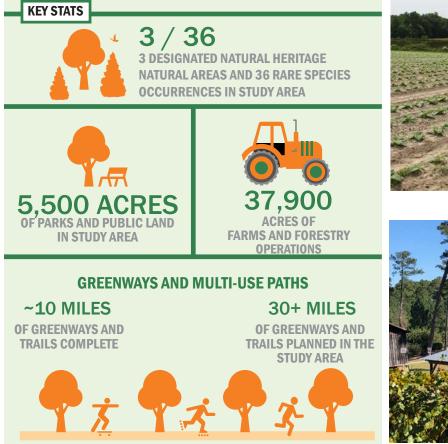


NATURAL RESOURCES

AGRICULTURE

During the course of the planning effort, preservation of farmland, open spaces and heritage lands was one of the most frequently stated desires of the study area community. Open fields on rolling terrain are signature features of the landscape of the northwest part of Harnett County, which is described by some as the "Hills of Harnett".

In addition to being a community value, agricultural and forestry production is a substantial asset to the Harnett County economy. Harnett County ranks 14th in the state in cash receipts. Cash receipts for agricultural products totaled over \$201M in 2015 (Source: USDA). Major crops include chickens, cotton, hay, and tobacco. There are 30,000 acres of forest in the study area (59% of land area) and timber harvested from Harnett County resulted over \$5,000,000 in revenue to landowners in Harnett County in 2016 (Source: NCSU College of Natural Resources). Maintaining agricultural lands, timber operations, and other elements that contribute to the rural character that draws people to the county will be a challenge in the coming years given the development pressure extending southward from the Triangle region. Agriculture and Forestry are major contributors to both the Harnett economy and the rural heritage that residents value.



Key natural resources, agricultural and recreation/open space statistics for the study area

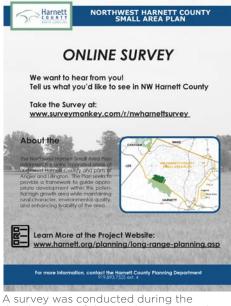


Planted fields are a common sight in the western part of the study area



Drakes Landing is an important agri-tourism destination within the study area

COMMUNITY INPUT



A survey was conducted during the development of the Northwest Area Plan. Over 330 responses were received.

WHAT WE HEARD

The Small Area Plan was developed through a process that included significant community input and regular communication with staff and steering committee members. Through stakeholder meetings, a public workshop, steering committee meetings, online and paper surveys, and discussion with staff, this plan was guided by the Northwest Harnett community and reflects their goals and priorities.

Although the Plan will be adopted by the County, the input received during the process was representative of the issues and needs of the whole study area, which includes portions of the Town of Angier and the Town of Lillington. As such, Harnett County and partner municipalities will benefit from ongoing collaboration in the study area.

Common themes of feedback from the steering committee and public participants include:

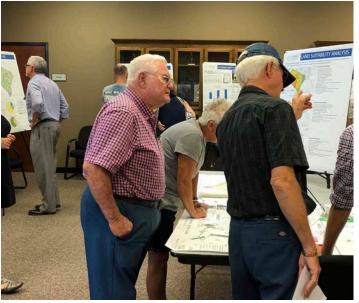
- Preservation of farmland, open spaces and heritage lands
- Concern about the negative impacts of growth (school crowding, traffic, demand for services, etc.)
- Support for small-scale commercial growth (esp. along US 401)
- Support for job growth on 401 corridor and the Brightwater Science and Technology Campus area, as long as traffic is managed
- Preference for rural, larger-lot development or conservation design in new subdivisions
- An overwhelming majority of respondents (72%) wanted more undisturbed natural areas in new developments
- Farms, working agricultural lands, areas important for water quality, and mature forests were identified as areas that should be preserved

VISUAL PREFERENCE RESULTS: COMMERCIAL AREAS



Responses to the survey indicated that residents preferred high-quality commercial areas with relatively small footprint, architectural details, and amenities. Many mentioned that they would like a grocery store and gas station.

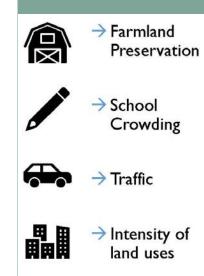
COMMUNITY INPUT



Above : Residents of the study area attended an open house in August at the Northwest Harnett County Fire Department.

Top Right: Farmland Preservation, School Crowding, Traffic and Intensity of Land Uses were ranked high as concerns by responses to the study area.

Right: When asked about what they value survey respondents mentioned the country setting, rural community, farms and the quiet nature of the northwest part of the county. COMMON CONCERNS



67% of survey respondents are concerned or very concerned about growth in the area.



PREFERRED RESIDENTIAL DEVELOPMENT STYLES



Attendees at the public meeting and survey responses indicated a strong preference for very low density development (such as the rural subdivision on the left above) and neighborhood designs that incorporate meaningful green spaces in the form of common areas, yards, or agriculture preservation. Many participants noted a strong dislike for images of conventional subdivisions with limited greenspace.

STRENGTHS | WEAKNESSES | OPPORTUNITIES | THREATS

The steering committee identified community assets and challenges through a SWOT assessment exercise.

STRENGTHS

- Proximity to Research Triangle Park and Wake Co. amenities
- Access to future Chatham County's Moncure Megasite
- Available utilities and opportunities
 - Sewer towns and 401
 - Water on all major corridors
- Lower cost of living (relative to Wake Co.)
- Tightly knit, involved community
- Capable workforce
- Rural character, natural resources
- Cape Fear River
- Raven Rock State Park
- Quality of life "Harnett Hills"
- Good access US 401, NC 210, NC 55
- Rail lines access for industrial uses
- Good government leadership
- Proactive growth management
- Lafayette Elem. School (ranked highest in Harnett County)

WEAKNESSES

- Retail leakage to Fuguay-Varina
- Lack of non-agricultural industrial/commercial uses
- Traffic congestion
- Lack of high speed internet/broadband access
- No natural gas (except Angier)
- Environmental constraints
- Watershed Protection Overlay, High Quality Waters
- Increasing demand on EMS
- Pace of growth, and impacts on taxes + infrastructure
 - Growth straining schools, roads, emergency services
- Perceived lack of quality schooling
- Balancing capacity
- Need for legislation and a partner (the state) to provide last mile internet connection
- Limited connections to the south across the river

The Steering Committee participated in a SWOT analysis to help guide the plan.

SWOT ANALYSIS

OPPORTUNITIES

- Transportation- two bridges + highways
- Raise development standards + amenities
- Get high quality growth
- Health industry cluster
- Eco-tourism / agro-tourism Ravens Rock State Park, Drake's Landing, and future parks
- Use the residential demand to ask for better development
- Mix of residential types
- Supply chain 2nd tier industries/growth
- Proximity to megasites
- EMS volunteer recruitment
- County partnering with towns
- Infrastructure, amenities.
- Voluntary agriculture districts and programs
- Targeted, localized infrastructure investment to grow jobs
- High speed internet extension to spur economic growth
- Medical corridor

THREATS

- School capacity
- Pace of residential growth
- Loss of farmland and rural character
- Lower quality residential development is being relegated to Harnett Co.
- Generational succession land sales and farm fragmentation
- EMS/Fire/Police coverage in high growth areas
- Services are stretched thin
- County stretched to provide municipal-style services
- Residential uses crowding out the potential for industrial/ job-creating uses.

PLAN FRAMEWORK



PLAN FRAMEWORK

FIVE KEY THEMES

The Northwest Small Area Plan's recommendations are organized around 5 topics:

LAND USE ECONOMIC DEVELOPMENT TRANSPORTATION UTILITIES OPEN SPACE AND NATURAL RESOURCES



FUTURE LAND USE CONCEPT

The Future Land Use Map for Northwest Harnett County builds on and refines the County's 2015 Comprehensive Growth Plan land use map.

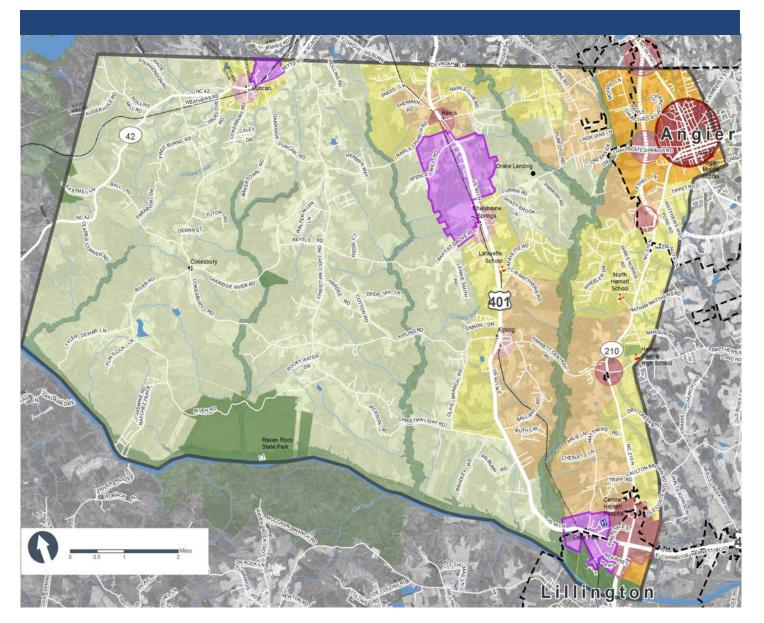
Building off of the plan framework components outlined in Chapter 2 Framing the Plan, the Future Land Use Map encourages a land use pattern that protects rural heritage, agricultural uses and natural resources. The western portion of the study area is planned for Agricultural and Rural Residential, as well as Parks and Conservation. This reflects the predominant existing land uses of this part of the County, and encourages these uses to continue. The plan also tries to add additional guidance on how to steer growth to where it can be supported by infrastructure. It concentrates the majority of residential and commercial use along the 401 corridor, within the Neills Creek area and near adjacent municipalities. It also supports nonresidential growth in strategic locations and builds on existing employment centers and where there is adequate current or planned transportation infrastructure, access and utility service.

In addition to supporting the ideas mentioned above, the Northwest Area Plan Future Land Use Map advances existing Comprehensive Plan goals including:

- Promote and maintain the rural character and agricultural economy of the County.
- Improve the aesthetics of urbanizing areas
- Encourage growth where infrastructure exists

FUTURE LAND USE CONCEPT

Note: Land within municipalities shown for display purposes only, consult Angier and Lillington planning documents for land use policies for these areas.

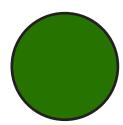


Parks and Conservation
Agricultural and Rural Residential
Low Density Residential
Medium Density Residential
In-Town Residential



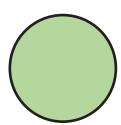
FUTURE LAND USE CATEGORIES





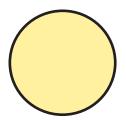
PARKS AND CONSERVATION

Parks and other forms of protected open space, including large conservation easements. Also includes environmentally sensitive areas, including floodplains and areas located in the Conservation Overlay Zoning District. Primary uses in these areas would be open space, forestry, and agriculture.



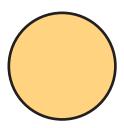
AGRICULTURE AND RURAL RESIDENTIAL

Primarily agricultural and forestry uses with some rural residential areas. These areas are located outside of existing and future utility service areas and rely on septic systems for wastewater treatment. They have a limited road network and in some cases lie within a High Quality Watershed or Water Supply Watershed area. The lack of utility and transportation infrastructure, the established low density development pattern and ongoing agricultural activities in these areas contribute to their rural character. This character can be enhanced by encouraging only low intensity uses such as agriculture and support industries, very low density single family residential (up to one dwelling per acre), and context sensitive rural design. Smaller lots would be permitted as part of a Rural Cluster Development, which could include 40% open space, and a maximum number of lots per development.



LOW DENSITY RESIDENTIAL

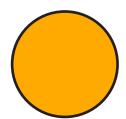
Single family detached residential intended to remain predominately suburban in character and provide for low density single-family residential development on lots smaller than those in Agriculture and Rural Residential areas. Gross densities of 1-2 dwelling units per acre depending on zoning, utilities, soils, and character of adjacent development. Smaller lot sizes could be permitted as part of a Compatibility Development, which would also include a higher amount of open space to preserve sensitive environmental areas.



MEDIUM DENSITY RESIDENTIAL

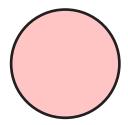
Located in areas served by current or planned utilities, medium density residential permits a mix of housing types including single family detached homes, small-lot homes and patio homes. Gross densities of 1-3 dwelling units per acre depending on zoning, utilities, natural features and adjacent development. Smaller lot sizes could be permitted as part of a Compatibility Development, which would also include a higher amount of conserved open space to preserve sensitive environmental areas.

FUTURE LAND USE CATEGORIES



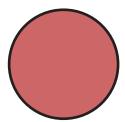
IN-TOWN RESIDENTIAL

Due to proximity to towns and potential for municipal services, these areas are suitable for residential developments with a mix of housing types including single family detached homes with average lot sizes, small-lot homes, and patio homes that are complimentary of the existing historic residential development of nearby towns. Gross densities of up to 5 dwelling units per acre. Located in areas served by current or planned utilities and in areas near the extra-territorial jurisdiction (ETJ) of towns. Additional housing types (including townhomes and apartments) and higher densities may be appropriate as part of planned developments or near Development Nodes.



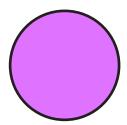
RURAL CENTERS

Small-scale commercial centers and nonresidential activity areas. The exact location and extent of the Rural Centers will be market driven, however, the non-residential footprint will usually be less than 50,000 square feet in these areas. Buildings should mimic historical scale and architectural details. Residential uses include smaller lot homes, patio homes, and some small-scale attached products (such as townhomes or quadplexes), where appropriate.



COMMUNITY MIXED USE

These areas are meant to be nodes or activity centers for growing areas in the county. They are located near concentrations of existing or planned residences and areas with access to major thoroughfares and utilities. These areas incorporate commercial uses including grocery stores, retail establishments, restaurants and services. Office, civic and institutional uses should complement commercial uses. Higher density residential including small lot single-family, townhomes, and apartments should be located in close proximity to shopping and service destinations and complimented by pedestrian facilities to provide more walking opportunities to internal and external destinations. The exact location and size of nonresidential areas will be dependent on market conditions.



EMPLOYMENT MIXED USE

These areas are located along major thoroughfares and include prime locations for economic development opportunities. Uses encouraged in the Employment Mixed Use areas include but are not limited to industrial, warehouse, office, research and development, tech-flex, medical, energy, and distribution. Residential development is appropriate only when not in conflict with existing or future industry or commercial uses or focal development areas.



RECOMMENDATION 1 Protect rural character, working agriculture, and water quality in rural areas

1.1: Discourage rezonings to higher density residential districts in Agriculture and Rural Residential (ARR) Areas

Zoning in the Agricultural and Rural Residential area in the Northwest Harnett County Study Area is predominantly RA-40 and RA-30. Allowing rezonings to high density districts or approving large-scale Planned Unit Developments (PUDs) could have a negative impact on agriculture and impact water quality. Strategic down-zoning should also be considered.

1.2: Modify zoning and development standards and create incentives to encourage low density development and discourage inappropriate density in rural areas

Many of the prime agricultural lands in the study area are located on relatively flat hilltops between steep stream corridors. These areas generally have good soils but are accessed via a sparse rural road network. Discouraging large-scale development in these areas and encouraging well-designed residential that fits into the landscape should be a priority of updated regulations.

Implementation Strategies:

- Modify the Compatibility Design section of the Unified Development Ordinance (UDO) that specifies context-sensitive development options in the Agricultural and Rural Residential areas on the Future Land Use Plan and allow these options throughout the Northwest Area.
 - Add a Rural Cluster Option to the UDO that allows a small-scale minor subdivision option with flexible standards to encourage innovative neighborhood design that fits

The Table to the right shows a potential ARR Compatibility Development Table that encourages low density, well-designed development in Agricultural and Rural Residential areas

Section 14.3.5												
Compatibility Design Concept Table	LOT WIDTH	FRONT YARD	REAR YARD	SIDE YARD	CORNER SIDE YARD	OPEN SPACE	STREET TREES	SIDEWALKS & CURB & GUTTER	SPRINKLER SYSTEM	PUBLIC UTULITIES	STREET PAVEMENT WIDTH	REQUIRED PERIMETER BUFFER
RA-40 Zoning												
AND USE CLASS: LD, MDR, RC, CM	AU, EMU, AI	RR; ESA,	PA									
≥40,000 sq. ft. minimum lots	150'	35'	25'	10'	20'	0%	•	•		•		-
≥35,000 sq. ft. minimum lots	450*	352	252	10;	20*	0%	•		•	+	-	-
≥28,000 sq. ft. minimum lots	100'	35'	25'	10'	20'	40%	1	1	÷.,	1	12	1
Rural Cluster Option**	60	10	15	8	10	30- 40%	*	0	•	÷	1.5	*
AND USE CLASS: MDR, RC, CMU,	EMU		-									-
≥21,000 sq. ft. minimum lots	100'	35'	25'	10'	20'	20%4	1	× 1	•	1	2	•
≥17,500 sq. ft. minimum lots	80'	35'	20'	10'	10'	30%	1	1		2	29'	1
RA-30 Zoning												
AND USE CLASS: ARR												
≥30,000 sq. ft. minimum lots	100'	35'	25'	10'	20'	0%	•	•	. •	-	-	
≥25,000 sq. ft. minimum lots	100'	35'	25'	10'	20'	20%	•	. *	•	1	~	×
Rural Cluster Option**	60'	10	15'	5	10'	30- 40%	×	0	-	•	-	1

within a rural context.

- Design Criteria for a Rural Cluster Option could include:
 - Maximum gross density of 1 dwelling units per acre (DUA) or less
 - Maximum of 20-30 lots and minimum size of property (i.e. 20-30 acres)
 - 10,000 square foot lot minimum
 - No public water or sewer requirement, but consider allowing off-site septic
 - Open Space Requirements & Standards
 - 30%-40% Open space with 10% minimum uplands
 - Emphasize natural / passive open space
 - Require stream and wetland buffers of 100 feet or more
 - Home Owner's Association (HOA) to assume maintenance / responsibility requirements of common open space
 - Rural street standards
 - Swale section, 20' of pavement
 - Private streets allowed if built to County / NCDOT Standards

1.3: Protect working agricultural operations through site design

The design details of new developments have the ability to mitigate the visual and environmental impacts that can occur when rural homesteads and farms are replaced with subdivisions. Modern agriculture is an industrial employment use. Respecting existing agricultural operations through site design can reduce conflicts in the future between new residents and existing and future farmers.

Implementation Strategies:

 Consider requiring or incentivizing working farmland buffers for subdivisions with lots smaller than 25,000 square feet in or adjacent to agricultural areas, especially those enrolled in the Present Use Value (PUV) program or Voluntary Agricultural Districts (VAD).

Best practice Example:

Huntersville Farmhouse Cluster

Huntersville encourages minor subdivisions in rural areas that meet certain criteria. Farmhouse clusters allow for up to 12 lots on a property that is 20 acres. These developments do not have a minimum lot size, and are allowed private roads, but require at least 50% designated open space.

The graphic to the right illustrates a rural cluster subdivision that is designed to fit into the surrounding agricultural landscape. It includes 29 lots on 60 acres. The smallest lots approach 10,000 square feet and could be serviced with an off-site septic tank located in a common area.





- Consider requiring a perimeter buffer and/or additional building setback for new development located near working forestry, farm or agritourism operations
 - For example require a landscaped buffer or tree save between potential conflicting uses (i.e. a 50 ft perimeter buffer and/or 200ft setback between new residential dwellings and existing agricultural operations)
- Prioritize the reservation of steep slopes, existing forest and other important natural features as open space between new residential and potential conflicting uses

1.4: Protect water quality in High Quality Waters and Water Supply Watersheds via site design

Portions of Hector Creek, Avents Creek, Parkers Creek, Mill Creek and Coopers Branch are designated as High Quality Waters by the state of North Carolina. These streams are located west of US 401 and bordered by large forests that are in some places over a mile wide. Nearly all of the study area is located in a WS-IV water supply watershed as most streams drain to the Cape Fear River above the intake in the vicinity of Lillington. Protecting forests and limiting impervious surfaces will help safeguard these streams from degradation that is common to more developed areas such as tributaries in Wake County.

Implementation Strategies:

- Require and/or incentivize protection of riparian areas and tree canopy conservation in Compatibility Subdivisions
 - Consider increasing stream buffer requirements for perennial streams and/or requiring or incentivizing protection of riparian areas along intermittent streams.
 - Update UDO to include a definition of priority conservation areas that includes riparian areas and stands of mature forest
 - Update Local Watershed Protection Ordinance
 - Include density and design criteria for High Quality Waters that meet or exceed state requirements
 - Low Density Option: One (1) dwelling unit per acre or 12% built upon area
 - High Density Option: No density limit specified, but must use NC Div. Of Water Quality, High Quality Waters, High Density Option Standard.
 - Update allowance for cluster development, if using the High Density Option, to meet or exceed state requirements
 - Consider requiring additional riparian buffers and/or adding mitigation or enhancement options that results in a net benefit to the sub-watershed
- Require stormwater best management practices in Compatibility Subdivisions that meet or exceed state regulations

RECOMMENDATION 2

Increase standards for residential developments in the Low Density Residential (LDR) and Medium Density Residential (MDR) areas

2.1: Revise and clarify open space requirements and options for new development

The forested hills and rolling agricultural fields of Northwest Harnett County are part of what makes the area attractive to new and existing residents. Preserving meaningful, usable open space as part of new development can be an amenity for new residents, help preserve the unique natural features of property and make a new neighborhoods fit more seamlessly into



the landscape. Accessible parks and open space included as amenities in new development can help share the burden of park infrastructure and land acquisition costs.

Implementation Strategies:

- Incentivize quality open space and recreational facilities
 - Encourage or require new developments in the Neills Creek watershed to utilize a conservation design approach to subdivisions.
 - Allowances exist in the Compatibility Development options for smaller lots in

Conventional vs. Conservation Design



Conventional Subdivisions

- Minimal amount of open space
- Only regulated features preserved (floodplain, minimum stream buffers)
- ~1/2 acre lots



Conservation Subdivision

- >30% open space required
- Mix of regulated features and uplands
- Emphasis on accessibility and preserving unique site features
- Mix of residential types including smaller lots, potential density bonus for meeting design criteria
- Updates to the UDO could include creating a Conservation Design Option with the following parameters:
 - Max of 2 Dwelling Units/Acre
 - Public sewer requirement
 - 6-10k minimum lot size
 - Open Space Standards



exchange for high amounts of open space. Updates could be considered that include simplifying the options within the UDO and making a Conservation Design Option that is more attractive due to increased design flexibility or streamlined approval process.

- Consider waiving all or part of the Recreation Fee-in-Lieu if recreation needs are addressed by new development.
 - Consider waiving half of the required Recreation Fee if land is reserved for a publicly accessible amenity, such as a park or greenway.
 - Consider waiving all of the required Recreation fee if recreation facilities are constructed and meet certain criteria.
 - Minimum criteria could include:
 - Inclusion of basic features (i.e. parking, an amenity, paths, etc.)
 - Public accessibility
 - Minimum sizes for parks and formal greenspaces
 - Minimum standards for sports fields
 - Minimum length for greenways or trails
 - Size or play structure requirements for playgrounds
- Revise and clarify open space requirements
 - Require all Compatibility Subdivisions to include some amount of high quality open space.
 - Currently a 5,000 square foot break in lot size is allowed if public utilities are available. This provides an incentive for smaller lots without increasing any design requirements. Requiring more open space in new developments with access to public utilities would be a better standard for the study area.
 - Define Primary and Secondary Conservation Areas (see Open Space & Natural Resource recommendations) and require identification of primary and secondary assets during development review process.
 - Improve standards for open space. Potential standards could include:
 - Require a percentage of open space to be outside of regulated features (i.e. floodplain, stream buffers and wetlands)
 - Dimensional and contiguity requirements (i.e. minimum size, >40-50% connected)
 - Revise "Open Space, Usable" definition (currently in PUD but not in Compatibility Dev.), include undisturbed, natural areas, parks, greenways
 - Minimum % of active or improved
 - Access requirements, ownership and maintenance responsibilities
 - Deed restriction if open space maintained by HOA (preferred)
 - Exceptions (i.e. trails, utilities, stormwater detention if naturalized)

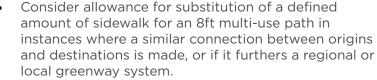
2.2: Update standards for sidewalks, curb and gutter, street trees, perimeter buffers, on-street parking and loading in Low Density Residential (LDR) and Medium Density Residential (MDR) areas

Small scale, low-density subdivisions fit well in rural areas, but larger-scale subdivisions with smaller lots have a greater impact on adjacent properties, generate more stormwater and may need higher standards to safeguard property values of nearby properties.

Implementation Strategies

- Standardized thresholds for sidewalks, curb and gutter, street trees, perimeter buffers, on-street parking and loading
 - Consider simplifying options and adding a threshold related to the size or scale of subdivision

LAND USE



- Require perimeter buffer when new residential subdivisions are located adjacent to lower density residential and agricultural uses
- Provide an option for lots with widths > 60' as part of a Planned Unit Developments but require rear-loaded lots for lots narrower than 50'.
- Consider requirements for on-street parking on local and collector streets with lots smaller than 1/4 acre.

RECOMMENDATION 3 Increase standards for commercial development



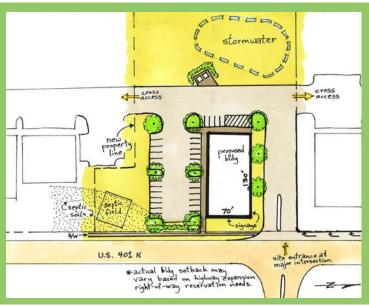
Minimizing the amount of parking between new commercial buildings and the main road, and the use of high quality materials and transparent facades can result in better gateways into Harnett County along US 401 and NC 210.

3.1: Promote quality commercial and retail development at well-located sites.

Strategically locating commercial development can reduce traffic and help build the non-residential tax base in the study area.

Implementation Strategies

- Encourage commercial and retail development at Commercial Mixed Use and Rural Centers located on the Future Land Use Map.
- Promote context-sensitive site design by creating a Highway Overlay District similar to the NC 87 Overlay that specifies design criteria for new commercial development along US 401 and NC 210.
 - This overlay could specify building orientation, placement of parking, a "build-to" line that factors in highway expansion, architecture standards, cross-access, landscaping, and screening requirements.



Commercial Site Design

The conceptual drawing above shows how new commercial development along US 401 could locate buildings close to the street with parking to the side. This replicates historical development patterns in Chalybeate Springs and would allow for cross-access behind buildings. Maximum setbacks or "build-to" lines could facilitate this, but would need to factor in a potential widening of US 401 in the future.

ECONOMIC DEVELOPMENT

RECOMMENDATION 4 Preserve opportunities for non-residential development

4.1: Encourage industrial, distribution and office development in Employment Centers located on the Future Land Use Map.

Three Employment Mixed Use areas are identified on the Future Land Use Map. These areas are located on major roads and have access to rail lines. They also are not located near any existing residential subdivisions. Preserving these sites for future employment bearing uses, improving visibility of these sites and access to infrastructure is a primary goal.

Implementation Strategies

- Support rezonings that are consistent with the Future Land Use Map
 - Support rezonings of land within Employment Mixed Use areas to office/institutional, commercial, light industrial and industrial.
 - Discourage rezonings that accommodate large-scale residential subdivisions within Employment Mixed Use areas that could lead to conflicts with existing or future nonresidential development.

4.2: Encourage commercial development including retail, services, restaurants, and offices in areas designated Town Centers, Commercial Mixed Use, and Rural Centers on the Future Land Use Map.

Growth of the existing commercial centers in the Town of Angier and the Town of Lillington is supported as well as smaller-scale commercial development at key intersections and in Rural Centers.



Harnett Central Hospital is one of the anchors of Brightwater Science & Technology Campus, a mixed-use medical, retail and business park in Lillington.

ECONOMIC DEVELOPMENT

RECOMMENDATION 5 Support existing industries and recruitment of new businesses in Northwest Harnett County

5.1: Support recruitment and marketing efforts.

Northwest Harnett County has a solid employment base and available land in key sites and along major highways that can be focus areas in county-wide economic development strategies. Natural resources such as the Cape Fear River and Raven Rock State Park can also be a draw for tourism.

Implementation Strategies

- Support recruitment efforts targeted at finding new tenants for existing business and industrial parks
 - Brightwater Mixed Use Business Campus
 - Tri-South Industrial Park
- Develop additional marketing materials in support of economic development in Northwest Harnett County
 - Highlight available sites on the Harnett Economic Development website
 - Support the development of marketing collateral for the Cape Fear River and Raven Rock State Park in cooperation with the Dunn Area Tourism Authority

5.2: Improve access to and provision of services for potential economic development opportunities.

Many sites along US 401 have great access to the Triangle Region. Improving crossaccess to undeveloped properties may help preserve capacity of the highway. Improving access to sewer may make industrial and commercial sites more marketable.

Implementation Strategies

- Evaluate and update site design and cross-access requirements for new businesses along major corridors to improve access to future development sites
- Encourage a collector street network to be built incrementally with development
 - Primary connections needed are parallel connections running north to south east and west of US 401. These connections will open tracts of land for future development and improve resiliency of the road network

5.3: Preserve the viability of agricultural operations.

Agriculture and forestry activities contribute significantly to the Harnett County economy. Preserving the viability of these operations is important for cultural, economic and environmental reasons.

Implementation Strategies

- Continue to require notification of new development within 1 mile of Voluntary Agricultural Districts (VADs) about active farming operations.
- Encourage participation in the Voluntary Agricultural District (VAD) program
- Discourage expansion of sewer service into areas designated as Agricultural and Rural Residential on the Future Land Use Map west of US 401
- Promote context-sensitive residential adjacent to working agricultural operations
 - Elements of context-sensitive residential include very low density development and buffering between new residential and existing agricultural operations



RECOMMENDATION 6 System Level Recommendations

6.1 Plan for long-term roadway improvements

Traffic in the study area is projected to increase substantially by 2045, with Future Year volumes on US 401 of 22,400 cars per day. These traffic estimates may be underestimated due to inaccuracies with future year model network and demographic projections.

Implementation Strategies:

- Reserve right-of-way along key corridors that is sufficient to accommodate future roadway improvements and new collector street connections.
 - US 401 and NC 210: 120 Feet of right-of-way should be reserved along these major highways in order to accommodate an eventual widening to 4 lane boulevards
 - 100ft of right-of-way should be reserved along Piney-Grove Wilbon Road for a future widening to four lanes
 - Other future improvements that are recommended include widening of roads to three lanes and collector streets shown on the map on the next page. 70-80' of right-of-way is recommended for all roads in orange (not mentioned above) and new location collector streets. 60' or right-of-way is recommended for new local connections shown in yellow on the map on page 38.

6.2: Coordinate with CAMPO on updates to the regional travel demand model to better reflect roadway improvement plans and land use trends.

The long-term plans for US 401 and land use trends in Northwest Harnett County have evolved since the last regional transportation planning effort. Updates to the model network and population and employment forecasts should occur to make sure traffic forecasts are as accurate as possible.

Implementation Strategies:

- Correct travel model network prior to the next Metropolitan Transportation Plan (MTP)
 - Remove the new US 401 location and properly reflect the Angier Shallow Bypass that is planned.
 - Update socio-economic data to reflect land use trends. Previous housing forecasts do not adequately reflect the location of development proposals. For instance more development will be loading on US 401 that is anticipated in the current model.

6.3: Utilize recommendations in the Comprehensive Transportation Plan during development review and update regularly to include and refine based on recommendations in recent plans.

The Harnett County Comprehensive Transportation Plan was adopted in 2016 and amended in 2017. Updates to the plan should be made to reflect more recent planning efforts such as the NW Harnett Area Plan and the CAMPO Southwest Area Study.

Implementation Strategies:

• Ensure that the CTP is incorporated into zoning and development reviews, and that right of way is reserved and/or dedicated at the time of development

- Require new development to leave adequate room for future rights of way and widening by prohibiting the placement of code-required development components (such as septic fields, landscaping, signs, parking and buildings) within planned rights-of-way.

6.4: Update policies and standards related to street design and improvements required with development.

Implementation Strategies:

- Amend tables, associated requirements and codes in the Unified Development Ordinance
 - Update standard street sections for all street types, including those associated with cluster development.
 - Require Traffic Impact Analysis (TIA) for developments that generate 100 or more peak hour trips, or 1,000 average daily trips (based on most current ITE trip generation manual).
 - Turn lanes (left turn and right deceleration lane) with appropriate stacking shall be required for any subdivision or development project that creates the equivalent traffic at a single access point of:
 - 20-30 single family homes.
 - Right-of-way for turn lanes shall be dedicated at either subdivision platting or as a condition of final site plan approval of the portion of the project that generates the need for the dedication.
- Consider implementing a fee-in-lieu structure for improvements
 - For projects that generate less than the amount above, they shall provide fee-inlieu to the County for their proportional share of a turn lane costs.
 - The County could hold and then provide that fee to the next developer that triggers the construction of the turn lane. Fee is due at time of plat or as a condition of final site plan approval.
 - Fee-in-lieu of construction may be an option, at County and NCDOT discretion.

RECOMMENDATION 7 Priority Roadway Improvements

7.1 Support incremental improvements along US 401

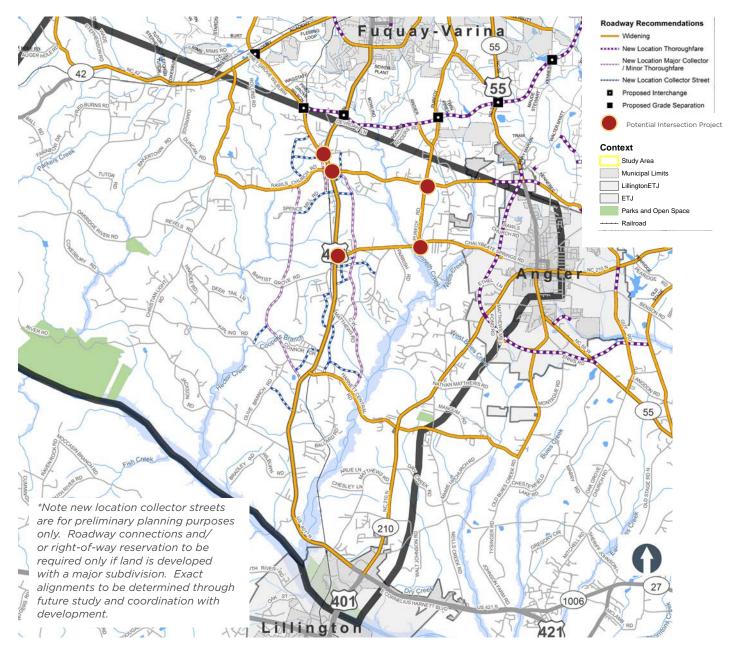
Current traffic volumes on US 401 do not necessitate a four lane road, but as new residential development occurs intersection improvements and a road widening will likely be necessary.

Implementation Strategies:

- Intermediate Intersection Improvements should be studied at the following locations along US 401 at Piney Grove Wilbon Road, Rawls Church Road and Chalybeate Springs Road
- Prioritize US 401 north of Chalybeate Springs for future widening to four lanes

7.2 Support the widening of Rawls Church Road and Purfoy Road to three lanes

It is anticipated that Rawls Church Road and Purfoy Road will provide key connections between US 401 and Angier and from Harnett County to Fuquay Varina and eventually the Southeast Extension of I-540. This would include a new location connection to Kennebec Road and the near term study of key intersections.



Roadway recommendations include intermediate intersection improvements, future widening of roadways and new collector and local road connections that are meant to be completed in tandem with development.

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UTILITIES



RECOMMENDATION 8

Encourage new development in areas well served by water and sewer infrastructure and/or town services

8.1: Discourage rezonings to higher density residential districts in Agriculture and Rural Residential (ARR) Areas

8.2: Encourage new subdivisions in the Neill's Creek basin to connect to county water and sewer service.

Implementation Strategies:

 Incentivize water and sewer connections and quality development via Compatibility Development regulations

8.3: Encourage annexation and utility connections in and near Extraterritorial areas of the Town of Angier and the Town of Lillington

Implementation Strategies:

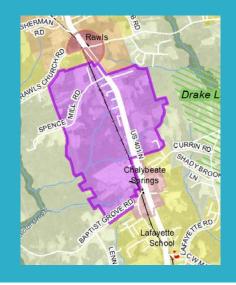
- Encourage connections to County owned infrastructure if capacity exists
- Allow for connections to Town of Angier infrastructure for new development located north of Chalybeate Springs Road (In Town Residential area on FLU Map)

8.4: Consider a partnerships to extend utility service to potential commercial and industrial areas

Providing sewer service to Chalybeate Springs and North 401 as well as exploring partnerships to serve the NC 42/Duncan Area would support land use and economic development goals.

Implementation Strategies:

Pursue grants and/or consider a public-private or public-public partnerships to



Utility Extension Grants

The Rural ReadySites program was funded by the North Carolina General Assembly in 2018 and distributed \$14 million in grants for communities preparing sites for industrial development. Access to infrastructure is a principal factor in site selection process and many of the grants went to communities extending water and/or sewer to potential industrial or business parks. To be eligible for these grants the following criteria must be met:

- The applicant must be a government entity in a Tier 1 or 2 county.
- The site must be publicly owned or controlled.
- The site must be a minimum of 50 contiguous acres.
- Funds must only be used to construct public infrastructure with priority given to water, sewer and industrial access improvements.

extend utility service to potential commercial and industrial areas

- This may include determining locations of future gravity mains in sub-basins, developing cost share estimates for future developments and supporting the acquisition of strategic sewer easements.
- Consider additional economic development opportunities when partnering with schools to provide a utility solutions for new schools

UTILITIES

• Public acquisition of prime industrial candidate sites could assist with securing grant funding.

RECOMMENDATION 9 Maintain and improve the efficiency of public services

9.1 Plan for efficient sewer provision in the Neills Creek basin.

Implementation Strategies:

- Regularly revise fee structure, connection and reimbursement policies to assure adequate levels of utility service and maintenance of assets.
- Continue to pursue public/private cost shares and developer agreements for reimbursement of infrastructure investments that serve additional development.
- Discourage new pump stations for residential development in the Hector Creek stream basin south of Rawls Church Road and west of US 401
- Update utility agreements with Angier and Lillington and Fuquay Varina to reflect future utility service areas

9.2: Improve fire and EMS service along US 401

RECOMMENDATION 10 Ensure stormwater regulations are enforced

10.1 Increase staff capacity and coordination with state officials to ensure stormwater regulations are enforced

The scale and density of development that is being proposed may require increased capacity to ensure stormwater facilities are designed, built and maintained adequately.

RECOMMENDATION 11 Collaborate with Harnett County Schools

11.1: Determine future needs and identify target locations for schools in growth areas

11.2: Discourage the location of new schools in the Agricultural and Rural Residential area on the Future Land Use map and within the 10 mile evacuation zone of Shearon Harris Nuclear Power Plant.

Implementation Strategies:

 Consider updates to Planned Unit Development requirements in the Unified Development Ordinance to include criteria for reservation of school sites. Harnett County Northwest Area Plan : 41

RECOMMENDATION 12 Consider strategic acquisition and development of new park facilities

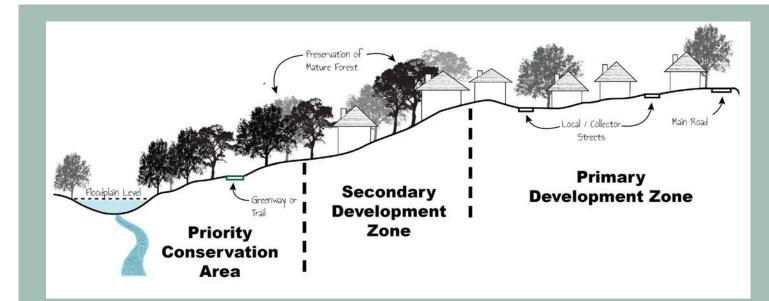
12.1: Improve access to parks and recreation options in Northwest Harnett County

Implementation Strategies:

- Develop recently acquired parkland near Revels Road and Oakridge River Road as park.
- Partner with Harnett County Schools to locate a new park as part of or adjacent to any new schools sites located between Hector Creek and Neills Creek.
- Acquire land for and develop at least 2 blueway access points along the Cape Fear River northwest of Lillington.
- Preserve open space along Avents Creek as part of new development, through partnerships with landowners, land trusts and North Carolina State Parks .

Implementation Strategies:

- Require greenway easements or joint sewer and greenway easements as part of new developments in locations shown on the Proposed Greenways & Trails map on page 43.
 - Floodplain areas should be dedicated for future greenways, additionally



Priority conservation areas along Neills Creek include the floodplain and adjacent floodplain forest. Steep slopes those with mature forest along tributary streams are also important. Development zones include the flatter plateaus with good soils closer to main roads.

major creeks (i.e. Neills Creek) should have a minimum of a 100ft greenway easement from top of bank dedicated to the county

- If outside of floodplain, greenway easements should be 30ft, joint greenway and sewer easements should be 50ft
- In the vicinity of stream crossings larger easement are preferable in order to adjust trail alignment and cross stream at a perpendicular angle.
- Encourage new developments to build pedestrian connections to planned greenways.

RECOMMENDATION 13 Encourage high-quality, accessible open space in new residential development

13.1: Revise and clarify open space requirements and options for new developments See recommendations on page 30.

13.2 Prioritize the preservation of primary and secondary conservation areas

Current regulations encourage the preservation of open space, however, there is little guidance to specify what types of open space should be preserved. Defining primary and secondary conservation areas can result in the reservation of higher quality open space.

Implementation Strategies:

• Define primary and secondary conservation areas

- These should include priorities expressed during this planning effort including those features that protect rural character and help to preserve water quality.
- Primary and secondary conservation areas can be specified in the Unified Development Ordinance and should include:
 - Primary conservation areas could include: Floodplains (100 and 500 year), riparian areas (up to 300ft on each side of streams), and mature forests, farms and working lands, and future greenway corridors
 - Secondary conservation areas could include: Steep slopes, scenic views, more formal parks, sports fields, playgrounds, historic structures, land adjacent to conserved areas and heritage trees
 - These areas should be required to be identified during the development review process. A defined percentage of primary conservation areas should be preserved first, if present, then secondary conservation areas can count towards open space dedication requirements.

RECOMMENDATION 14 Prioritize Protection of Stream Buffers

14.1: Protect stream buffers.

Trees and vegetation along streams helps to protect water quality by filtering sedimentation and other pollutants out of stormwater run-off. Currently 64% of land within 300ft of USGS blue-line streams is covered in forest. Preserving these forests can help maintain water quality.

Implementation Strategies:

- Consider increasing stream buffers requirements or incentivize protection of riparian areas
 - Stream buffers of 100ft are recommended on Perennial streams, due to potential presence of rare species
 - Stream buffers of 30-50ft are recommended on Intermittent streams

GREENWAYS AND TRAILS

The following table and map on the opposite page shows proposed greenway trails in NW Harnett County along streams (riparian areas), sidepaths along roadways, as well as connections to key upland destinations along those corridors.

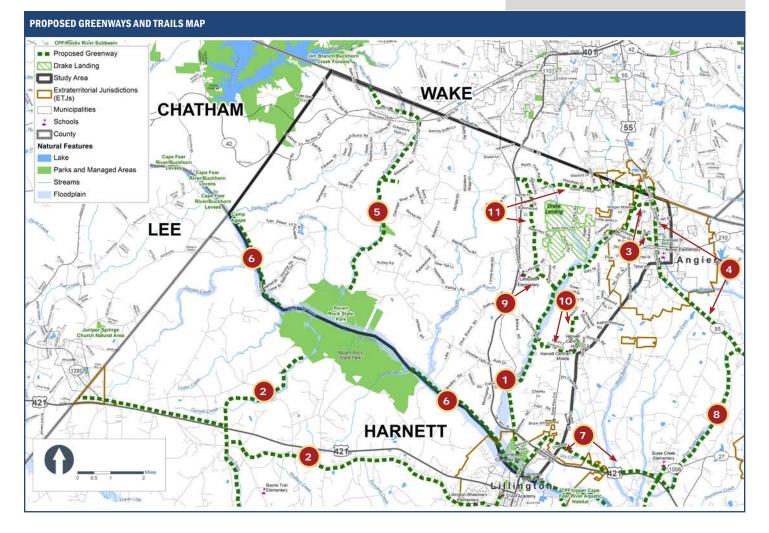
Name of Trail	Primary Corridor	Primary Trail Type	Distance (Approx)	Description / Key Points of Interest
Harnett Cross County Trail	Neills Creek	Riparian (WS-IV)	10.3 miles	Multi-use path connection between Cape Fear River outside of Lillington to East Angier where the trail will ultimately connect to the Wake County Greenway System through Fuquay Varina.
2 Raven Rock Ramble	Old Highway 421 / Camels Creek / Poorhouse Creek	Riparian (WS-IV), Sidepath	16.5 miles	Creates a primary recreation route between Raven Rock State Park and the Cape Fear River through Lillington along Camels Creek, US 421 and Poorhouse Creek.
3 Angier Loop Trail	NA	Independent	1.9 miles	Multi-use path linkages between NC 55 sidepath on N Raleigh St and the Harnett Cross County Trail. The two trails complete a recreational loop in NE Angier using the Cross County Trail and Angier-Dunn Trail.
4 Angier - Dunn Trail	NC 55	Sidepath	14.1 miles	Multi-use path linkage between Angier and Coats along NC 55 and to the Dunn-Erwin Rail Trail. Connects community destinations to central business districts.
5 Avents Creek Greenway	Avents Creek, Horse Branch	Riparian (WS-IV; HQW; C)	6.6 miles	Multi-use path linkage between the northern end of Raven Rock State Park and the Wake County Line near Duncan. Due to the potential connection with Bridle Trails at Avents Creek Access Area in Raven Rock State Park, equestrian use could be considered on portions of this trail.
6 Cape Fear River Trail	Cape Fear River	Riparian (WS-IV)	10.3 miles	Multi-use path connection along the Cape Fear River. Connection to downtown Lillington, Raven Rock State Park, and Chatham County. (Note: Planned route/length does not include connection through Raven Rock State Park)
 Campbell Campus Connector 	US 421/N Main St	Sidepath, Independent	5.4 miles	Mutli-use path connection between Campbell University and downtown Lillington along US 421 and N Main St
8 East Buies Creek Greenway	East Buies Creek	Riparian (WS-IV)	5.0 miles	Multi Use Path connecting US 421 to NC 55 along East Buies Creek.
Lafayette Trail	CW Matthews Rd	Independent	1.3 miles	Multi-use path connection to Lafayette Elementary School from the Harnett Cross County Trail
Central Schools Connector Trail	Harnett Central Rd / Dry Creek	Sidepath, Riparian, Independent	2.8 miles	Multi-use path connection from Harnett Cross County Trail to Harnett Central Middle, Harnett Central High and North Harnett Primary School and Neills Creek Park
US 401 / Rawl Church Connector	New Collector road parallel to US 401 and Rawls Church Rd	Riparian, Sidepath	7.0 miles	Multi-use path connection between Lafayette Trail, Rawls and the Town of Angier



The map shows the proposed greenway trails in NW Harnett County along streams (riparian areas), sidepaths along roadways, as well as connections to key upland destinations along those corridors.

NW Harnett greenways are proposed to connect to the Wake County Greenway System

Greenways can be an effective and attractive means of protecting water quality and can also enhance the aesthetic and recreational amenities



GREENWAYS AND TRAILS

Greenways provide excellent chances to preserve agricultural land, create recreational opportunities, and protect natural resources. Delineating greenway corridors ensures that access is maintained in areas that are suitable for conservation and recreation. It is easier and cheaper to reserve greenway corridors before property is developed. After land is subdivided and sold for development, this process can be more difficult.

Trail Width

Where a paved trail surface is provided, 10-feet is the recommended minimum trail width. The trail should have a 2' level clear zone on each side of the trail between the traveled surface and any obstructions such as trees, walls, or fences. This trail cross-section is adequate for most moderately used trails shared by bicyclists and pedestrians. Where there is heavy use by multiple user types, 12-feet is the recommended minimum width because it allows more space for trail users of all ages and abilities to share comfortably, and more space for trail users to pass. Alternatively, a separate track (5 feet minimum) can be provided to separate bicyclists from pedestrians. In these areas, the pedestrian zone should be placed closer to the scenic or natural amenity.

Sidepath Trails

Along roadways, the recommended separation is 6.5 feet (<25 mph) but may widen to 24 feet (>= 55mph) at road crossings. Wherever possible, the sidepath should be designed to provide a natural buffer of trees and native plantings between the trail and the roadway.

A high-visibility marked crosswalk with warning signage may be appropriate at sidepath crossings with low motor vehicle speeds, volumes and clear sight lines. Additional crossing enhancements may be necessary on high speed and high-volume roadways.



▲ Sidepaths are multi-use trails that are separated from the roadway by a physical barrier or space. As speeds increase, so does the preference for wider separation distance at roadway crossings.

SOURCE: SMALL TOWN AND RURAL MULTIMODAL NETWORKS GUIDE, FHWA

Greenways and Multi-Use Trails

A greenway along Neills Creek could provide a north/south path for walking, running and bicycle travel. Connections to the primary greenway via trails and greenways in new development as well as by including multi-use trails along frontages of secondary roadways could create serve Northwest Harnett County well in the long term.

Median islands are beneficial to break up the crossing into two parts on roadways with three or more travel lanes or those that have higher volumes and speeds. Median islands particularly benefit people who may travel slower, such as children, older adults, and people with disabilities.

Greenway Easements

The land acquired for a greenway, whatever its acquisition method, must be wide enough to accommodate the construction and maintenance of the trail. In most cases it will be desirable to have a corridor wide enough to preserve natural vegetation, provide a scenic route for trail users, provide a buffer to nearby developments, avoid obstacles and preserve stream buffers.

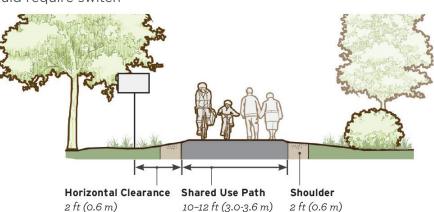
Several factors contribute to increased corridor widths of stream-associated greenways. These include utility obstacles (i.e. poles, towers, manholes) and environmental conditions (100-year floodplain, steep slopes, and wetlands). While sewer easements typically range in width according to the size of the line, it is best practice in places where greenways are proposed along sewers to dedicate a joint easement of 50 feet in width for both sanitary sewer and greenway use. This allows the trail to stay out of the wettest parts of the corridor, avoid manholes, provide space for boardwalks and bridge structures but still allows the trail to take advantage of areas where clearing has already occurred to minimize environmental impacts. Where easements can provide double duty, they should, provided they don't interfere with the utility or function of the uses.

In riparian areas, it is best practice to include the stream buffers and 100-year floodplain in the greenway easement. The first 30 feet from the top of the stream bank (area nearest the stream) should remain undisturbed. In key places the width of the easement may need to be as wide as 100 feet in order to accommodate in areas where the trail routes to the narrowest points of creeks, drainage areas or waterways for cost savings on bridges and boardwalks or in areas where steep slopes could require switch-

backs. This also permits space for minor relocations of the trail in the future in case of erosion or need for stream bank restoration.



Sidepath at Wayne Community College in Goldsboro, NC



IMPLEMENTATION STRATEGIES

MALLAREAPLAN

Subarea

IMPLEMENTATION STRATEGIES

Implementation Tasks Summary

Task	Task Description	Responsibility	Timeframe
IS1	Formally adopt the Future Land Use Map and policy recom- mendations, update the Future Land Use Map in the 2015 Comprehensive Plan, and utilize when considering rezoning requests in the area covered.	Local government planning staff	Short-term
152	Coordinate with schools to identify school sites near growth areas.	Development Services staff in co- ordination with the county school board	Mid-term
183	Pursue intermediate and long-term roadway improvements along US 401 and other priority corridors	Development Services in cooperation with CAMPO	Mid- to long-term
IS4	 Update local land use regulations (Unified Development Ordinance) to be consistent with this plan. Specific tasks include: New ARR Compatibility Development Design Options Table / Add Rural Cluster Option Update open space requirements, standards and options Require working farmland buffers for subdivisions with small lots Standardize thresholds for transportation improvements, sidewalks, curb & gutter and other design criteria 	Development Services	Short-term
1\$5	Improve the quality commercial development design in the study area along US 401 and NC 210 by adopting an highway overlay district.	Development Services in coordi- nation with other departments	Mid-term
IS6	 Consider a UDO text amendments and feasibility studies to advance greenways and trails Require reservation of greenway easements according to greenway plans Conduct additional feasibility studies for priority greenway and trail corridors (i.e. Neills Creek) 	Development Services in coordi- nation with Parks and Recreation	Short-term
157	Update UDO as needed to encourage cross access and completion of collector street connections	Development Services in coordi- nation with other departments	Short- to mid-term
158	 Require and/or incentivize protection of riparian areas and tree canopy conservation. Consider increasing stream buffer requirements for compatibility subdivisions Update UDO to define priority conservation areas Update Local Watershed Protection Ordinance 	Development Services	Mid-term
159	Pursue grants and/or consider a public-private partnerships to extend utility service to potential commercial and industrial areas	Development Services in coordi- nation with other departments	Mid-term
IS10	Improve fire and emergency service coverage in the Neills Creek area	Harnett County Emergency Man- agement	Mid-term
IS11	Develop additional marketing materials in support of economic development in Northwest Harnett County	Harnett County Economic Development, Parks and Recreation in cooperation with Dunn Area Tourism Authority	Mid-term
IS12	Increase staff capacity and coordination with state officials to ensure stormwater regulations are enforced	Development Services in coordi- nation with other departments	Mid-term

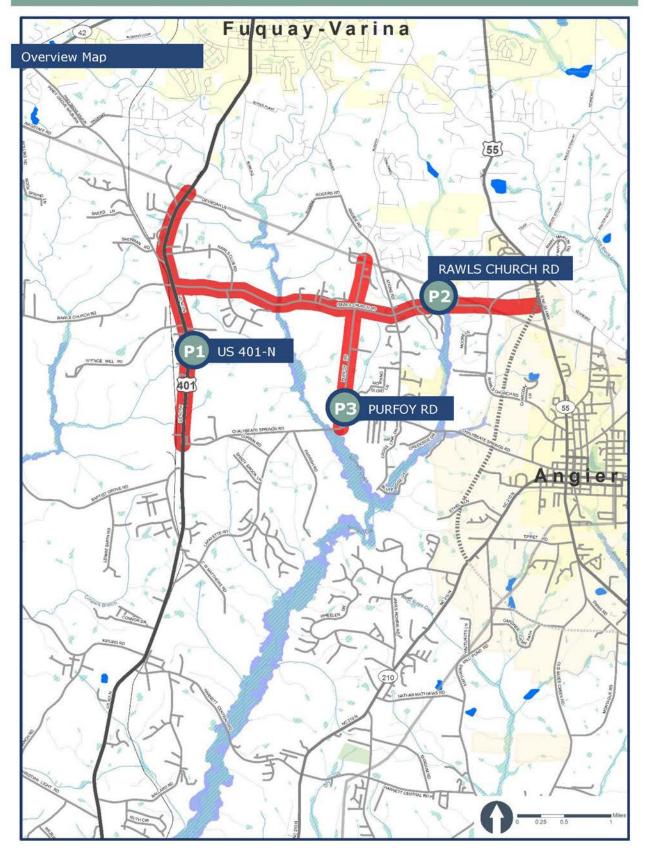
APPENDIX

APPENDIX

CONTENTS PRIORITY TRANSPORTATION PROJECT SHEETS

- Overview Map
- US 401
- Rawls Church Road
- Purfoy Road

Harnett County Small Area Plan PRIORITY TRANSPORTATION PROJECTS



Project ID | Name P1 | US 401 NORTH

Extent: Harnett County Line to Chalybeate Springs Rd

Improvement Type: Widening

Length: 2.8 miles

Probable Cost Estimate: \$56,241,900 (from Fuquay-Varina to Lillington UPD – 7.5 miles) per CAMPO 2045 MTP

• Cost Estimate for this portion: \$20,996,976

Existing and Future Conditions

- Existing CTP Class: Minor Thoroughfare
- Future CTP Class: Boulevard
- Travel Lanes (Existing / Proposed): 2/4
- Existing Volume (2018): 15,700
 - From existing counts grown to 2018
- Projected Volume (2045): 22,400
 - Notes: Projected volumes from the Triangle Regional Model
- Existing Right-of-Way: 60 Feet
- Future Right-of-Way: 120 Feet

Previous Planning:

- 2011 Harnett County CTP Widen to four lane section
- Southwest Area Study (2012) Widen to four lane section
- US 401 Corridor Study increase capacity, increase safety and reduce travel time (not funded and studies have concluded for the time being)

Context and Need: Recommended to be upgraded to improve safety and handle expected growth in the county. There are many economic development opportunities along US 401 and improving this section will provide adequate capacity for forecasted growth.

Potential Intermediate Improvements / Next Steps:

- Intermediate improvements:
 - Piney Grove Rd: Peak hour signal warrants are met, recommend installing traffic signal if full signal warrants are met.
 - Rawls Church Rd: Add a right turn lane to westbound Rawls Church Rd with 200' storage. Cost Estimate: \$117,000
 - Chalybeate Springs Rd: Add a right turn lane to westbound Chalybeate Springs Rd with 200' storage. Cost Estimate: \$117,000
 - Convert US 401/Chalybeate Springs Road and US 401/Rawls Church Road intersections to traffic signal controlled intersections
- Next Steps:
 - Widen US 401 to four lanes. Study potential cross-section and consider multi-use path north of Chalybeate Springs on US 401 or as part of a "backage" collector street.
 - Consider widening Piney Grove Road (current volume: 7,200; future volume: 24,300)
 - Add additional northbound left turn bay on US 401 at Piney Grove Road



Project ID | Name P2 | RAWLS CHURCH RD

Improvement Type: Widening and New Location

Length: 4.0 miles (3.3 miles of widening, 0.7 miles of new location)

Cost Estimate: \$27,255,022 per CAMPO 2045 MTP

- Proportion for widening: \$22,485,393.15
- Proportion for new location: \$4,769,628.85

Existing and Future Conditions

- Existing CTP Class: Minor Thoroughfare
- Future CTP Class: Minor Thoroughfare
- Travel Lanes (Existing / Proposed): 2/3
- Existing Volume (2018): 2,600
 - From existing counts grown to 2018
- Projected Volume (2045): 7,100
 - Notes: Projected volumes from the Triangle Regional Model
 - 3% growth = 5,600
- Existing Right-of-Way: 60 Feet
- Future Right-of-Way: 90 Feet

Previous Planning:

- 2011 Harnett County CTP Upgrade to two 12-foot lanes with 2-foot paved shoulders
- Southwest Area Study (2012) Widen existing portion to four-lane section, four-lane new location section

Context and Need: Recommended to be upgraded to improve safety and increase capacity to accommodate additional traffic traveling east/west and improve access between US 401 and the Town of Angier including NC 210 and NC 55.

Potential Intermediate Improvements / Next Steps:

- Intermediate improvements: Convert Rawls Church Road/Purfoy Road intersection to traffic signal controlled
- Next Steps: Widen Rawls Church Road to a two-lane road with a continuous two-way turn lane and wide paved shoulders. Consider a multi-use path on one side of roadway to facilitate eastwest pedestrian and bicycle travel.



Project ID | Name P3 | PURFOY RD

Extent: Harnett County Line to Chalybeate Springs Rd

Improvement Type: Widening

Length: 1.8 miles

Cost Estimate: \$35,773,795 (from Holland Rd in Wake County to Chalybeate Springs Road – 4.12 miles) per CAMPO 2045 MTP

• Proportional Cost Estimate: \$15,629,328

Existing and Future Conditions

- Existing CTP Class: Minor Thoroughfare
- Future CTP Class: Minor Thoroughfare
- Travel Lanes (Existing / Proposed): 2 / 3
- Existing Volume (2018): 3,000
 - From existing counts grown to 2018
- Projected Volume (2045): 13,200
 - Notes: Projected volumes from the Triangle Regional Model
 - The model includes US 401 on a new location, which will no longer be completed. Volume from this road was shifted onto Purfoy Road.
 - 3% growth = 6,700
- Existing Right-of-Way: 60 Feet
- Future Right-of-Way: 80 Feet

Previous Planning:

• Southwest Area Study (2012) – Widen to four lane section

Context and Need: Recommended to be upgraded to improve safety and increase capacity to accommodate additional traffic traveling east/west and improve access to to Fuquay-Varina and the Southern Expressway (I-540).

Potential Intermediate Improvements / Next Steps:

- Intermediate improvements: Consider converting Chalybeate Springs Road/Purfoy Road intersection to traffic signal controlled
- Next Steps: Widen Purfoy Road to two-lane road with a two-way turn lane and wide paved shoulders.

